



## **Hearing Report:**

### **Proposed Southland Water and Land Plan**

**Prepared under Section 42A of the  
Resource Management Act 1991**

**April 2017**



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# 1. Introduction

## Purpose of Report

- 1.1 This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA) and assesses the submissions on the proposed Southland Water and Land Plan (pSWLP).
- 1.2 The purpose of this report is to provide the Hearing Commissioners with a summary and analysis of the submissions made on the pSWLP and makes recommendations on possible amendments to the pSWLP in response to those submissions.
- 1.3 This report has been prepared by the following authors and draws on technical information provided by a number of technical experts (brief statements of qualifications and experience are contained in Appendix A).
  - **Section 1** – Introduction– *Matthew McCallum-Clark (Incite)*
  - **Section 2** – Legal and Statutory Context– *Philip Maw (Wynn Williams)*
  - **Section 3** – Science Supporting the Plan – *Roger Hodson (Environment Southland), Clint Rissmann (Land and Water Science), Karen Wilson (Environment Southland), Gary Morgan (Environment Southland), Nick Ward (Environment Southland), James Dare (Environment Southland), Monique Beyer (Environment Southland), Brydon Hughes (Liquid Earth) and Lawrence Kees (Environment Southland)*
  - **Section 4** – Introduction to the Plan and General Submissions – *Angela Fenemor (Incite) and Matthew McCallum-Clark (Incite)*
  - **Section 5** – Objectives – *Angela Fenemor (Incite) and Matthew McCallum-Clark (Incite)*
  - **Section 6** – General Policies and Rules – *Sonya Nicol (Environment Southland), Bryan Scoles (Environment Southland), Angela Fenemor (Incite) and Matthew McCallum-Clark (Incite)*
  - **Section 7** – Water Quality – *Angela Fenemor (Incite), Matthew McCallum-Clark (Incite), Bryan Scoles (Environment Southland), Rebecca Robertson (Environment Southland), Gavin Gilder (Environment Southland), and Claire Jordan (Environment Southland)*
  - **Section 8** – Water Quantity – *Ben McCall (Incite) and Matthew McCallum-Clark (Incite)*
  - **Section 9** – Land and Landfill Contamination – *Bryan Scoles (Environment Southland) and Matthew McCallum-Clark (Incite)*
  - **Section 10** – Structures and Bed Disturbance Activities in River and Lake Beds – *Sonya Nicol (Environment Southland), Bryan Scoles (Environment Southland), Claire Jordan (Environment Southland), Angela Fenemor (Incite) and Matthew McCallum-Clark (Incite)*
  - **Section 11** – Wetlands– *Erin Hawke (ex-Environment Southland) and Matthew McCallum-Clark (Incite)*
  - **Section 12** – Miscellaneous– *Matthew McCallum-Clark (Incite)*
  - **Section 13** – Appendices
- 1.4 It should be emphasised that any conclusions reached or recommendations made in this report are the opinion of the authors and are not binding on the Hearing Commissioners. It should not be assumed that the Hearing Commissioners will reach

the same conclusions having considered all the information in the submissions and the evidence of the submitters.

## **Key Elements of the pSWLP**

- 1.5 The genesis of the pSWLP lies within the Operative Southland Regional Water Plan (RWP), the Regional Effluent Land Application Plan (RELAP) and the Transitional Regional Plan (TRP). However, provisions in the pSWLP have been updated to reflect the introduction of key elements to manage water quality and quantity.
- 1.6 These key elements include:
- meeting the obligations of the National Policy Statement on Freshwater Management (NPSFM) and the proposed Regional Policy Statement (pSRPS);
  - more direct management of diffuse discharges, particularly from dairying, winter grazing and cultivation;
  - encouraging good management practices;
  - the introduction of physiographic zones;
  - requirements for stock exclusion; and
  - providing for Ngāi Tahu values, including introducing the concept of Te Mana o te Wai.
- 1.7 The majority of submissions received focused on these key elements.

## **Reporting Assumptions**

### **Submissions and Further Submissions**

- 1.8 In all, approximately 900 submissions and 47 further submissions were lodged on the pSWLP. A significant proportion of the submissions relate to a limited range of policies and rules, particularly those related to farming activities. That said, almost all of the provisions of the pSWLP are subject to one or more submissions. Due to the large number of submissions, submitters with common submission points have often been grouped together in the discussion of individual policies or rules. This means that individual submitters are often not identified and the reporting on submitters is often generalised e.g. ‘a large number of submissions were received on Policy....’ and only a single submitter or submission point is shown. This has been done as a means of confirming that there is scope within the submissions to make the requested change, rather than identifying or prioritising particular submitters.
- 1.9 There are further submissions on many submission points. The further submissions have been closely reviewed along with the relevant submission point. The majority of further submissions are from original submitters (43 of the 47 received). For most further submission points, the issue is clearly ‘live’ from the submitter’s original submission.
- 1.10 As a generalisation, several of the agriculture and horticulture submitters (such as B+LNZ, Federated Farmers, Fonterra, Hort NZ and DHL) supported each other

through further submissions, as well as garnering other further submitter support from the agriculture community. Further submissions in opposition to many points of these original submitters consistently came from DOC, Fish and Game and Ngāi Tahu.

- 1.11 In general, DOC, Fish and Game and Ngāi Tahu supported each other's submissions, along with that of Forest and Bird. The submission points of these submitters, including Forest and Bird, received consistent opposition from mainly the agriculture sector, with further submissions from T Barclay and Dillon Ag (C & R) opposing these submissions in their entirety.
- 1.12 That said, there are some situations where these generally opposing parties agree with each other's submission points, and there are further submissions from other parties on a wide range of provisions. Overall, given the issues subject to further submissions are discussed in relation to the original submission point, only in exceptional cases are further submission points noted in the body of this report.
- 1.13 A significant number of provisions, including many definitions, have submissions in support only. A few provisions have no relevant submissions. For these provisions, the recommendation is to retain the provision as notified, unless consequential changes have been recommended. In general, there is no analysis of these submissions, but the support is noted.

### **Report format**

- 1.14 The overall format of this report closely follows the order of topics and content in the pSWLP. This report is very much topic based, with the first three sections of the pSWLP discussed first, then the pSWLP is broken into topics, with the policies, rules, definitions and schedules related to each topic discussed as a group.
- 1.15 Recommendations are made where appropriate, and these are either to retain provisions without amendment, or to add to or amend the provisions with the amendment shown by way of strikeout and underlining. In limited circumstances the authors consider that an amendment may be appropriate, but consider it would be beneficial to hear further evidence before making a final recommendation, and this is made clear within the report. In the absence of a specific recommendation, the default position of the reporting officers is to retain the provisions as notified in the pSWLP. All recommended changes have a footnoted reference with a submission point and submitter name that provides the scope for the recommended change.

### **Reporting Approach**

- 1.16 The overall intent in considering and analysing the submission points is, amongst other things, to better give effect to the NPSEFM, NPSET, NPSREG and the RPS, and to have appropriate regard to the pSRPS, the Council's responsibilities under Section 30 and section 32 and to improve the pSWLP in terms of clarity, workability and certainty.<sup>1</sup> Time and again, the submissions were assessed against these criteria, and the reasoning given in the Report for recommended changes often relate to these criteria.

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<sup>1</sup> This list is by no means exhaustive. For a full list of the statutory documents that must be considered, see section 2 of this report.



- 1.17 It is also critical to note that the pSWLP will not give full effect to the NPSFM – Council has notified a time-staged implementation programme, and is working through a process for each identified FMU. Accordingly, the submissions have not been assessed to consider whether they give effect to all of the NPSFM.
- 1.18 In preparing this report, the direction set by Councillors for the drafting of the pSWLP has provided a useful context to the statutory tests and requirements. The Councillors, through workshops agreed:

***Path Forward:***

1. *Maintain water quality;*
2. *Make improvements to water quality through good management practices; and*
3. *Make further improvements where degraded through the Freshwater Management Unit processes*

***Why:***

*Water quality shows declining trends in Southland and in places fail to meet National Objectives Framework bottom lines. The available science shows that current actions are not maintaining water quality, as required by the Southland Regional Policy Statement.*

***How:***

1. *Ki uta ki tai – from the mountains to the sea – integrated management*
2. *Use physiographic work as a primary tool*
3. *Utilise industry support and work in partnership where this is possible and beneficial*
4. *Encourage a mind-set change, recognising that current practices need to change to maintain water quality*

- 1.19 In my opinion, this framework provides a useful plain-English summary of the Council’s approach and expectations for the pSWLP.

## **Abbreviations**

- 1.20 Abbreviations used throughout the text of this report are:

<b>Full Term</b>	<b>Abbreviation</b>
Farm Environment Management Plan	FEMP
Freshwater Management Unit	FMU
Good Management Practices	GMP
Hectares	ha
Independently Audited Self-Management	IASM
Kilograms	Kg
Kilograms per hectare per year	Kg/Ha/Yr
National Policy Statement for Freshwater Management 2014	NPSFM
New Zealand Coastal Policy Statement 2010	NZCPS
OVERSEER <sup>TM</sup> Nutrient Budget Model	Overseer
Proposed Southland Regional Policy Statement 2012	pSRPS

<b>Full Term</b>	<b>Abbreviation</b>
Proposed Southland Water and Land Plan 2016	pSWLP
Regional Coastal Plan for Southland	RCP
Regional Effluent Land Application Plan	RELAP
Regional Policy Statement for Southland 1997	RPS
Regional Water Plan for Southland	RWP
Resource Management Act	RMA
Water and Land 2020 & Beyond	WAL 2020

1.21 Abbreviations of submitter names used in this report are:

<b>Full name</b>	<b>Abbreviation</b>
Aggregate & Quarry Association of NZ	AQA
Alliance Group Ltd	Alliance
Ballance Agri-nutrients	Ballance
Beef + Lamb New Zealand	B+LNZ
Dairy Holdings Limited	DHL
DairyNZ	DairyNZ
Director-General of Conservation	DOC
Egg Producers Federation of NZ (EPFNZ)	EPFNZ
Federated Farmers of NZ (Southland Province)	Federated Farmers
Fonterra Co-operative Group Ltd	Fonterra
Forest & Bird NZ	Forest and Bird
Gore District Council	GDC
H W Richardson Group	HWRG
Heritage New Zealand	HNZ
Horticulture NZ	Hort NZ
Invercargill Airport Ltd	IAL
Invercargill City Council	ICC
IPENZ Engineers NZ	IPENZ
Irrigation NZ Incorporated	INZ
KiwiRail Holdings Ltd (KiwiRail)	KiwiRail
L & M Ashers Waituna Limited	L & M
Lower Aparima Catchment Group	Lower Aparima CG
Mainland Minerals Southern Ltd	MMSL

<b>Full name</b>	<b>Abbreviation</b>
Meridian Energy Ltd	Meridian
Mid-Aparima Catchment Group	Mid-Aparima CG
Ministry for Primary Industries	MPI
NZ Deer Farmers Association	NZ Deer
NZ Defence Force	NZDF
NZ Fire Service Commission	NZFS
NZ Transport Agency	NZTA
OSPRI New Zealand Ltd	OSPRI
Pourakino Catchment Group	Pourakino CG
Rayonier NZ Ltd	Rayonier
South Island Eel Industry Association	SIEIA
Southern Rural Fire Authority	SRFA
Southland Conservation Board	SCB
Southland District Council	SDC
Southland Farm Forestry Association	SFFA
Southland Fish & Game Council	Fish and Game
Southland River Liaison Committees	Southland RLC
Southwood Export Ltd, Kodansha Tree Farm Ltd & Southland Plantation Forest Co. of NZ	SWEL
Ngā rūnanga – Waihopai Rūnaka, Te Rūnanga o Awarua, Te Rūnanga o Oraka Aparima, Hokonui Rūnaka and Te Rūnanga o Ngāi Tahu	Ngāi Tahu
The Fertiliser Assoc. of NZ	FANZ
The Southern District Health Board	SDHB
Three Rivers Catchment Group	Three Rivers CG
Upper Aparima Catchment group	Upper Aparima CG
WaterForce Southland	WaterForce
Z Energy, BP Oil NZ & Mobil Oil NZ	Oil Companies

## 2. Legal and Statutory Framework

### Introduction

- 2.1 The pSWLP has been prepared in accordance with the RMA's statutory framework, as it applies to the preparation of regional plans.
- 2.2 This part of the Section 42A report summarises this framework against which the Plan, and the submissions and further submissions on it, must be assessed. It also addresses some specific legal issues raised in submissions.

### Summary of Statutory Framework

- 2.3 The Council must hold a hearing on submissions, and make a decision. The decision must provide reasons, including for accepting or rejecting submissions (although individual submission points do not have to be addressed individually) in accordance with clause 10 of Schedule 1 of the RMA.
- 2.4 Environment Southland has decided to delegate the hearing of submissions to the appointed Hearing Panel who will make recommendations to the Council. The scope of submissions and jurisdictional issues are addressed further in section 2.67 – 2.79 of this report.
- 2.5 In reaching a decision (or in making recommendations) under clause 10 of Schedule 1 of the RMA on the provisions forming part of the pSWLP, the following framework must be applied:

#### General requirements

The Council must be satisfied that the pSWLP will assist the Council to carry out its functions in order to achieve the purpose of the RMA.<sup>2</sup>

The preparation of the pSWLP must be in accordance with the provisions of Part 2 of the RMA and any applicable regulations.<sup>3</sup>

The pSWLP must give effect to:<sup>4</sup>

- (i) any applicable national policies statements, including, of particular relevance, the NPSFM;
- (ii) the NZCPS; and
- (iii) the RPS.

The pSWLP must meet the RMA's specified requirements for alignment with other RMA policy and planning instruments as summarised in the table at section 2.3.2 below.

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<sup>2</sup> Section 63(1).

<sup>3</sup> Section 66(1).

<sup>4</sup> Section 67(3).

Consideration must be given in the manner directed by the RMA to various other statutory documents summarised at table 2.3.1 below.

Regard must be had to the section 32 report for the pSWLP.<sup>5</sup> A further evaluation under section 32AA of any changes proposed must also be undertaken and regard had to.

### Objectives and policies

The Council must be satisfied that the provisions in the pSWLP meet their statutory purposes, namely:<sup>6</sup>

- (i) the objectives of the pSWLP are the most appropriate way to achieve the purpose of the RMA;
- (ii) the policies are to achieve and implement the pSWLP objectives; and
- (iii) the rules, if any, are to achieve the pSWLP objectives and implement the pSWLP policies.

### Regional rules

Other specific statutory directions in relation to the content of regional rules (as relevant to the pSWLP) that must also be met are summarised in the table at section 2.9 below.

- (i) To the extent the plan allocates the taking and use of water, it must record how it is done so.<sup>7</sup>

## The Council's obligations in relation to the statutory documents

### Alignment with statutory documents

2.6 Regional plans fall within a hierarchy of planning documents. When preparing and assessing a regional plan, the RMA prescribes how regional plans are to align with other planning instruments.

2.7 One of the key issues associated with the hearing of submissions on the pSWLP is to ensure that the plan aligns with the other planning instruments in accordance with the statutory tests. The following table summarises the alignment required:

Statutory document	Alignment required by the pSWLP	Comment
Regulations: <sup>8</sup> <i>Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007</i> <i>Resource Management (Measurement and Reporting of Water Takes) Regulations 2010</i>	Prepared in accordance with <sup>9</sup>	See below in relation to the requirements for rules in relation to the <i>Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007</i>

<sup>5</sup> Section 66(1)(e).

<sup>6</sup> Section 67(1).

<sup>7</sup> Section 67(5).

<sup>8</sup> There are also regulations currently proposed in relation to excluding stock from water bodies, estuaries, and coastal lakes and lagoons. These regulations will not be able to be enacted until changes to the RMA are made under the Resource Legislation Amendment Bill 2015, and at this stage little weight can be given to the proposed regulations.

<sup>9</sup> Section 66(1)(f).

Statutory document	Alignment required by the pSWLP	Comment
<i>Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011</i>		The other regulations referred to here have been considered in the preparation of the pSWLP, and are discussed in the relevant parts of this report.
<i>New Zealand Coastal Policy Statement 2010 (NZCPS)</i>	Give effect to <sup>10</sup>	Give effect to is a strong direction and requires full compliance and positive implementation of the superior instrument. <sup>11</sup>
National Policy Statements: <i>National Policy Statement for Freshwater Management 2014 (NPSFM)</i> <i>National Policy Statement for Renewable Electricity Generation 2010</i> <i>National Policy Statement on Electricity Transmission 2011</i>	As above	The specific assessment of these National Policy Statements and the regional policy statement are set out in the remaining chapters of this report where submissions have raised issues regarding whether the pSWLP gives effect to these higher order directions.
<i>Southland Regional Policy Statement 1997 (RPS)</i>	As above	The requirement to give effect to the NPSFM and RPS in particular are considered further below.
<i>Regional Coastal Plan 2013</i> <i>Regional Air Plan 2016</i>	Not be inconsistent with <sup>12</sup>	This is usefully tested by asking: <ul style="list-style-type: none"> <li>• Are the provisions of the pSWLP compatible with the provisions of these higher order documents?<sup>13</sup></li> <li>• Do the provisions alter the essential nature or character of what higher order documents allow or provide for?<sup>14</sup></li> </ul> The consistency with Environment Southland's other regional plans is assessed to the extent that this is raised in submissions, in the other sections of this report.
Water conservation orders: <i>Water Conservation (Mataura River) Order 1997</i> <i>Water Conservation (Oreti River) Order 2008</i>	Not be inconsistent with <sup>15</sup>	The pSWLP has been prepared to ensure it is not inconsistent with these orders. <sup>16</sup>  The orders are specifically considered further, where relevant, in the remaining chapters of this report.

<sup>10</sup> Section 67(3).

<sup>11</sup> *Environmental Defence Society v New Zealand King Salmon Company* at [80], *Clevedon Cares Inc v Manukau City Council* [2010] NZEnvC 211 at [50].

<sup>12</sup> Section 67(4)(b).

<sup>13</sup> *Re Canterbury Cricket Association* [2013] NZEnv 184 at [51]-[52].

<sup>14</sup> *Norwest Community Action Group inc v Transpower New Zealand* EnvC A113/01, 29 October 2001 at [55]-[56].

<sup>15</sup> Section 67(4)(a).

<sup>16</sup> Section 32 Report, page 12, paragraph 2.2.2.

## Other considerations

2.8 There are also a range of other statutory documents that consideration must be given to. These obligations can be summarised as follows:

Statutory document/legal test	Consideration	Comment
<i>Proposed Regional Policy Statement 2012 (pRPS)</i>	Have regard to <sup>17</sup>	Give genuine attention and thought to the matter. <sup>18</sup> Further discussion is set out below in relation to the pRPS.
Specified management plans and strategies prepared under other legislation: <i>Southland Sports Fish and Game Management Plan</i>	Have regard to <sup>19</sup>	As above.
<i>Otago Regional Policy Statement</i> <i>Otago Regional Plan: Water</i> <i>Otago Regional Plan: Coast</i> <i>Otago Regional Plan: Air</i> <i>Otago Regional Plan: Waste</i>  <i>West Coast Regional Policy Statement</i> <i>West Coast Land and Water Plan</i> <i>West Coast Coastal Plan</i> <i>West Coast Air Plan</i>  <i>Proposed Otago Regional Policy Statement</i> <i>Proposed West Coast Regional Policy Statement</i> <i>Proposed West Coast Coastal Plan</i>	Have regard to extent to which there is a need for consistency <sup>20</sup>	As above. We note that no submitters have raised consistency with these plans as an issue and so these plans have not been considered further in this report.
Iwi Management Plans <i>Te Rūnanga o Ngāi Tahu Freshwater Policy Statement (1999); and</i> <i>Ngāi Tahu ki Muribikū Natural Resource and Environmental Iwi Management Plan 2008 (Te Tangi a Tauria).</i>	Take into account <sup>21</sup>	Must address the matter and record it has been addressed in the decision; but weight of the matter is for the decision makers' judgment in light of the evidence. <sup>22</sup>  These Iwi Management Plans are considered further in the analysis of submissions set out in other parts of this report.
Trade competition or the effects of trade competition	Must not have regard to. <sup>23</sup>	No submission has raised this as an issue.
Statutory acknowledgements under the Ngāi Tahu Claims Settlement Act 1998 <sup>24</sup>	Must include information	The pSWLP identifies Statutory Acknowledgement areas within Southland as required by the

<sup>17</sup> Section 67(4)(b).

<sup>18</sup> *Foodstuffs (South Island) Ltd v Christchurch City Council* (1999) 5 ELRNZ 308, at page 314.

<sup>19</sup> Section 66(2)(a).

<sup>20</sup> Section 66(2)(d).

<sup>21</sup> Section 66(2A)(a).

<sup>22</sup> *Bleakley v Environmental Risk Management Authority* [2001] 3 NZLR 213 (HC) at [42].

<sup>23</sup> Section 66(3).

<sup>24</sup> The Te Rūnanga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998 gives effect to the Deed of Settlement signed by the Crown and Te Rūnanga o Ngāi Tahu on 21 November 1997 to achieve a final settlement of Ngāi Tahu's historical claims against the Crown. The Settlement Act includes an instrument called a Statutory Acknowledgement. Statutory Acknowledgements recognise Ngāi Tahu's mana in relation to a range of sites and areas in the South Island, and provide for this

Statutory document/legal test	Consideration	Comment
		Settlement Act (see Appendix B).

## Part 2 and the RMA purpose and the interaction with the planning hierarchy

- 2.9 One of the overarching requirements, on which the Hearing Panel must be satisfied, is that the pSWLP achieves Part 2 of the RMA.<sup>25</sup> In addition, section 66(1) provides that regional plans must be prepared in accordance with the provisions in Part 2. There is also the requirement in section 32 that the objectives of the pSWLP are the most appropriate way to achieve the purpose of the Act.
- 2.10 The overall objective of the RMA,<sup>26</sup> and the keystone of Part 2, is section 5(1), which states the purpose of the Act as "to promote the sustainable management of natural and physical resources".
- 2.11 In addition, the matters in section 6, 7 and 8 are all relevant to the assessment of the pSWLP.
- 2.12 Since the Supreme Court's decision in *Environmental Defence Society v New Zealand King Salmon*<sup>27</sup> there has been some debate regarding how Part 2 should be factored into the evaluation of planning documents.
- 2.13 In essence, following *King Salmon* the task of a local authority when assessing a planning document does not require a consideration of Part 2, unless there is uncertainty, incompleteness or illegality in the objectives and policies higher order documents to which the regional plan is required to give effect to (in this case the New Zealand Coastal Policy Statement, the National Policy Statement for Freshwater Management 2014, National Policy Statement for Renewable Electricity Generation 2010, the National Policy Statement on Electricity Transmission 2011 and the Regional Policy Statement).
- 2.14 That is because each of these documents is assumed to itself give effect to, or particularise Part 2 for the particular context in which they have been prepared.
- 2.15 The Supreme Court has also made it clear that the phrase "give effect to" is a strong direction.<sup>28</sup>
- 2.16 In the case of pSWLP, as described more fully below, the Council considers that the relevant higher order statutory directions have been given effect to as required applying the approach in *King Salmon*. Most relevant are the directions within the Southland Regional Policy Statement 1997 (**RPS**), proposed Southland Regional Policy Statement 2012 (**pRPS**),<sup>29</sup> and the NPSFM 2014.<sup>30</sup>

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to be reflected in the management of those areas. Section 220 of the Settlement Act provides that local authorities within the Ngāi Tahu claim area must attach to all regional policy statements, district plans, and regional plans (including proposed plans and proposed policy statements) from time to time prepared pursuant to the Resource Management Act 1991, information recording all statutory acknowledgements affecting statutory areas covered wholly or partly by such policy statements or plans.

<sup>25</sup> Section 63.

<sup>26</sup> *Environmental Defence Society v NZ King Salmon* [2014] NZSC 38, at [151].

<sup>27</sup> *Environmental Defence Society v NZ King Salmon* [2014] NZSC 38.

<sup>28</sup> *Environmental Defence Society v NZ King Salmon* at [77].

<sup>29</sup> While the pRPS is still a proposed policy statement, it is substantially through the policy-making process, with appeals being resolved and a number of parts now 'beyond challenge'. The relationship between the pRPS, operative RPS and the pSWLP is addressed elsewhere in this report.



- 2.17 The Council agrees that resort should not be had to Part 2 in interpreting objectives and policies in higher order directions unless they fall within one of the categories recognised by the Supreme Court. The Supreme Court was quite clear that there will still be situations where it is necessary to "go back to" Part 2, including:
- (a) if there is an allegation of invalidity in the higher order direction;
  - (b) if the policies in question do not "cover the field and a decision-maker will have to consider whether Part 2 provides assistance in dealing with the matter(s) not covered"; or
  - (c) where there is any uncertainty as to the meaning of particular policies (of the NZCPS).<sup>31</sup>
- 2.18 Put simply, the Council cannot rely on Part 2 to avoid giving effect to a higher order direction. This is considered further below in the context of the NPSFM and submissions which seek that economic considerations outweigh other considerations, including the requirement to give effect to the NPSFM objectives and policies.
- 2.19 The NPSFM and the RPS are considered further as follows.

## **NPSFM**

- 2.20 While there are three national policy statements relevant to the pSWLP (and to which it must give effect) the most significant is the NPSFM.
- 2.21 The NPSFM 2014 was *Gazetted* on 4 July 2014 and came into force on 1 August 2014.
- 2.22 In accordance with section 55 of the RMA and the NPSFM, all but two of the NPSFM policies (A4 and B7) must be given effect to through a Schedule 1 process. These two policies have been included in the pSWLP. While some submissions have sought amendments to the policies, given the requirements in section 55 and the NPSFM itself, to insert these policies without using a Schedule 1 process, it is considered that there is no jurisdiction to change the policies. These policies will remain in the pSWLP until the remainder of the policies are fully implemented through Schedule 1 processes (discussed further as follows).
- 2.23 In accordance with Policy E1 of the NPSFM and the progressive implementation programme adopted and notified by Environment Southland in November 2015, Environment Southland is implementing Policies A1, A2, A3, B1, B2, B5, B6, CA1, CA2, CA3 and CA4 of the NPSFM through a time-staged implementation process. The Council has resolved to fully implement the NPSFM by December 2025.
- 2.24 The pSWLP is the first step which establishes the broad framework for managing water quality and water quantity issues. Council, in partnership with Ngai Tahu tangata whenua, will then work with the Southland community to give effect to the NPSFM 2014 through the development of objectives and corresponding limits for freshwater

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<sup>30</sup> The National Policy Statement for Freshwater Management 2014 came into force on 1 August 2014 and the National Policy Statement for Freshwater Management 2011 was revoked from that date. The implications of the NPSFM 2014 are addressed elsewhere in this report.

<sup>31</sup> *Environmental Defence Society v NZ King Salmon* at [88], [90].

quality and quantity within each of the Freshwater Management Units (FMUs) established by the pSWLP.

- 2.25 The progressive implementation programme timeline for implementation within the FMUs is as follows:
- (a) **Fiordland and islands FMU** - commenced late 2016, with catchment limits to be developed by July 2018;
  - (b) **Aparima and Pourakino – Jacobs River Estuary FMU** - commence late 2017, with catchment limits to be developed by July 2019;
  - (c) **Mataura – Toetoes Harbour FMU** - commence late 2017, with catchment limits to be developed by July 2019;
  - (d) **Oreti and Waihopai – New River Estuary FMU** - commence late 2018, with catchment limits to be developed by July 2020;
  - (e) **Waiau – Te Waewae Lagoon FMU** - commence late 2018, with catchment limits to be developed by July 2020.
- 2.26 In order to fully give effect to the NPSFM, there will need to be a range of further plan changes to the pSWLP in the future which implement the national objectives framework in accordance with the policies of the NPSFM in the above FMUs.
- 2.27 However, despite the fact that the pSWLP is only the first step in the process, it is still required to give effect to the objectives in the NPSFM. These objectives relate to water quality, water quantity, integrated management, the national objectives framework, and tāngata whenua roles and interests.<sup>32</sup>
- 2.28 As will be evident from the remainder of this report, one of the key themes arising from submissions relates to the requirement in Objective A2 that the overall quality of fresh water within a region is maintained or improved.
- 2.29 The Environment Court in *Ngati Kabungunu Iwi Inc v The Hawkes Bay Regional Council* acknowledged that while the NPSFM 2014 does not provide a definition of what "overall" should mean in respect of Objective A2, it might be appropriate for a Council to regard overall quality as "*permitting some increases in a type of contaminant (nitrate-nitrogen, for instance) in a particular waterbody, so long as that was matched or exceeded in its adverse effects by, say, a reduction in some other contaminant, so that the ...quality of the water... taken overall, was at least no worse.*"<sup>33</sup>
- 2.30 This interpretation does not support an "unders and overs" approach where the water quality may deteriorate in one area so long as there is improvement elsewhere. This approach would be inconsistent with the unqualified function imposed on regional councils by section 30(1)(c)(ii) to maintain and enhance water quality in waterbodies. An "unders and overs" approach may also be seen to be incompatible with section 69 and section 107 relating to water quality and discharges respectively.
- 2.31 While the Environment Court in this case recognised that it is an objective rather than a rule, it did emphasise that an objective is a goal which rules must focus on achieving.

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<sup>32</sup> There are also separate objectives in relation to monitoring and freshwater accounting which are not directly relevant to the pSWLP.

<sup>33</sup> *Ngati Kabungunu Iwi Inc v The Hawkes Bay Regional Council* [2015] NZEnvC 50 [60].

2.32 A number of submitters have raised issues regarding the role of economic considerations, in the context of the water quality provisions in particular. As set out above in the context of Part 2, economic considerations and Part 2 cannot be used as an argument to say that the objectives and policies in a higher order direction (in this case the NPSFM) do not have to be given effect to. However, the benefits and costs of all of the environmental, economic, social and cultural effects<sup>34</sup> have to be considered in determining how to give effect to the higher order directions. All of these factors need to be considered, and no one factor takes precedence over another.

### **Further amendments to the NPSFM**

2.33 Proposed amendments to the NPSFM were announced by the Government in February 2017 (in the form of the Clean Water package). Until any changes to the NPSFM are *Gazetted*, no weight can be placed on the proposed changes. To the extent to which any changes to the NPSFM (if changes are made) have to be given effect to by the pSWLP will depend on the transitional provisions made in the proposed changes. If any changes to the NPSFM take legal effect during the course of hearings on the pSWLP, Council Officers' will update the hearing panel accordingly.

### **RPS and the pRPS**

2.34 While the pRPS is still a proposed regional policy statement, it is substantially through the policy-making process, with appeals being resolved and a number of parts now 'beyond challenge'.

2.35 At the time of preparing this report, the provisions that remain under challenge are in Chapter 4 (Water) and Chapter 7 (Coast).

2.36 In respect of Chapter 4, the following provisions remain under challenge:

- Objective WQUAL.2 – Lowland water bodies;
- Policy WQUAL.3 – Wetlands and outstanding freshwater bodies;
- Notified Policy WQUAL.4 – Waituna Lagoon;
- Notified Method WQUAL.13 – Waituna Catchment.

2.37 In respect of Chapter 7, an appellant has sought the inclusion of a new Objective relating to marine farming in the Coastal Marine Area, together with subsequent amendments to Policy 15.1.3.

2.38 If there is a change in the status of any of the appeals relating to the pRPS, or if the status of the pRPS changes prior to recommendations being made by the Hearing Panel to Council, the section 42A officers' will bring that to the attention of the Hearing Panel.

2.39 Under section 67(3)(c) of the RMA, a regional plan must give effect to any operative regional policy. While the pRPS is only a proposed regional policy statement, it is considered that the pSWLP should give effect to the parts of the pRPS that are 'beyond challenge'.

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<sup>34</sup> In accordance with section 32.

- 2.40 The pRPS represents the future regional policy framework for the Southland region and gives effect to the national policy statements and the NZCPS. It is likely the pSWLP will become operative before Council makes decisions on the pSWLP. Applying a purposive approach to the interpretation of the RMA and, in particular, the alignment required between a regional policy statement and a regional plan, it would create an absurdity to give effect to the RPS and not the provisions in the pRPS that are now "beyond challenge", in this instance.
- 2.41 Accordingly, notwithstanding the statutory requirement that the Hearing Panel must 'have regard to' the pRPS, it is submitted that the pSWLP should give effect to the parts of the pRPS that are 'beyond challenge'.
- 2.42 For any parts of the pRPS that are still under challenge, the Hearing Panel will be required to give effect to the RPS, and to have regard to the pRPS.

### Section 32

- 2.43 In addition to the statutory tests outlined above, one of the key sections under which the pSWLP must be evaluated is section 32 of the RMA.
- 2.44 The 2013 version of section 32 applies.
- 2.45 Schedule 1 requires a section 32 evaluation to be prepared prior to notification and particular regard given to it when the decision to notify the pSWLP was made. The evaluation was required to examine:
- (a) the extent to which the objectives of the proposal (i.e. the stated objectives in the pSWLP) are the most appropriate way to achieve the purpose of the Act.<sup>35</sup> Appropriate implies informed discretion and value judgment, akin to "suitable".<sup>36</sup> In undertaking a further evaluation required by section 32AA (addressed further below) it is open to the Hearing Panel to take different view on what the most appropriate objectives are, in light of the evidence and information that the Hearing Panel will receive. In addition, the High Court has confirmed that section 32(3)(b) does not mandate that each individual objective had to be "the most appropriate" way to achieve the RMA's purpose. Each objective is required to be examined in the process of evaluation. Objectives could not be looked at in isolation because the extent of each objective's relationship in achieving the purpose of the Act may depend on inter relationships;<sup>37</sup>
  - (b) whether the provisions (the policies, rules or other methods to implement the objectives) are the most appropriate way to achieve the objectives by:<sup>38</sup>
    - (i) identifying other reasonably practicable options for achieving the objectives;
    - (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives (*the efficiency and effectiveness assessment*); and
    - (iii) summarising the reasons for deciding on the provisions.

<sup>35</sup> Section 32(1)(a).

<sup>36</sup> *Rational Transport Society Inc v New Zealand Transport Agency* [2012] NZRMA 298 (HC) at [45].

<sup>37</sup> *Rational Transport Soc Inc v New Zealand Transport Agency* HC Wellington CIV-2011-485-2259, 15 December 2011, [30] and [44]–[46]. Applied by the Environment Court in the context of a plan change in *Black v Waimakariri District Council* [2014] NZEnvC 119 at [16].

<sup>38</sup> Section 32(1)(b).

- (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of the pSWLP.<sup>39</sup>

2.46 The *efficiency and effectiveness assessment* was required to:<sup>40</sup>

- (a) identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth (that are anticipated to be provided or reduced); and employment (that are anticipated to be provided or reduced);
- (b) if practicable, quantify the benefits and costs; and
- (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

2.47 As set out above, one of the most significant themes arising from submissions on the pSWLP is the potential economic effects associated with the farming rules. Submissions which allege economic effects associated with the provisions will need to be assessed in light of these provisions (whilst bearing in mind the overarching requirement that the pSWLP gives effect to the higher order directions).

### **Section 32AA**

2.48 Section 32AA requires the Council (in this case through the Hearing Panel) to "undertake, and have particular regard to, a further evaluation of the proposal" in accordance with section 32AA.

2.49 The section 32AA evaluation is only required "for any changes that have been made to, or are proposed for, the proposal since the Council's evaluation report for the proposal was completed" at a level of detail that corresponds to the scale and significance of the changes. The further evaluation must address the specific requirements of section 32 (outlined at paragraphs 2.45 and 2.46 above).

2.50 The further evaluation must either:

- (a) be published in an evaluation report that is made available at the same time the decision on the pSWLP is made; or
- (b) be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken.

2.51 It is anticipated that any changes that Council officers recommend be made to the pSWLP (in the Council's reply) will be accompanied by a further section 32 evaluation of those changes for the purposes of section 32AA.

### **The objectives and policies**

2.52 The pSWLP is required to state the objectives for the region, the policies to implement the objectives and the rules (if any) to implement the policies.

2.53 The objectives of the plan contain statements of what is to be achieved by the plan.

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<sup>39</sup> Section 32(1)(c).

<sup>40</sup> Section 32(2).

- 2.54 In accordance with section 32 of the Act, the objectives of the pSWLP must achieve the purpose of the RMA.
- 2.55 In terms of the extent to which each objective must meet the relevant tests in the Act, it is relevant that the purpose of the preparation, implementation, and administration of regional plans is to assist a regional council to carry out its functions in order to achieve the purpose of the RMA.<sup>41</sup> Further, a regional council must prepare a regional plan in accordance with Part 2 of the RMA.<sup>42</sup>
- 2.56 It follows then that the pSWLP, as a whole, must implement and achieve the sustainable management of natural and physical resources; rather than each objective viewed in isolation. Similarly, a section 32 report is required to examine the extent to which the objectives of the plan, together not individually, are the most appropriate way to achieve the purpose of the Act.<sup>43</sup> On this point the High Court has noted that this may result in the objectives of a plan "*having different, and overlapping, ways of achieving sustainable management of natural and physical resources....objectives cannot be looked at in isolation, because "the extent" of each may depend of inter relationships.*"<sup>44</sup>
- 2.57 Policies are then the course of action that will implement the objectives.
- 2.58 Policies can be flexible or inflexible, broad or narrow.<sup>45</sup> The language used in a policy will reflect whether it is directive or not.
- 2.59 The objectives and policies in the pSWLP and the submissions on them are considered in the following chapters of this report.

## Regional Rules

- 2.60 In addition to the legal tests concerning the hierarchy of planning documents and provisions within a plan, the RMA also contains a number of specific legal tests in relation to regional rules.
- 2.61 Rules are included to achieve the objectives and implement the policies of the plan. In making a rule, the Council must have regard to the actual and potential effect of activities on the environment.<sup>46</sup>
- 2.62 Broadly speaking, a rule may:<sup>47</sup>
- (a) apply throughout the region or part of the region;
  - (b) make different provision for different parts of the region, or different classes of effects arising from an activity;
  - (c) apply all the time, or for stated periods or seasons;
  - (d) be specific or general in its application; and

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<sup>41</sup> Section 63(1).

<sup>42</sup> Section 66(1)(b).

<sup>43</sup> Section 32(1)(a).

<sup>44</sup> *Rational Transport Society Incorporated v New Zealand Transport Agency* [2012] NZRMA 298 at [46].

<sup>45</sup> *Auckland Regional Council v North Shore City Council* (1995) 1B ELRNZ 426 at 433; [1995] 3 NZLR 18; [1995] NZRMA 424.

<sup>46</sup> Section 68(3).

<sup>47</sup> Section 68(5).

- (e) require a resource consent to be obtained for an activity causing, or likely to cause, adverse effects not covered by the plan.
- 2.63 The pSWLP contains rules under section 9 (land use), section 13 (restrictions on uses of beds of lakes and rivers), section 14 (taking, using and damming of water) and section 15 (discharge of contaminants into water, onto or into land in circumstances which may result in the contaminant entering water).
- 2.64 The introduction of land use rules into the pSWLP represents an evolution from previous regional plans in the Southland Region which did not include land use rules.
- 2.65 Importantly, the introduction of such rules relates to Environment Southland's functions to control the use of land to maintain and enhance the quality of water in water bodies, and to control the discharges of contaminants into water.<sup>48</sup> The pSWLP uses land use rules (under section 9) to control the cumulative effects of land use on water quality.
- 2.66 In addition to the above legal tests, the following matters are relevant to evaluating the rules in the pSWLP:

Statutory document or test relevant to rules	Legal test	Comment
<i>Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007</i>	Rule may not be more lenient than a national environmental standard <sup>49</sup>	Regulation 10 of the Drinking Water NES is particularly relevant as it provides a range of additional legal tests if the regional council proposes to include a permitted activity rule in a regional plan under section 9, 13, 14 or 15 of the Act upstream of an abstraction point where activities have the potential to affect a registered drinking-water supply that provides water to more than 501 people for not less than 60 calendar days a year. The pSWLP introduces a range of drinking water protection zones (identified in Appendix J) and conditions that apply to permitted discharges to ensure that the Drinking Water NES is complied with.
<i>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health</i>	Rule may not be more lenient than a national environmental standard <sup>50</sup>	This National Environmental Standard is primarily relevant to consenting activities by territorial authorities.
<i>Proposed National Environmental Standard on ecological flows and water levels</i>	N/A	These National Environment Standards have not been made operative and therefore are not directly relevant at this time.

<sup>48</sup> Section 30(1)(c)(ii). See also *Ngati Kabungunu Iwi Inc v The Hawkes Bay Regional Council* [2015] NZEnvC 50 at [29].

<sup>49</sup> Section 43B(3).

<sup>50</sup> Section 43B(3).

Statutory document or test relevant to rules	Legal test	Comment
<i>Proposed National Environmental Standard on Plantation Forestry</i>		
Section 70(1)	<p>Before a permitted activity rule enabling a discharge is included in the pSWLP the regional council must be satisfied that none of the following effects is likely to arise, after reasonable mixing:</p> <ul style="list-style-type: none"> <li>• the production of conspicuous oil or grease films,</li> <li>• scums or foams, or floatable or suspended material;</li> <li>• any conspicuous change in the colour or visual clarity;</li> <li>• any emission of objectionable odour;</li> <li>• the rendering of fresh water unsuitable for consumption by farm animals; or</li> <li>• any significant adverse effects on aquatic life.</li> </ul>	<p>Submissions on a number of provisions raise a question regarding whether an activity can be classified as permitted or not. These matters are assessed in the relevant sections of this report, including Chapter 7 (Section 7.1, 7.6-7.8); Chapter 8 and Chapter 9.</p>
Section 70(2)	<p>Before a rule requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant is included in the pSWLP, the regional council must be satisfied that having regard to:</p> <ul style="list-style-type: none"> <li>• the nature of the discharge and the receiving environment; and</li> <li>• other alternatives, including a rule requiring the observance of minimum standards of quality of the environment;</li> </ul> <p>that the inclusion of the rule in the plan is the most efficient and effective means of preventing or minimising those adverse effects on the environment.</p>	<p>While Policy 36 refers to the Best Practicable Option, there is no rule in the pSWLP requiring the adoption of best practicable option so this is not considered further in this report.</p>

### The Hearing Panel's jurisdiction to recommend changes to the plan

2.67 Before making any amendments to the pSWLP, the Hearing Panel will need to consider whether there is jurisdiction to make the amendments to the pSWLP.



- 2.68 First, the Hearing Panel must consider the validity of the submission and the decision requested. The submission must be "on" the pSWLP<sup>51</sup>, and must raise a valid resource management issue (in a specific or a general way). The decision requested must fall within the ambit of the powers and functions afforded to the Council under the RMA.
- 2.69 Secondly, any recommended changes must fairly and reasonably fall within the general scope of the submissions. In other words, any alterations to the pSWLP must not extend the pSWLP beyond what was reasonably and fairly understood from the content of submissions.
- 2.70 Submissions must be in the prescribed form.<sup>52</sup> The prescribed form requires a submitter to give details of the specific provisions of the proposed plan that the submission relates to, and to give precise details of the decision which the submitter seeks from the local authority.<sup>53</sup>
- 2.71 The Courts have recognised that the degree of specificity required in a submission often presents practical difficulties. Councils customarily face multiple submissions, often conflicting, and often prepared by persons without professional help. Persons in many instances are unlikely to fill in the forms exactly as required by the RMA and the regulations. Both councils, and the Environment Court on appeal, need scope to deal with the realities of the situation.
- 2.72 Accordingly, the Courts have determined the assessment of whether an amendment fairly and reasonably falls within the scope of a submission should be approached in a realistic workable fashion rather than from the perspective of legal nicety. This requires that the whole relief package detailed in the submissions be considered and is a question of degree to be judged by the terms of the plan and the content of the submissions.<sup>54</sup>
- 2.73 It is submitted, in line with the approach taken by the Courts, although a submission must state what decision is sought this does not require a submitter to go so far as to provide a track change version of the amendments that they seek, and more general wording will suffice, so long as the reader is adequately informed of the amendments sought. This is reflected in the participatory nature of public processes, including the proposed plan process, under the RMA.
- 2.74 Some submitters have not sought relief in their submissions (including some submitters who have said that they will bring their relief to the hearing). Those submitters will need to show how any relief sought at the hearing fits within the scope of relief sought by another submitter in order for the Hearing Panel to have jurisdiction to make the changes sought.
- 2.75 The Hearing Panel has jurisdiction to make consequential changes as a result of accepting certain decisions from submissions. Consequential changes can flow downwards from

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<sup>51</sup> *Clearwater Resort v Christchurch City Council* HC Christchurch AP 34/02, 14 March 2003; *Palmerston North City Council v Motor Machinists* [2013] NZHC 1290 at [80]-[90]; *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59 at [62]; *Well Smart Holding (NZQN) Limited v Queenstown Lakes District Council* [2015] NZEnvC 214.

<sup>52</sup> RMA, Clause 6, Schedule 1.

<sup>53</sup> Form 5, Schedule 1, Resource Management (Forms, Fees, and Procedures) Regulations 2003.

<sup>54</sup> *Countdown Properties (Northlands) v Dunedin City Council* [1994] NZRMA 145 (HC) at 164; *Royal Forest and Bird Protection Society Inc v Southland District Council* [1997] NZRMA 408 (HC) at 413; *General Distributors Limited v Waipa District Council* (2008) 15ELRNZ 59 (HC) at [59]

whatever point on the line is first chosen (i.e. a change to an objective may require changes to the policies to ensure that the policies achieve and implement the objectives).<sup>55</sup> Consequential changes may also flow 'upwards' as a result of accepting a submission point (e.g. changes to the policies may be required as a result of amending the activity status of a rule).<sup>56</sup>

2.76 Further, amendments required for clarity and refinement of detail are allowed on the basis that such alterations are considered to be minor and un-prejudicial. Similarly, amendments to wording that does not alter the meaning or effect of the submission will be within jurisdiction.

### **Jurisdictional issues regarding further submissions**

2.77 Several further submissions seek relief that is different to the relief sought in original submissions.<sup>57</sup>

2.78 Further submissions may only be made in support of, or in opposition to, submissions already made. Accordingly, further submissions cannot extend the scope of an original submission.<sup>58</sup> Therefore the Hearing Panel cannot consider any decisions requested in further submissions that were not requested in original submissions as this will be out of scope.

### **Specific legal issues arising from the submissions**

2.79 In addition to the general statutory framework which submissions must be assessed against, there are some specific legal issues arising from the submissions and further submissions on the pSWLP. This section of the section 42A report addresses these as follows:

- (a) procedural issues regarding notification of the pSWLP;
- (b) jurisdictional issues associated with controlling the coastal marine area;
- (c) the vires of the permitted baseline policy (Policy 39);
- (d) interference with private property rights; and
- (e) the measurement point for minimum flows and water allocation.

### **Procedural issues**

2.80 Several submitters have raised issues with procedural aspects of the notification of the pSWLP.

### **Notification timeframes**

2.81 A number of submissions have raised an issue regarding the notification timeframes within which submissions could be lodged on the pSWLP saying that insufficient time was given to make submissions.

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<sup>55</sup> *Campbell v Christchurch City Council* [2002] NZRMA 352 (EnvC) at [20]; *Clark Fortune McDonald and Associates v Queenstown Lakes District Council* (C89/2002), at [17].

<sup>56</sup> *Church of Jesus Christ of Latter Day Saints Trust Board v Hamilton City Council* [2015] NZEnvC 166, at [45]- [47]

<sup>57</sup> For example parts of the further submission of the Ministry of Education

<sup>58</sup> RMA, Schedule 1, Clause 8(2). See also *Offenberger v Masterton DC* W053/96 (PT) and *Telecom NZ Ltd v Waikato DC* EnvC A074/97

- 2.82 Schedule 1 of the RMA outlines the various requirements involved in the preparation and change of a proposed plan by local authorities. In particular, in the case of a proposed plan clause 5 provides that the closing date for submissions shall be at least 40 working days after public notification.<sup>59</sup>
- 2.83 The pSWLP was publicly notified on 3 June 2016, and submissions closed on 1 August 2016, being 40 working days. As such, the timeframes within the RMA were complied with.

### Notification of maps

- 2.84 A submission has also raised the issue of whether the public notification of the pSWLP included all of the relevant maps. Mr Wyatt's submission states that the USB flash drive supplied to consultants containing the maps that form part of the pSWLP only included one map in Map Series 6, which does not cover the whole region.
- 2.85 Map Series 6 depicts the Fire Hazard Zones, which relate to rule 79 – High Country Burning. Rule 79 regulates the use of land for the burning of vegetation only within the Fire Hazard Zones, and does not apply across the entire Southland Region. Map Series 6 only contains one map, which depicts all of the Fire Hazard Zones. Map Series 6 was notified along with the other documents forming part of the pSWLP.

### Jurisdictional issues regarding the coastal marine area

- 2.86 Some submitters have raised the issue of the jurisdiction of the pSWLP and whether it manages activities in the coastal marine area (CMA).<sup>60</sup> This issue is particularly relevant to the landward boundary of the CMA.
- 2.87 The landward boundary of the CMA is defined as:
- ...the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of—*
- (i) One kilometre upstream from the mouth of the river; or*
- (ii) The point upstream that is calculated by multiplying the width of the river mouth by 5:*
- 2.88 In the CMA, the Council has the function of the control (in conjunction with the Minister of Conservation) of various natural and physical resources including the use of land; taking and using of water, and discharges of contaminants to land or water.<sup>61</sup>
- 2.89 The Council also has the function of the control of the use of land for the purpose of:<sup>62</sup>
- (a) the maintenance and enhancement of the quality of water in water bodies and coastal water;
  - (b) the maintenance of the quantity of water in water bodies and coastal water; and
  - (c) the maintenance and enhancement of ecosystems in water bodies and coastal water.

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<sup>59</sup> Schedule 1, clause 5(3).

<sup>60</sup> For example, see the submissions of William Watt, the Southland Conservation Board, and the Invercargill City Council.

<sup>61</sup> Section 30(1)(d).

<sup>62</sup> Section 30(1)(c).

- 2.90 The Council may prepare a regional plan for any of its functions specified in section 30(1)(c), (ca), (e), (f), (fa), (fb), (g), or (ga).<sup>63</sup>
- 2.91 However, the Council does not have the power to prepare a regional plan controlling the matters in the CMA set out in section 30(1)(d). The functions of the Council in respect of the CMA must be contained in a regional coastal plan, which is approved by the Minister of Conservation.
- 2.92 While a regional coastal plan may form part of a regional plan in certain circumstances, the pSWLP does not control activities in the CMA and it is not a regional coastal plan.<sup>64</sup> This is discussed further in section 4 of this report.
- 2.93 The Southland Regional Coastal Plan defines the extent of the CMA for the Southland region. It controls activities associated with the Council's functions under section 30(1)(d). It also recognises cross-boundary and integrated management issues that may arise from adverse effects of activities in one jurisdiction transferring/occurring in another.
- 2.94 Objective 20.1.1 of the Southland Regional Coastal Plan seeks to provide for integrated management of the land, CMA and economic exclusive zone, including across the local authority boundary between the CMA and land. The procedures to implement integrated management include the preparation of regional plans relating to inland water quality that will appropriately complement the Southland Regional Coastal Plan.<sup>65</sup> The objectives and policies of the Southland Regional Coastal Plan relating to some activities in the CMA also recognise that their effects can cross outside the CMA.
- 2.95 Importantly, the pSWLP may control activities outside the CMA in accordance with its functions under section 30(1).
- 2.96 Accordingly, the pSWLP can control the use of land landward of the CMA (including in the coastal environment) for the purposes set out in section 30(1)(c) (including in relation to the effects of land use on the quality of coastal water). Further, where a discharge occurs landward of the CMA, the pSWLP can also address the effects of the discharge within the CMA (i.e. contaminants that may ultimately enter coastal waters).<sup>66</sup>
- 2.97 The interface between effects arising upstream of the CMA landward boundary, and the effects of those activities on the coastal environment and CMA, is also recognised in both the New Zealand Coastal Policy Statement 2010 and the NPSFM 2014 which the pSWLP is required to give effect to.

### **The legality of Policy 39**

- 2.98 Several submitters have sought that Policy 39 be deleted because it unfairly singles out farming activities and/or is unlawful given the consent authority has the discretion whether or not to disregard any adverse effects of an activity on the environment if a plan permits an activity with that effect (the "permitted baseline") when it considers an application for consent.

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<sup>63</sup> Section 65(1).

<sup>64</sup> Sections 63 and 64.

<sup>65</sup> Southland Regional Coastal Plan, 20.2(4).

<sup>66</sup> Section 30(1)(f).

2.99 The permitted baseline concept is set out in section 104(2) of the RMA, which provides that when considering any actual and potential effects on the environment of allowing the activity, a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.

2.100 Policy 39 as notified states:

***Policy 39 – Application of the permitted baseline***

*When considering any application for resource consent for the use of land for a farming activity, Environment Southland will consider all adverse effects of the proposed activity on water quality, whether or not this Plan permits an activity with that effect.*

2.101 Policy 39 is intended to capture farming activities that have nitrogen losses that may have adverse effects on water quality that will not otherwise be caught by the thresholds set out in the pSWLP.

2.102 The application of the permitted baseline provided for in section 104(2) of the RMA is left to the discretion of the consent authority when considering a resource consent application. It is not a mandatory consideration (as it once was).

2.103 As set out above, under section 67(1) of the RMA, a regional plan must state (inter alia) the policies to implement the objectives. A policy is a course of action, and may be either flexible or inflexible, broad or narrow. A policy can include a highly specific direction, where there may be some discretion in implementing a policy, but "if applied remorselessly it would not cease to be a policy".

2.104 Policies are allowed to include a highly specific direction and accordingly can single out particular activities if the policy implements the objectives for the region. In this case, Policy 39 implements, in particular, Objective 1, Objective 6 and Objective 9.

2.105 Further, Policy 39 does not override the statutory discretion to apply the permitted baseline that is set out in section 104(2) of the RMA.

2.106 Policy 39 is not a rule that must be adhered to when Environment Southland considers applications for resource consent. Policy 39 will be one of the matters the consent authority must "have regard to" when considering an application for resource consent in accordance with section 104(1)(b)(vi). The test of "must have regard to" under section 104(1) requires the decision maker to give genuine attention and thought to the matters set out in section 104, but does not require acceptance of those matters. It will be up to the consent authority how much weight to give Policy 39 when assessing an application for resource consent.

2.107 Policy 39 does not make it a mandatory requirement to disregard the permitted baseline and the policy does not conflict with section 104(2) of the RMA.

2.108 Accordingly, it is submitted that the Policy is not unlawful or ultra vires.

## The RMA and private property rights

- 2.109 A theme in a number of the submissions received on the pSWLP is that the plan interferes with private property rights.
- 2.110 The RMA, and associated town and country planning legislation before that, have always to a degree impacted on the property rights of individuals.
- 2.111 Under the RMA, the Council has powers, functions and duties, which include regulating certain activities, including the use of land, taking and use of water and the discharge of contaminants. Planning provisions created pursuant to these powers, functions and duties may impact and change what people can do on their land as of right, or how certain activities may be carried out.
- 2.112 In particular, in order to achieve the sustainable management purpose of the Act, the RMA empowers and requires councils to restrict particular activities through planning provisions where these are necessary to fulfil the Council's functions. For example, the Act prevents any person using land in a manner that contravenes a rule in a regional plan, unless a resource consent is obtained, or in limited circumstances, the use is an existing lawful use. The Act also prevents people from taking and using freshwater, except where expressly allowed by a rule in a regional plan (and proposed regional plan), or a resource consent (among other things).
- 2.113 The RMA explicitly recognises the provisions in regional plans may impact on property rights. Section 85 provides that an interest in land shall be deemed not to be taken or injuriously affected by reason of any provision in a plan unless otherwise provided for in the RMA.
- 2.114 However, if a provision in a plan or proposed plan would render the interest in land incapable of reasonable use then the provision may be challenged in a submission on that ground. No submission on the pSWLP explicitly alleges that the provisions render the interest in land incapable of reasonable use.
- 2.115 In any event, the term "reasonable use" includes the use or potential use of the land for any activity where the actual or potential effects on any aspect of the environment (or any other person) would not be significant.<sup>67</sup> The aspirations of an individual landowner in relation to the future use of its land are not relevant,<sup>68</sup> and reasonable use does not mean optimum financial return.<sup>69</sup> The focus is on the public interest in promoting sustainable management and not private property rights. The test is whether the proposed restriction on the use or development of land serves the statutory purpose of promoting sustainable management, and not whether it is unreasonable to the owner.<sup>70</sup> It is also necessary to look at the land use as a whole. The need to apply for resource consent for activities, by itself, does not impose an unreasonable restriction on the use of land, or impose an unreasonable burden on an owner.<sup>71</sup>

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<sup>67</sup> Section 85(6).

<sup>68</sup> *Queenstown Airport Corporation Ltd v Queenstown Lakes District Council* [2013] NZEnvC 14 at [863].

<sup>69</sup> *Landcorp Ltd v Auckland Council* [2012] NZEnvC 203.

<sup>70</sup> *Hastings v Auckland City Council* EnvC Auckland A086/01, 6 August 2001.

<sup>71</sup> *Fore World Developments Ltd v Napier City Council* EnvC Wellington W029/06, 13 April 2006.

- 2.116 Other submissions which allege that the plan provisions interfere with private property rights must be judged by reference to the tests outlined above which set out how submissions against the plan should be assessed.

### **The measurement point for minimum flows and water allocation**

- 2.117 The submission by Landpro Limited seeks (among other things) an amendment to Appendix K - Surface Water Appendix, in respect of the point used to determine the minimum flow and the level of allocation for the purposes of Policy 22.

- 2.118 The relevant part of the Landpro submission states:

*"Additionally, when determining minimum flow (point (ii)), in circumstances where flow in a surface water body is lost to groundwater, the point to determine minimum flow and the level of allocation is determined by the "the most flow sensitive point downstream". We oppose this methodology on the basis of the Morefield Farms vs Environment Southland Environment Court Decision which specifies assessments should be made at the nearest downstream monitoring point. Consistent with this EC decision, we agree that the point to determine minimum flow and level of allocation is determined by the nearest downstream environment Southland monitoring point."*

- 2.119 Landpro Limited is seeking that Appendix K is amended as follows:

“in the case of surface waterbodies where flow is lost to groundwater along the length of the surface waterbody, ~~the most flow sensitive point downstream.~~ the nearest downstream environment Southland monitoring point”

- 2.120 The reliance on *Morfield Farms v Southland Regional Council*<sup>72</sup> for the above proposition is misconstrued. This case arose in the context of a resource consent decision and the need to comply with the provisions of the Water Conservation (Mataura River) Order 1997, which allows for takes that do not exceed a specified minimum flow, which is to be determined with adjustments for natural losses and gains. The issue in the case was the degree of hydrogeological connection to the river and what flows to take into account when determining river depletion and the appropriate minimum flow. Under the Water Conservation (Mataura River) Order 1997 the measurement of the minimum flow was to be via actual flows estimated by the Council "at any point". All parties agreed for the purposes of the hearing that the relevant measuring point was the Gore measuring station. Therefore, it was not relevant for the Court to determine the meaning of "at any point" or where the appropriate monitoring point was for the purposes of determining the minimum flow.<sup>73</sup> Accordingly, there is no discussion in *Morfield Farms v Southland Regional Council* of the appropriateness of a determining the minimum flow where a river loses flow to groundwater at either the nearest downstream monitoring point, or the most sensitive point downstream.

- 2.121 Appendix K is discussed further in chapter 8 of this report.

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<sup>72</sup> *Morfield Farms v Southland Regional Council* EnvC Christchurch C154/05, 19 October 2005.

<sup>73</sup> *Morfield Farms v Southland Regional Council* EnvC Christchurch C154/05, 19 October 2005 at [17].

## 3. Science Supporting the Plan

### Introduction

- 3.1 The NPSFM directs regional councils to set objectives for the quantity and quality of their freshwater resources, and to define actions, including limits to achieve these objectives. The Council is taking a time-staged approach to the implementation of the NPSFM. A range of measures to manage water quality, including promoting good on farm practices and updates of existing policies and rules have been included in the pSWLP. Outcomes and limits for water quality (discharges) and quantity (abstraction) will be set through the FMU limit setting process.
- 3.2 The Council uses State of the Environment (SOE) monitoring programmes to track long-term environmental trends and to monitor the effects of human activities on the environment. Although SOE networks are designed to be representative of a broader area, a majority of SOE sites are located in developed areas despite ~50% of Southland's land area occurring in national parks. Reference sites in these undeveloped areas are under-represented due to difficulties in accessing remote areas and a tendency towards monitoring developed areas to assess the effectiveness of resource management. The SOE monitoring data is considered against the values and water quality attributes in the NPSFM.
- 3.3 A number of submitters have raised issues with the science that underpins the pSWLP. The purpose of this chapter is to provide a high-level summary of the science that has been undertaken, including an up-to-date summary of SOE water quality monitoring data. This chapter describes:
1. **Water quality and ecosystem health** - The condition (state and long-term trend) of Southland's freshwater resources and estuaries, for ecosystem health and human health. The national objectives framework of the NPSFM has been used as the basis for this reporting, as this is consistent with national reporting.
  2. **Water quantity** - How allocation of groundwater and surface water resources are managed for water takes and maintaining flows.
  3. **Physiographic zone science** - The evolution, key outputs and validation processes involved in the Physiographics of Southland science project including the physiographic zones used in the pSWLP.
  4. **Water quality risk assessment** - How water quality risk was assigned to each physiographic zone and variant.
  5. **Practical on-farm environmental performance** - Education and advice initiatives used to effect behaviour change to improve environmental outcomes including the promotion of good management practices.



## Water quality and ecosystem health

### Overview

- 3.4 Environment Southland operates a number of State of Environment (SoE) monitoring networks in streams, rivers, lakes, and aquifers throughout the region. The monitoring programme has been designed to assess indicators of water quality and ecosystem health in terms of both current state and long-term trends.
- 3.5 Monitoring water quality state and trend, involves measuring both the physical properties of water, temperature and visual clarity, and chemical characteristics, such as nutrient pH, and dissolved oxygen levels at monthly frequency in surface waters and quarterly for groundwaters. The main contaminants of concern for Southland's freshwater are the plant available nutrients nitrogen and phosphorus, sediment, and disease-causing micro-organisms (referred to as microbes<sup>74</sup>).
- 3.6 Environment Southland also undertakes high flow sampling at the bottom of major catchments in order to understand the mass of contaminants that are being transported by the respective river systems. Some key monitoring locations have continuous monitoring, recording results every 10 to 15 minutes.
- 3.7 Ecological health monitoring aims to understand spatial and temporal variation in ecosystem health and how freshwater environments respond to contaminant stressors from human input, such as elevated nitrogen and phosphorus levels. For example, scientists look at the amount and type of slime algae growing on the bottom of a river bed<sup>75</sup>, and the number and types of small aquatic animals such as insect larvae, worms and snails<sup>76</sup>. Using a range parameters (including those above), scientists are able to give an assessment of habitat quality and 'Ecosystem health'.
- 3.8 Water quality and ecosystem health are high priority work areas for Environment Southland in response to the National Policy Statement for Freshwater Management, 2014.
- 3.9 The impact of water quality on human health is monitored and assessed in terms of risk. In particular, scientists assess the risk of contracting illness associated with contact with a water body (e.g. swimming or boating), toxic effects of recreational use, and the suitability of water supplies for human consumption.

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<sup>74</sup> For example, *Escherichia coli* (*E.coli*) levels are used as an indicator of the risk to human health.

<sup>75</sup> Called benthic periphyton. 'Benthic' refers to the bottom surface of a water body, such as a river or lake bed. 'Periphyton' refers to the complex mixture of algae, cyanobacteria, microbes, and detritus that forms a slime layer, which attaches to submerged surfaces in most aquatic ecosystems. Although benthic periphyton is an important source of food for many aquatic animals, excessive growth can reduce habitat quality and indicate high nutrient and or sediment levels.

<sup>76</sup> Called macro-invertebrates. Defined as animals without a back-bone or spine that can be caught by using a 500µm net or sieve (i.e. visible to the naked eye without using a microscope). Macro-invertebrates are sensitive to changes in their environment and are good indicators of environmental change such as increased contaminant levels.

## Key findings and water quality trends

3.10 Data and reports<sup>77</sup> from Environment Southland's SoE monitoring networks show several consistent themes:

- elevated microbial contamination in lowland rivers and streams, resulting in a high risk to human health;
- an increase in nitrate nitrite nitrogen levels in the main stem and some tributaries of the Waiau, Oreti, Mataura and Pourakino rivers, increasing at 15 of 34 and 4 of 6 sites with sufficient data for the time period 2000 - 2016, operated by Environment Southland and NIWA respectively, 2 of 34 and 1 of 6 showed decreases in concentration with the balance being unable to be determined with confidence;
- nuisance growths of benthic periphyton in the lower Mataura, Aparima Rivers and several other lowland streams;
- macroinvertebrate community health standards are not met at 20% of sites;
- isolated pollution 'incidents' linked to toxic levels of nitrate, ammonia or depleted oxygen;
- impacts of intensive land use on groundwater quality with approximately 20% of managed aquifers posing a potential risk to ecosystem health in hydraulically connected surface water bodies;
- most groundwater supplies have nitrate concentrations which are suitable for human consumption, however 58 wells or ~9% have nitrate concentrations in excess of drinking water standards;
- increases in ground water nitrate nitrite nitrogen concentrations at 15 of 23 and 1 of 6 sites with sufficient data for the time period 2000 - 2016 operated by Environment Southland and GNS respectively, 3 of 23 and 1 of 6 showed decreases in concentration with the balance being unable to be determined with confidence.

## Rivers

3.11 Non-point source agricultural inputs, such as leaching and runoff, are the main source of nutrient contaminants in Southland's rivers. Monitoring shows that some of the main stem of the Mataura and Aparima River and several lowland tributaries of the Oreti and Aparima rivers do not meet national bottom lines in the NPSFM for benthic periphyton. Results also show that most lowland streams do not meet the RWP or pSWLP standards for macro-invertebrates, and that Total Nitrogen and nitrate concentrations are increasing in areas where nitrogen concentrations are already high<sup>78</sup>.

## Estuaries

3.12 Some of Southland's more sensitive receiving environments include estuaries located at the bottom of large rivers. Estuaries are particularly at risk from human activities such as run-off from agriculture and wastewater discharges. Threats to ecosystem health in

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<sup>77</sup> Including: Environment Southland, (2000); Environment Southland and Te Ao Marama Incorporated (2010); Snelder et al. (2014); Daughney et al. (2015); Environment Southland (2016(b)); Kitto and Hodson (2016); Hodson, et al. (2017 in press).

<sup>78</sup> Snelder et al. (2014) developed a regional scale stratification of water quality to assess the ecosystem health of Southland's rivers. A wide range of water quality and ecosystem health indicators were considered for this report.

estuaries include sedimentation, excessive nutrients, toxic contaminants, disease-causing microbes, and habitat loss.

- 3.13 Monitoring shows that degraded areas of the Waikawa, Fortrose, Jacobs River and New River estuaries are increasing in size. Increases in degradation have resulted from the cumulative ‘stress’ of elevated nutrient and sediment loading from upstream catchments<sup>79</sup>.

## Human Health

- 3.14 Freshwater in Southland is commonly used for recreational activities, such as swimming and boating, and for drinking water supplies to both reticulated networks and individual households. Poor water quality can have negative effects on human health, as well as lost opportunities for recreation and commercial use of water.

## Recreational activities

- 3.15 Risk to human health from recreational activities is usually associated with illness from exposure to microbial contamination or toxic algal blooms<sup>80</sup>. *Escherichia coli* (*E.coli*) levels are used as an indicator of the risk from microbial contamination sourced from faecal material<sup>81</sup>.
- 3.16 Recreational activities can be divided into categories based on the degree of expected immersion in water:
- **Primary contact recreation** - activities that are likely to involve full immersion, such as swimming and white-water rafting;
  - **Secondary contact recreation** - activities involving occasional immersion, such as wading, fishing and boating.
- 3.17 Six popular river bathing sites (primary contact recreation) have been identified for Southland in the RWP. However, none of the six meet the standard for bathing waters, they all have a “Very Poor” Suitability for Recreation Grading (SFRG), and also do not meet the NPSFM national bottom line for swimming. Results are shown in Table 2 of Appendix B1.
- 3.18 In addition to the above, six of 55 SoE monitoring locations which had sufficient data for state assessment do not meet the national bottom line, or the RWP standard for *E.coli* for secondary contact recreation<sup>82</sup> (see Table 3, Appendix B1).

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<sup>79</sup> Townsend and Lohrer (2015) reviewed the ecological health of the Waikawa, Fortrose, Jacobs River and New River estuaries.

<sup>80</sup> The NPSFM 2014, provides a framework for assessing the risk posed to human health from recreation in lake environments from planktonic algae. In river environments, interim national guidelines are available to assess the risk to human health from benthic algae mats (MFE and MOH, 2009)

<sup>81</sup> Standards for *E.coli* levels that can be used to interpret the risk to human health from recreational contact with the water can be found in: The Regional Water Plan for Southland (ES, 2010), proposed Southland Water and Land Plan (ES, 2016a), Microbiological water quality guidelines for marine and freshwater recreational areas (MfE and MoH, 2003) and the National Policy Statement for Freshwater Management (MFE, 2014).

<sup>82</sup> The Regional Water Plan for Southland (ES, 2010) and the National Policy statement for Freshwater Management (MFE, 2014) identify a standard and at national bottom line respectively of 1000 *E.coli*/100 ml.

- 3.19 Toxic algae, such as cyanobacteria (blue green algae), in rivers and streams can also impact suitability for recreation. For example, under certain conditions<sup>83</sup> some periphyton can produce toxins that can be harmful to humans, stock and pets.
- 3.20 The Ministry for the Environment (MFE) and Ministry of Health (MOH) (2009) provide interim guidelines for the percentage cover of benthic cyanobacteria mats in rivers as an alert framework. When percentage cover is greater than 20% and less than 50%, notification is to be provided to the Public Health Unit, and consideration given to increasing the frequency of observation and testing for toxin presence. When percentage cover is greater than 50%, notification is to be made to both the Public Health Unit and the public. See Appendix B2 for published information about toxic algal blooms in Southland rivers.

### Drinking water supplies

- 3.21 The suitability of water for human consumption can be compromised by the presence of contaminant concentrations in excess of drinking water guidelines (MFE, 2009). In some instances, high concentrations of contaminants in drinking water can be harmful to human and stock health. Elevated nitrogen concentrations in drinking water supplies are of greatest concern to pregnant woman and young children (causing methemoglobinemia<sup>84</sup>).
- 3.22 Microbiological contamination of drinking water by pathogens is indicated by the presence of *E.coli*, and can result in short-term or reoccurring illness. The consumption of water with other contaminants in high concentrations can also be harmful to human and stock health.

### Groundwater

- 3.23 Aquifers are used as a source of human drinking water by a number of population centres in Southland, as well as by individual households to complement rain water supplies. Compromised drinking water quality can result in negative human health outcomes as well as subsequent negative social and economic impacts.
- 3.24 Groundwater human health related issues in Southland are generally related to the presence of either microbial (*E.coli*) or nitrate (NO<sub>3</sub>) contaminants. Elevated *E.coli* levels are mainly related to poor well-head construction and point source contamination (e.g. leaking sewage tanks, stock access)<sup>85</sup>. Regional nutrient loads (e.g. nitrate) are primarily related to non-point, diffuse sources from agricultural land<sup>86</sup>.
- 3.25 The Drinking Water Standards for New Zealand<sup>87</sup> specify that *E.coli* should not be present in water to be used for human consumption. Monitoring shows that the number of instances of *E.coli* in Southland wells has increased since 2001. However, the proportion of affected wells has decreased. This is probably due to improved well-head

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<sup>83</sup> For example, when they 'bloom' or are under 'stress'.

<sup>84</sup> Methemoglobinemia is condition whereby red blood cells have a reduced ability to release oxygen to the body's tissues.

<sup>85</sup> Daughney et al., 2015; Snelder et al., 2014

<sup>86</sup> Snelder et al., 2014

<sup>87</sup> Ministry of Health, 2008

construction and well protection. See Appendix B3 for more information about *E.coli* contamination of groundwater.

- 3.26 The New Zealand drinking water standard for nitrate is 11.3 mg/L NO<sub>3</sub>-N<sup>88</sup>. Monitoring indicates that most of Southland's groundwaters have nitrate concentrations below this limit and are therefore fit for human consumption<sup>89</sup>. However, 58 wells or ~9% of sites in parts of the: Waimea Plains; Edendale; Lower Maitua; Knapdale; Central plains; Makarewa; Waihopai; Lower Oreti; Castle Rock; Five Rivers; Awarua; Waimatuku; Lower Aparima; Te Waewae; Blackmount; Longridge; Croydon; Riversdale; Upper Aparima; Wendonside aquifer systems have wells which have recorded nitrate concentrations in excess of drinking water standards. Increasing trends in groundwater nitrate have been determined at about half of the regional SoE monitoring sites<sup>90</sup>. It is expected that further intensification of land use will result in an increase of elevated nitrate concentrations, or nitrate 'hotspots'<sup>91</sup>. See Appendix B4 for more information about nitrate levels in Southland's groundwater.

## Ecosystem Health

- 3.27 This section summarises the indicators used to assess ecosystem health for both estuarine and freshwater systems. Estuaries, lakes and rivers are all sensitive to eutrophication<sup>92</sup>. In particular, estuaries and lakes<sup>93</sup> can be particularly susceptible due to their location at the bottom of a catchment, which results in the accumulation of contaminants from multiple waterways, including streams, rivers and groundwater.
- 3.28 It is important to monitor for any negative changes in the condition of rivers, lakes, and estuaries as this can signal the need for increased effort to mitigate the loss of contaminants coming from the contributing catchment.

## Estuaries

- 3.29 An estuary is a body of water where freshwater from rivers and streams flows into and mixes with saltwater from the sea. Estuaries play many important roles in our environment. For example, they provide critical habitat for species that are valued commercially, recreationally, and culturally. Estuaries filter contaminants from the land and so protect the nearby coastal environment and perform an important function for cycling nutrients. Estuaries are also important to commercial and recreational fishing, as they provide essential nursery areas for many fish and shellfish species. The ecosystem health of the four main estuaries on Southland's mainland are summarised below.
- 3.30 **New River Estuary** is located just south of Invercargill City and is the largest estuary in Southland. There are sections in the central and outer portions of the estuary that appear to be moderately healthy. However, there are also sections that are severely degraded. In general, the ecosystem health of the estuary is in decline, with impacts of nutrient

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<sup>88</sup> Ministry of Health, 2008

<sup>89</sup> Rissmann, 2012; Daughney et al., 2015

<sup>90</sup> Moreau and Hodson, 2015

<sup>91</sup> Vibart et al., 2015; Snelder and Legard, 2014

<sup>92</sup> The process by which a body of water becomes over enriched in dissolved nutrients (such as nitrogen and phosphorus). The resulting growth of aquatic plant life (e.g. microscopic algae) results in the depletion of dissolved oxygen and reduced capacity to sustain life.

<sup>93</sup> Termed 'reservoir' type receiving environments, due to their capacity to collect and hold water.

enrichment being the main driver of degradation. See Appendix B5 for more information.

- 3.31 **Jacobs River Estuary** is located in Riverton and is also in ecological decline due to the impacts of nutrient enrichment and sedimentation. The ecological health of the estuary is severely compromised in certain parts, with no indications of improvement, and some evidence of further deterioration. See Appendix B6 for more information.
- 3.32 **Fortrose (Toetoes) Estuary** is situated at the mouth of the Maitua River and appears to be in a moderate state of ecological health. The main stress appears to be nutrient enrichment from the estuary catchment, rather than sedimentation. See Appendix B7 for more information.
- 3.33 **Waikawa Estuary** is located south of Niagara on the Catlins Coast and appears to be in good health overall. However, the upper estuary is considered only moderately healthy. Management of nutrient input is necessary to prevent a threshold change, particularly in the sandflats area. See Appendix B8 for more information.

## Lakes

- 3.34 Southland lakes are grouped into three categories:
- Shallow lakes
  - Intermittently Open and Closed Lakes and Lagoons (ICOLLS)
  - Deep glacial lakes.
- 3.35 Shallow lakes and ICOLLS are at a greater risk of developing compromised ecological states than the deep glacial lakes due to having less volume, their position in the landscape, and the type of landuse in surrounding catchments. The ecosystem health of each lake category is discussed below. More information can be found in Appendix B9.

### Shallow lakes

- 3.36 Results from an Ecological Health Assessment<sup>94</sup> in 2016 indicate that mainland shallow lakes are significantly degraded in comparison with Stewart Island reference lakes (Lakes Calder and Sheila). Lakes Vincent and George were rated as having ‘Excellent to Good’ ecological integrity, while the Reservoir and Lake Murihiku were rated ‘Good to Fair’. Lower ratings could be traced back to either degraded water quality or the presence of non-native species.
- 3.37 Since the above study, Environment Southland scientists have further improved their knowledge of lakes in Southland by carrying out an assessment against the National Objectives Framework<sup>95</sup>. Analysis included a higher resolution dataset than that used in the Ecological Health Assessment, which provided more information about in-lake concentrations throughout the entire year. Results showed that all shallow coastal lakes are suitable for secondary contact recreation based on *E.coli* levels. However, concentrations of nitrogen and phosphorus indicate high nutrient loads from

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<sup>94</sup> Developed by Kelly et al. (2016). This work combines measured parameters of ‘nativeness’, ‘pristineness’, ‘resilience’, and ‘diversity’ to provide an overall assessment of ecological health.

<sup>95</sup> Hodson et al., (2017).

anthropogenic inputs. For example, Lake Vincent had nitrogen levels well in excess of the national bottom line.

### **Intermittently Open and Closed Lakes and Lagoons (Waituna Lagoon)**

- 3.38 Waituna Lagoon is one of the best remaining examples of a natural coastal lagoon in New Zealand. It is a large coastal lagoon that is fed by three creeks, and drains to the sea through a managed opening. The lagoon is mechanically opened to the sea after the water levels reach the trigger point set in the Lake Waituna Control Association's resource consent. The intermittent opening and closing of the lagoon to the sea strongly influences the lagoon's ecology and water quality.
- 3.39 Waituna Lagoon is monitored during both open and closed periods at four separate sites. Results for nitrogen and phosphorus monitoring indicate considerable nutrient stress when the lagoon is closed. This suggests that the lagoon is still at risk of changing from a clear water state, to an algal dominated state if nutrient loads are not reduced.
- 3.40 The lagoon is deemed safe for secondary contact recreational activities when open and closed. See Appendix B9 for more information.

### **Deep Lakes**

- 3.41 The Ecological Health Assessment<sup>96</sup> undertaken in 2016 show an 'Excellent' rating for Lake Manapouri and 'Good' for Lake Te Anau<sup>97</sup>.
- 3.42 Subsequent assessments by Environment Southland scientists<sup>98</sup> show that Lake Manapouri and Lake Te Anau have the highest ecological health score of all lake types in Southland.

### **Groundwater**

- 3.43 The importance of groundwater quality to ecosystem health is internationally recognised<sup>99</sup>, and is increasingly recognised in Southland<sup>100</sup> where groundwater and surface waters are often highly connected. Groundwater is able to mix with hydraulically connected surface water, and can enter estuaries and coastal environments via rivers or coastal aquifers.
- 3.44 The majority of Southland rivers and streams derive between 40 to 60 percent of their flow from groundwater<sup>101</sup>. This percentage increases during low flow conditions, when streams and rivers are almost entirely derived from groundwater. In particular, riparian aquifers<sup>102</sup> have a high degree of connectivity between surface and groundwater, and terrace aquifers commonly discharge to surface water bodies via springs.

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<sup>96</sup> Developed by Kelly et al. (2016). This work combines measured parameters of 'nativeness', 'pristineness', 'resilience', and 'diversity' to provide an overall assessment of ecological health.

<sup>97</sup> Lake Te Anau scored slightly lower due to a higher diversity of rotifer (a type of microscopic animal) species. This metric is inversely related to ecological integrity.

<sup>98</sup> Hodson et al., (2017)

<sup>99</sup> Griebler and Avramov (2015)

<sup>100</sup> Rissmann et al., (2012)

<sup>101</sup> Rissmann et al., (2012); Liquid Earth (2011)

<sup>102</sup> Riparian aquifers are those associated with rivers, fluvial deposits, or unconsolidated deposits along river corridors. They account for approximately 10% of Southland's aquifers.

- 3.45 The high connectivity between regional surface water and groundwater means that nitrate in groundwater can significantly contribute to the nitrate load of Southland's rivers, lakes and estuaries. The pSWLP does not specify nitrate thresholds in groundwater with regards to ecosystem health, but objective 8 does require aquifers that meet freshwater objectives for connected waterbodies to be maintained. Research suggests that to protect ecosystem health in regional streams at low flow conditions, nitrate should not exceed 3.5 mg/L NO<sub>3</sub>-N<sup>103</sup>. Monitoring shows that approximately 20% of managed aquifers have nitrate concentrations higher than 3.5 mg/L<sup>104</sup>. This implies that one fifth of the region's groundwaters may pose a risk ecosystem health in regional streams, particularly those with high proportion of high base flow and during periods of low flow. See Appendix B10 for more information.
- 3.46 Increases in ground water nitrate nitrite nitrogen concentrations were detected at 15 of 23 and 1 of 6 sites with sufficient data for the time period 2000 - 2016 operated by Environment Southland and GNS respectively. Decreases in concentration were detected at 3 of 23 and 1 of 6 sites operated by Environment Southland and GNS respectively with trend direction at the balance of sites being unable to be determined with confidence.
- 3.47 For the time period January 2012 to December 2016, increases in nitrate nitrite nitrogen concentration were detected at 5 of 25 sites operated by Environment Southland. Decreases in nitrate nitrite nitrogen concentration were detected at 6 of 25 and 2 of 6 sites operated by Environment Southland and GNS respectively, with trend direction at the balance of sites being unable to be determined with confidence

## Rivers

- 3.48 Southland rivers and streams are monitored regularly for a range of physical and chemical characteristics as part of a monthly State of Environment Monitoring programme. Monitoring has illustrated:
- elevated microbial contamination in lowland rivers and streams, resulting in a high risk to human health;
  - an increase in nitrate nitrite nitrogen levels in the main stem and some tributaries of the Waiau, Oreti, Mataura and Pourakino rivers, increasing at 15 of 34 and 4 of 6 sites with sufficient data for the time period 2000 - 2016, operated by Environment Southland and NIWA respectively, 2 of 34 and 1 of 6 showed decreases in concentration with trend direction at the balance of sites being unable to be determined with confidence;
  - nuisance growths of benthic periphyton in the lower Mataura, Aparima River's and several other lowland streams;
  - macroinvertebrate community health standards are not met at 20% of sites.
- 3.49 Environment Southland's State of the Environment reporting for rivers includes a number of indicators of ecosystem health: macroinvertebrates, periphyton, nitrate and ammonia. These indicators are outlined in the sections below with respect to national guidelines.

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<sup>103</sup> Snelder, et al., (2014)

<sup>104</sup> Rissmann (2012). 20% refers to area, not volume.



## Macroinvertebrate health

- 3.50 Macroinvertebrates provide an important food source to fish and birds. They provide a good indicator of ecosystem health due to their general lack of mobility and short life-cycles. Some species are more sensitive to contaminants than others.
- 3.51 The Macroinvertebrate Community Index (MCI) is a tool for assessing water quality. Different species of macroinvertebrate are assigned a number based on their tolerance to water contaminants. The index then calculates an average score for a site. The RWP and pSWLP have standards for MCI scores for different stream environments or settings (e.g. mountain vs lowland streams). A higher MCI score generally indicates a more healthy stream.
- 3.52 Results for Southland show MCI standards are not met at 20% sites in Southland. Between 1996 and 2014, 26% of monitored sites had strongly significant decreasing macroinvertebrate health trends. No sites showed improving trends<sup>105</sup>. A trend direction was unable to be determined with confidence for 73 % of sites. See Appendix B11 for more information.

## Periphyton

- 3.53 Periphyton most commonly grows on bottom (benthic) substrates as either ‘mats’ or long filaments. Periphyton is an important source of food for invertebrates, which are in turn food for fish and birds. However, high or nuisance levels of periphyton put stress on aquatic ecosystems by smothering habitat, altering invertebrate communities and driving adverse fluctuations in dissolved oxygen and pH. High levels of periphyton can also alter water colour, odour and the physical nature of the river bed, having a negative impact on aesthetic and human uses of a river.
- 3.54 In 2014 monitoring data was used to develop predictive models of periphyton cover in Southland rivers<sup>106</sup>. Results indicated that breaches of the national bottom line were likely to occur in the lower reaches of the main stem of the Mataura River and tributaries of the Aparima, Oreti, Waimatuku and Makarewa Rivers.
- 3.55 Subsequent assessments by Environment Southland and Dairy New Zealand scientists<sup>107</sup> show that eight sites are unlikely to meet the national bottom line for periphyton. See Appendix B11 for more information.

## Nitrate toxicity

- 3.56 Southland currently meets the national bottom line for nitrate toxicity to fish at all surface water monitoring sites. However, increasing trends for nitrate in groundwater and surface water suggest that for some locations there is a risk of not meeting this bottom line in the future.
- 3.57 Trend analysis for the time period January 2000 – December 2016 illustrates an increase in nitrate nitrite nitrogen levels in the main stem and some tributaries of the Waiau, Oreti, Mataura and Pourakino rivers. With nitrate nitrite nitrogen levels increasing at

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<sup>105</sup> Hodson and Akbaripasand (2016)

<sup>106</sup> Snelder et al. (2014)

<sup>107</sup> Kitto and Hodson (2016) and Environment Southland (2016b)

15 of 34 and 4 of 6 sites with sufficient data for the time period 2000 - 2016, operated by Environment Southland and NIWA respectively. Decreases in concentration were detected at 2 of 24 and 1 of 6 sites operated by Environment Southland and NIWA respectively. Trends for remaining sites which had sufficient data for analysis were indeterminate (Hodson et al. 2017 in press).

- 3.58 Trend analysis for the five year period January 2012 – December 2016 illustrated decreasing trends in concentration at 9 of 55, increasing trends in concentration were detected at 2 of 55 sites and trends direction was unable to be determined with confidence for 38 of 55 sites operated by Environment Southland with sufficient data for analysis. Trend direction was unable to be determined with confidence at any of the sites operated by NIWA (Hodson et al., 2017 in press).

### **Ammonia toxicity to fish**

- 3.59 Southland currently meets the national bottom line for ammonia toxicity to fish at all surface water monitoring sites.

## **Water Quantity**

### **Overview**

- 3.60 There are two main sources of ‘available’ freshwater in Southland: surface water and groundwater. Areas of available surface water in Southland include streams and rivers. Groundwater is water that collects and flows beneath the Earth's surface, filling the porous spaces in soil, sediment, and rocks. Groundwater ultimately originates from rain and/or infiltration of runoff in rivers and streams that infiltrates through the soil, to underlying areas of porous sand, gravel or rock. A saturated geological material is referred to as an ‘aquifer’ where the groundwater can be extracted in sufficient quantities and at sufficient flow rates for human use.
- 3.61 The Southland region has significant surface water and groundwater resources. Southland’s rivers and aquifers have long been an important source of water supply for domestic, municipal (town and city), and industrial use (including farming), as well as for hydro generation.
- 3.62 Most of Southland’s aquifers are found in alluvial sediments, which mainly occur across the Southland Plains and inland basins. Alluvium is typically made up of a variety of loose materials, including sand, gravel, silt and clay. Groundwater is able to collect and move through these materials in large quantities.
- 3.63 Since the early 2000s, the total volume of groundwater allocation (i.e. volume allowed for abstraction) has increased significantly. The main reason for this has been an increase in pasture irrigation in inland parts of Southland.

### **Groundwater and surface water connections**

- 3.64 Surface waters (streams, rivers and lakes) and shallow groundwater do not exist in isolation. They interconnect and interact with each other at various points throughout the landscape. Therefore, management of the groundwater allocation also has to take into

account potential effects on water levels and flows in hydraulically connected rivers, streams, lakes and wetlands.

3.65 Managing the cumulative effects of groundwater abstraction on surface water (referred to as *stream depletion*) is an important component of groundwater quantity management in Southland. In particular, managing the relationship between water quantity allocation and instream habitat is a significant and longstanding work stream at Environment Southland.

3.66 Individual groundwater takes are categorised in terms of their hydraulic connection to surface water following methodologies established in the RWP and pSWLP (see right).

3.67 **Highly connected waters**

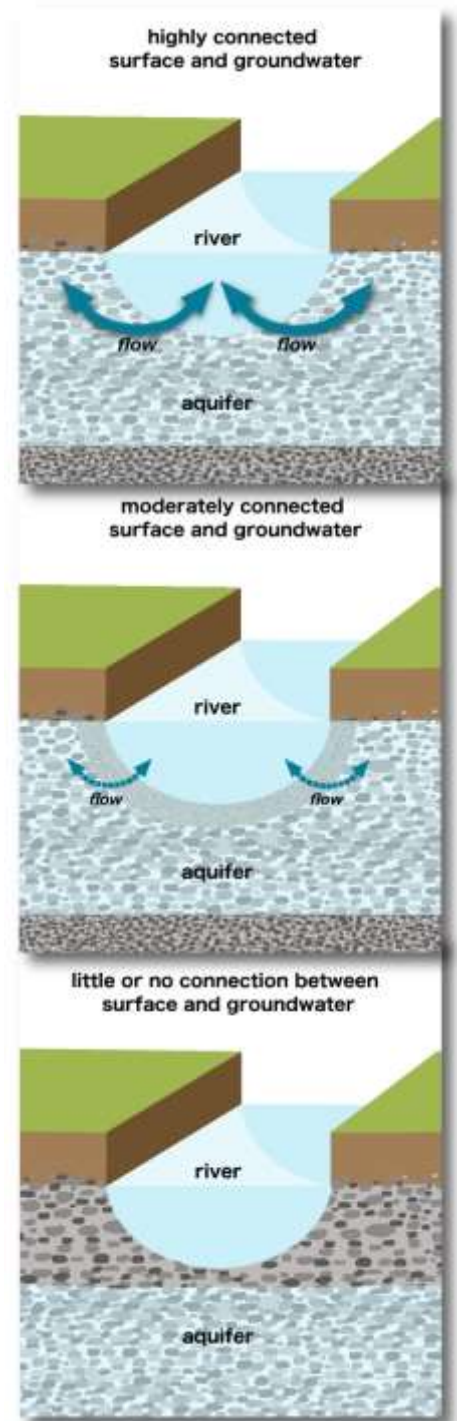
Allocation for groundwater takes with a high level of connection to surface water is split between groundwater and surface water according to the calculated stream depletion effect. Groundwater takes are therefore subject to the same minimum flow restrictions as equivalent surface water takes.

3.68 **Moderately connected waters**

Groundwater takes with a moderate hydraulic connection are also managed in terms of their potential effect on both surface and groundwater allocation. However, in moderately connected waters there is an extended lag time between water extraction from groundwater and resulting effects on surface water. Therefore, there are no minimum flow restrictions for groundwater takes, as these measures do not provide an effective means of mitigating effects on surface water.

3.69 **Waters with little or no connection**

Groundwater takes classified as having a low degree of hydraulic connection (including confined aquifers) have little to no effect on stream flow and are therefore managed solely in terms of a volumetric groundwater allocation.



**Water allocation and stream flow**

3.70 The volumes of water available for abstraction from both streams/rivers and aquifers, are based upon maintaining instream flows, so they can continue to support life. This allows for instream habitat preservation and the long-term survival of native species, such as giant kokopu and inanga, and introduced species, such trout (see Appendix K of the pSWLP). Groundwater is also managed to ensure long-term aquifer sustainability and reliability of supply.

3.71 In-stream allocation is the sum of abstractions directly from the stream and the stream depleting proportion of groundwater takes. Surface water takes have an immediate effect on habitat, with cumulative effects occurring down the river network. However,

groundwater takes can have a delayed impact on instream habitat. Therefore, groundwater takes are managed in relation to the rate and period of time that a stream might become affected by water takes.

- 3.72 Specifically, water takes are governed by minimum and ecologically relevant flows, maximum abstraction rates, and volumes specified as conditions of a water permit in conjunction with flow abstraction monitoring. In addition, there are numerous *permitted* takes for activities such as domestic and stockwater supply. Permitted takes must be below a nominated volume and/or rate to ensure their potential effects on the environment are no more than minor.
- 3.73 The *stream depletion effects assessment* and the regulations governing the control of groundwater volume are laid out in Appendix L of the pSWLP.

#### **Available groundwater for abstraction**

- 3.74 The ability to access groundwater varies considerably between different parts of Southland. For example, in many areas of lowland and coastal Southland alluvial materials have low permeability, resulting in limited volumes of available water. Bores yields in these areas are typically low.
- 3.75 In contrast, aquifers hosted in alluvial sediments deposited along current or historic river channels in inland Southland are highly permeable and have high yields of available water. While significant volumes of water can be accessed from bores in these areas, extraction may be limited by environmental effects, such as stream depletion.
- 3.76 Recent increases in groundwater allocation in inland Southland have largely been driven by both an increased demand for irrigation water during dry months and have typically occurred in areas with easy access to higher yielding aquifers.

#### **Groundwater management zones**

- 3.77 Allocation of groundwater (under both the RWP and pSWLP) is undertaken on a volumetric basis within individual management units, called *groundwater management zones*. Allocation volumes are established for each groundwater management zone based the percentage of average annual rainfall that is expected to infiltrate down to underlying aquifers (called 'rainfall recharge').
- 3.78 At the current time groundwater allocation is generally well below (i.e. less than 50%) of the allocation limits listed in the pSWLP. Of the groundwater management zones, Wendonside is the only zone fully allocated at the current time. Two confined aquifers in the Oreti Basin (the Lumsden and North Range aquifers) which are physically separated from overlying shallow groundwater are also fully allocated.
- 3.79 In many areas, allocation of groundwater with a moderate to high degree of hydraulic connection to surface water is significantly constrained by water allocation and minimum flow requirements in nearby rivers and streams. Therefore, although these aquifers may be high yielding, the potential for effects on surface water limits groundwater availability. Elsewhere, while allocation may be available, access to groundwater is often constrained by the natural hydraulic properties of the subsurface geological materials.

## Minimum flow management and water allocation

- 3.80 Environment Southland maintains a series of permanent long-term recorders that measure the amount of water flowing through a catchment. Using this data Council scientists are able to determine how much water is flowing and where, at a catchment and sub-catchment scale. Management flows are set through the pSWLP to recognise ecological limits for native and introduced species. Thus, ensuring the minimum volume of water that is needed to support aquatic life (section 3).
- 3.81 Under the pSWLP, a minimum flow value has been adopted that represents the period of time (duration) that flow is above a certain critical level. This method for managing minimum flow in Southland describes stream flow rate that occurs at or above a certain level for 95% of the time, with the level called 'Q95'. The minimum flow for primary water allocation is set at Q95 and is currently the preferred management metric as it provides a better description of the length of time that an abstraction might be viable, and of the relative effect of the abstraction on in-stream ecology.
- 3.82 In terms of the primary allocation, the Waiau catchment is fully allocated as a result of the Manapouri Power Scheme (see Appendix B13). Due to the way the Water Conservation (Mataura River) Order 1997 is structured (i.e. a fixed percentage of flow available for allocation), in theory water can still be allocated from this catchment, however the reliability of supply is not sufficient for run-of-river takes, at least for irrigation.
- 3.83 High flow rate abstractions from surface water are allocated from the 'secondary allocation block'. The seasonal structure of secondary allocation aims to incentivise the filling of storage ponds to times where the abstraction has less impact on instream ecology. This water can be used when instream flows are low in an attempt to strike a balance between ecological dependence and increased availability of water for storage<sup>108</sup>.
- 3.84 Management flows for the secondary allocation block are set on the basis that there is higher security of supply in autumn and winter (median flow; 1 April to 30 November), and a lower security of supply in summer (mean flow; 1 December to 31 March). It is recognised that large abstractions may 'flatten' the hydrograph above the management flows in small streams and impact on ecologically important instream flow variation. For this reason an upper limit of abstraction is a flow rate that is no more than 10% of the seasonal management flow for the impacted stream.

## Summary

- 3.85 In summary, while groundwater is accessible across much of the Region, in practical terms its availability is limited in many areas by the allocation status and reliability of supply constraints associated with hydraulically connected surface waterways (see Appendix B12). Groundwater with a low hydraulic connection to surface water typically occurs in areas where available yields are naturally limited by the lower permeability nature of the host geological materials. This combination of factors has significantly reduced the rate of groundwater development over the past five years.

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<sup>108</sup> Hay and Kitson (2013).

- 3.86 Groundwater level monitoring undertaken by Environment Southland indicates some localised variation in groundwater levels in response to increases in abstraction over the past 15 years. However, monitoring shows that variations in aquifer storage over time are mainly due to variations in rainfall from season to season, as well as variations from year to year<sup>109</sup>.
- 3.87 In terms of surface water allocation, as noted above the Waiau catchment is fully allocated and significant constraints also exist in the Mataura catchment.

## Physiographic Zone Science

### Overview

- 3.84 The Physiographics of Southland project was a project initiated by Environment Southland scientists to provide insight into spatial variation in water composition (which includes quality) across the region. Specifically, the goal was to understand ‘how’ and ‘why’ water quality varies spatially, despite often similar land use pressures.
- 3.85 In order to understand spatial variation in water quality, it is necessary to recognise: (i) the underlying processes that govern water quality outcomes, and; (ii) the features or ‘environmental attributes’ of the landscape that govern spatial variation in these processes.
- 3.86 National and international research<sup>110</sup> is united in the understanding that landuse is required for poor water quality outcomes. [Where ‘outcome’ reflects both the current state of water quality but also the potential risk associated with subsequent intensification]. However, it is also well established that different landform characteristics modify water composition and hence quality in different ways. The key processes responsible for spatial variation in water composition and water quality outcomes may be classified into: (i) atmospheric; (ii) hydrological, and; (iii) biogeochemical. The landform characteristics that govern variance in the key processes that determine water composition and hence water quality outcomes include the physical, chemical and biological attributes of an environment. For example, soil hydrology is one of several key environmental attributes that vary in space due to natural geological, hydrological and soil forming factors. Variation in soil hydrological attributes influences water compositional and water quality outcomes through determining the pathway water takes and the degree to which a soil denitrifies. Importantly, the same natural processes that modify water composition in areas of intensive landuse also determine natural compositional variation in water from pristine natural state environments.
- 3.87 In summary:
- (i) different landscape attributes are responsible for variation in the processes governing water compositional and water quality outcomes;
  - (ii) variation in landscape attributes govern variation in the processes that govern water composition and quality, and;

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<sup>109</sup> Wilson, K. (2011).

<sup>110</sup> Becker et al., (2014), Dillon and Molot (1997), Dow et al., (2006), Shiels (2010), Puckett and Bricker (1992).

(iii) these processes are ubiquitous to all areas of the planet and all manner of land uses. Identifying and mapping the natural attributes of the environment that govern spatial variance in water composition and quality (in areas of intensive landuse) is the basis of the physiographic approach.

3.88 In a number of the studies referenced here it was observed that landscape features accounted for  $\geq 2x$  the variability in water composition (including water quality) than landuse alone<sup>111</sup>. Therefore, the Southland physiographic science programme sought to understand the natural environmental attributes that governs variance in shallow ground and surface water quality outcomes across the Southland region as a basis for the development of a land use risk framework for targeting policy.

3.89 This section provides:

- an overview of the evolution of the Physiographics of Southland project;
- an outline of the project outputs and where these can be sourced; and
- a summary of the validation and peer review processes undertaken.

### **Evolution of the Physiographics of Southland Project**

3.90 The Physiographics of Southland is a unique project that has been many years in the making. Much of the understanding as to how and why water quality varies spatially evolved over a number of years prior to the formal inception of the project in 2014.

3.91 The project makes use of a comprehensive dataset that has been collected through Environment Southland's monitoring programmes over approximately the last 25 years, with some data records going back more than 40 years. Included in that dataset are records from a number of long-term state of the environment monitoring programmes Environment Southland has in place to better understand, and therefore manage, the region's water resources.

3.92 Prior to the formal inception of the project in 2014, much of the foundation research and questioning had been developing for a number of years using this dataset. During these years the general question remained the same – *why do hydrochemical<sup>112</sup> and water quality<sup>113</sup> signatures vary in space and time across Southland?*

3.93 Much of the hydrochemistry data available for Southland prior to 2012 was for groundwater. Looking at this data over a period of many years it became apparent that hydrochemical signatures vary across Southland. Patterns began to emerge as results from different investigations and observations were pieced together.

3.94 In 2012 it was recognised that more data was needed to fill gaps in Southland's hydrochemical signature puzzle (see Appendix B14 for diagram). A revised sampling programme for ground and surface waters was implemented in late 2012, which included an increased range of both sampling locations and measured parameters. Of significance

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<sup>111</sup>

<sup>112</sup> Hydrochemical signatures refers to the chemical composition of water.

<sup>113</sup> Water quality refers to the condition of water relative to ecological or human requirements.

was the increased focus on stable isotopes<sup>114</sup>. This work proved to be crucial to developing a much greater understanding of hydrochemical gradients such as water source, recharge mechanism<sup>115</sup> and redox<sup>116</sup> processes.

- 3.95 In 2014 a team of Environment Southland scientists commenced working with this dataset to produce the first physiographic zone maps using hydrochemistry to guide the mapping process (a bottom up approach).
- 3.96 In 2015 external consultant scientists advised the team to extend the project to include a top down approach using existing spatial frameworks<sup>117</sup> as well. Integrating both the bottom-up and top-down approach was an important basis for reducing the uncertainty in the work.
- 3.97 The initial conceptual work was based on the knowledge that for any given geological or climatic setting: (i) the key process controlling variation in water composition are: atmospheric, hydrological and biogeochemical (redox and weathering<sup>118</sup>), and; (ii) that variation in these processes is controlled by spatial variation in landscape features or ‘environmental attributes.’ Environmental attributes include the physical, chemical and biological attributes of a landscape (e.g., soil hydrology, organic carbon content of aquifers and soils, and geological composition such as rock and sediment type). As such, the fundamental basis of the physiographic science was to understand which ‘environmental attributes’ and their respective combinations governed spatial variation in shallow ground and surface water composition.
- 3.98 It is important to note that the identification of the key environmental attributes governing variance in Southland’s water quality was informed by water composition (i.e., the physical, biological and chemical composition of precipitation, soil water, ground and surface water). In other words, within any given water sample information is retained as to the physical, chemical and biological evolution of the water – equivalent to a fingerprint. Using these finger prints it is possible to identify, extract and classify the important attributes of the landscape that control spatial variation in water water quality outcomes. This is a critical distinction from some other works in which the attributes supposedly governing water quality outcomes are assigned without consideration of the evolutionary history contained within any given water sample.
- 3.99 Understanding variation in water signatures requires an integrated understanding of how environmental attributes control variation in the processes that control water quality outcomes. For example, an assessment of water quality controls based purely on soil hydrology, although important, is not sufficient to understand how and why water quality varies in space. Only when all key attributes are combined can we reliably estimate spatial variance in water quality outcomes.

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<sup>114</sup> Isotopes are different forms of the same element with different numbers of neutrons. For example carbon 12 is the most common form of carbon, and has six protons and six neutrons. Carbon 14 has the same number of protons (six) but has eight neutrons. Isotopes of a given element typically behave alike chemically.

<sup>115</sup> Recharge mechanism describes the primary method/pathway through which water enters a water body, such as a stream or aquifer.

<sup>116</sup> Redox (short for reduction–oxidation reaction) is a chemical reaction in which the oxidation states of **atoms** are changed. Any such reaction involves both a *reduction* process and a corresponding *oxidation* process.

<sup>117</sup> Existing spatial frameworks include those for topography, geomorphology, hydrology, hydrogeology and soils.

<sup>118</sup> Weathering refers to the process of ‘break-down’ of rocks, soils and minerals. Weathering does not involve the movement of materials (i.e. occurs in-situ), therefore differs from erosion.



- 3.100 The scientific understanding of the underlying controls over water quality outcomes forms the basis for zonation of the landscape (physiographic zones) and subsequent land use risk assessment for the pSWLP. The 9 physiographic zones are therefore fundamentally based on the conceptual knowledge of the controls over water quality outcomes.
- 3.101 From the conceptual scientific understanding of water quality controls, 9 broad physiographic zones and 8 sub-classes (referred to as variants) were developed. Each physiographic zone represents distinct combinations of biogeochemical and hydrological controls over potential water quality state, while the variants represent areas within each zone where variability in drainage mechanisms can modify water quality risk on a temporal basis. However, zonation is by necessity a simplification of a more sophisticated, higher resolution conceptual framework, which provides additional spatial resolution over water quality and compositional outcomes.
- 3.102 After an extensive peer review process in late 2015 and early 2016 (outlined in Section 5.7), the Physiographics of Southland Part 1 and initial Part 2 science reports were published and made publicly available in June 2016, along with a scientific report prepared by AgResearch on the management practices and mitigation options for reducing contaminant losses from land to water for each physiographic zone. The original Part 2 reports were subsequently consolidated and merged into a single version 2 document, which was made publicly available in December 2016 along with the accompanying validation and testing report.

## **Outputs**

- 3.103 The size and complexity of the Physiographics of Southland project resulted in the body of work being divided into two separate science reports, a mitigations report, validation and testing report, technical sheets and an accompanying user guide, and factsheets (see Appendix B15 for diagram). All documents can be sourced from Environment Southland's website – [www.es.govt.nz](http://www.es.govt.nz).

## **Application of the Physiographic Zones**

- 3.104 The physiographic zones provide generalised information as to pathways for contaminants, and the general susceptibility of different physiographic zones to contaminant loss due to landuse .
- 3.105 There are four key contaminant pathways which are present across Southland, and each physiographic zone may have one that is relevant, or several. The pathways are:
- overland flow
  - artificial subsurface drainage – such as through tile drains
  - deep drainage – leaching to groundwater
  - lateral drainage – movement horizontally through the soil profile.

## **Validation and Peer Review Processes**

- 3.106 The validation and peer review processes for the Physiographics of the Southland project have been comprehensive and are outlined below.

## Validation process

- 3.107 The validation and testing for the main science report (Part 1) by Dr Ton Snelder from Land Water People is included within the report itself. Empirical testing was undertaken which indicated a strong estimation capacity for surface water hydrochemistry, but was weaker for groundwater. Nonetheless, the patterns of hydrochemical response for groundwater were still consistent with the conceptual model<sup>119</sup>. Furthermore, given nearly half the base flow of the region's surface waters is from groundwater, the strong performance of the model for surface water indicates the characterisation of young, soil zone influenced groundwater across Southland is robust. The latter is particularly significant in terms of the value and effectiveness of this work in terms of accurately estimating ecosystem inputs to surface water bodies across the region.
- 3.108 Water covered in the Physiographics of Southland project includes surface water, soil water and shallow, hydraulically connected groundwater (see Appendix B16 for illustration). Deep or 'old' groundwater is low in contaminants and is not often connected to the same degree to Southland's surface water network. Much of the groundwater dataset used to undertake the testing outlined above is from this deeper groundwater, which most likely explains why variation in surface water composition and quality was better resolved than for groundwater. Specifically, regional groundwater data is poorly representative of the shallow, unconfined groundwaters that make up a mean value of 47% of the total water volume of Southland streams. For this reason, and as recognised by many researchers, sampling of streams at low flows when the majority of flow is dominated by groundwater inputs is perhaps the best way of providing a representative signature of the shallow groundwater environment.
- 3.109 A separate validation and testing report was prepared by Land Water People to accompany Part 2 of the Physiographics of Southland science reports. This report assessed whether the physiographic zones used for the pSWLP represented unique assemblages of drivers, environmental characteristics and observed water quality states.
- 3.110 The results from the assessment showed that the physiographic zones strongly discriminate unique combinations of the drivers and characteristics and performed reasonably well in terms of explaining variation in water quality. The surface water results were better than the groundwater results, presumably for similar reasons as those outlined in paragraphs above.

## Peer review process

- 3.111 The peer review process for the Physiographics of Southland project has been extensive and involved many people. A preliminary report setting out the proposed approach was completed in May 2015 and peer reviewed by Dr Chris Daughney (GNS Science), Dr Ross Monaghan (AgResearch) and Prof. Hans Schreier (University of British Columbia) who endorsed the scientific rigour of the approach and also provided critical feedback and guidance on how to progress the work and improvements required.

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<sup>119</sup> The conceptual model is defined as a semi-quantitative, mechanistic model that aims to simulate hydrochemical variation in surface water and young, soil influenced groundwater at any point in the landscape. Accordingly, this model operates across multiple scales, for example regional, low and high order drainage basin or river catchments.

3.112 The approach was also endorsed in July 2015 by the Technical Advisory Group of senior scientists from a range of research organisations set up to provide technical advice and guidance on Environment Southland's science programme. This group includes the following representatives:

- Dr Clive Howard-Williams, NIWA
- Dr Chris Daughney, GNS
- Dr Murray Close, ESR
- Dr Cath Moore, GNS/ESR
- Dr Liz Wedderburn, AgResearch
- Prof. Jenny Webster-Brown, University of Canterbury
- Associate Prof. Peter Almond, Lincoln University
- Dr Mike Scarsbrook, DairyNZ
- Dr Vince Bidwell (independent consultant)
- Mr Bill Dyck, Envirolink Coordinator

3.113 The Technical Advisory Group then reviewed the draft science report and user guide in late 2015. In addition to this review, a number of specialist hydrochemists, soil biogeochemists, soil experts and isotope specialists also reviewed the hydrobiogeochemical content of the report including the following:

- Mr Trevor Webb, Landcare Research
- Dr Troy Baisden, GNS
- Dr Matthew Leybourne, Laurentian University
- Prof. Hans Schreier, University of British Columbia
- Dr Ranvir Singh, Massey University
- Dr Travis Horton, University of Canterbury
- Dr Ross Monaghan, AgResearch
- Dr Allan Hewitt, Landcare Research
- Dr Ton Snelder, Land Water People

3.114 The project team spent the first few months of 2016 refining the final documents based on the feedback from these reviewers prior to notification of the pSWLP in June 2016.

3.115 The Part 2 science report went through a further peer review over the latter half of 2016 following the decision to consolidate and merge the original Part 2 reports into a single version 2 document. The independent Validation and Testing report by Land Water People was peer reviewed by Dr Scott Larned, NIWA.

## **Water quality risk assessment**

### **Overview**

3.116 Water quality refers to the condition of water relative to ecological or human requirements. The main contaminants of concern in Southland are sediment, microbes, and the plant nutrients nitrogen and phosphorus. Water quality in Southland's groundwater and surface water bodies (such as streams, rivers, lakes, wetlands and estuaries) varies across the region.

- 3.117 Environment Southland has developed a classification system for managing water quality risk across the region, to be used in the pSWLP.
- 3.118 The classification system identifies ‘physiographic zones’, which are areas of land that have been grouped together on the basis of water quality risk. Each zone has been mapped using combinations of biogeochemical<sup>120</sup> and hydrological properties<sup>121</sup> (e.g. soils, geology, and topography) that affect water quality outcomes.
- 3.119 ‘Variants’ were used to define areas within individual physiographic zones where drainage pathways result in additional water quality risks.

### **Water quality assessment**

- 3.120 The assessment of water quality risk for each physiographic zone considered the potential for ‘dilution’<sup>122</sup> and ‘attenuation’<sup>123</sup> of nitrogen, phosphorus, sediment and microbes along five drainage pathways.
- 3.121 The drainage pathways identified for variants operate on an intermittent basis, generally when soils are wet (i.e. at field capacity) and potentially reduce contaminant attenuation. Variants were mapped using assessments of overland flow potential and artificial drainage density.
- 3.122 Dilution (e.g. from alpine snowmelt) reduces contaminant ‘concentrations’. Concentration describes the amount of a contaminant in a given amount of water. However dilution does not influence contaminant ‘loads’. Load describes the amount of contaminant being discharged during a defined *period of time*.
- 3.123 Two main forms of attenuation were considered for the water quality risk assessment: reduction potential; and processes associated with filtration and sorption<sup>124</sup>.
- 3.124 Reduction processes can decrease concentrations of nitrate (NO<sub>3</sub>) through denitrification<sup>125</sup> but can increase dissolved phosphorus concentrations under certain conditions. Microbes and sediment are generally unaffected by reduction potential.
- 3.125 Filtration and sorption processes can reduce concentrations of microbes, sediment and particulate phosphorus. Nitrogen is generally not affected by these processes.
- 3.126 Water quality risk was assessed by intersecting the spatial coverage of the physiographic zones and variants with maps of dilution potential, reduction potential, filtration and sorption potential, overland flow potential, artificial drainage density, deep drainage potential and natural bypass flow potential. This process allowed the dominant

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<sup>120</sup> Biogeochemistry involves the study of the chemical, physical, geological, and biological processes and reactions that govern the composition of the natural environment.

<sup>121</sup> Hydrology refers to the scientific study of the properties, distribution, and effects of water (as a liquid, solid, or gas) on the Earth's surface, in the soil and underlying rocks, and in the atmosphere.

<sup>122</sup> In this context, dilution is the process of decreasing contaminant concentrations in solution. Dilution potential refers to the potential for dilution to occur in a given environmental setting.

<sup>123</sup> In this context, attenuation refers to a variety of physical, chemical, or biological processes that reduce the amount (i.e. mass, toxicity, mobility, volume, or concentration) of contaminants in soil or water.

<sup>124</sup> Sorption refers to the physical and chemical processes by which one substance becomes attached to another.

<sup>125</sup> Denitrification is a naturally occurring process whereby nitrate is converted to nitrogen gas.

contaminant pathways and associated water quality risks to be identified. See Appendix B17 for more information.

3.127 The contaminant pathways are summarized in Table 1. Each physiographic zone may comprise of one, or several contaminant pathways (where are several contaminant pathways, variants are used).

**Table 1: Major contaminant pathways identified for the physiographic zones and variants.**

<b>Contaminant Pathway</b>	<b>Water quality risk</b>
Overland flow	Nitrogen, phosphorus, sediment, microbes
Artificial drainage	Nitrogen, phosphorus, sediment, microbes
Deep drainage and/or natural bypass flow	Nitrogen
Deep drainage and lateral drainage	Phosphorus, microbes

### **Mitigation**

3.128 Mitigation measures that may reduce the effects of agricultural land use on water quality were developed for the physiographic zone and variants. These are documented in the *Management practices and mitigation options for reducing contaminant losses from land to water* report (Monaghan, 2016).

## **Practical On-farm Environmental Performance Improvement<sup>126</sup>**

### **Background to the Land Sustainability Team**

3.129 The Land and Water Services Division within Environment Southland has a team of ten land sustainability officers and two team leaders. The purpose of the wider division is to deliver non-regulatory advice and education to effect behaviour change in Southland to improve environmental outcomes. This is done by:

- increasing community and individuals’ awareness of and commitment to managing the environment sustainably;
- delivering programmes of advice, information and education that contribute to increased sustainable environmental management and behaviour change;
- planning, promoting and delivering work programmes that increase compliance with legislation, regional rules and consent conditions;
- being recognised as a professional, credible source of advice and information.

3.130 The team of land sustainability officers work predominantly with the rural community, including individual landowners and their staff (farm workers, farm managers and sharemilkers), corporate farming entities, rural professionals (bankers, farm consultants, fertiliser representatives). The ‘clients’ predominantly come from the sheep and beef, deer, dairy, dairy support, arable and forestry sectors and manage, own or work across Southland, with properties ranging from relatively small landholdings through to large hill

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<sup>126</sup> Prepared by Gary Morgan, Principal Land Sustainability Officer for the Southland Regional Council.

and high country blocks, and in both intensive and extensive farming settings. In addition, the team has always supported a range of community groups - from those with conservation interests to production focused farmer groups.

- 3.131 Land sustainability officers operate within the regulatory context of the RMA and the various planning documents produced by central government, Environment Southland and the local territorial authorities. However, the focus of the work is based on education and advice, supported by the unwarranted nature of the staff. Experience has shown that developing relationships through one-on-one visits with people builds trust and results in a deeper understanding by the community of complex water quality and farm system issues. In this type of setting, advice is more likely to be implemented by a landowner, with increased opportunities for future visits and ongoing work. Whilst it is difficult to quantify, it is anticipated that wider benefits are accrued from better informed individuals speaking with their neighbours, peers and colleagues.
- 3.132 Over many years, the team has provided information and advice on good management practices to the individuals and groups above. The principle of good management practices encompasses a wide range of strategies that have been developed as a result of decades of scientific research and practical application. Good management practices<sup>127</sup> are considered to be those actions that most farmers could be expected to implement, without significant farm system change. It is not to say that these good management practices are without cost or implication, but they are expected to be what most farmers should be able to achieve within their existing farm system.
- 3.133 To understand which good management practices are relevant and how they should be adopted, a conversation often begins with a discussion about contaminants and transport pathways for those contaminants. In Southland, the key water quality contaminants are bacteria, nitrogen, phosphorus and sediment. As noted in other parts of this report, the existing state and trends of these contaminants is determined by a number of factors, both natural and human induced. The way in which these contaminants enter groundwater and surface water is similarly controlled by a number of factors (also discussed earlier).
- 3.134 The good management practices that are recommended are intended to align with both environmental factors (soils, climate, geology, topography) and human factors (land use, current management practices, business goals). It is notable that there is a very wide spectrum of awareness of environmental issues amongst the rural community, and an equally wide spectrum of implementation of good management practices on farm. The team has established a programme that seeks to measure uptake of recommended good management practices delivered through 200 individual plans per year, with follow up intended to happen every two years.

### **Examples of Mitigation**

- 3.135 The following section will present examples of practices that land sustainability would recommend to farmers across Southland to address water quality issues. The practices have been grouped, based on the physical part of the farm or farming activity that they seek to address.

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<sup>127</sup> Monaghan, R M 2016 *Management practices and mitigation options for reducing contaminant losses from land to water*. Environment Southland

## Riparian management

- 3.136 The strip of land beside a waterway is called a riparian zone and it is an important buffer between land and water. Establishing this zone as a vegetated buffer (using native or exotic species that may include pasture) will decrease contaminant loss in surface runoff by a combination of filtration and deposition, and act to stabilise banks. The upslope edge of the strip is where most large particles and particulates (sediment and entrained nitrogen, phosphorus and *E. coli*) are filtered out, and the speed of surface runoff slows enough so that deposition occurs. Filtering of the contaminants then occurs as the water percolates through into the soil, removing dissolved contaminants and finer sediments.
- 3.137 Setbacks are most effective under sheet flow and are less effective under convergent flow (small channels) that can bypass or inundate the buffer strip. For this reason, setbacks should increase in width as the slope of land adjacent to the water way increases, particularly around convergent flow pathways.
- 3.138 Examples of recommended good management practices within the riparian zone include:
- stock exclusion using temporary or permanent fencing with drinking water for stock available in the paddock;
  - managed grazing with light stock at appropriate times of year to manage grass riparian zones;
  - planting of riparian zones using native species suitable for the climate and environment, or exotic species (trees or pasture). Examples are provided in the *Riparian Plants for Southland* Environment Southland factsheet;
  - installing culverts and bridges that are constructed appropriately to retain material on the structure and divert it away into vegetated buffer areas that prevent direct discharge into water;
  - installing sediment traps – their use is well documented in the forestry sector during the harvest phase, and in small waterways and gullies they will be very effective at reducing sediment and phosphorus loads with minimal works required to establish them.
  - critical source area treatment – Critical source areas, when treated appropriately, can be effective filters, using vegetation and stock exclusion to decrease the flow of water channelled from across a paddock during and after rainfall. See the next section for a more detail discussion on these features and associated good management practices.

## Critical source area treatment

- 3.139 Leading into waterways are critical source areas (CSA's). These are landscape features such as swales and gullies that contribute a disproportionately large amount of nutrients and sediment to waterways. This occurs because overland flow from rainfall becomes channelised flow within the critical source area causing sediments and nutrients to become mobilised because of the increased velocity of flow.
- 3.140 Good management practices to mitigate this loss of contaminants include:
- fencing stock out of the convergence zone of the critical source area and the waterway, and constructing a vegetative filter;

- constructing sediment traps and filtering vegetation;
- avoid cultivating critical source areas;
- strategic grazing of critical source areas. This includes keeping heavy animals out of critical source areas during wet periods;
- if the critical source area is in winter forage crop, graze from the top of the critical source area downslope and leave the lower part (convergence zone) until the 'last bite'.

### **Wintering practices**

3.141 Southland's climate and soils have led to extensive use of wintering or 'intensive winter grazing' over the winter. Stock (all types) are taken off paddocks during the months of June, July and August and 'wintered' in a relatively small paddock area, fed on forage crops (predominantly swedes, kale or fodderbeet) with supplementary feed (hay, straw and baleage). The practice of large numbers of animals on a small area, with bare soil (post grazing) can create a number of environmental effects – overland flow with sediment, phosphorus and bacteria entrained, and nitrogen movement through the soil to groundwater.

3.142 Good management practices that are recommended to address these effects include:

- paddock choice that minimises the losses of contaminants.
- cultivation practices that minimise risk of overland flow, for example cultivating around the contour, leaving a buffer of uncultivated land around any waterways (width determine by slope of adjacent land), wetlands or critical source areas;
- temporary or permanent fencing of waterways and wetlands to completely exclude stock during the grazing period, with drinking water supplied in the paddock;
- application of strategic grazing practices (as appropriate) such as grazing stock from the top of a hill down the slope or creating an additional buffer in the crop at the bottom of a hill then grazing upwards from there. Isolating critical source areas from the grazing area, and either grazing them last, or grazing with lighter stock;
- placing a temporary fence behind stock, and the use of mobile troughs to avoid excessive trampling of soil after grazing;
- nutrient management plan that ensures any fertiliser application meets the needs of the crop and is not lost to water;
- use of 'catch crops' planted on fallow ground after the grazing period. The purpose of these crops is to take up the urinary nitrogen deposited during winter grazing, reducing the risk of nitrate leaching. This approach is not widely adopted yet and is very much site and system specific in terms of its application. However, research is indicating that these crops are effective in soaking up nitrogen as well as providing additional feed for the farmer.

### **Soil management and land development**

3.143 Healthy soils are integral to sustainable production and contribute to improved water quality. Southland is characterised in part by heavy soils, and these are subject to significant damage during pugging/treading events by heavy stock. We have good knowledge of soils in Southland through the work done in the Topoclimate project, and this has been further developed with the Physiographics work. This information is



widely distributed to farmers and available publicly via the Environment Southland website.

3.144 A selection of information and practices land sustainability would typically deliver, frequently through discussions on future land development plans, include:

- cultivation practices (beyond the winter grazing paddocks) such as ploughing around the contour, using minimum tillage techniques such as direct drilling;
- establishing setbacks or buffers around waterways, wetlands and critical source areas;
- identification of indigenous vegetation and encouraging protection of biodiversity, including restoration where appropriate (and working with territorial authorities on land development);
- reducing soil loss from various erosion types (sheet, wind, rill erosion);
- demonstrating soil monitoring programmes to farmers, for example the Visual Soil Assessment (VSA) which can be used to monitor soil health, structure, biological activity;
- raising awareness of nutrient management, nutrient budgets (including Overseer), and the nutrient profile of and individuals' farming operation, in particular the losses from different blocks and over the whole farm.

### **Effluent management**

3.145 Significant effort and investment has gone into improving the management of dairy farm effluent in Southland over the past decade. This has been achieved by using deferred irrigation<sup>128</sup> principles, based on sufficient storage to hold effluent during wet periods, and low rate application methods to discharge effluent at a rate that plants can uptake. This has contributed to a decreased risk of effluent discharging to water. This is important in the downlands of Southland because of the combination of heavy soils and wet conditions resulting in high soil moisture levels in both autumn and spring.

3.146 Good management practices relating to effluent management are largely managed through the consent process, and within the dairy industry and associated consultants.

### **Drainage management**

3.147 Heavy soils and regular rainfall over the downlands of Southland mean that well maintained and functioning artificial drainage systems are critical for sustainable agricultural production.

3.148 Generally, the artificial drainage system comprises a subsurface component – tiles, pipes and mole drains which transport water from the soil profile and deliver it to open source drains which are artificial or modified natural waterways. In a number of physiographic units, artificial drainage is a key transport pathway for contaminants into streams and rivers.

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<sup>128</sup> Houlbrooke, D J; Monaghan R M (2009) The influence of soil drainage characteristics on contaminant leakage risk associated with the land application of farm dairy effluent. Environment Southland

3.149 Good management practices to mitigate the adverse effects of artificial subsurface drainage include:

- where landscapes allow, direct tile drainage outflows into wetlands or sediment traps prior to entering open ditches;
- avoid placing effluent irrigation systems directly over tile drains;
- avoid winter grazing with forage crops on heavily tiled paddocks;
- reduce the accumulation of surplus nitrogen in the soil, particularly during autumn and winter;
- reduce the use of phosphate fertiliser where Olsen P levels are above the agronomic optimum.

## 4. Introduction to the Plan and General Submissions

### Introduction

- 4.1 The introductory section of the pSWLP outlines the purpose, framework and statutory context of the Plan, and the key issues facing the Southland region. While these sections of the Plan do not form part of the provisions that must be implemented, the introduction provides important context to the provisions that follow.
- 4.2 This chapter of this report also includes general submissions on the whole plan. These submissions provide some important context as they outline submitters support or opposition for the whole plan and identify submitters concerns with fundamental aspects of the plan. As such, it is useful to understand the general themes raised in submissions particularly if the submitters have not provided specific relief.

### Submissions on the Introduction to the Plan

#### Preamble

#### Submissions

- 4.3 There are nine general submission points against the preamble to the pSWLP from eight different submitters.
- 4.4 Federated Farmers and R Kempthorne seek that the words “much of which is deteriorating” be deleted or revised on the basis that the statement is too broad or does not reflect water quality data. Similarly, N & C Beggs and B Wilkins seek amendments to include cross reference to studies and results which substantiate the preamble, or include data that shows the state of water quality in Southland.
- 4.5 Federated Farmers also seek additional amendments to the second paragraph of the preamble as the submitter believe that the importance of the land in driving economic wellbeing is understated and the final sentence is vague. The submitter seeks the following amendments:

*Southland also has a diverse range of highly productive land uses that ~~contribute to~~ drive the region's prosperity and will ~~likely~~ form the foundation of further growth and expansion. The ongoing intensification of land use, both urban and rural, brings challenges to the environment (including people), particularly in terms of maintaining ~~those natural qualities of importance~~ water quantity and quality.*

- 4.6 K & J Woolhouse and A Stevenson seek that any te reo used in the Plan is translated into English.
- 4.7 There are also a range of submission points to this section of the notified Plan, the policies, or the Plan as a whole, generally in relation to Tangata Whenua values or the use

of te reo, that seek that only English is used or that expressions relating to Tangata Whenua values effectively are deleted.<sup>129</sup>

- 4.8 The remaining two submission points from K & J Woolhouse and M Pullar are unclear. The submitters may wish to clarify their submission at the hearing.

## Analysis

- 4.9 Water quality issues in Southland are described in section 3 of this report and on the basis of those comments, the preamble is considered to be accurate in its description of water quality trends.
- 4.10 I note that agriculture (being only one industry in Southland) has a significant contribution to GDP for the Southland region<sup>130</sup>, and the amendments sought by Federated Farmers describes the contribution of different land uses to the region's prosperity. While the suggested amendments have some merit, I consider that the notified wording of the preamble sufficiently conveys these matters. I recommend the amendments sought by Federated Farmers to the second paragraph of the preamble are adopted in part.
- 4.11 I note that the te reo used in the pSWLP is either clearly translated in the text of the introductory section and provisions of the pSWLP; or in the RMA. Te reo is also an official language of New Zealand. As is explained further below, there is an effective partnership between Environment Southland and Ngāi Tahu ki Murihiku, which has been evident in the development of the pSWLP. For the avoidance of any doubt, I do not consider that the requirements of the RMA, NPSFM, RPS and pSRPS could be met without explicitly taking Tangata Whenua values into account. Overall, I do not consider that any further amendments to this section or any other section of the Plan are appropriate, with respect to these submitters' concerns.

## Recommendation

- 4.12 Amend second paragraph of the preamble as follows:

*Southland also has a diverse range of highly productive land uses that contribute to the region's prosperity and will likely form the foundation of further growth and expansion. The ongoing intensification of land use, both urban and rural, brings challenges to the environment (including people), particularly in terms of maintaining ~~those natural qualities of importance~~ water quantity and quality.<sup>131</sup>*

## Te Mana o te Wai

### Submissions

- 4.13 The "Te Mana o te Wai" section of the Plan received three submissions. A & L Byars Trust seek that this section of the Plan is translated. In the submission from J Gardyne, he notes that from the first two pages of the Plan the significance of water to Maori is

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<sup>129</sup> See for example: 888.1 K A & J A Woolhouse; 181.1 P & L Cruickshank; and A R & L J Byars Trust

<sup>130</sup> Market Economics Limited (2013). Southland Region: Economic Impacts of Water Policy Decisions Workstream.

<sup>131</sup> 265.4 Federated Farmers

made clear. However, he does not believe the Plan identifies the significance of water to everybody. J Gardyne has not provided any relief sought with respect to the “Te Mana o te Wai” section of the Plan.

### **Analysis**

- 4.14 I note that the Māori language used in the “Te Mana o te Wai” section of the pSWLP is clearly explained or translated in either the text of the introductory section or glossary of the pSWLP or in the RMA. I do not consider that any further amendments are required to translate “Te Mana o te Wai”.

### **Recommendation**

- 4.15 Retain “Te Mana o Te Wai” as notified.

## **Purpose of this Plan**

### **Submissions**

- 4.16 There are three submissions on the section of the pSWLP titled “Purpose of this Plan”. The SCB seeks that this section of the Plan is retained as notified.
- 4.17 H & H Blakely submit that all land uses must be sustainable, however it is unclear from their submission what changes they seek to the “Purpose of this Plan” section of the pSWLP.
- 4.18 William J Watt Consulting submits that any statutory plan should include a definition of the area covered by the Plan. The submitter seeks that the area of jurisdiction of the pSWLP is defined in the introduction of the Plan, specifically whether it includes the Coastal Marine Area (CMA).

### **Analysis**

- 4.19 The area covered by the Southland region is defined in the planning maps, which form part of the pSWLP. I note that the boundaries of the Southland region are clearly defined in the Local Government Act<sup>132</sup> and are not subject to change. I do not consider that the Plan requires amendment to more clearly define the area of land that the Southland region covers.
- 4.20 While the land use provisions do not apply in the CMA, there are a number of provisions that seek to ensure the effects of land use and discharges activities on the CMA are appropriately avoided, mitigated or remedied. As such, I agree that a statement specifying that the rules of the Plan do not apply to the CMA would assist certainty.

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<sup>132</sup> Schedule 2, Part 1: Local Government (Southland Region) Reorganisation Order 1989, *Gazette* 1989, p 2430

## Recommendation

4.21 Amend “Purpose of this Plan” as follows:

*The Southland Regional Water and Land Plan has been developed by Environment Southland under the Resource Management Act 1991 (RMA). This Plan is intended to provide direction and guidance regarding the sustainable use, development and protection of water and land resources in the Southland region. This Plan fits within, and is influenced by an RMA framework of national, regional and local policy documents.*

*For the avoidance of doubt, no rule in this plan applies in the Coastal Marine Area.*<sup>133</sup>

## Framework of the Plan and Freshwater Management Units

### Introduction

- 4.22 The introduction of the pSWLP includes a description of the Plan framework including how water quantity and quality are managed (consistent with the requirements set out in the NPSFM). The Southland region has been divided into five catchments (called Freshwater Management Units (FMU)) for the purposes of the NPSFM.
- 4.23 Objectives, policies and rules will be developed for each FMU through FMU limit setting processes. The relationship between the region-wide objectives, policies and rules in the pSWLP and the policies and rules specific to each FMU is described in the “Framework of the Plan and Freshwater Management Units” section of the Plan.

### Submissions

- 4.24 There are six submissions on the Framework of the Plan and the FMU’s.
- 4.25 The SCB submits that it takes several readings of the Plan to understand the concepts of “Physiographic Zones”, “Catchments”, and “Freshwater Management Units”, and to assist understanding of the pSWLP, further explanation of these concepts should be included in the Introduction to the pSWLP.
- 4.26 Federated Farmers submit that the proposed Plan enables FMUs to develop catchment specific objectives, polices and rules that can replace region-wide provisions. The submitter notes that they have been involved in regional council freshwater planning processes across New Zealand, and based on their experience, fundamental approaches set out in regional plans are not changed during subsequent limit setting processes. In particular, the submitter notes that paragraph 4 of this section of the Plan conflicts with Policy 45. The introduction states that region-wide provisions may be added to or preplaced by FMU specific provisions, however notes that Policy 45 states that FMUs cannot alter the region-wide provisions. The submitter seeks that the introduction is consistent with Policy 45.

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<sup>133</sup> 872.1 William J Wyatt Consulting

- 4.27 In addition, Federated Farmers also seek that the Council ensures the pSWLP:
- is effects-based;
  - addresses real and immediate issues with water quality, not attempt to cover off ‘risks’ to water quality in future;
  - enables the use of land and the discharge of contaminants to provide for Southlanders’ economic and social wellbeing; and
  - recognises farmers’ efforts to reduce contaminant losses before limit-setting.
- 4.28 Two submitters support the concept and structure of the FMUs and the outlining of water management issues, but submit that the pSWLP needs to describe how the limit setting process will take place and under what method the wider community will be involved in this process. The submitters seek that the council adopts a collaborative approach to the limit setting process.
- 4.29 In relation to the FMU’s identified by the Council, two submitters seek that a smaller sub catchment group is created for the Pourakino Catchment. These two submissions are assessed under Policy 46.

### **Analysis**

- 4.30 The concepts of FMU and “Physiographic Zones” are described in the Plan. It is unclear from the SCB submission what particular amendments are required to make these descriptions clearer. I note that “catchment” is defined in the glossary of the pSWLP. The submitter may wish to provide greater detail at the hearing.
- 4.31 The Council are currently preparing policy that will guide the FMU processes, including expectations around collaboration and community involvement. Unfortunately, the policy is not available at the time this report was prepared. It is anticipated this document will be available for the hearing panel to view during the Plan hearing.
- 4.32 As correctly identified by Federated Farmers, the FMU limit setting processes will likely result in catchment specific provisions. Paragraph four of the section of the Plan titled “Framework of the Plan and the Freshwater Management Units” clearly outlines this process, where more specific guidance is provided in Policy 45. While there will be catchment specific provisions for the FMU, these provisions will be in addition to, or instead of, the region-wide provisions for that particular FMU. There is no ability to delete or amend the region-wide provisions as part of an FMU process, as these provisions will remain relevant for the remainder of the region. I do not consider that any amendments are required to ensure there is consistency between paragraph four and Policy 45. I also note that the rest of Federated Farmers submission against the introduction of the pSWLP is relatively non-specific in terms of what changes are sought.

### **Recommendation**

- 4.33 Retain “Framework of this Plan and the Freshwater Management Units” as notified.

## Partnership between Environment Southland and Ngāi Tahu ki Murihiku

### Submissions

4.34 There are four submissions on the section of the Plan titled “Partnership between Environment Southland and Ngāi Tahu ki Murihiku”.

4.35 A Wilson and S Wilson submit that the pSWLP needs to outline a mechanism with which iwi values and wider community values are found or ascribed through a collaborative process.

4.36 Ngāi Tahu supports this section of the Plan but seeks some amendments to ensure the information is accurate and reads clearly. In particular, Ngāi Tahu seek to delete the first paragraph and replace it with:

*As tangata whenua of Murihiku/Southland<sup>134</sup>, Ngāi Tahu share a strong connection to the natural environment (including lands, coasts, water, air and biodiversity) of the area.*

4.37 The submitter also seek that the third paragraph is placed ahead of paragraph two. Additionally, Ngāi Tahu request the following addition to the statement about the Treaty of Waitangi:

*This Act sets out legal requirements within the RMA that this plan must follow. These areas are known as statutory acknowledgement areas, tōpuni features, nohoanga (campsites alongside specified rivers and lakes), mahinga kai, and taonga (treasured or valued) species of plants and animals.*

4.38 In relation to mātaītai, Ngāi Tahu seek the addition of the following paragraph:

*While mātaītai are predominantly in coastal marine areas legislatively there can be freshwater mātaītai. Within Southland, mātaītai comprise of coastal and inland areas with the Mataura River Mātaītai Reserve being the first freshwater mātaītai in New Zealand. The quality and quantity of freshwater, and the use of land, have direct and indirect effects on the regulations of all mātaītai and on the customary rights of Ngāi Tahu.*

4.39 D Diprose submitted on the Treaty of Waitangi paragraph of this section of the Plan, seeking that the Council considers “the economical delays and timing of operations and set a desirable time frame for consents to be issued”.

### Analysis

4.40 The amendments proposed by Ngāi Tahu largely assist in the reading of this section of the Plan and provides some useful additional context. However, in my opinion, the amendments sought in relation to the Treaty of Waitangi do not appear to assist in the understanding of the relationship between the Ngāi Tahu Claims Settlement Act 1996 and the RMA.

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<sup>134</sup> Te Rūnanga o Ngāi Tahu Act 1996



- 4.41 Apart from the requested amendment to the paragraph that addresses the Treaty of Waitangi, I recommend that the submission from Ngāi Tahu is adopted.
- 4.42 As discussed earlier in this report, Council policy for guiding the FMU processes is not available at the time this report was prepared. It is anticipated this document will be available for the hearing panel to view during the Plan hearing.
- 4.43 The submission from D Diprose appears to be unrelated to the partnership with Ngāi Tahu, but may be an oblique reference to consultation processes. To the extent that any relief is specified, I do not recommend this submission is adopted.

## Recommendation

- 4.44 Amend “Partnership between Environment Southland and Ngāi Tahu ki Murihiku” as follows:

Delete the first paragraph and replace it with:

*As tangata whenua of Murihiku/Southland<sup>135</sup>, Ngāi Tahu share a strong connection to the natural environment (including lands, coasts, water, air and biodiversity) of the area*

Add the following paragraph:

*While mātaihai are predominantly in coastal marine areas legislatively there can be freshwater mātaihai. Within Southland, mātaihai comprise of coastal and inland areas with the Mataura River Mātaihai Reserve being the first freshwater mātaihai in New Zealand. The quality and quantity of freshwater, and the use of land, have direct and indirect effects on the regulations of all mātaihai and on the customary rights of Ngāi Tahu.*

## Statutory Context of the Plan

### Submissions

- 4.45 There are six submissions on the section of the Plan titled “Statutory Context of the Plan”. One submitter submits that there should not be a resource consent process as they do not believe there are any benefits to anyone.
- 4.46 Fonterra seeks that the description of the RMA is amended to acknowledge its broad purpose, consistent with Objective 2 of the pSWLP.
- 4.47 A Wilson and S Wilson support the adoption of the three operative National Policy Statements, but only on the provision that they be applied to the pSWLP in a truly collaborative process. They also support the inclusion of Water Conservation Orders and seek that it is retained.
- 4.48 Two submitters have submitted on the National Environmental Standards (NES) referenced in the pSWLP. The Oil Companies seek that the explanation of the NES for contaminated land is retained as notified. PF Olsen seek that three additional NES' are

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<sup>135</sup> Te Rūnanga o Ngāi Tahu Act 1996

included in this section of the Plan. The submitter also seek that the section is amended to make clear that an NES, as higher level RMA regulations, defines matters that:

1. are out of scope for the Regional Water and Land Plan; or
2. enable Regional and District Councils to set more stringent standards than those defined in the NES.

4.49 In addition, PF Olsen seeks that the NES section of the Plan is amended to acknowledge that the proposed NES for Plantation Forestry is likely to come into effect before a decision is made on the pSWLP.

### **Analysis**

4.50 The pSWLP lists all operative NESs, with further explanation provided for those which are relevant to the provisions contained in the Plan. I do not consider that it is appropriate to include an inoperative NES in the Plan, nor that further explanation included for those that are not relevant. I do not recommend that the submission from PF Olsen be adopted.

4.51 In my opinion, the submission from Fonterra has some merit, but the submitter has not provided any amendments to the provisions in its submission.

4.52 In addition, this part of the pSWLP will likely require some amendments prior to the release of decisions on submissions, to align the pSWLP with the pSRPS, which may have advanced, in terms of resolution of appeals prior to that date.

### **Recommendation**

4.53 Retain “Statutory Context of the Plan” as notified.

## **Issues**

### ***Water Quality***

#### **Submissions**

4.54 The description of the issues associated with water quality received 14 submissions.

4.55 Several submitters seek that reference to non-point source discharge from agricultural land being significant contributors of contaminants be amended, deleted, or additional information provided to support this statement. Others seek that this section of the Plan specifically acknowledges that land use intensification applies to both rural and urban land uses. One submitter seeks to include the reference to the effects of plant pests on water quality.

4.56 Forest and Bird and Fish and Game seek that this section of the Plan describes the state of waterbodies in Southland, with one submitter seeking the use of better water quality data. In addition, Fish and Game and Forest and Bird seek that this section also names waterbodies in Southland that are not achieving desired objectives, including national

bottom lines set out in the National Objectives Framework (NOF) as set out in the NPSFM.

- 4.57 The SCB seeks that the Issues: Water Quality section is amended to acknowledge that conservation values are also dependent on water of high quality.
- 4.58 DOC and Fish and Game seek that paragraph two is amended to include reference to smaller catchments in the Southland region that may end with estuaries, freshwater lakes and coastal lagoons/lakes. In addition, Fish and Game seeks to include reference to the Makarewa River as a river that receives industrial and/or municipal discharges. J Gardyne seeks that the term “water quality” is reassessed and to discuss ways in which we can maintain rivers better so there is less sediment lost downstream.

### **Analysis**

- 4.59 The Issues section of the Plan provides a relatively general overview of the issues faced by Southland. The values listed in this section of the Plan are not all inclusive, and therefore some values are not included in the description of the issue. For this reason, I do not recommend that conservation values or a list of waterways that do not meet desired objectives are specifically mentioned in the Issues: Water Quality section of the pSWLP.
- 4.60 I note that this section of the Plan clearly acknowledges the impact both urban and rural activities have on water quality. I do not consider any amendments are necessary to make this clearer.
- 4.61 In my opinion, there is sufficient water quality data and evidence that demonstrates that some agricultural activities are significant contributors to contaminants in receiving waterbodies. I do not recommend amending this section of the Plan to effectively understate the effects of such activities.
- 4.62 Water quality issues in Southland are described in Section 3 of this report and on the basis of those comments, the preamble is considered to be accurate in its description of water quality issues and trends.
- 4.63 I recommend accepting the submissions from DOC and Fish and Game where they seek to amend paragraph two to include reference to smaller catchments in the Southland region that do not end with an estuary. I note that Makarewa River is a tributary of the Oreti River, which is already provided for in the Issues: Water Quality section of the Plan. I do not recommend that Fish and Game’s suggested amendment (to include reference to Makarewa River) be adopted.

### **Recommendation**

- 4.64 Amend paragraph 2 of “Issues: Water Quality” as follows:

*Southland’s main catchments end with estuaries and its smaller catchments can end with estuaries, freshwater lakes and coastal lagoons and lakes, which are all particularly sensitive to nutrient and sediment loads. Degraded estuary, lagoon and lake water quality and habitats are particularly*

*difficult and expensive to reverse. This highlights the importance of maintaining good water quality in upstream rivers.*<sup>136</sup>

## **Water Quantity**

### **Submissions**

- 4.65 The Issues: Water Quantity section of the Plan received ten submissions, with three in support, seeking that it is retained as notified. S Baker and W Shaw request that water quantity information is obtained for their area and that groundwater allocation already in place should remain unchanged.
- 4.66 Real Journeys request that this section of the Plan includes reference to industries and activities that rely on abundant water supply, such as community water supplies, dairy industry, hydro-electric power generation and forestry.
- 4.67 Two submitters request amendments to incorporate Recommendation 131 of the First Land and Water Forum report, specifically that:
- c. allocation of water should start at the boundaries of the waterbody, surface or groundwater – that is, not rainfall on land. Allocation will still need to manage for land use effects on water availability and on water quality, in concert, at the catchment level.*
  - d. water allocation methods should not pick winners based on land use, e.g. constraining forestry to enhance water supplies for other productive sectors.*
  - e. water use efficiency criteria should apply to all users, not just those under the new regime*
- 4.68 Federated Farmers seek that the descriptions about surface water and groundwater section includes specific reference to data to support references to current allocation of water resources and explain how this has been determined. Similarly, Fish and Game and SCB seek amendments to clarify the allocation status of groundwater in Southland.
- 4.69 The remaining submission appears unrelated to this section of the Plan, and is assessed under the stock exclusion provisions.

### **Analysis**

- 4.70 Environment Southland has an extensive water monitoring network, which is described in part in Section 3 of this report.
- 4.71 As the Issues section of the Plan is a general overview, I do not consider it necessary to further define or refine the allocation status of water quantity in the description of surface water or groundwater. The substance of these submission points is addressed in relation to water quantity and allocation in Section 8 of this report and the technical comments associated with that section.

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<sup>136</sup> 752.6 Fish and Game

- 4.72 The submission from Real Journeys has merit, however in the absence of a full list of industries and activities that rely on access to reliable water supplies, I recommend this submission is not adopted.

### **Recommendation**

- 4.73 Retain “Issues: Water Quantity” as notified.

## ***Soil Resources***

### **Submissions**

- 4.74 The description of the issues associated with soil resources received eight submissions, six of which seek that this section of the Plan is retained as notified.
- 4.75 DOC and Fish and Game seek the addition of a sentence to acknowledge that inappropriate land use can result in adverse effects, such as soil erosion and soil compaction.

### **Analysis**

- 4.76 The submissions from both DOC and Fish and Game clearly describe the likely impacts of inappropriate land use or land management practices on soil resources. I recommend these submissions are adopted.

### **Recommendation**

- 4.77 Amend “Issues: Soil Resources” as follows:

*Soil resources are fundamental to the region’s primary production economy, and can assist in maintaining or enhancing water quality and supporting human health, cultural, social and economic activities.*

*Discharges onto or into land can carry contaminants, including heavy metals, hydrocarbons and biological contaminants, that can create adverse effects on the quality and/or structure of the soil resource. Conversely, some contaminants, when applied appropriately, can have positive effects on the soil resource and plant growth, such as fertilisers and agricultural effluent.*

*Inappropriate land use or land management practices may adversely affect soil quality and structure, including through erosion and soil compaction.*<sup>137</sup>

## **River and Lake Beds**

### **Submissions**

- 4.78 The description of the issues associated with river and lake beds received six submissions, with Fulton Hogan and S Wilson seeking that it is retained as notified.

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<sup>137</sup> 752.11 Fish and Game

4.79 DOC seek that this section of the Plan is amended to acknowledge Southland’s braided river beds as a significant habitat for braided river birds. The SCB seek to extend the issue to also cover wetlands, lagoons and freshwater estuaries. Fish and Game seek that the reference to recreational values is amended to include game bird hunting.

## Analysis

4.80 The submissions from DOC and Fish and Game provide useful improvements to the description of the issues associated with river and lake beds. I recommend these two submissions are adopted. SCB may wish to clarify where the words “wetlands, lagoons, and freshwater estuaries” are to be included in this section of the pSWLP. I note these water bodies are provided for in the section of the Plan describing the issues associated with indigenous biodiversity.

## Recommendation

4.81 Amend “Issues: River and Lake Beds” as follows:

*River beds (including beds of streams and modified watercourses) and lake beds have a wide variety of values, including natural, ecological, heritage, cultural and spiritual values, with rivers and lakes used for a range of recreational and cultural activities, including walking, fishing, game bird hunting,<sup>138</sup> boating, and food gathering. Southland’s braided river beds are a nationally significant habitat for braided river birds, being a national stronghold for the threatened black billed gull and important for the threatened black fronted tern and banded dotterel<sup>139</sup>. The use and development of river beds and lake beds also has value for economic, social and community health and safety reasons, which can be broken down into two main categories:*

- *activities that involve structures, such as bridges, culverts, dams, weirs, pipes, cables, boat ramps, jetties, moorings and flood and erosion control works; and*
- *activities that disturb the bed, such as gravel extraction, channel realignment, construction activities, vegetation planting and removal, and vehicle and stock access.*

*Some of these activities can have positive effects on the natural environment, for example, bridges and culverts allow access across a river without disturbing the bed. Others have important economic and social benefits, for example, erosion control works protect community assets. However, activities in the beds of rivers and lakes can also have adverse effects on the environment, including generating sediment, disturbing habitat and preventing fish passage.*

## Indigenous Biodiversity

### Submissions

4.82 The description of the issues associated with indigenous biodiversity received ten submissions, with P & S Dale Trust and Federated Farmers seeking that it is deleted. SCB seek that this section of the Plan is amended to include reference to aquatic weeds and their adverse effect on biodiversity. The submitter has not provided any suggested amendments in their submission.

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<sup>138</sup> 752.12 Fish and Game

<sup>139</sup> 210.8 DOC

- 4.83 Forest and Bird submit that it would be useful to specify the drivers for biodiversity loss. Additionally, it seeks to delete reference to conflicts between the productive use of land and protecting habitats and biodiversity, on the basis that this describes the human issue (i.e. conflict) rather than the environmental issue.
- 4.84 DOC also seek that this section of the Plan is amended to better align the terminology used in the pSWLP with that used in the pSRPS. In addition, the submitter seeks that the importance of the ecosystem services should be highlighted including protection of soil, reduction of flood flow peaks and the maintenance low flows.
- 4.85 A Wilson and S Wilson seek that the following statement is amended as follows: *Land use change may sometimes lead to a conflict between productive use of land, including wet areas, and protecting habitats and biodiversity.* The submitters believe the statement (as notified) has no basis, and believes there are many instances of QEII covenants, enhanced or restored wetlands on land that has changed land use.

### Analysis

- 4.86 I note that the Issues section of the Plan is a general overview of the issues facing Southland. As such, I do not consider it necessary to further define or highlight particular ecosystem services or the drivers for biodiversity loss.
- 4.87 I note that a number of activities that are addressed in the pSWLP have the potential to adversely affect biodiversity values in Southland. As such, I consider it important to retain the reference to indigenous biodiversity (and the associated issues) in the Plan.
- 4.88 The suggested amendment from DOC to align the terminology used with that in the pSRPS is a constructive and useful amendment. I recommend this part of DOC's submission be adopted.
- 4.89 I do not recommend deleting the reference to conflict between productive use of land and protecting habitats and biodiversity, as this is a genuine issue faced by the Southland region. I note that this conflict may not occur in all instances, and therefore recommend adopting the submissions from S Wilson and A Wilson in part.

### Recommendation

- 4.90 Amend "Issues: Indigenous Biodiversity" as follows:

*Indigenous biodiversity covers native flora and fauna in both dryland and wetland environments. Southland contains a variety of ecosystems and habitats, including indigenous vegetation, wetlands, lakes, and rivers. Indigenous plants and animals are an integral part of the natural character values of the region, and in addition to their intrinsic value, plants and animals are significant for cultural, economic, scientific and educational reasons, biological diversity and provision of ~~ecological~~ ecosystem<sup>140</sup> services. The region contains a number of significant and distinctive ecosystems, including the network of culturally and ecologically significant river mouths, estuaries and lagoons, the largely unmodified alpine environments, particularly of*

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<sup>140</sup> 210.9 DOC

*Fiordland, extensive high country, and many lakes and wetlands that provide nationally and internationally significant bird habitat.*

...

*Wetlands were once more prevalent, with Southland having lost approximately 90% of its wetlands in developed areas, including from hill and high country. Many remaining wetlands are on publicly held land and afforded some level of protection. Other wetlands are on private land and little is known about their health, values and use. Land use change may leads<sup>141</sup> to conflict between productive use of land, including wet areas, and protecting habitats and biodiversity.*

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## **Physiographic Zones**

4.91 The physiographic zones received 259 submissions, with many seeking that the physiographic zones be removed from the Plan or that the accuracy of the zones are verified (with some submitters seeking that a full peer review is undertaken).

### **General submissions on the Physiographic Zones**

#### **Submissions**

4.92 A large number of general submissions were received that sought amendments to, or the deletion of, the provisions related to the physiographic zones. These submissions are largely addressed in section 7.2 of this report in relation to farming:

- submissions that seek to include new provisions that enable landowners to contest or change the physiographic zone that has been assigned to their property. Many submitters request that this process does not come at the cost of the landowner;
- submissions that seek clarification on how the rules treat a property that have multiple physiographic zones;
- submissions that seek different activity classifications for some physiographic zones;
- submissions seeking an alternative permitted activity threshold for intensive winter grazing.

4.93 Where submitters have sought that the physiographic zones be deleted, few submitters have provided alternative relief (i.e. how farming activities to be managed in the absence of such provisions). The most common alternative put forward by submitters is to allow farmers to implement GMPs and have greater flexibility without zoning restrictions.

4.94 While it is explained at a more detailed level in section 7.2 of this report, the broad issues with the use of physiographic zones that has been troubling many submitters have been recognised and a range of adjustments are recommended later in the report. In summary, these include:

- changes to thresholds, so that there are no size thresholds based on physiographic zones;

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<sup>141</sup> 880.8 S Wilson; 877.5 A Wilson.



- the timing for the requirements for FEMP and consenting of larger wintering operations to be based on FMU, rather than physiographic zone;
  - removal of differences between physiographic zones from the stock exclusion provisions;
  - a smoother process available for situations where there are two or more physiographic zones on a property.
- 4.95 Submissions have been received from several submitters seeking that some of the physiographic zones be retained (i.e. the Alpine and Peat Wetland Zones) on the basis that they believe there are limited land uses for these areas. Others seek to retain all physiographic zones with the exception of Old Matura. Two submitters have sought the inclusion of additional physiographic zones. N McPhail seeks that new zones are included in the Plan, as they note (as an example) Willowbank lignite deposit is not identified in the maps. The SCB submits that if the CMA is not excluded from the pSWLP then “the sea” should be included as a separate physiographic zone.
- 4.96 J Gardyne submits that more research is needed as to how different physiographic zones react to different management practices from, urban, to dairy to cropping and extensive farming.
- 4.97 A number of submitters are concerned that the provisions associated with the physiographic zones result in “grandparenting”, which will limit future options and affect property values. Several submitters request that the Council pays compensation for any reduction in property value as a result of the pSWLP.
- 4.98 DOC seeks that the physiographic zones are amended to reflect the science outlined in Physiographics of Southland Part 3 and other relevant Council science. In particular, the submitter seeks that the Council takes into account the existing water quality data and trends and whether the water quality breaches (or will breach in future) water quality objectives and standards. They also believe it is essential to take into account the actual and potential effects of water quality degradation on values of Southland’s waterbodies (including groundwater) and estuaries/coastal water.
- 4.99 Two submitters note that the methodology used in the pSWLP to develop the physiographic zones is different to the methods and systems being implemented in other areas of New Zealand, which they believe will mean that research and development carried out by research institutes will not be specific or widely applicable to Southland. To alleviate these concerns, the submitters seek that the pSWLP be amended so that the physiographic zones align and integrate with acceptable practices and permitted activities in other regions in New Zealand to ensure products, application rates, farming or business systems mirror what is acceptable nation-wide. Similarly, Wilkens Farming submits that a proven and established method should be used to support regulation of farming activities (including, but not limited to a combination of grandparenting and the use of the Overseer model).
- 4.100 Ngāi Tahu seeks that physiographic zones apply to all land uses, not just agriculture. The submitter seeks consistent use of the physiographic zones throughout the Plan “as it provides a strong basis for the rule structure and also makes it more user friendly for plan users”.

## Analysis

- 4.101 The pSWLP identifies nine physiographic zones which each represent areas of the landscape with common attributes that influence water quality (such as climate, topography, geology and soil type). As discussed in Section 3 of this report, the technical work undertaken in the development of the physiographic zones identified a high level of detail about each of these attributes. However, this was considered too complex for policy development. The resolution of the nine physiographic zones is considered, by the science and policy teams, to be an appropriate balance between achieving a robust scientific outcome and having a plan that is practical and usable. Given the above, and without any further evidence supporting the inclusion of new physiographic zones, I do not consider that any amendments are required to provide for any variations to those described in the Plan.
- 4.102 I also note that the CMA is referred to in the pSWLP in so far as it is influenced by activities that are governed by the Plan. It is my view that this reference is important to ensure the effects of such activities are appropriately managed. However, I do not consider that a new physiographic zone (being “the sea”) is necessary. As is addressed earlier, I have recommended clarity that the pSWLP does not cover activities that occur within the CMA.
- 4.103 It is unclear from the submission from DOC which parts of the physiographic zones require amendment to reflect the scientific work undertaken to support the pSWLP. The submitter may wish to clarify this at the hearing. A key environmental outcome sought by the Plan is no reduction in the quality of freshwater, and water in estuaries and coastal lagoons<sup>142</sup>. I note that the provisions contained in the pSWLP enables the Council to appropriately consider the effects of higher risk farming activities through the resource consent process, where the use of physiographic zones provides useful guidance about risks to the environment and the need to undertake on-farm mitigations to address any potential adverse effects. The use of the non-complying activity status for higher risk activities in some physiographic zones has been used to ensure that the effects on the environment are less than minor or that the objectives and policies in the Plan have been met.<sup>143</sup> Given that the objectives and policies contained in the pSWLP are directive and clear, particularly in regards to effects on the environment, it is my view that the pSWLP (read in its entirety) provides little room to enable further degradation of water quality. As discussed in section 6 of this report, catchment specific solutions will be developed through the FMU limit setting process, where additional information and data will be available to determine freshwater objectives and limits to help achieve those objectives.<sup>144</sup> Until this time, I do not consider that it is appropriate to make further amendments to the physiographic zones and associated provisions to ensure that the water quality outcomes in the Plan will be met. Accordingly, I do not recommend that the submission from DOC be adopted.
- 4.104 I note that each region in New Zealand has unique physical and hydrological characteristics, where different methodologies have been employed across New Zealand to address issues particular to each region. The physiographic zones are a region-specific

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<sup>142</sup> Objective 6

<sup>143</sup> Consistent with the requirements set out in section 104D of the RMA.

<sup>144</sup> Consistent with Section CA (National Objectives Framework) of the NPSFM (2014).

solution to identify areas that require specific mitigations to ensure the effects on the environment are acceptable. Southland is one of the most geologically diverse regions in New Zealand and some location specific approaches are unavoidable. I note that the tools and mitigations that will be employed on-farm are unlikely to be significantly different to those used elsewhere in New Zealand. For example, the use of the nutrient budgeting tool Overseer is a requirement as part of the FEMP and the GMP's factsheets prepared by Environment Southland outline tools and mitigations that are consistent with good farming practices elsewhere in New Zealand.

- 4.105 Environment Southland intends to keep a range of advice and education material up-to-date by maintaining it outside of the pSWLP, and therefore not requiring a plan change to adjust the material. Given the above, I do not consider that amendments are required to ensure that established methodologies and tools are used in the pSWLP, as these are already provided for.
- 4.106 While a property-specific assessment will need to be undertaken as part of the resource consent process, the deletion of the physiographic zones and associated provisions removes the clear direction needed to ensure that measures are in place to ensure water quality outcomes are met. In some instances, some property owners will be required to undertake practices that are better than GMP. Given the need to include mitigations that are specific to the key contaminant pathways identified via the physiographic zone, I do not consider that it is appropriate to delete the physiographic zones (in their entirety or the removal of specific zones) and replace restrictions contained in the pSWLP with the general requirement to adhere to GMP.

### **Recommendation**

- 4.107 That the physiographic zones are retained in the pSWLP.

### **Submissions on the descriptions of the physiographic zones**

#### **Submissions**

- 4.108 A small number of submissions were received on the descriptions of the physiographic zones. The descriptions of the Old Maitauru, Oxidising, Peat Wetlands and Riverine zones only received submissions in support seeking that these be retained as notified.
- 4.109 DOC seeks amendments to the Alpine, Central Plains, Gleyed, Bedrock/Hill Country and Lignite-Marine Terraces physiographic zones to include additional key contaminant pathways. As is described earlier, only the dominant contaminant pathways have been identified for each physiographic zone. For the reasons set out in Section 6 of this report, I do not recommend that the description of the physiographic zones be amended to include additional contaminant pathways.

### **Recommendation**

- 4.110 Retain "Physiographic Zones" as notified.

## General submissions on the Plan as a whole

4.111 This section of the report deals with submissions that relate to the Plan as a whole, rather than seeking a change to individual provisions, or to a range of provisions relating to one topic.<sup>145</sup> The pSWLP attracted a large number of these general submissions, which can generally be categorised, and have been assessed, as follows:

- submissions in support or opposition to the whole of the pSWLP;
- submissions raising general concerns or seeking plan-wide changes relating to: economic analysis; processing of consents; urban and industrial discharges; consultation; simplification of provisions; timeframes; plan reviews; and general water quality comments;
- submissions identifying concerns with the pSWLP without specifying what changes the submitters would like to see;
- submissions seeking clarification or further information;
- submissions not specifically on the pSWLP.

4.112 In a number of cases, recommendations are not made on these general submissions, as the acceptance or rejection of them is ultimately dependent on decisions made on specific provisions in the pSWLP. Wherever possible, analysis is provided on these submissions in the following sections, or direction given as to where the matters raised are discussed more fully in other parts of this report.

### Whole of Plan Submissions

4.113 J Campbell, Cromel Valley Station and SFFA support the Plan in its entirety. However, SFFA states that it was unable to review the pSWLP fully because of the limited amount of time for making submissions. Thirteen other submitters generally support the pSWLP except where stated in their submissions.

4.114 Conversely, ten submitters oppose the pSWLP in its entirety. Some submitters including Alliance seek that the Plan is withdrawn if the amendments sought in their submissions are not implemented. Rural Contractors of NZ and Rayonier seek to retain the provisions of the existing RWP.

4.115 A J & P G Adams seek that the Plan is amended so that it is effects based, not risk based.

4.116 In my view, there is nothing raised in submissions that suggest that the pSWLP should be withdrawn entirely. A number of provisions have been 'rolled over' from the current provisions in the RWP, where they are considered to still be the most appropriate approach. Conversely, changes have been proposed in the pSWLP (from those in the RWP) where the current provisions are no longer considered to be the most appropriate approach. I also note that consideration of changes to specific provisions are discussed in more detail in this report, and include consideration of submissions specifically seeking that the RWP provisions are retained.

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<sup>145</sup> Where submissions were included as 'General' submissions in the Summary of Decisions Requested, but have been identified as relating to an individual provision or topic assessed elsewhere in this report, those submissions have been considered and addressed elsewhere in this report.

- 4.117 In response to SFFA's concerns about the time allowed for making submissions, I note that the time allowed met the requirements of the RMA. This issue was also considered in Chapter 2 of this report.
- 4.118 In my view, the pSWLP, at a general level, is an 'effects based' plan, in that it seeks to manage the effects of the various activities addressed by the Plan. Ensuring that effects are appropriately managed necessarily requires taking into account the risks associated with various activities, and in my view, is entirely appropriate.

### **Economic Analysis and Supporting Information**

- 4.119 A common theme among many submissions is that economic analysis supporting the Plan is lacking with an overarching tenor that insufficient weight has been given to economic consideration. Thirty-seven submissions were received either requesting further economic reporting or commenting on the lack of economic information. Several submissions request specific consideration of the effects on the farming community – socially and economically. A number of these submitters also question the scientific information. T Anderson seeks that technical research is improved before implementing the Plan. S Hastie seeks to collect real data and create an understanding from a variety of farming areas.
- 4.120 The RMA includes specific requirements, outlined in section 32, as to the evaluation that Council must undertake of the provisions proposed. This includes assessment of the benefits and costs of the economic effects, alongside environmental, social and cultural effects, that are anticipated from the implementation of the provisions. The assessment is summarised in Council's section 32 Report, and in my view, provides sufficient consideration of economic effects. That being said, there are instances where changes sought in submissions on specific provisions are recommended to be accepted because the changes are considered more appropriate to achieve the Plan's objectives, and this assessment is strongly influenced by economic considerations.

### **Consent Processing**

- 4.121 Many submissions were received seeking changes to consent processing or seeking that the consenting process is streamlined and simplified. A few submitters submit generally on the consent process seeking that it is not too complex and expensive. Other submitters raise concerns around the cost of consenting.
- 4.122 Nine submitters either seek that there are no consenting costs for farmers or identify concerns with consenting costs. J R & S J Crooks seeks assurance that consents will not require expensive renewal costs and a minimum term of five years. Euan Crump Farming Co seeks to make consents free for five years.
- 4.123 Some submissions were received seeking alternatives to a consenting framework. Generally, these submissions request more emphasis on on-farm monitoring and testing. The submitters seek to either provide farmers with the tools such as water testing kits or the Council tests water as it enters a farm and leaves a farm to understand where hot spots are and identify where further investigation is required. Several submitters are in favour of GMP's and/or education rather than consents. More specifically, G R & J E Tait & Waikawa Valley Trust seek an annual visit from the Land Sustainability Team instead of consenting. A generic consent to farm is requested by Frew Farming.

4.124 The requirement for consents to be obtained, particularly in relation to farming activities, are considered more fully in section 7 of this report. In broad terms, the pSWLP provides for permitted activities (i.e. those that do not require a resource consent to be obtained) where the effects of an activity are considered to be consistent with the outcomes sought in the Plan, without the need for further assessment from the Council. The costs associated with the consenting process are therefore targeted to activities where there is a greater risk of adverse environmental effects, and where further assessment by the Council is justified in order to ensure that these effects are appropriately managed. Consideration of the appropriate duration for consents is something that, in my view, should be considered on a case-by-case basis.

### **Urban and Industrial Discharges**

4.125 Twenty-five submissions were received that generally discuss concerns that the pSWLP has a focus on farming and seeking to amend the Plan to acknowledge the contribution of urban communities to water quality. Specifically, submitters such as Hopcroft Farm and H & C Stalker seek that wastewater treatment, septic tanks, sewerage systems/discharges, storm water and industrial discharges should have stronger regulation. Conversely, the territorial authorities seek greater flexibility for urban discharges. Some submitters question why industrial discharges are not mentioned.

4.126 Consideration of the specific provisions related to farming activities, and to discharges associated with urban activities (for example, community sewerage schemes) are discussed in this report in relation to the provisions governing these activities. At a general level, the pSWLP contains a range of provisions that seek to manage water quality, and are focussed on managing the effects of both point source and non-point sources discharges on water quality. As such, the Plan does not seek to 'target' or regulate particular activities more than others, rather it seeks to target the effects on water quality of various activities, ensuring that the regulation is commensurate with the anticipated effects of various discharges. For the avoidance of doubt, urban and industrial discharges are subject to rules, many of which require resource consent.

### **Consultation**

4.127 Several submitters seek further consultation. Lower Aparima CG and Hopcroft Farms seeks a collaborative process throughout the transition of the pSWLP, focusing on involving all parties and providing appropriate time to be equitable to all parties.

4.128 McPhelzo Trust & SDHB request specific information about consultation with the community. McPhelzo Trust seeks evidence that the Council is working cohesively and the Plan is supported by Venture Southland and the Southland Regional Development Strategy. SDHB seeks that a robust community strategy, as part of implementing the Plan to inform the public of the current state of water quality in Southland.

4.129 In my view, consultation and communication going forward is a matter for Council to consider outside of this planning process. For example, how community consultation and engagement is undertaken in relation to the FMU process is a matter to be considered when those processes are undertaken.

## **Simplification**

- 4.130 Two submissions were received seeking that the Plan is simplified. A few submitters, including Bayswater Dairy and O Gunn, seek that there is more detail in the Plan. Specifically, the submitters seek more information about FEMPs. SCB seeks that the Plan is appropriately annotated so that the line of logic in the Plan is clear. Growplan identifies that the jargon and specialist language is a barrier to understanding.
- 4.131 In general terms, I consider that the level of detail included in the pSWLP is appropriate. While I accept that the terminology used in the pSWLP often uses specialist terms, in my view this is required due to the nature of the activities that the Plan manages.

## **Timeframes**

- 4.132 Three submitters seek to extend timeframes for compliance with the pSWLP, but do not specify a date. Other submitters seek that implementation dates are rolled back so sufficient time is allowed to review the impacts of the Plan and for good science to be developed. Southwest Properties, Waikoaka Holdings and Tihaka Farms all seek changes from the status quo to be aligned with 30 May 2018 date in Rule 20 of the pSWLP. A Stevenson seeks the same timeframes for everyone. Rimu Grasslands & Leicester Downs seeks an implementation plan released before making the rules operative.
- 4.133 I note that section 20A of the RMA allows a 6-month period for consent to be applied for, where a regional rule is introduced that requires consent to be obtained. In certain circumstances, it may be appropriate to allow for further time before rules apply, as is proposed in several rules in the pSWLP, such as the requirement to establish and implement a FEMP. These specific timeframes are considered in more detail in this report in the assessment of specific provisions. At a general level, I do not consider that it is appropriate to extend timeframes for compliance further.

## **Review**

- 4.134 A W & T M Clarke Partnership and D Stevens seek a Plan review process as information comes to hand. Similarly, B & C McLeod seek to review rules regularly because of changing practices, climate change, new developments and the scientific models used may have to be altered. Arkley Farm seeks that the Plan be reviewed after three years and to disregard any items that have made no measurable environmental benefits.
- 4.135 I note that the RMA contains requirements to monitor the efficiency and effectiveness of the Plan provisions (section 35(2)(b)) and to review provisions within the Plan every 10 years (section 79(1)(b)). In my view, reliance on these general review provisions is sufficient.

## **General Water Quality Submissions**

- 4.136 Balfour, Wendonside & Waikaia Group, and T Barclay generally support the intent of the pSWLP and Council's commitment to "holding the line". T Barclay and A & B Hunt oppose any parts of the Plan that go beyond "holding the line".
- 4.137 Federated Farmers seeks to ensure that the pSWLP goes no further than set the fundamental approach for managing land and freshwater now, including the use of

GMP's to underpin on-farm activities; with no significant restrictions imposed on land use before the limit-setting process.

- 4.138 Several submitters seek no consenting requirements particularly for day to day work on farms. Others oppose the “blanket” rules approach or any requirements that restrict intensification. Numerous submitters seek that standards are guidelines and are not regulated and are up to the farmer to implement. For example, AdBest Partnership seeks an approach where desired outcomes are defined and individual farmers are free to achieve the desired outcome in their own ways.
- 4.139 The issues raised in these submissions are discussed elsewhere in this report.
- 4.140 Fish and Game seeks a number of general amendments to the Plan, largely related to the inclusion of new objectives, policies and rules to ensure freshwater objectives are achieved, nitrogen leaching standards are established and leaching rights are allocated within catchments. I note that the majority of the concerns raised in these general submission points are likely to be addressed in future FMU limit setting processes, including specifying freshwater objectives for each FMU and determining how land use and discharge activities will be managed accordingly. I do not consider that these general amendments sought by Fish and Game are appropriate ahead of the FMU processes.
- 4.141 The submission from Fish and Game also requests that land use and ancillary discharge activities are regulated to ensure that good environmental practices are achieved. I note that this is already a requirement of the Plan and therefore do not consider that any amendments are necessary.

### **Submissions not seeking specific changes**

- 4.142 A number of submitters identify concerns with the pSWLP without specifying what changes the submitters would like to see. These include:
- Cromel Valley Station consider that water users need to be accountable for river maintenance.
  - M C & S Copland seek to include a provision to require farmers to supply their fertiliser purchases to the Council.
  - J Campbell seeks that indigenous biodiversity is encouraged on all farming properties, especially in riparian strips and as shelter belts along with species to attract bees.
  - Cosy Nook Farms 2007 states that there needs to be checks and balances to safeguard farmer interests and ratepayer interests.
  - Fish and Game seeks to include new objectives, policies and rules for flood protection.
  - Growplan considers that there is too much emphasis of thresholds and limits and seeks incentivising environmental performance by setting targets and providing rates relief and consent fees relief.
  - S W & J M Gamble seeks that the Plan incorporates animal welfare and climate considerations.
  - S W & J M Gamble seeks to recognise fenced damable silt and nutrient ponds cleaned regularly on farm outlets as an effective tool for controlling both flow and quality.



- A McClure seeks compensation for farmers whose private property rights are affected by the rules and a market based model such as the Emissions Trading Scheme be considered.
- S McDonald & R Halder state that the Plan needs to acknowledge the relationship between Southland farmers and their land.
- A Mouat and G S & M A Clearwater seek to ensure the Plan addresses the effects of the Telford Trail and associated infrastructure for sediment and nutrient reductions.
- Tomogalak Gorge Trust (J Keen & L Keen) seeks less dairy farming in Southland, less cows wallowing in mud and waterways grazed, less “fragile land being sprayed off and developed”, and more indoor cow houses should be encouraged perhaps.
- S Payne seeks to make sensible rules on sediment run off, most silt comes from river banks.
- M & P White state that Otago Regional Councils strategies (no strategy specified) seem more reasonable, straightforward and practical.
- Hillview Trust seeks to consider current environmental gains and the level of investment made by farmers.
- B & S Blakely requests that Council look at the farmers causing the most impact.
- HNZ seeks a review of the use of ‘despite’ and ‘notwithstanding’ in the rules and to amend as necessary to achieve consistency and clarity.
- R Paterson & S Paterson seek that landowners control and protect waterways through a well implemented FEMP.
- R Greer seeks to recognise, provide for and encourage those farmers who already operate with lower levels of environmental effects.
- A & R Johnston make comments in relation to alternative feasible systems, simplistic calculations, acceptable approaches and reference to ISO 14000 Environment Management Practices.

4.143 These submitters may wish to clarify at the hearing the specific changes they are seeking to the Plan, to the extent that this is consistent with submissions that have been lodged. I also note that the subject matter of a number of these submissions is considered in more detail elsewhere in this report, and changes that are recommended may go some way to addressing the concerns of the above submitters.

### **General submissions on the rules**

4.144 Several submissions were received on the rules (generally), from seven submitters.

4.145 Ardel Dairies seeks to lower the upper classification of resource consents as it believes that some of the activity classifications are too harsh and do not allow the consenting party to prove that they can mitigate all environmental and consent factors. While the submitter has not specified which rules it is referring to, I note that a number of other submitters seek similar relief in relation to a number of the rules for farming activities. This submission is therefore addressed along with those submissions.

4.146 C P M Environmental seeks that the Plan has clear provision for new/innovative techniques in land and water to be considered under an “alternative solutions” where applicants can show that they achieve compliance. While this idea may have some merit, I note that a rule regime that provides for “alternative solutions” may require significant

redrafting, where submitters have not had an opportunity to comment on such amendments to the notified Plan. I do not recommend this submission be adopted.

- 4.147 DHL seeks that the rule regime is simplified where possible, however have not requested a specific decision.
- 4.148 Federated Farmers seek that the rules are amended so that permitted activities are at the beginning of each section. I note that this is inconsistent with the drafting style of the Plan and do not recommend this submission is adopted.
- 4.149 Fish and Game and Ngāi Tahu both request that unless specific changes are sought, the rules are retained as notified.

### **Clarification or Further Information Sought**

- 4.150 Some submissions were received seeking clarification or further information. These include:
- A R Horrell seeks to evaluate the role that river and stream bank erosion plays in estuary sedimentation.
  - Ardel Dairies seeks clarification of why there is no reference to the future limits that are going to be enforced as the next phase of the Plan.
  - T Haywood seeks clarification of how changing farming practice to winter grazing will affect tile drains and creeks.
  - Hort NZ seeks to clarify in the Plan that the values for freshwater management will be set through the FMU process.
  - ICC seeks to clarify the relationship between the pSWLP and the RCP, and which provisions will be administered in respect of discharges in the Coastal Marine Area.
  - Growplan suggests the use phosphate detection methods that detect more phosphate.
  - T McKee seeks clarification of how fast leaching is occurring.
  - E McLeod seeks clarification of the roles and responsibilities of a lessee and lessor. Similarly, Timothy Farms seeks clarification whether consents will be transferable to purchaser/lessee and whether there will be ongoing costs in keeping them.
  - Mid Aparima CG and H & C Stalker seek more detail around responsibilities.
  - Real Journeys seeks to outline the relationship between catchments, FMU's and physiographic zones in the Plan.
  - Several submitters state that there is no overview of how the penalty system will work.
- 4.151 I note that the subject matter of a number of these submissions is considered in more detail elsewhere in this report, and the discussion in those sections may provide the clarity or information sought by the above submitters.

### Submission that are not on the pSWLP

4.152 Some submissions were received not specifically on the Plan, including those relating to its implementation. These include:

- J A & D M Cleland and SJ Partnership seeks to put more responsibility on Council for responsibility of the Waikaka River, particularly willow clearance above and below the Waikaka Bridge.
- R J Christie seeks the Council and DOC “look at their own patch” in regards to the Regional Pest Management Strategy.
- DairyNZ seeks to establish a technical working group to work with primary sector stakeholders to finalise its management planning requirements.
- D Diprose seeks to use the process of check, clean and dry to ensure recreational users do not transfer diseases through contaminated gear.
- S McDonald and R Halder seek that implementation of the Plan should be accomplished with present or reduced staffing levels.
- C Robertson states that the cost of the Plan will lead to an increase in rates.
- Windyridge (Fleming) seeks that Council provide funding of native trees for waterways on farm properties.
- Glenaffric Partnership seeks to consider appointing a case manager that would discuss/negotiate a plan with the owners of each class of land.
- Timothy Farms seeks that more money is spent on monitoring.
- R Bowmar seeks that Council provides information about “the transactional (overhead) cost” associated with implementing and monitoring this plan.
- W Christie seeks a new provision be included into the Regional Pest Management Strategy that requires more vigilance in the management of ragwort to prevent its spread.

4.153 In my view, the matters raised in these submissions do not necessitate any changes to the pSWLP.

## 5. Objectives

### Introduction: Region-wide Objectives

- 5.1 The pSWLP introduces 18 Region-wide Objectives. These objectives are intentionally concise outcome driven statements, identifying a future state. The timeframe around this future state is not necessarily within the lifetime of this Plan.
- 5.2 The analysis of the submissions on the objectives of the pSWLP is broken down into three parts. These three sections are as follows:
1. those submissions that make a general commentary on the objectives;
  2. those submissions that support or oppose specific objectives, or seek changes to specific objectives; and
  3. those submissions seeking entirely new objectives.

### Submissions on the Objectives generally

#### Submissions and Analysis

- 5.3 Nine submissions were received on the pSWLP objectives generally.
- 5.4 Ngāi Tahu support the objectives, noting that they offer a strong directive for shaping the policies and rules that follow. The submitter requests that the objectives are retained as notified.
- 5.5 Fish and Game seek that sub-headings be inserted into the objectives of the pSWLP to provide guidance as to the subject matter of individual or groups of objectives.
- 5.6 It is my view that the objectives are concise and directive, with no ambiguity as to what subject matter they relate to. Further, the objectives are to be read as a whole. If sub-headings are introduced, there is a risk that relevant objectives may be given less weight when considered subject specific applications for resource consent. As such, I do not consider that including sub-headings provides additional clarification or improves the Plan.
- 5.7 J M & K B Dale and Ludell both support the objectives, however seek that the financial, economic and social repercussions to Southland of implementing the objectives are considered.
- 5.8 I note that in preparing the pSWLP, an assessment of the efficiency and effectiveness of the proposed provisions was undertaken in accordance with section 32 of the RMA. The efficiency and effectiveness assessment identifies and assesses the benefits and costs of the environmental, economic, social, and cultural effects anticipated from the implementation of the provisions, including expected changes to economic growth and employment opportunities. A number of submitters are critical of the section 32

assessment undertaken in support of the pSWLP, however none of those submitters provide any specific examples or evidence in support of their position.

- 5.9 Seaview Trust & Oraka Farms seek to amend the objectives to provide equal consideration to environmental, social, cultural and economic considerations in the Plan objectives.
- 5.10 I note that a number of similar submissions were made against Objective 9. The analysis of this submission is covered under Objective 9 of this report.
- 5.11 R Kempthorne seeks clarification of what objectives take precedence. R Kempthorne's submission specifically referred to Objectives 3, 4 and 5 and a potential conflict or double up with Objective 8 and 9.
- 5.12 Based on my reading and understanding of the objectives in the pSWLP, I do not consider that there is any conflict between the objectives. I note that the pSWLP states that these objectives should be read together in their entirety and I do not consider that any amendments are necessary to clarify this position.
- 5.13 W Devine is concerned two layers of policy and rules apply to the Southland region (i.e. the pSWLP and the RMA) and submits that people should only have to refer to one plan. W Devine also submits that all aquifers should be for public good and benefit, where landowners have the right to use water in a sustainable manner.
- 5.14 I note that Environment Southland has prepared the pSWLP in accordance with its obligations and the requirements set out in the RMA. A full assessment regarding how the proposed Plan meets the requirements of the RMA is detailed in the section 32 report and is not repeated here. I note that the sustainable management of groundwater is addressed in a number of objectives and do not consider that any amendments are required to give effect to the request from W Devine.

## Submissions on Specific Objectives

### *Objective 1*

*Land and water and associated ecosystems are managed as integrated natural resources, recognising the connectivity between surface water and groundwater, and between freshwater, land and the coast.*

### Submissions

- 5.15 There are 14 submissions on Objective 1, with 13 submissions in support, seeking either its retention in full or with amendment. Fish and Game seek amendments to the objective to ensure better consistency with Objective C1 of the NPSFM. In particular, Fish and Game believes the objective needs to provide for sustainable integrated management as follows:

*Land and freshwater and associated ecosystems are sustainably managed as integrated and connected natural resources from the mountains to the sea, recognising the ~~connectivity~~ interactions between surface water and groundwater, and between freshwater, land, associated ecosystems and the coast.*

- 5.16 Forest and Bird also seek to amend Objective 1 to ensure that land, water and associated ecosystems are sustainably managed.
- 5.17 DairyNZ seek that the objective is reordered to more clearly recognise that land use is the driver behind the effects on water quality and water quantity.
- 5.18 D Diprose wants the objective to recognise that the connection between surface water and groundwater is indirect and is influenced by other elements outside the landholding boundaries.

## Analysis

- 5.19 Objective 1 is well supported by submitters, with minor amendments sought from four submitters. The amendments sought by the Fish and Game generally have a neutral effect on the desired outcomes expressed in the objective. It is my view that they complicate the objective. I note that the use of the term “water” (as opposed to “fresh water”) at the beginning of the objective is intentional, as it seeks to capture both freshwater and coastal water. Given that the remaining requested amendments have either a neutral effect or do not improve the objective, it is my recommendation that the amendments proposed by Fish and Game are not adopted.
- 5.20 It is my view that the amendment sought by Forest and Bird is an improvement to the objective, with better alignment with the requirements set out in Part 2 of the RMA. I recommend the submission from Forest and Bird be accepted.
- 5.21 I note it is unclear what amendments are sought by the remaining two submitters. Without the benefit of seeing specific amendments to the objective, I do not recommend that the submissions from D Diprose or DairyNZ are accepted.

## Recommendation

- 5.22 Amend Objective 1 as follows:

*Land and water and associated ecosystems are sustainably<sup>146</sup> managed as integrated natural resources, recognising the connectivity between surface water and groundwater, and between freshwater, land and the coast.*

## Objective 2

*Water and land is recognised as an enabler of the economic, social and cultural wellbeing of the region.*

## Submissions

- 5.23 There are 46 submissions on Objective 2, with 28 submissions in support, 21 of whom request that the objective is retained without amendment.
- 5.24 Some submitters are concerned that a full economic analysis was not undertaken to support the Plan, with eight submitters requesting that an economic study is completed

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<sup>146</sup> 279.3 Forest and Bird

to determine the impact on individual areas or particular physiographic zones prior to the Plan being implemented. Several submitters seek recognition that farming is the backbone of the Southland economy, with amendments sought to the objective to ensure the social and economic impacts on rural communities are recognised in the development of all policy and regulation. S Hastie seeks that the objective is amended to include emphasis on supporting farmers, in helping build their businesses and drive economic growth.

- 5.25 Three submitters seek amendments to the objective to ensure water and land is sustainably managed. Two of these submitters (Ballance and FANZ) believe their proposed amendments will strengthen the objective to align with the purpose of the RMA. The submitters believe that in order for the “three well-beings” to be enabled, the sustainable management of water and land must both “recognise and provide for” the economic, social and cultural wellbeing of the region. Another submitter also seeks amendments to strengthen the policy by recognising water and land as a “significant” provider of the wellbeing of the region.
- 5.26 Federated Farmers are concerned that Objective 2, as currently written, does not identify a goal or outcome sought in managing the use of land and freshwater; rather it identifies the issue. The submitter states that Objective 2 is the only one of 18 objectives that recognises that land and freshwater are resources which are used by people and communities in Southland to provide for their economic and social well-being. The submitter believes that the use of land and freshwater for farming purposes drives the economy and community of Southland and this needs to be recognised and provided for in the pSWLP objectives.
- 5.27 Fish and Game seek amendments to Objective 2 to include recognition of ecosystem health, ecological processes, natural character and ecosystem services to the economic, social, and cultural aspects within Objective 2, with the addition of human health as an aspect within the objective. In addition, the submitter believes there is a need to include sustainable limits to provide for these aspects.
- 5.28 Similarly, Forest and Bird seek amendments to Objective 2 to use the land for economic, social and cultural wellbeing within sustainable limits.
- 5.29 W Devine submits that there needs to be real consideration to utilise the freshwater resource that flows into Deep Cove to be sold for the public benefit, where significant royalties would need to be imposed on the commercial gain. The submitter believes that processes should be in place which encourages local Councils to allow pumped grey waste water to connect to centralised sewage networks instead of restricting the size of lots. This would still require onsite septic tanks as the primary treatment of household sewerage.
- 5.30 M Taylor seeks to include an additional objective or modify Objective 2 to ensure the costs imposed on landowners are not prohibitively expensive or disproportionate to the environmental gains envisaged.

## Analysis

- 5.31 Objective 2 will guide decision making on both the FMU processes and resource consents. It is important to retain this objective in the pSWLP, so that consideration is given to economic, social and cultural wellbeing as part of the sustainable management of the natural and physical resources in the Southland region.
- 5.32 The provisions in the pSWLP are set to meet the Council's obligation to (amongst other things) maintain or improve water quality.<sup>147</sup> In order to achieve this outcome, it is clearly understood by both the Council and submitters there will be a cost to the resource user to improve land use practices (including, but not limited to, farming and associated discharge activities). Further economic analysis will be undertaken through the future FMU processes when area specific provisions will be derived. While the cost of mitigation and some new consenting costs are unavoidable, the measures are considered necessary to cease further degradation of the environment (and ultimately, the economic, social and cultural well-being of the region). Several submitters have requested that a full economic assessment is undertaken prior to the pSWLP being implemented, however there is no option for the Council, under the RMA, to ignore the direction set out under the NPSFM to delay the implementation of the pSWLP while awaiting further economic analysis, beyond that already undertaken as part of the section 32 analysis. As such, I do not recommend that the request from the submitters is accepted.
- 5.33 The amendments sought by Ballance and FANZ are consistent with the outcomes sought by the pSWLP. However, I note that this particular objective only seeks to recognise the role that the natural and physical environment plays in social, economic and cultural well-being, rather than specifying how those resources are to be managed. These comments also apply to the submission from Federated Farmers and Forest and Bird. I therefore do not recommend the submissions from these four submitters be adopted.
- 5.34 The submission from Fish and Game requests amendments to recognise the benefits of natural systems and processes to human health and social and economic wellbeing. While it is unclear from the submission what particular amendments are sought, I note that these matters are addressed in a number of other objectives<sup>148</sup> in the pSWLP. Given that these matters have already been addressed elsewhere in the pSWLP and that the objectives in the pSWLP are to be read and considered together in their entirety, I do not consider it necessary to provide for the matters sought by the submitter in this objective.
- 5.35 The submission from W Devine does not request specific amendments to Objective 2 and it is therefore unclear what relief is sought.

## Recommendation

- 5.36 Retain Objective 2 as notified.

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<sup>147</sup> Objective A2 NPSFM

<sup>148</sup> Objectives 3, 8, 9, 13, 14 and 17.



### **Objective 3**

*The mauri (inherent health) of waterbodies provide for te hauora o te tangata (health of the people), te hauora o te taiao (health of the environment) and te hauora o te wai (health of the waterbody).*

### **Submissions**

- 5.37 Objective 3 received 11 submissions, with seven in support, requesting that the objective is retained as notified. R Kempthorne noted there is duplication between Objectives 3, 4 and 5. The submitter seeks that clarification is provided so that the pSWLP can be clearly interpreted.
- 5.38 Ravensdown seeks to retain the intent of Objective 3. However, Ravensdown seeks clarification on how achieving the objective will be measured. J Gardyne considers the objective to be unmeasurable and seeks that it is deleted.
- 5.39 SIEIA seeks to amend the objective to manage activities that adversely affect the habitat of taonga species, specifically shortfin and longfin eels, listed in Appendix M.
- 5.40 Federated Farmers seek to delete Objectives 3, 4, 5 and 15, stating that Objective 3 is not an objective but reads as a description of mauri or what mauri should provide for. The submitter seeks one objective recognising and providing for Ngāi Tahu's customs and traditions and Ngāi Tahu's ability to exercise kaitiakitanga over freshwater resources.

### **Analysis**

- 5.41 Objective 3 of the pSWLP is considered to be an appropriate way to achieve the direction set out in Section 6(e) and 7(a) of the RMA, which includes provision for the exercise of Kaitiakitanga in accordance with tikanga Māori. Including mauri (inherent health) of waterbodies that provides for three key considerations of the environment as an objective for the Southland region is consistent with tikanga Māori (customary values and practices). This objective does not duplicate the outcomes sought by Objective 4 (the identification and reflection of Tāngata whenua values and interests in the management of freshwater and associated ecosystems) or Objective 5 (Ngāi Tahu has access to, and sustainable use of, food gathering sites). Rather, these objectives (3, 4 and 5) are complementary. Given that Objectives 3, 4 and 5 address three distinct management areas, it is my view that amendments to Objective 3 are not necessary to clarify this position.
- 5.42 For similar reasons, I do not believe that Objectives 3, 4, 5 and 15 should be deleted and replaced with only one objective that recognises and provides for Ngāi Tahu's customs, traditions and ability to exercise kaitiakitanga. Therefore, I do not recommend the submission from Federated Farmers be adopted.
- 5.43 The submission from the SIEIA suggests amendments to Objective 15, but does not provide similar relief for Objective 3. Without further clarification from the submitter, I do not recommend its submission in relation to Objective 3 is adopted, as outwardly, the submission would appear to be more relevant to Policy 3 (Taonga species protection).

## **Recommendation**

5.44 Retain Objective 3 as notified.

### ***Objective 4***

*Tāngata whenua values and interests are identified and reflected in the management of freshwater and associated ecosystems.*

## **Submissions**

- 5.45 There are 13 submissions on Objective 4, with eight in support seeking that the objective is retained as notified. Federated Farmers seeks to delete Objective 4 (refer to the above analysis of Objective 3).
- 5.46 A Wilson and S Wilson seek that the definition of “tāngata whenua” in relation to Objective 4 be amended to include all residents and peoples of Southland. This submission is addressed in the definitions section of this report.
- 5.47 Hort NZ seeks to amend Objective 4 to make clear that tāngata whenua values and interests are identified through the FMU process.
- 5.48 Ravensdown seeks to retain the intent of Objective 4. However, Ravensdown seeks amendments to recognise tāngata whenua values (rather than those values being identified and reflected) in the management of natural resources.

## **Analysis**

- 5.49 In order to recognise tāngata whenua values in the management of freshwater and associated ecosystems, those values must first be identified. It is my view that the term “recognise” (in relation to tangata whenua values), is a weakening of the outcome sought by the objective. The use of the word “reflect” ensures closer alignment with the tāngata whenua values identified by Ngāi Tahu. I therefore do not recommend that the submission from Ravensdown is adopted.
- 5.50 The submission from Hort NZ correctly identifies one avenue to identify tāngata whenua values. However, given that these values may be identified via other means (such as through the development of iwi management plans), I do not consider it appropriate to limit the identification of values through the FMU process. As such, I do not recommend that the submission from Hort NZ is adopted.

## **Recommendation**

5.51 Retain Objective 4 as notified.

### **Objective 5**

*Ngāi Tahu have access to and sustainable customary use of, both commercial and non-commercial, mahinga kai resources, nohoanga, mātaaitai and taiāpure.*

### **Submissions**

- 5.52 There are 10 submissions on Objective 5, with seven in support seeking that the objective is retained as notified. R Kempthorne notes that there is duplication between several objectives (including Objective 3) and seeks that clarification is provided so that the pSWLP can be clearly interpreted, including an English translation of Māori words.
- 5.53 Federated Farmers seeks to delete Objective 5 (refer to the analysis of Objective 3). J Gardyne also seeks to delete the objective as he is unsure whether this is an objective or an action.

### **Analysis**

- 5.54 Under section 66 (2)(c)(iii) of the RMA, the Council must have regard to any regulations relating to ensuring sustainability, or the conservation, management, or sustainability of fisheries resources (including regulations or bylaws relating to taiāpure and mahinga mātaaitai). Objective 5 seeks to ensure that Tangata whenua have access to and the sustainable use of sources of mahinga kai, whether or not these have been formally identified and/or protected as mātaaitai and taiāpure.
- 5.55 The introduction section of the pSWLP includes a section describing the partnership between Environment Southland and Ngāi Tahu ki Murihiku. This section of the pSWLP provides a clear translation and explanation of the concepts behind the te reo Māori (Māori language) used in Objective 5. Given that the te reo used in Objective 5 is already explained elsewhere in the pSWLP, I do not consider it necessary to include definitions of these terms within the body of the objective. I therefore recommend that the submission from R Kempthorne is rejected.
- 5.56 Objective 5 sets a clear outcome for the Southland region, where if the objective is achieved, it would result in Ngāi Tahu having access to mahinga kai, nohoanga, mātaaitai and taiāpure. I do not consider that the objective needs to be deleted on the basis that it is an “action”, nor that it requires amendment to ensure it better expresses a particular environmental outcome. I do not recommend that the submission from J Gardyne be adopted.

### **Recommendation**

- 5.57 Retain Objective 5 as notified.

## **Objective 6**

*There is no reduction in the quality of freshwater, and water in estuaries and coastal lagoons, by:*

- (a) maintaining the quality of water in waterbodies, estuaries and coastal lagoons, where the water quality is not degraded; and*
- (b) improving the quality of water in waterbodies, estuaries and coastal lagoons, that have been degraded by human activities.*

## **Submissions**

- 5.58 Objective 6 received 31 submissions with nine in support. Three submitters seek that the objective be retained without amendment. Drylands Farming and Drysdale Family Trust support Objective 6 however state that all farmers want to maintain water quality and seek recognition of farmers already practising best management.
- 5.59 Several submitters are concerned that Objective 6 is overly restrictive, more so than the requirements set out in the NPSFM and the NZCPS. In particular, the territorial authorities are concerned that Objective 6 does not provide for necessary infrastructure discharges (irrespective of any measures to mitigate and remedy effects). In their submission, the territorial authorities state that the wording in the NPSFM refers to improving water quality where it has been degraded to the point of being over allocated and are concerned that the pSWLP does not provide this context. Fonterra raises a similar issue in its submission. In addition, the territorial authorities raise concerns with the interpretation of the NPSFM, particularly around the “overall water quality of a region”, and whether some changes in quality may be provided for if it remains within the designated “attribute state”. They also note that Policy 21 of the NZCPS seeks that priority is given to improving water quality where it has deteriorated to a level where it is having significant adverse effects. To address these concerns about the restrictive nature of Objective 6, submitters seek to amend the objective so that “overall” water quality is maintained or improved to meet freshwater objectives.
- 5.60 Similarly, several other submitters seek that the objective is amended so that improvements to degraded water bodies only occur if the water body is degraded to the point of being over-allocated. Fulton Hogan and Southern Aggregates seek amendments to tolerate some deterioration of water quality where it is deemed appropriate. Federated Farmers seeks amendments where water quality is maintained where it is in a healthy state and improved where it is degraded. Contrary to these submissions, other submitters seek amendments so that the primary outcome is to improve water quality (rather than there is no reduction in the quality of water).
- 5.61 While Fish and Game oppose Objective 6, the submitter acknowledges the first priority for the region is to cease further degradation of water quality. In regards to the requirement to improve water quality for degraded waterbodies, the submitter expresses its concern that the pSWLP does not:
- (a) Identify which waterbodies have been degraded; and
  - (b) Provide a minimum level of improvement within set timeframes
- 5.62 Fish and Game seeks amendments to Objective 6 which set a minimum level of improvement in a number of water quality parameters by 2020 (similar to Objective 4 in the operative RWP). In addition, the submitter requests that the pSWLP includes a

definition of waterbody and a new schedule is included that identifies which water bodies have been degraded by human activities. Other submitters have sought similar amendments so that it can be determined whether a waterway requires improvement in water quality and what that would look like.

- 5.63 DairyNZ states that the objective contains some internal inconsistencies, committing in the first instance to “no reduction in the quality of freshwater” but then going on to require improvement in the quality of water. DairyNZ seeks amendment to provide a more logical connection between the primary and secondary objectives. Ravensdown supports the intent of Objective 6, but also seeks amendments to improve the structure, as follows:

*There is no reduction in the quality of freshwater, and water in estuaries and coastal lagoons, by:*  
(a) *maintaining the quality of water in ~~waterbodies, estuaries and coastal lagoons, where the water quality it is not degraded;~~ and*  
b) *improving the quality of water in ~~waterbodies, estuaries and coastal lagoons, that have where it has been degraded by human activities.~~*

- 5.64 H & H Blakely requests that the Council consider and include provisions to control the environmental impact that urban built up areas are having on the water quality in Southland, as well as the farming areas that have diversified.
- 5.65 Ernslaw One seeks to amend Objective 6 to align “with current Central Government work on water allocation and pricing, while making provision for Iwi rights and interests in freshwater. As per the Land & Water Forum recommendation 131e, ensure that water use efficiency criteria apply to all users, not just those under a new regime”.

## Analysis

- 5.66 As raised by several submitters, the genesis of Objective 6 sits with Objective A2 of the NPSFM, which states:

*The overall quality of fresh water within a region is maintained or improved while:*  
(a) *protecting the significant values of outstanding freshwater bodies;*  
(b) *protecting the significant values of wetlands; and*  
(c) *improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.*

- 5.67 The NPSFM goes on to further define the meaning of “over-allocated” as a resource that has been allocated to users beyond a limit, or is being used to a point where a freshwater objective is no longer being met.
- 5.68 While Objective A2 allows for some variability in water quality (as long as the overall water quality is maintained or improved), the meaning of “overall quality” of freshwater within a region has been tested through a number of other regional planning processes. The meaning of “overall quality” has also been considered by the Courts.<sup>149</sup> As described in section 2, the courts do not support an “unders and overs” approach, where the water quality may deteriorate in one area so long as there is improvement elsewhere.

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<sup>149</sup> See section 2, in particular, the discussion on *Kabungungu*

- 5.69 The pSRPS contains two objectives that seek to give effect to Objective A2 of the NPSFM. Objective WQUAL.1 of the pSRPS sets the overall framework for the management of water quality in Southland, with a goal to maintain water quality, or improve it in accordance with freshwater objectives formulated in accordance with the NPSFM. It recognises the effects of water quality on the life-supporting capacity of water and related ecosystems. It also requires that the health of people and communities is safeguarded in accordance with the NPSFM.
- 5.70 Objective WQUAL.2<sup>150</sup> specifically addresses lowland water bodies, which typically have lower water quality. Objective WQUAL.2<sup>151</sup> aims to cease further decline in water quality in lowland water bodies and improve water quality in accordance with freshwater objectives formulated in accordance with the NPSFM. It should be noted that the pSRPS does not use the word “overall” in relation to maintaining or improving water quality.
- 5.71 Objective 6 is consistent with the objectives of the NPSFM and the approach outlined by the courts in the Kahungunu case, in that there is to be no reduction in the quality of freshwater by:
- (a) maintaining the quality of waterways where the water quality is not degraded; and
  - (b) improving the quality of waterbodies where they have been degraded by human activities.
- 5.74 The objective does not go into detail about variability of specific water quality attributes, which may be provided when defining freshwater objectives in future FMU processes. Given the clear direction set out by the courts in the meaning of “overall quality”, the particular wording of Objective 6 is considered necessary and appropriate to meet the requirements set out in Objective A2 of the NPSFM. Additionally, it provides sufficient guidance to those making decisions on future plan changes (as part of the FMU processes) and any resource consent application for activities that may impact on water quality (including both rural and urban activities). Given that the wording of Objective 6 is consistent with Objective A2 of the NPSFM and gives effect to Objectives WQUAL.1 and WQUAL.2<sup>152</sup> of the pSRPS, I do not recommend that the suggested amendments proposed by the territorial authorities, DairyNZ, Ballance and FANZ are adopted. Similarly, I do not recommend the submission from Fulton Hogan and Southern Aggregates be adopted, as it is inconsistent with the direction set out in the NPSFM and the pSRPS.
- 5.75 Objective 6 is set at an aspirational level and provides guidance for future FMU processes, where freshwater objectives (including timeframes for any improvements) will be set. While it is considered important to define which waterways require improvement, it is my view that the most appropriate place for this to occur is via the FMU process. In addition, I consider it inappropriate to specify water quality targets in Objective 6 as these may not be suitable for all waterways, and are not well suited to the drafting of an objective. As such, I do not recommend adopting the submissions requesting that degraded waterways are identified or water quality targets be specified in Objective 6.

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<sup>150</sup> Still subject to appeal

<sup>151</sup> Still subject to appeal

<sup>152</sup> Still subject to appeal

- 5.76 I note the submission from Ernslaw One does not appear to be related to the subject addressed by Objective 6. It is unclear what relief the submitter seeks in relation to this objective.

### **Recommendation**

- 5.77 Retain Objective 6 as notified.

### **Objective 7**

*Any further over-allocation of freshwater (water quality and quantity) is avoided and existing over-allocation is phased out in accordance with timeframes established under Freshwater Management Unit processes.*

### **Submissions**

- 5.78 There are 17 submissions on Objective 7, with four in support seeking it is retained without amendment. Timpany Investments has requested that the objective be further defined in an objective manner, so that improvement in water quality will be incorporated as a measurable target and timeframes will be genuinely achievable. J Gardyne opposes Objective 7 and seeks that it is deleted.
- 5.79 Fish and Game seeks that the objective is amended so that, if freshwater objectives have not yet been set via the FMU process, further allocation of freshwater is avoided and existing over-allocation is phased out when considering consent applications for land use and/or discharge activities. DOC raises similar concerns in its submission.
- 5.80 Ballance and FANZ seek amendments to better align the objective with the purpose of the RMA and the FMU process anticipated by the NPSFM. In its submission, Ballance notes that it is important that any timeframes to address over-allocation are fair, reasonable and achievable, and should be established in consultation with affected parties.
- 5.81 Similarly, Federated Farmers considers that it is not yet known whether Southland's water is 'over-allocated' and this will become known through the limit-setting process. Federated Farmers seeks to amend Objective 7 as the submitter considers it to be a policy rather than an objective.
- 5.82 Ravensdown supports Objective 7 in part, however questions the intent of the objective, as it is not clear how water quality can be 'over-allocated' and seeks to amend the objective to refer to contaminants (nutrients, sediment and pathogens).
- 5.83 The Oil Companies seek to amend Objective 7 to recognise that it is appropriate to provide for water takes for temporary construction dewatering activities.
- 5.84 Aratiatia Livestock seek specific amendments to the objective to provide for the integrated management of freshwater resources in the Manapouri catchment by aligning the resource consent for the Manapouri Hydro Scheme (expires in 2031) with the timeframes specified in the NPSFM (i.e. 2025).

- 5.85 Ernslaw One seeks to amend Objective 7 to align “with current Central Government work on water allocation and pricing, while making provision for Iwi rights and interests in freshwater. As per the Land & Water Forum recommendation 131e, ensure that water use efficiency criteria apply to all users, not just those under a new regime”.

## Analysis

- 5.86 In its submission, Federated Farmers correctly notes that the allocation status of all waterways in Southland is not yet known and that these will be identified via the limit setting process. The suggested amendments from Federated Farmers improve the objective, while retaining the intent. I recommend the amendments sought by Federated Farmers be adopted, with the exception that it remains as an objective (rather than be included as a policy, as sought by the submitter). In my view the objective is appropriately phrased as an outcome and how further over-allocation is to be avoided and existing over-allocation phased out is then directed at the policy level.
- 5.87 The submissions from Fish and Game and DOC have merit. However, in the absence of any further catchment specific information established through the FMU limit setting process, and noting that the provisions in the pSWLP are to be read together in their entirety, any application for resource consent made prior to the FMU limit setting process for that particular area will be considered in the context of the pSWLP. It is my view that Objective 6 (which requires that water quality is maintained or improved) and Objectives 9 and 12 (management of water quantity and flows) are sufficient to ensure that further over-allocation will be avoided prior to the limit setting process. In addition, I note that when considering an appropriate duration for a resource consent, Policy 40 enables council to consider the timing of FMU processes and may consider whether granting a shorter or longer duration will better enable implementation of any revised frameworks established through those processes. Given the other provisions in the pSWLP are considered sufficient to provide the Council with adequate guidance prior to the FMU processes, I do not consider that the amendments requested by Fish and Game are necessary.
- 5.88 Policy E1 of the NPSFM specifies that every regional council is to implement the policies in the NPSFM so it is fully completed by no later than 31 December 2025. The Southland Regional Council intends to complete its FMU limit setting programme by December 2025, thus meeting the implementation timeframes set out in the NPSFM. While the Southland Regional Council may review resource consents to ensure they align with new provisions in a regional plan, there is no ability for the Council to reduce the duration of a consent. As such, I do not consider that any amendments are required in response to the submission from Aratiatia Livestock.
- 5.89 As set out in Section 5.3.7 of the section 32 report, I note that the appropriateness of Objective 7 has been evaluated and it is considered that the objective, as it is currently written, assists in achieving the primary purpose of the RMA. Without further information supporting its submission, I do not consider that the amendments sought by FANZ are necessary.
- 5.90 It is anticipated that the FMU limit setting processes set out in the pSWLP (and directed by the NPSFM) will be undertaken in close collaboration with members of the community who are directly affected by those changes. While the provisions in the NPSFM and the pSWLP do not specifically require collaboration between the Council,



community and other stakeholders, it is considered current best practice and will likely result in a more achievable and reasonable outcome. While the council will likely seek to engage in a collaborative process, there is no statute that compels the community to participate in such processes. Given that there is no certainty that collaboration will occur (despite the strong likelihood that the Council will promote and advance collaboration), I do not consider that the amendments sought by Ballance are appropriate. I also note the assessment of the new policy sought by Federated Farmers is assessed with the submissions on the FMU policies.

- 5.91 In response to concerns raised by Ravensdown, I note that the NPSFM provides a clear definition of “over-allocation”, which also applies to water quality. The definition reads:

*Over-allocation is the situation where the resource:*

- (a) has been allocated to users beyond a limit; or*
- (b) is being used to a point where a freshwater objective is no longer being met.*

*This applies to both water quantity and quality.*

- 5.92 Given that freshwater outcomes and any associated water quality limits are yet to be defined, I do not recommend that the objective is amended to include any particular water quality attribute or contaminant, as requested by Ravensdown.

- 5.93 The temporary abstraction of water for dewatering purposes may exacerbate any adverse cumulative effects on both surface water and groundwater. While these activities may be necessary to enable some construction activities to commence, taking into consideration the clear direction set out in the NPSFM, it is my view that an exemption for temporary activities should not be provided for in over-allocated catchments. In order to minimise the effect of water abstraction for temporary construction activities on over-allocated catchments, I consider it more appropriate that any abstracted water should be returned to the same water body or aquifer so that the net effect of the abstraction on water allocation is effectively nil (consistent with the submitters requested amendments to Policy 21, which is further discussed in section 6 of this report). Given the non-consumptive nature of such abstractions, I do not consider they should be counted against an allocation limit and, subsequently, amendments to Objective 7 are not considered necessary.

## **Recommendation**

- 5.94 Amend Objective 7 as follows:

~~Any further~~<sup>153</sup>*Over-allocation of freshwater (water quality and quantity) is avoided and any<sup>154</sup> existing over-allocation is phased out in ~~it~~<sup>155</sup> accordance with timeframes established under Freshwater Management Unit processes.*

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<sup>153</sup> 265.20 Federated Farmers

<sup>154</sup> 265.20 Federated Farmers

<sup>155</sup> Cl 16 typo

### **Objective 8**

- (a) *The quality of water in aquifers that meet both the Drinking-Water Standards for New Zealand 2005 (revised 2008) and any freshwater objectives, including for connected surface waterbodies, established under Freshwater Management Unit processes is maintained; and*
- (b) *The quality of water in aquifers that have been degraded by land use and discharge activities (with the exception of those aquifers where ambient water quality is naturally less than the Drinking-Water Standards for New Zealand 2005 (revised 2008)) is improved.*

### **Submissions**

- 5.95 Objective 8 received 17 submissions, seven of which seek that the objective is retained as notified. Growplan seeks that standards cited in the objective are included in the pSWLP.
- 5.96 J Gardyne opposes Objective 8 and seeks to combine it with Objective 6 as they believe there is repetition between these objectives. In addition, the submitter seeks clarification of how water quality can be improved in areas where water quality cannot be improved.
- 5.97 Ravensdown supports the intent of the objective, however seek amendments as it believes that the objective is a mix of what is to be achieved (an objective) and how it will be achieved (a policy). Similarly, Federated Farmers seeks to delete Objective 8 as it believes it is written as a policy not an objective. The submitter also states that objectives for groundwater are better expressed in Objective 12, though it only deals with levels, not quality. The new objective sought by Federated Farmers is addressed in the analysis of Objective 12.
- 5.98 DOC seeks to retain Objective 8 with amendment recognising the spring fed creek water quality standards in Appendix E.
- 5.99 Ballance seeks amendments to clause (a) to remove reference to the FMU limit setting processes, as it believes there is uncertainty relating to both the process and the outcomes. BD Farm Trust seeks amendments to clause (b) to ensure that any improvement in water quality is to an level agreed by the catchment's community.
- 5.100 Fonterra seeks clarification of what the term "degraded" means and whether this constitutes "does not meet the Drinking Water Standards for New Zealand 2005 (revised 2008)". Fonterra also seeks clarification of the term "freshwater objectives" as it states it is not defined and it is unclear whether it refers to objectives or standards currently in, or referenced in, the pSWLP or whether it refers to objectives yet to be determined through the FMU process.
- 5.101 Fish and Game seeks amendments to introduce additional details to the objective, in particular, what methods will be undertaken to ensure water quality will be improved (i.e. through land use and discharge provisions and rules) and a date by which compliance with the relevant standards will be achieved. In addition, Fish and Game seeks to include reference to the water quality standards (set out in Appendix E of the pSWLP) for spring fed streams.

## Analysis

- 5.102 Proposed Objective 8 is consistent with the requirements set out in the NPSFM, particularly Objective A2. While there is inherent uncertainty about the outcome of the FMU limit setting process, the terms of those processes are sufficiently certain to ensure that any resulting outcome (including the freshwater objectives) will meet the requirements of the RMA (for the sustainable management of natural resources) and the NPSFM (to maintain or improve water quality). Given the importance of the limit setting FMU processes and need to adhere to such limits (once set), it is important to include the reference to the outcome of those processes in Objective 8.
- 5.103 While there will likely be close collaboration with communities during the FMU limit setting processes, it is entirely possible that not all parties are in agreement to the outcomes. As such, the suggested amendments from BD Farm Trust do not provide the certainty required for objectives in a planning document. Even so, the amendments sought from BD Farm Trust seek to define what level of improvement in water quality is anticipated, as the objective is silent on this matter. This is further explored by Fish and Game, where it requests amendments to ensure that the Drinking Water Standards for New Zealand 2005 (revised 2008) are met by 2020. As per the discussion on Objective 6, it is not considered appropriate to define a timeframe to meet set water quality standards across the Southland region, as it is generally understood that some areas may take longer to reach such milestones. I consider it to be more appropriate to set the timeframes to achieve the freshwater objectives through the FMU limit setting process. I consider it appropriate to include reference to the Drinking-Water Standards for New Zealand 2005 (revised 2008), however I note that the FMU process may result in different objectives for the quality of water in aquifers. To be consistent with clause (a) I recommend that the submission from Fish and Game to amend clause (b) is adopted in part, with consequential amendments to provide for other freshwater objectives established under the FMU process.
- 5.104 I do not recommend adopting the amendments requested by Fish and Game to clause (a), as the water quality of surface water bodies is addressed in Objective 6.
- 5.105 On close reading of the submission from Fonterra and Objective 8, it is my view that the objective clearly specifies that freshwater objectives are those which are established under the FMU process. It is my view that the amendments to clause (b), as sought by Fish and Game, may address Fonterra's submission seeking clarification on what "degraded" means, where improvements in water quality will be required so that either freshwater objectives or the drinking water standards are met.
- 5.106 I note that the Drinking-Water Standards for New Zealand 2005 (revised 2008) is a readily available document for Plan users.<sup>156</sup> Incorporating standards in regional plans by reference is provided for in clause 30(1) of schedule 1 of the RMA. It is common planning practice and typically used when a whole document or standard is relevant to the Plan but too large to be practicably incorporated into the text. I do not recommend the relevant standards be incorporated into the text of the pSWLP.

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<sup>156</sup> Documents incorporated by reference are made available to view at the Environment Southland offices or on the Environment Southland website, Copies of the document can also be requested from the council.

## Recommendation

5.107 Amend Objective 8 as follows:

- (a) *The quality of water in aquifers that meet both the Drinking-Water Standards for New Zealand 2005 (revised 2008) and any freshwater objectives, including for connected surface waterbodies, established under Freshwater Management Unit processes is maintained; and*
- (b) *The quality of water in aquifers that have been degraded by land use and discharge activities (with the exception of those aquifers where ambient water quality is naturally less than the Drinking-Water Standards for New Zealand 2005 (revised 2008)) is improved so that the quality of water in aquifers meets the Drinking-Water Standards for New Zealand 2005 (revised 2008)<sup>157</sup> and any freshwater objectives established under Freshwater Management Unit processes<sup>158</sup>.*

## Objective 9

- (a) *The quantity of water in surface waterbodies is managed so that aquatic ecosystem health, life-supporting capacity, outstanding natural features and landscapes, recreational values, natural character, and historic heritage values of surface waterbodies and their margins are safeguarded; and*
- (b) *Provided (a) is met, water is available both instream and out-of-stream to support the reasonable needs of people and communities to provide for their social, economic and cultural wellbeing.*

## Submissions

5.108 Objective 9 received 45 submissions, with 14 in support seeking that the objective is retained as notified, while one submitter seeks that the objective be deleted. Eighteen submitters opposed Objective 9 on the basis that equal weighting is not afforded to social, economic, cultural and environmental values in the Southland region, however alternative wording has not been provided by the submitters.

5.109 J Bythell has sought clarification on the definition of “reasonable needs for economic wellbeing” in regards to water abstraction. Stevenson A seeks provision to free up water for changing needs in the region.

5.110 Hort NZ seeks to amend Objective 9 to specify that recreational and historic heritage values will be identified through the FMU process. Similarly, INZ are concerned that the objective sets priorities beyond the compulsory values contained in the NPSFM, and that the future community based processes will identify the values for each FMU. The submitter notes that if these values are to be included in the objective, then these values should be considered and not safeguarded. KiwiRail also seeks that historic heritage values are removed from the objective on the basis that historic heritage values are typically associated with structures (either in or over surface water bodies) rather than the quantity of water within the surface water body.

5.111 Fonterra seeks to amend Objective 9 to remove recreational values from (a). In its submission, Fonterra states that recreational values can be variable in form and change over time. The submitter considers recreational values are better met after the

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<sup>157</sup> 752.24 Fish and Game

<sup>158</sup> Consequential amendment to 752.24 Fish and Game

fundamental and high priority values are met, that is they sit best within (b) and can be considered part of social wellbeing.

- 5.112 Fish and Game seeks amendments so that Objective 9 also applies to the management of land use to maintain the quality of water in waterbodies and coastal water.
- 5.113 Federated Farmers seeks to delete Objective 9 and replace it with two new objectives. It submits that the objective (as notified) sets up a hierarchy between in-stream and out-of-stream values and uses of freshwater which does not exist in either Part 2 of the RMA or in the NPS-FM. The submitter requests the following amendments:

*Objective X*

~~Provided (a) is met, water is available both instream and out-of-stream to support the reasonable needs of people and communities to provide for their social, economic and cultural wellbeing.~~

*Objective X*

The flows and levels in rivers and lakes have depth and variability to support geomorphic functions, maintain healthy aquatic ecosystems, and support a range of values and uses.

- 5.114 Two submitters seek amendments to the objective to provide for two particular issues, with P & J Horrell seeking that the Lower Waiau is acknowledged as a unique situation. Aratiatia Livestock seek to draw attention to the impacts of the invasive freshwater specie didymo, noting that it considers that ES has an overarching responsibility to review and monitor the adequacy of the biosecurity management plans that the statutory managers of freshwater fisheries (Fish and Game) have in place.

## Analysis

- 5.115 The pSWLP provides an opportunity to review the default flow and level provisions set in the pSWLP through the future FMU limit setting processes. If, after establishing revised flow and level regimes through the FMU process, waterways are still classified as fully or over-allocated, there is no opportunity to free up additional water or reallocate existing abstractions to other uses during the term of existing consents.<sup>159</sup> However, the RMA<sup>160</sup> clearly states that a natural resource may be allocated in anticipation of the expiry of existing consents, where a rule may allocate all of the resource used for an activity to the same type of activity; or allocate some of the resource used for an activity to the same type of activity and the rest of the resource to any other type of activity or no type of activity. Given the future FMU limit setting processes will be consistent with guidance set out in the RMA concerning the allocation of natural resources, I do not consider that any amendments are necessary to “free up” water for changing needs.
- 5.116 I agree with Hort NZ and INZ that the catchment specific values will be identified through the FMU processes, however given that the matters listed in clause (a) are consistent with the requirements set out under Part 2 of the RMA and the direction set out in the NPSFM and the pSRPS,<sup>161</sup> I do not consider it necessary or appropriate to delete reference to these values nor should they be given less priority or protection than “safeguarding”. Case law states that the meaning of “safeguard” is towards the “stronger

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<sup>159</sup> Section 30(4)(a) of the RMA.

<sup>160</sup> Section 30(4)(d) of the RMA.

<sup>161</sup> Objective B1 of the NPSFM (2014) and Objective WQUAN.1 of the pSRPS.

end of meanings encompassed by the word ‘protect’<sup>162</sup>. However it does not mean all adverse effects must be avoided.<sup>163</sup>

5.117 The submission from Federated Farmers has merit, as the objective may be interpreted as though priority has been afforded to some values over others. This is not the intention of the objective and in my view, it requires amendment to remove the perception of a hierarchy between social, economic, cultural and environmental values. In order to accommodate the submission from Federated Farmers without removing the key outcomes sought by the objective, I recommend the submission from Federated Farmers be accepted in part. It is my view that ensuring water is available instream and out-of-stream to support the reasonable needs of people and their community equates to “sustainable management” of the water resource, and have recommended changes to this effect. The submitter may wish to comment on these amendments at the hearing. However, it is unclear why recreational values have been included in clause (a), as there is no higher order document that provides such guidance. Given that recreational values are typically considered under social and cultural well-being, I recommend that Fonterra’s submission be accepted in part to delete recreational values from clause (a).

5.118 I note that “historic heritage” also includes sites of significance to Maori, including wahi tapu. These matters are relevant to water quantity and flows in water bodies and are not exclusively associated with structures. As such, I do not recommend the submissions from KiwiRail, Hort NZ or INZ are accepted.

5.119 I note that Objective 9 seeks to manage water quantity, rather than water quality. Water quality matters are addressed in other provisions in the pSWLP and do not need to be incorporated into this objective. I therefore do not recommend that the submission from Fish and Game is adopted.

## Recommendation

5.120 Amend Objective 9 as follows:

~~(a) — The quantity of water in surface waterbodies is managed so that aquatic ecosystem health, life-supporting capacity, outstanding natural features and landscapes, recreational values<sup>164</sup>, natural character, and historic heritage values of surface waterbodies and their margins are safeguarded;~~  
~~and~~

*New Objective 9A*

~~(b) — Provided (a) is met, water is Surface water is sustainably managed available both instream and out-of-stream<sup>165</sup> to support the reasonable needs of people and communities to provide for their social, economic and cultural wellbeing.~~

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<sup>162</sup> *P & E Limited v Canterbury Regional Council* [2016] NZEnvC 252 at [231].

<sup>163</sup> At [263].

<sup>164</sup> 414.1 INZ, 277.12 Fonterra

<sup>165</sup> 265.22 Federated Farmers

### **Objective 10**

*The national importance of the existing Manapouri Power Scheme in the Waiau catchment is provided for, and recognised in any resulting flow and level regime.*

### **Submissions**

5.121 Objective 10 received 17 submissions, with three in opposition seeking that the objective is deleted and three in support seeking that the objective be retained. The remaining submissions largely oppose Objective 10, with submitters seeking amendments to provide for other water uses in the Waiau catchment.

5.122 Meridian supports the recognition of the national significance of the Manapouri Power Scheme. However, Meridian believes the objective is too limiting with a focus being primarily on the flow and level regime and not on other activities essential to the continued operation of the scheme. The submitter seeks amendments to give effect to the NPSREG through enabling consideration of increasing electricity generation capacity and output while managing adverse effects. Meridian seeks the following relief to address the concerns raised in its submission:

*The national importance of the existing Manapouri Power Scheme in the Waiau catchment is provided for, and*

1. *is recognised in any resulting flow and level regime, and*
2. *the Manapouri Power Scheme including its associated water takes, use, damming, diverting and discharge of contaminants and water to water or onto and into land where this enters water is considered as part of the existing environment; and*
3. *allows for enhancement of the scheme where the effects of these can be appropriately managed.*

5.123 In its submission, Fish and Game acknowledges the operation of Manapouri Power Scheme is of national and regional importance, however note that the resultant modified flow and level regime has resulted in significant adverse effects on the environment. Despite the submitters concerns, it notes that there is an opportunity for ongoing mitigation and remediation (i.e. flushing flows in summer and autumn). The submitter also seeks that the objective is amended to ensure further over-allocation is avoided (in accordance with Objective B2 of the NPSFM), and that wetlands associated with the lower Waiau River and sports fisheries in the Waiau catchments are maintained and improved where degraded by the existing flow regime. DOC seeks similar amendments to protect natural and fishery values as well as wetlands.

5.124 Several submissions seek to provide for the power scheme, but also seek a path for wider community discussion in order to provide for abstraction for other uses.

### **Analysis**

5.125 Objective 10 acknowledges the importance of the Manapouri Power Scheme in the Waiau Catchment and that it is provided for in any resulting flow and level regime developed through the FMU process. The acknowledgement of this scheme does not preclude the Council from considering any other uses or values in the catchment when setting the flow and level regime, including those raised in submissions.

- 5.126 While the scheme is part of the existing environment, there is an obligation to set flow and level regimes to give effect to the requirements of the RMA, the NPSREG and the NPSFM.<sup>166</sup> If future limit setting processes demonstrate that a new flow and level regime is required to ensure the effects on the environment are acceptable and the water bodies are sustainably managed, then that will likely result in a review of existing authorisations so that they meet the new regime. It is not considered appropriate to protect the existing level of abstraction, damming or diversion of water if they are found to have unacceptable adverse effects. As such, it is my view that the amendment sought by Meridian to introduce a new clause (2) is inappropriate, and should not be accepted.
- 5.127 It is my view that Objective 10 sufficiently provides for the power scheme such that the requirements under the NPSREG have been met. I do not consider that the amendment sought by Meridian to introduce a new clause (3) is necessary.

## Recommendation

- 5.128 Retain Objective 10 as notified.

## Objective 11

*Water is allocated and used efficiently.*

## Submissions

- 5.129 Objective 11 received 32 submissions, 13 of which are in support seeking that the objective be retained as notified. Willans M & T supports the objective however considers it to conflict with Objective 10, raising concerns about the efficient nature of the abstraction from the Manapouri Power Scheme.
- 5.130 Fish and Game submits that the objective does not ensure that water use is first necessary, and where necessary, is reasonable and used efficiently. The submitter does not consider that the water quantity provisions in the pSWLP ensure that the life supporting capacity and ecosystem health and processes of freshwater habitats is safeguarded or natural character protected. To address its concerns, Fish and Game seeks to delete the objective and replace with the following:

*“Water use must be necessary, reasonable and justifiable for its intended use, and where it meets these criteria it use must be efficient.”*

- 5.131 INZ submits that the objective needs to be split into two parts, as it believes that water allocation and efficient use are two different concepts. The submitter seeks that reliability of supply is recognised in any allocation system as it is the key driver to enable water to be used efficiently. Similar to Fish and Game, INZ believes that water use efficiency needs to introduce the concept of reasonable use. Dairy NZ also seeks clarification how and at what scale “efficiency” is being determined.
- 5.132 Alliance submits that Objective 11 should be amended to better guide decision making in relation to efficient water use by reiterating the primacy of water supply for critical needs (such as animal welfare).

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<sup>166</sup> For a further discussion on the weight to be given to the NPSREG in the context of the need to give effect to a range of superior documents, see section 2 of this report.



- 5.133 Federated Farmers submits that Objective 11 requires amendments so that it makes sense. The submitter notes that efficiency is not a goal in itself, but an adverb by which to describe how well an action is undertaken. The submitter also questions whether the efficient use of irrigation water is a resource management issue in Southland such as it is in ‘water short’ regions such as Canterbury and Hawkes Bay. To address the concerns raised in its submission, Federated Farmers seeks that Objective 11 is deleted and replaced with the following:

*Water abstracted for individual or community drinking or stockwater supply, irrigation, or other uses, is taken and used in quantities which are reasonable for the intended use; and is conveyed and applied using methods which minimise loss or wastage.*

- 5.134 Several submitters seek that the objective is amended so that water allocation is also based on other meaningful metrics such as market value. The submitters have not provided specific wording to support their request.

### **Analysis**

- 5.135 While the majority of submitters support Objective 11, some relatively substantial amendments have been suggested by several submitters. The submission from Alliance appears to be more related to the setting of flow and limit regimes and ensuring sufficient water is set aside for community water supplies and priority takes. I note that the requirement to allocate and use water efficiently would still apply to priority takes.
- 5.136 The request from INZ and Fish and Game to include “reasonable use” aligns with the guidelines for the efficient use of water as set out in Appendix O of the pSWLP. While “reasonable use” is a fundamental consideration when determining water allocation efficiency, it is my view that the reference to efficient allocation already provides the council with discretion to determine whether or not the total rate or volume of water sought is reasonable for the intended end use. Allocating more water than what is considered necessary or reasonable does not constitute an “efficient” allocation of water. While I believe “efficient allocation” already provides for these matters, it is clear that the submitters believe amendments are necessary to make this unambiguous. Given that the requested amendments are consistent with the outcomes sought by the objective, I recommend that the submissions from INZ and Fish & Game are accepted in part. I consider that it is inappropriate for the Council to consider whether or not allocated water is necessary or justifiable (in addition to “reasonable”), as this is typically an economic consideration made by the person seeking to take water, as there is a financial cost associated with the infrastructure and physical abstraction of water. Such an assessment does not relate to the effects on the environment and is not a determination required by under the RMA.
- 5.137 I do not recommend adopting INZ’s submission in relation to allocation of water recognising the importance of water supply reliability. It is my view that water supply reliability is one consideration when determining the efficient allocation of water, and that only including this criterion may unintentionally exclude other considerations in any future flow and limit setting process.
- 5.138 In response to the matters raised by Federated Farmers, I note that Objective 11 clearly describes a future state where water in the Southland Region is allocated and used

efficiently. While this requires action on behalf of the council and water users, it is my view that the method to determine efficient allocation and use of water, and the pathway to achieve this is more appropriately dealt with in the form of a policy, rule or methodology set in an Appendix. In addition, I note that the NPSFM<sup>167</sup> requires all councils to make or change regional plans to provide for the efficient allocation of water and to identify methods to encourage the efficient use of water, irrespective of the allocation status of the catchment (i.e. whether or not it is considered to be “water short”). This is reflected in the pSRPS, where Policy WQUAN.4 seeks to manage the demand for water. Allowing the regional council to allocate water inefficiently may result in water resources becoming fully allocated sooner, where others that wish to take and use the water miss out on that opportunity due to inefficiencies in the allocation system.

- 5.139 I note the specific amendments sought by Federated Farmers is a general weakening of the position of the pSWLP. Taking into consideration the matters addressed above, and in the absence of any evidence to support the approach requested by Federated Farmers, I recommend that its submission be rejected.
- 5.140 Submitters seeking amendments to recognise or provide for an allocation mechanism that take into consideration market value have not provided specific relief in support of their submissions. In the absence of specific amendments, I do not recommend these submissions be adopted.

## **Recommendation**

- 5.141 Amend Objective 11 as follows:

*The amount of water abstracted is shown to be reasonable for its intended use and<sup>168</sup> water is allocated and used efficiently.*

## **Objective 12**

*Groundwater levels, and minimum surface water flows where these are derived from groundwater, are maintained.*

## **Submissions**

- 5.142 Objective 12 received 14 submissions, six of which are in support seeking that the objective is retained as notified.
- 5.143 Fish and Game submits that Objective 12 does not give effect to Objective B2 of the NPSFM, which provides for the avoidance of any further over allocation of fresh water and phasing out of existing over allocation. The submitter seeks amendments to the objective to address the concerns it has raised. INZ also submits that the objective needs to be replaced with a statement that sets groundwater use within the context of sustainable management, whereas DairyNZ have sought clarification regarding the term “maintained”, as it notes that there is no guidance regarding the required groundwater maintenance levels.

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<sup>167</sup> Objective B3, Policy B2 and Policy B4

<sup>168</sup> 414.2 INZ; 752.27 Fish and Game

- 5.144 Growplan seeks clarification whether the monitoring network is dense enough to model groundwater levels within levels that will protect key catchment metrics.
- 5.145 DOC supports the objective but seeks amendments to ensure that natural stream flow variability (in addition to minimum surface water flows) is maintained.

### Analysis

- 5.146 Objective 12 seeks to ensure that the groundwater levels are maintained, however the submission from Fish and Game correctly identifies that the objective does not provide for any improvement in groundwater levels where groundwater is over-allocated. I note that as at 11 February 2016, less than 50% of the groundwater primary allocation thresholds have been allocated in the majority of the region, however the North Range and Lumsden aquifers are considered to be fully allocated.<sup>169</sup> Given that the current state of groundwater resource is not over-allocated, the amendments suggested by Fish and Game are not required in order to give effect to the NPSFM.
- 5.147 The amendments sought by INZ emphasise the sustainable management of groundwater to primarily support abstraction and, as a secondary consideration, base-flows in connected water bodies. It is my view that maintaining groundwater levels could be interpreted as meaning that no further groundwater may be allocated. I note that the NPSFM does not require the maintenance of groundwater levels, rather it seeks to avoid any further over-allocation and phase out existing over-allocation.<sup>170</sup> Neither of these situations apply to the Southland region, other than in isolated locations. Given that there is groundwater available for further allocation within most of the Southland region, I agree with INZ that the objective requires amendment to instead require the sustainable management of the groundwater resource (rather than maintaining groundwater levels). It is my view however that the amendments sought by INZ are not consistent with Objective B1 of the NPSFM, and while I recommend the submission is adopted in part, I also consider that consequential amendments are necessary to maintain consistency with the NPSFM. I note that the amendments may also address concerns raised by DairyNZ in relation to the use of the word “maintained” and are consistent with the policy and rule regime set out in the pSWLP.
- 5.148 Flow variability is typically unrelated to groundwater inflows, and is mainly influenced by high rainfall events. It is my view that flow variability in surface water bodies is more appropriately addressed in Objectives 9 and 17. I do not recommend that the submission from DOC be adopted.
- 5.149 In response to the submission from Growplan, I note that the Council’s groundwater quantity monitoring network consists of 21 continuously monitored groundwater water level sites (bores), and 95 additional bores that have groundwater level measured quarterly. It is my understanding that telemetered sites are preferentially positioned within groundwater zones that are identified as being at higher risk of negative effects as a result of water extraction. Flow data from groundwater fed springs is also used when evaluating aquifers. The monitoring network undergoes regular (monthly) quality checks to ensure accuracy of data and has undergone multiple iterations of review and alteration over the last 10 years in order to ensure the network is relevant and fit for purpose (for

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<sup>169</sup> Kees, L & Hughes, B. (2016) Technical Memorandum: Water allocation in Southland, section 32 Report to the pSWLP.

<sup>170</sup> Objective B2

example see Wilson, 2011<sup>171</sup>). As such, it is my understanding that the monitoring network has been designed for evaluation and modelling the effects of groundwater abstraction on key catchment metrics (e.g. aquifer and stream depletion). The Council is currently undertaking a comprehensive review of the hydrogeology of Southland. Much of the existing information is spread across numerous reports or as unpublished expert knowledge, this project aims to collate and present all available information on Southland's hydrogeology. This resource can then be used in future management of Southland's groundwater.<sup>172</sup>

## Recommendation

5.150 Amend Objective 12 as follows:

*Groundwater ~~levels~~ is sustainably managed to safeguard the life-supporting capacity, ecosystem processes and indigenous species of groundwater, and ~~minimum~~ surface water ~~flows~~ bodies where ~~these are~~ their flow is derived from groundwater, are maintained<sup>173</sup>.*

## Objective 13

*Enable the use and development of land and soils, provided:*

- (a) the quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land;*
- (b) the discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided; and*
- (c) adverse effects on ecosystems (including diversity and integrity of habitats), amenity values, cultural values and historic heritage values are avoided, remedied or mitigated to ensure these values are maintained or enhanced.*

## Submissions

5.151 Objective 13 received 29 submissions, 13 of which are in support seeking that the objective is retained as notified. N McRae submits that the objective does not take into account the economic realities of farming and the social and cultural wellbeing of landowners. N McRae seeks that the requirements (a) to (c) listed in the objective are deleted and the remainder of the objective is amended to read:

*Enable the use and development of land and soils to support the economic, social and cultural wellbeing of the region.*

5.152 Drysdale Family Trust and Dryland Farming both oppose Objective 13 clause (a) in relation to intensive winter grazing in the Old Mataura Physiographic Zone. The submitters have sought amendments to Rule 23 to address its concerns. These submissions are addressed under Rule 23 of this report.

5.153 FANZ seeks amendments to clause (a) as it believes the phrase “irreversibly degraded” is a relatively extreme outcome, with preference to refer to the maintenance and enhancement of the quality of the soil resource. FANZ and Hort NZ seek to amend clause (b) so that the policy refers to adverse effects (rather than significant or cumulative

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<sup>171</sup> Wilson K., (2011). State of the Environment: Groundwater Quantity Technical Report. Environment Southland Report

<sup>172</sup> Per comms. Rachael Millar, Environment Southland Science Team

<sup>173</sup> 414.2 INZ

effects) on human health. Several submitters also believe that the objective should also provide for remedying or mitigating such effects on human health.

- 5.154 KiwiRail seeks to delete the inclusion of “historic heritage values” from clause (c), as it considers that it is unnecessary for a regional plan to include controls on historic heritage, when these matters are already managed by operative district plans. The submitter believes this could result in the potential for inconsistency and conflict between the instruments, and uncertainty for Plan users. The submitter also notes that this will also result in considerable resource consent requirements being triggered for a range of activities associated with maintenance, upgrade and replacement works for KiwiRail bridges and culverts within the rail corridor.
- 5.155 Fish and Game seeks a number of amendments to Objective 13 to address its concerns that the objective is inconsistent with Part 2 of the RMA and does not take into account the effects associated with land development in headwater sub-catchments. Additionally, the submitter has requested amendments to ensure that water quality, in relation to human health, better aligns with Part 2 of the RMA and Objective A1(b) of the NPSFM. Forest and Bird seeks similar amendments.
- 5.156 DOC seeks that Objective 13 is retained, with the addition of a new clause to address adverse effects on natural flow regimes of water bodies, including effects on the severity of low flows or the magnitude of flood flows.
- 5.157 In its submission, Federated Farmers raises numerous concerns about Objective 13. In particular, it is concerned that Objective 13 makes the use or development of land conditional on addressing the effects in clauses (a) to (c); rather than requiring an overall judgement considering the need for people and communities to provide for their economic, social and cultural well-being and managing effects on the environment as set out in section 5(2) of the RMA.
- 5.158 Federated Farmers are also concerned that Objective 13 cannot be achieved in urban areas, as it believes that urban development cannot retain the quality and structure of soil resources. The submitter is also concerned that the effects of land uses on historic heritage and amenity values are functions of district councils under the Act and should not be included in Objective 13. The submitter requests that the objective is deleted and replaced with the following:

- (a) In rural areas, farming activities and other land uses maintain or improve the quality and structure of soils; and maintain or enhance freshwater bodies and biodiversity.
- (b) In urban areas:
  - (i) sewage is treated before being discharged into water;
  - (ii) natural wetlands are protected from drainage and filling; and
  - (iii) biodiversity is maintained or enhanced.

## Analysis

- 5.159 Objective 13 seeks to ensure that the development of land and soils are enabled provided that particular effects of such activities are avoided, mitigated or remedied. The objective (including the requirements set out in clauses (a) to (c)) cover four distinct management areas:
1. enabling the use and development of land and soil;
  2. protecting the quantity, quality and structure of soil resources;
  3. protecting human health from adverse effects that may arise from discharges or land use activities; and
  4. maintaining or enhancing ecosystems, amenity values, cultural values and historic heritage values.
- 5.160 It is my view that the four outcomes sought by the objective are appropriate, however it may be more suitable to list them as separate objectives. Given that the objectives in the Plan are to be read together in their entirety, the development of land and soil will still need to be consistent with the other objectives in the Plan (including those currently outlined in clauses (a) to (c) of Objective 13). I note this approach may address the concerns raised by Federated Farmers in regards to the “overall judgement” against section 5(2) of the RMA. The submission from N McRae provides suitable wording for an objective that enables use and development of land and soil. I recommend this submission is adopted. Submission specific matters addressed in clauses (a) – (c) are addressed below.
- 5.161 Clause (a) of Objective 13 recognises that land use and development may have an impact on the quantity, quality and structure of soil resources, however seeks to ensure that such degradation is not irreversible. FANZ and Fish and Game seek to ensure that the properties of soil are maintained or enhanced, however I note that “maintain or enhance” is a more difficult outcome to achieve than “irreversibly degraded” (which provides for some unavoidable or inevitable changes to soil structure, quality or quantity). Without evidence demonstrating that this is an achievable outcome, it is my view that the suggested amendments to clause (a) are not adopted.
- 5.162 Fish and Game have also sought that recreational amenity is provided for within the objective. While many waterways in the Southland Region have notable recreational values, it is important to note that these values are already provided for in the context of human health and amenity, which are listed in clauses (b) and (c) of the objective. I do not consider that specific reference to recreational values is necessary.
- 5.163 Additionally, Fish and Game seeks to amend clause (b) to replace reference to “significant or cumulative effects” (in relation to human health) with “adverse or cumulative effects”. It is my view that avoiding any adverse effects, without qualifying an acceptable scale or magnitude of such effect, will be a difficult threshold to achieve. I note that the submissions from FANZ and Hort NZ to amend the objective to read “significant or cumulative adverse effects” appropriately qualifies the nature of the effect of concern. However, given the importance of ensuring that human health is appropriately protected, it is my view that such effects should be avoided, and that mitigation and/or remediation will not sufficiently protect the environment in relation to human health. If adverse effects are deemed to be more than minor, but less than

significant, these are more appropriately assessed through the resource consent process where options to remedy or mitigate can be considered. The submitters may wish to provide an example where remediation or mitigation is an appropriate management tool to ensure there are no significant adverse effects on human health.

- 5.164 Fish and Game and DOC have sought the addition of a new clause in relation to adverse effects on the natural flow regime of rivers. I note that clause (c) is sufficiently broad to ensure effects on flows are also appropriately considered when enabling the development and use of land and soils. I note that these matters are also addressed by Objectives 9, 14 and 17. As discussed above, it is my view that the matters addressed in Objective 13 are listed as separate objectives, however given that clause (c) is adequately addressed by Objectives 9, 14 and 17, I do not consider that another objective on this topic is necessary.
- 5.165 As discussed earlier in this report (see Objective 9), historic heritage also includes sites of cultural significance, including wahi tapu. It is my view that reference to historic heritage is necessary and a relevant consideration when setting desired outcomes for the management of land and soils for the Southland Region.
- 5.166 In response to the concerns raised by Federated Farmers, it is acknowledged that there will be a loss of productive land/soil through urban development,<sup>174</sup> however the land use provisions (and associated zoning) set out in the relevant city and district plans are the most appropriate place to address such issues. I note that Objective 13 only applies to the land uses that are controlled under the regional plan, thus urban land development is exempt from the requirements set out in clause (a).

## Recommendation

- 5.167 Amend Objective 13 as follows:

*Enable the use and development of land and soils; to support the economic, social and cultural wellbeing of the region. provided:*<sup>175</sup>

- ~~(a) the quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land;~~
- ~~(b) the discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided; and~~
- ~~(c) adverse effects on ecosystems (including diversity and integrity of habitats), amenity values, cultural values and historic heritage values are avoided, remedied or mitigated to ensure these values are maintained or enhanced.~~<sup>176</sup>

- 5.168 That a new Objective 13A is included in the pSWLP as follows:

*The quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land.*<sup>177</sup>

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<sup>174</sup> Issue URB.1 of the pSRPS.

<sup>175</sup> 558.2 N McRae

<sup>176</sup> 558.2 N McRae

<sup>177</sup> Consequential amendment to 558.2 N McRae

5.169 That a new Objective 13B is included in the pSWLP as follows:

*The discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided.*<sup>178</sup>

### **Objective 14**

*The range and diversity of indigenous ecosystem types and habitats within dryland environments, rivers, estuaries, wetlands and lakes, including their margins, and their life-supporting capacity are maintained or enhanced.*

### **Submissions**

- 5.170 Of the 14 submitters on Objective 14, five seek that the objective be retained as notified. Federated Farmers seek that the objective be deleted on the basis that indigenous biodiversity types and habitats are adequately addressed in the RPS, and that generic provisions in the pSWLP are unnecessary.
- 5.171 Fulton Hogan and Southern Aggregates submit that “range” of indigenous ecosystems types and habitats is unclear. The submitter seeks that either this term is deleted from the objective, or the objective is redrafted to better articulate what is intended by the use of the word “range”.
- 5.172 ICC notes that the Regional Council’s responsibilities, as set out in the pSRPS, do not cover dryland environments and request the removal of these words from the objective. Fish and Game propose some additional wording including coastal waters and that the word “enhanced” be replaced with “...if degraded are restored to protect their values”.
- 5.173 Several submitters have asked who will be enhancing indigenous ecosystems, where the Three Rivers Catchment Group and the Pourakino Catchment Group request the addition of the words “...where practicable” at the end of the objective.
- 5.174 In its submission against Objective 7 and 11, Aratiatia Livestock seeks that Meridian’s resource consent for the Manapouri Power Scheme aligns with the timeframes set out in the NPSFM. This submission is addressed in the analysis for Objective 7 and is not repeated here.

### **Analysis**

- 5.175 Objective 14 and the policy and rule framework which flow from it seek to prevent the reduction in the range and diversity of indigenous ecosystems, including a reduction in their areas, functions and qualities.
- 5.176 The submission from ICC has merit in that the management of indigenous ecosystem types and habitats within ‘dryland environments’ are not typically managed by the Council. To reduce the potential duplication between provisions contained in district plans and the pSWLP, I recommend that the phrase be deleted out.

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<sup>178</sup> Consequential amendment to 558.2 N McRae



5.177 Adding a reference to ‘coastal waters’ within the objective is not considered appropriate as these waters are covered by the RCP and are outside the scope of the pSWLP. In my view retaining the word ‘enhanced’ in this objective is consistent with the pSRPS, and replacing this with “if degraded are restored to protect their values” is not necessary and creates uncertainty as to what constitutes degradation and what the values are that require protection.

5.178 The reference to the “range” of indigenous ecosystem types and habitats is similar to wording used in Objective BIO.3 of the pSRPS. Objective BIO.3 states:

*Enhance the range, extent and condition of indigenous biodiversity in Southland, with a particular emphasis on those areas most at risk to further loss or degradation.*

5.179 I note that the term “range” in Objective BIO.3 is in relation to biodiversity, whereas the term is used in the context of *ecosystem types and habitats* in Objective 14. The use of the word “range” in Objective 14 is consistent with its use in the goals set out in the New Zealand Biodiversity Strategy 2000. In particular, Goal Three states:

*...Maintain and restore a full range of remaining natural habitats and ecosystems...*<sup>179</sup>

5.180 As there is a range of ecosystem types and habitats within the Southland region that require maintenance or enhancement, it is my view that deleting this term would remove this direction set out in the pSWLP. Fulton Hogan and Southern Aggregates may wish to comment on this further at the hearing.

5.181 I note that a number of activities that are managed under the pSWLP, and which fall within the functions of the regional council, have the potential to impact on biodiversity. Section 30(1)(ga) of the RMA specifically provides the Council with the function of establishing, implementing and reviewing objectives, policies and methods for the maintenance of indigenous biological diversity. The objective aligns with this, and the direction set in the pSRPS, providing a statement on the outcome that is sought for the region in this regard.

5.182 I note that including the words “where practicable” at the end of the objective is inconsistent with Objectives BIO.2 and BIO.3 of the pSRPS and therefore do not recommend that the submissions from the two Catchment Groups be accepted.

### **Recommendation(s)**

5.183 Amend Objective 14 as follows:

*The range and diversity of indigenous ecosystem types and habitats within ~~dryland environments~~,<sup>180</sup> rivers, estuaries, wetlands and lakes, including their margins, and their life-supporting capacity are maintained or enhanced.*

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<sup>179</sup> Goal Three of the New Zealand Biodiversity Strategy 2000.

<sup>180</sup> 411.2 ICC

### **Objective 15**

*Taonga species, as set out in Appendix M, and related habitats, are recognised and provided for.*

#### **Submissions**

- 5.184 Nine submissions were received on Objective 15. Six submissions support Objective 15 and seek that it is retained.
- 5.185 SIEIA seeks to amend the objective so that it only applies to the habitat of taonga species. The submitter raises concerns with ‘recognising and providing for’ taonga species, where it believes that the management of some taonga species (specifically Shortfin and Longfin eels) are governed by the Fisheries Act.
- 5.186 Federated Farmers seek to delete Objectives 3, 4, 5 and 15 and replace them with a one objective to address the relationship between iwi and their customs and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga. This submission is addressed in the analysis of Objective 3 and is not repeated here.
- 5.187 Aratiatia Livestock submit that the introduction of trout into the Waiau catchment has negatively impacted on the native fishery (as listed in Appendix M). In response to these concerns, the submitter suggests that all sources of nitrogen and phosphorus that contribute to Southland’s river systems should be actively managed, including those contributions from trout.

#### **Analysis**

- 5.188 Section 6(e) of the RMA requires the Council, when exercising its functions and powers under the RMA, to recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga. Section 7(a) requires that particular regard be had to kaitiakitanga. The requirements set out in Part 2 of the RMA are provided for in the pSRPS, where Objective TW.3 seeks to ensure that Mauri and wairua are sustained or improved where degraded and mahinga kai and customary resources are healthy, abundant and accessible to tangata whenua. Objective 15 directly reflects these requirements in relation to taonga species. The objective is also consistent with the direction set out in Objective TW.4 of the pSRPS which states “*Wāhi tapu, wāhi taonga and sites of significance are appropriately managed and protected*”. While the management of some taonga species may be addressed in the Fisheries Act, this act does not, to my knowledge, manage the effects of activities on these species. In my view, this requires a focus in the objective, on protection and recognition of these species themselves, not simply on their habitat.
- 5.189 It is important that Objective 15 provides for both taonga species and their habitat, as it is accepted that some activities may have a direct adverse effect on some species (for example, the effects of nitrate toxicity on taonga species as a result of the discharge of contaminants to water). As such, I do not recommend the submission from the SIEIA be adopted.
- 5.190 I agree with the submission from Aratiatia Livestock that all sources of nitrogen and phosphorus need to be considered when determining effects on waterways and taonga species. I note that these matters will be further progressed through the FMU limit

setting processes, and that the wording of Objective 15 provides sufficient guidance to ensure taonga species are recognised and provided for in those processes.

## **Recommendation**

5.191 Retain Objective 15 as notified.

## **Objective 16**

*Public access to river and lake beds is maintained, except in circumstances where public health and safety are at risk.*

## **Submissions**

- 5.192 Objective 16 received 17 submissions, with nine in support seeking that the objective is retained as notified. Federated Farmers seek that the objective be deleted on the basis that it reflects the duty in section 6(d) of the RMA to provide public access to and along water bodies and the coast, however the submitter notes that access is achieved through the functions of district councils not the regional council.
- 5.193 Fish and Game notes that as currently worded, the objective is inconsistent with section 6(d) of the RMA. The submitter has subsequently asked for amendments for the maintenance and enhancement of public access to lakes, rivers and along the coastal marine area.
- 5.194 Several submitters consider that the objective is generally appropriate, however provision should be made where restrictions on access are necessary to protect or enhance biodiversity values, including threatened species and indigenous species.
- 5.195 N McRae submits that the objective appears to give the public blanket entrance on to properties, noting that farms can have health and safety issues for those not used to farming. The submitter notes that there needs to be some form of requirement to check with the landowner before entering properties.

## **Analysis**

- 5.196 Fish and Game have correctly identified that the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers is a matter of national importance (section 6(d) of the RMA), that the Council must recognise and provide for. I note that access to the coastal marine area is addressed in the RCP<sup>181</sup> and it is not appropriate or necessary to duplicate these requirements in the pSWLP.
- 5.197 Objective BRL.2 of the pSRPS gives effect to Section 6 of the RMA, in that it seeks to maintain public access to, along and across lakes and rivers, and enhance access where necessary. Given the direction set out in section 6 of the RMA, and to ensure consistency with the pSRPS, I recommend that the submissions from J Bythell and Fish and Game be adopted in part and Objective 17 be amended so that the enhancement of public access remains as a recognised outcome for the Southland Region. I do not consider that provision needs to be made where restrictions are necessary to protect or

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<sup>181</sup> Objective 5.5.1 RCP

enhance biodiversity values, as these matters are already provided for in Objectives 13, 14 and 17.

- 5.198 Objective 16 seeks to maintain public access to lakes and rivers, while acknowledging there is an inherent health and safety risk associated with access to some water bodies (for example, near infrastructure associated with the take, use, diversion or damming of water). It is not recommended that this exception is removed from the objective (as requested by Fish and Game), as there is a clear need to ensure that health and safety is a key consideration when providing public access to lakes and rivers.
- 5.199 I note that typically, there is no right for public access to river and lake beds via private property, unless the landowner provides that authorisation. As this is a property matter (and not a resource management issue), I do not recommend that Objective 16 is amended in response to the submission from N McRae.

### Recommendation

- 5.200 Amend Objective 16 as follows:

*Public access to river and lake beds is maintained, and enhanced<sup>182</sup> where necessary<sup>183</sup>, except in circumstances where public health and safety are at risk.*

### Objective 17

*The natural character values of wetlands, rivers and lakes including channel form, bed rapids, seasonably variable flows and natural habitats, are protected from inappropriate use and development.*

### Submissions

- 5.201 Objective 17 received 14 submissions. Eight submitters support the objective, six of which request that the objective is retained as notified.
- 5.202 A number of submitters seek minor amendments to the objective for clarification or to better align with the requirements set out in the RMA or the pSRPS. In particular, Forest and Bird seek amendments to the objective so that it better aligns with section 6(a) of the RMA, by including the requirement to preserve natural character of wetlands, rivers and lakes and their margins. Similarly, Fish and Game also request the insertion of the words "*and their margins*" throughout the pSWLP wherever provisions are referring to the management of river and/or lake beds. Fulton Hogan and Southern Aggregates seek amendments to better align with Policy BRL.1 of the pSRPS.
- 5.203 The Southland Conservation Board request that "*The natural character values of wetlands, rivers and lakes...is protected from ~~inappropriate~~ incompatible use and development*", as it believes that "inappropriate" is value-laden and weak in the context of an objective.
- 5.204 DOC requests that large bare gravel bars are also protected from inappropriate use and development, as it states these are a significant habitat of indigenous fauna, particularly braided river birds. D Diprose seeks amendments so that the objective only applies to natural formed wetlands.

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<sup>182</sup> 108.16 J Bythell; 752.32 Fish and Game

<sup>183</sup> Consequential amendment to align with pSRPS.

- 5.205 Federated Farmers seek that the objective is deleted and replaced with a new objective on the basis that Objective 17 lists natural character values and outstanding natural features, where it notes that these will vary between waterbodies.
- 5.206 In addition to the amendments sought by Fish and Game to Objective 17, the submitter also seeks a new objective in relation to the management of beds or wetlands, rivers and lakes. Fish and Game states that the Plan fails to ensure that the flood protection and river management activities are sustainably managed and are undertaken in a manner consistent with safeguarding the life supporting capacity and ecological health and processes of freshwater habitat and protecting natural character.

## Analysis

- 5.207 In my view, this objective gives effect to the direction set out in Objective B4 of the NPSFM which requires that the significant values of wetlands and of outstanding freshwater bodies are protected. It also recognises and provides for the protection of wetlands, and lakes and rivers and their margins as a matter of national importance, as required by section 6(a) of the RMA.
- 5.208 I recommend adopting the words “and their margins” because it is consistent with section 6(a) of the RMA, which requires:
- the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.*
- 5.209 The word “inappropriate”, in my view, has a commonly accepted meaning in a resource management context, where it is used in section 6 of the RMA and again in the NZCPS<sup>184</sup>.
- 5.210 In my view, “incompatible” does not have the same common understanding as “inappropriate”, particularly as it is unclear what the reference point is for “incompatible” use or development. I do not recommend accepting the submission from the Southland Conservation Board on this matter. I note that the request from Fulton Hogan and Southern Aggregates to only require that natural character be protected where practical is somewhat closer to the direction set out in the pSRPS<sup>185</sup>. However, I note that the use of the terms “inappropriate use and development” provides for development where effects can be appropriately mitigated or remedied. I do not consider that amendments are required in response to the submission from Fulton Hogan and Southern Aggregates.
- 5.211 While the submission from Fulton Hogan and Southern Aggregates seeks amendments “to better have regard to the proposed RPS”, it is my view that additional amendments (that go beyond those requested Fulton Hogan and Southern Aggregates) may be useful to better align the objective with Objective BRL.1 and Policy BRL.1 of the pSRPS. Objective BRL.1 of the pSRPS seeks to maintain and enhance *all significant values* of lakes and rivers, however Objective 17 only applies to *natural character values*. I note that historic heritage values (including cultural or spiritual values) are not typically classified as

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<sup>184</sup> Objective 2 of the NZCPS

<sup>185</sup> Policy BRL.1

“natural character values”. Should the Hearing Panel be of the mind to better align Objective 17 with the direction set out in the pSRPS, it is my view that the submission from Fish and Game (seeking the addition of a new objective in relation to the management of beds of wetlands, rivers and lakes) provides sufficient scope to make such amendments.

- 5.212 I note that the list of natural character values in Objective 17 is not all inclusive, nor do they apply to every water body. As such, I do not recommend that the objective is amended to remove these values in their entirety or include any additional values.

### **Recommendation(s)**

- 5.213 Amend Objective 17 as follows:

*The natural character values of wetlands, rivers and lakes and their margins,<sup>186</sup> including channel form, bed rapids, seasonably variable flows and natural habitats, are protected from inappropriate use and development.*

### **Objective 18**

*All activities operate at “good (environmental) management practice” or better to optimise efficient resource use and protect the region’s land, soils, and water from quality and quantity degradation.*

### **Submissions**

- 5.214 Objective 18 received 53 submissions, with 14 in support seeking that the Objective be retained as notified. Federated Farmers seeks that the objective be amended to recognise the efforts undertaken by those in the community to use GMP’s to enhance water and soil health, and the importance of this to land and water management. Similarly, Dillon Ag submits that farmers should be recognised as being leaders in implementing good environmental practices. The submitter believes that requiring farmers to obtain resource consent will not improve water quality, however concentrating on point source discharges will.
- 5.215 FANZ has requested that the objective be deleted on the basis that the requirement to meet GMP could have significant economic and social consequences. In addition, the submitter believes that good practice is a method to achieve the objectives of the Plan, which the submitter believes are already well defined by Objectives 1-17.
- 5.216 Several submitters note that good environmental practice or better needs to be defined, and that industry should lead such standards, whereas a number of submitters have asked for the words “or better” to be deleted on the basis that it creates uncertainty as to what measures are appropriate. In its submission, Alliance Group notes that Appendix N of the pSWLP includes reference to management plans, including a section relating to “good management practices”. The submitter seeks that these measures should be included in the objective so it is clear what it is meant by the reference to “good (environmental) management practice”.

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<sup>186</sup> 752.33 Fish and Game

- 5.217 Fonterra generally supports the intent of Objective 18, but seek that the term “best practicable option” (BPO) replaces reference to “good (environmental) management practice or better” in relation to point source discharges or industrial activities. The submitter notes that BPO is a recognised term that is defined in section 2 of the RMA and is readily understood by Fonterra’s manufacturing operation, compared to the term ‘good (environmental) practice’.
- 5.218 Ballance seeks amendments to the objective on the basis that economic and social factors must be considered alongside the GMPs, noting that practices employed must be practicable and sustainable in the current economic situation. Similarly, R Kempthorne seeks amendment to the objective to ensure environmental protection and enhancement does not undermine the communities’ economic position.
- 5.219 Fish and Game supports the intent of Objective 18, however seeks amendments to the objective to better align with the Council’s functions under section 30(1)(c)(i)-(v) of the RMA in relation to the control of the use of land. The submitter also notes that “good (environmental) management practice” is unlikely to be the same as the “best practicable option” as defined in section 2 of the RMA.

### Analysis

- 5.220 Objective 18 recognises an overall aim of the pSWLP to encourage good practice by all water and land users in the region, irrespective of activity status under the pSWLP. Submissions have been received requesting amendments specific to either farming or urban activities, however activity specific amendments are not considered appropriate as the objective applies to all activities that are managed under the pSWLP. It is therefore not recommended these submissions are adopted.
- 5.221 In its submission, Ballance correctly identifies Appendix N as setting out example GMP’s for farming activities, where following collaboration with AgResearch, these GMP’s are further defined on the Environment Southland webpage. A specific definition of good (environmental) management practice has not been included in the pSWLP as these will likely evolve and change as technology and knowledge improves over time. This provides the ability for the pSWLP to be adaptable to changing technology and innovation over time as the information can be updated when new mitigations are developed.
- 5.222 The inclusion of the words “or better” is a clear signal to all water and land users that, in some instances, additional measures and mitigations may need to be implemented to ensure environmental outcomes are met. Activity specific standards are set out in the rules of the pSWLP, which will provide resource users with the information they need to determine whether or not they need to adhere to management practices that are better than “good (environmental) management practices” (GMP). Given the need to meet the environmental outcomes for the Southland Region, including those in the NPSFM and pSRPS, it is my view that the words “or better” are appropriate and necessary to signal that better than good practice may be required for some activities.
- 5.223 I acknowledge that many land and water users in the region are already operating at what they consider to be GMP, and that this has come at an economic cost to that user. Similarly, it is acknowledged that not all resources users are currently operating at the required level to ensure the environmental objectives for the region will be met. While

there will be some costs associated with ensuring compliance with GMP, these costs are considered necessary to ensure the sustainable use of natural resources in the Southland Region. Given the above information, I do not recommend the words “or better” are deleted from the objective, nor do I recommend amendments that enable activities to operate at less than GMP.

5.224 The amendments sought by Fish and Game do not improve the understanding or meaning of the objective. I therefore do not recommend the amendments sought by Fish and Game be adopted.

### **Recommendation**

5.225 Retain Objective 18 as notified.

### **Submissions seeking new objectives**

5.226 Thirteen submitters have sought the addition of new objectives, which can be generally divided into three categories:

- submitters seeking additional objectives of a general nature;
- submitters seeking one or more additional objectives in relation to regionally significant infrastructure;
- submitters seeking objectives related to limit setting and farming activities

### **Submitters seeking additional objectives of a general nature**

5.227 Fish and Game have sought the addition of four new objectives in relation to the following management areas:

- contact recreation standards;
- habitat of trout and salmon;
- Water Conservation Orders; and
- management of beds of wetlands, rivers and lakes.

5.228 I note that objectives contained in the pSWLP are sufficient to address each of the management areas raised by Fish and Game, with the exception of a new objective related to the management of beds of wetlands, rivers and lakes (which is discussed under Objective 17). I do not recommend that the additional objectives sought by the submitter are included in the pSWLP, however as discussed earlier in this report, the Hearing Panel may wish to consider amending Objective 17 to provide for matters related to the management of beds of wetlands, rivers and lakes, consistent with the direction set out in the pSRPS.

5.229 Landpro seeks the inclusion of a new objective that recognises that natural resources must be managed in an integrated manner. The submitter notes that this is a requirement under the NPSFM and that the additional objective would fit above Policy 39 A of the pSWLP. I note that Objective 1 of the pSWLP already provides for the integrated management of natural resources and therefore do not recommend the submission from Landpro is adopted.



### **Submitters seeking objectives in relation to infrastructure**

5.230 A number of submitters seek new objectives in relation to regional, national and critical infrastructure, including renewable electricity generation activities, the Invercargill Airport and 'strategic facilities' (i.e. for security and military functions). I note that these matters are already provided for in Objective 2, where land and water is recognised as an enabler of the economic, social and cultural wellbeing of the region, and do not consider that new objectives are necessary to provide for infrastructure in the Southland region.

### **Submitters seeking objectives related to limit setting and farming activities**

5.231 Several submitters seek a new objective that supports a collaborative planning approach to freshwater management. Several submitters also seek a new objective which acknowledges the economic and social benefits of farming. Others seek an additional objective to ensure that the economic cost imposed on landowners is not prohibitively expensive.

5.232 I note that objectives in a regional plan specify a goal or an outcome sought for the region. A new objective that acknowledges the benefits of farming activities or an objective addressing the costs of implementing the Plan are not considered to be goals or outcomes that fit the requirements for a plan objective. This also applies to the requests for including an objective that supports a collaborative planning approach. These matters may be more appropriately addressed in policies or methods in the Plan, rather than be included as an objective.

## **6. General Policies and Rules**

### **Introduction**

- 6.1 The pSWLP contains 47 region-wide policies that are either activity based or relate to key management topics that either assist with the development of other policies and rules (through the FMU process) or decision making (including the consideration of resource consent applications).
- 6.2 The analysis of the submissions on the activity based policies are contained in the sections of the section 42A report that relate to that topic. The analysis of the remaining policies is broken down into five parts. These five sections are as follows:
1. submissions that make a general commentary on the policies;
  2. submissions that support or oppose the Ngāi Tahu policies, or seek changes to those policies; and
  3. submissions that support or oppose the Physiographic policies, or seek changes to those policies; and
  4. submissions that support or oppose the FMU policies, or seek changes to those policies; and
  5. submissions seeking entirely new policies.

### **Submissions on the policies generally**

#### **Submissions**

- 6.3 There are three general submissions against the policies in the pSWLP.
- 6.4 J Gardyne suggests the Plan includes policies which encourage sustainable environmental and economic land use rather than rules.
- 6.5 Fish and Game seeks that the policies in the pSWLP are retained, deleted or amended to ensure that they will, individually and collectively, direct how the objectives, as retained or amended by Fish and Game, are to be achieved. In particular, the submitter notes that policies that are not specifically addressed in its submission are supported by Fish and Game and that those submissions are supported.
- 6.6 Fish and Game also seeks that provisions are amended that allow significant adverse effects to be remedied or mitigated so that:
1. adverse effects are first avoided, and where they cannot be avoided are remedied or mitigated; and
  2. significant adverse effects are avoided.
- 6.7 Fish and Game also seeks to ensure that the policies clearly set out the management outcomes to be achieved so that objectives of the pSWLP are achieved and in particular

the water quality standards in Appendix E. In addition, the submitter has sought for the inclusion of “and where degraded improved” to policies and rules.

- 6.8 Ngāi Tahu also seeks to retain the policies as notified, unless otherwise indicated in their submission.

## Analysis

- 6.9 The general submission from Fish and Game has been analysed against each policy where specific amendments have been sought. No further analysis is undertaken here. As the pSWLP is aimed at maintaining water quality in advance of FMU processes, I am reluctant to recommend adding “improvement” to policies.
- 6.10 I do not recommend that the policies are further amended to encourage sustainable environmental and economic land use, rather than include rules to the same effect, on the basis that rules are an important regulatory tool. In the absence of such rules in the Plan, most activities that are regulated under sections 13, 14 and 15 of the RMA<sup>187</sup> become innominate, meaning resource consent is required for all activities as a discretionary activity. Land use activities regulated under section 9 of the RMA will become permitted, where there may be significant adverse effects on the environment may occur if such activities are left unregulated via the rules.

## Submissions on specific policies

### Ngāi Tahu policies

#### ***Policy 1 – Enable papatipu rūnanga to participate***

*Enable papatipu rūnanga to effectively undertake their kaitiaki responsibilities in freshwater and land management through Environment Southland:*

- 1. providing copies of all applications that may affect a Statutory Acknowledgement area, tōpuni, noboanga, mātaītai or taiāpure to Te Rūnanga o Ngāi Tahu and the relevant papatipu rūnanga;*
- 2. identifying Ngāi Tahu interests in freshwater and associated ecosystems in Southland/Murīhiku;*
- 3. reflect Ngāi Tahu values and interests in the management of and decision-making on freshwater and freshwater ecosystems in Southland/Murīhiku, consistent with the Charter of Understanding.*

#### ***Policy 2 – Take into account iwi management plans***

*Any assessment of an activity covered by this plan must:*

- 1. take into account any relevant iwi management plan; and*
- 2. assess water quality and quantity based on Ngāi Tahu indicators of health.*

#### ***Policy 3 – Ngāi Tahu ki Murīhiku taonga species***

*To manage activities that adversely affect taonga species, identified in Appendix M.*

- 6.11 The Ngāi Tahu policies received a number of submissions that vary from support, seeking that the policies are retained, to opposition seeking that particular policies are deleted. Five submitters supported all three policies, seeking that the policies be retained as notified. Lowburn Dairy Farms also submitted on all three policies, seeking that all

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<sup>187</sup> Works in beds of lakes and rivers; the take, use damming and diversion of water; and the discharge of contaminants into the environment.

applications and consents are to be processed only by the regional council, with no input on individual applications by iwi.

- 6.12 In addition to the general submissions listed above, Ngāi Tahu also seeks that policies 1 and 2 are retained as notified, whereas the Oil Companies sought that policies 1 and 3 are retained as notified.

## **Policy 1**

### **Submissions**

- 6.13 There are ten submissions on Policy 1, with seven in support seeking that the policy be retained as notified. Federated Farmers seek that clause 3 is amended by deleting the inclusion of Ngāi Tahu interests in the management of and decision making on freshwater ecosystems.
- 6.14 Lowburn Dairy Farms seek that all applications and consents are to be processed only by the regional council, with no input on individual applications by iwi.

### **Analysis**

- 6.15 Reflecting Ngāi Tahu values and interests in the management of and decision making on freshwater ecosystems reflects the agreement set out in the Charter of Understanding, a document which establishes and provides for a clear understanding of the relationship between the district and regional councils in Southland and tangata whenua in the context of the RMA and the Local Government Act 2002 (LGA). Given the commitment the Council has to ensuring their obligations have been met under the Charter of Understanding, I do not consider it appropriate to delete reference to Ngāi Tahu interests in relation to the management of freshwater ecosystems.

### **Recommendation**

- 6.16 Retain Policy 1 as notified.

## **Policy 2**

- 6.17 There are 25 submissions on Policy 2, with six in support seeking that the policy be retained. Three submitters seek that the policy be deleted. Hort NZ seeks that the policy is deleted on the basis that the Plan should take into account iwi management plans rather than requiring individual applicants to do so while when preparing an assessment for resource consent. Hort NZ considers that the Plan should adequately have regard to iwi management plans which is then implemented through the resource consent process, noting that requiring applicants to take these into account adds an additional layer of complexity that is not anticipated by the RMA. In addition, the submitter notes that the indicators of health of water quality and quantity (clause 2) should also be incorporated into the Plan so assessment is against criteria in the Plan and not something that sits outside the Plan.
- 6.18 A number of other submitters also raise concerns with clause 2 of the policy, with amendments sought to:

- delete the “Ngāi Tahu indicators of health” or clarify what these are;
- ensure any assessment on water quality and quantity using Ngāi Tahu indicators of health is undertaken in conjunction with nationally recognised scientific measures;<sup>188</sup>
- provide some discretion when iwi indicators are not easily measured or quantified; or
- include the indicators of health by reference, or delete these words from the Plan.

6.19 Seaview Trust & Oraka Farms submit that some Iwi indicators may not be easily measured or quantified and should not take precedent over other values. The submitter requests that the policy is reworded to “*Give consideration of water quality and quantity based on Ngāi Tahu indicators of health*”.

6.20 Additionally, two submitters<sup>189</sup> are concerned that the Ngāi Tahu indicators of health will act as a proxy for community ascribed values at the limit setting process. The submitters have sought general amendments so that the Plan outlines a collaborative process for the limit setting process.

## Analysis

6.21 Policy 2 provides useful guidance to those implementing the Plan, particularly when assessing applications for resource consent and potential effects on tangata whenua values and interests. Policy 2 implements Objective 4 of the pSWLP and is consistent with the direction set out in the pSRPS, particularly Objective TW.2 which aims to ensure all local authority resource management process and decisions take into account iwi management plans. The request from Hort NZ to delete this policy is inconsistent with the pSRPS and I therefore do not recommend the submission be adopted.

6.22 The Ngāi Tahu indicators of health are not specifically defined in the pSWLP, however Te Tangi a Taurira (Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008) contains a list of indicators used by tangata whenua to assess stream health, as follows:

- Shape of the river
- Sediment in the water
- Water quality in the catchment
- Flow characteristics
- Flow variations
- Flood flows
- Sound of flow
- Movement of water
- Fish are safe to eat
- Uses of the river
- Safe to gather plants
- Indigenous vs. exotic species
- Natural river mouth environment

<sup>188</sup> 712.11 Seaview Trust and Oraka Farms

<sup>189</sup> 877.9 A Wilson; 880.14 S Wilson.

- Water quality
- Abundance and diversity of species
- Natural and extent of riparian vegetation
- Use of river margin
- Temperature
- Catchment land use
- Riverbank condition
- Water is safe to drink
- Clarity of the water
- Is the name of the river an indicator?

6.23 I note that Ngāi Tahu seek the addition of a new definition that describes the indicators of health (with reference given to Te Tangi Te Tangi a Turia Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008). Given that a definition is recommended to be included in the Plan and these indicators of health are already listed in the relevant iwi management plan, I do not consider it necessary to amend Policy 2 to provide further clarification. Additionally, I note that these indicators may be further refined through other processes (including the FMU process), which may be included in the new provisions associated with each FMU. For these reasons, I also do not consider it appropriate to incorporate this list by reference into the policy.

6.24 The assessment against most of these indicators will need to be informed by science, however there may be some instances where the indicator is not easily measured or quantified (i.e. “uses of the river” or “indigenous vs. exotic species”). To offer some assurance to Plan users, it is my view that the suggestion made by Seaview Trust & Oraka Farms sets out a pragmatic approach for assessing water quality and quantity against such indicators, without detracting from the intent of the policy. I recommend the submission from Seaview Trust & Oraka Farms be adopted, however suggest some alternative wording to better align with the outcome sought by the policy.

6.25 I note the FMU processes will likely result in a range of community ascribed values, some of which are likely to align with the Ngāi Tahu indicators of health. There is nothing in the Plan that constrains the identification of community values to those already identified by Ngāi Tahu. As such, I do not consider further amendments are required to address the submissions from A Wilson and S Wilson.

## Recommendation

6.26 Amend Policy 2 as follows:

*Any assessment of an activity covered by this plan must:*

1. *take into account any relevant iwi management plan; and*
2. *assess water quality and quantity ~~based on~~ taking into account<sup>190</sup> Ngāi Tahu indicators of health.*

## Policy 3

6.27 There are 12 submissions on Policy 3, six of which are in support seeking that the policy be retained as notified. Federated Farmers seeks that the policy is deleted on the basis

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<sup>190</sup> 712.11 Seaview Trust & Oraka Farm

that effects being managed through Policy 3 and the relationship to the Council's functions under the RMA are unclear.

- 6.28 In their submission, Ngāi Tahu notes that taonga species are of great significance to Ngāi Tahu, and on that basis, seeks amendments to the policy so that activities that affect taonga species are avoided as a first priority.
- 6.29 Three Rivers CG and Pourakino CG seek amendments to the policy as they are concerned about how the policy is to be applied. The submitters believe that removal of individual plants (such as a flax) on a farm should not be regulated under the Plan, rather management of taonga species should only occur for activities that require resource consent. In addition, the submitters note that the three TAs currently have the responsibility for the management of significant indigenous flora and fauna in Southland.
- 6.30 Submissions have also been made by Lowburn Dairy Farms and D Loveridge, however these submission points have already been addressed under Policies 1 and 2.

### Analysis

- 6.31 Policy 3 is intended to implement Objective 4 of the pSWLP, which seeks to ensure tāngata whenua values and interests are identified and reflected in the management of freshwater and associated ecosystems. As identified in the submissions from Three Rivers CG and Pourakino CG, the TAs have a responsibility for managing flora and fauna in Southland. However, I note that this is also a responsibility of the regional council in so far as it relates to the activities that are managed under the pSWLP<sup>191</sup>. The provisions in the pSWLP are not intended to duplicate provisions in the district plans or take on the responsibility afforded to the TAs under section 31 of the RMA<sup>192</sup> (which relate to the use, development or protection of land). While it is anticipated that the standards and conditions set out in the permitted activity rules are sufficient to manage effects on taonga species (such as the example given in Catchment Group submissions), where resource consent is required for an activity, it is pertinent that the activity is appropriately managed in response to the potential and actual effects on taonga species. I consider that it is important to retain the direction set out in Policy 3 for all activities, both permitted and consented, so that the rules in the Plan give effect to the policies. Excluding permitted activities from the policy would therefore remove an important link within the Plan.
- 6.32 As Policy 3 relates to all activities managed under the pSWLP (including those permitted and consented), it is necessary to allow for activity and site specific management methods to be employed to address adverse effects on taonga species, which may include managing the activity so that effects on taonga species are avoided, remedied or mitigated. In the absence of any evidence or examples from Ngāi Tahu, I do not consider it is appropriate to afford priority to avoiding activities that affect taonga species when other management tools may be equally effective in managing potentially adverse effects.

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<sup>191</sup> Section 30(1)(c) provides regional councils with the control of the use of land for the purpose of the maintenance and enhancement of ecosystems in waterbodies. Section 30(1)(ga) states that regional councils functions include *the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity*

<sup>192</sup> Section 31 (b)(iii) provides territorial authorities with the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of the maintenance of indigenous biological diversity.

## Recommendation

6.33 Retain Policy 3 as notified.

## Physiographic Zone policies

### **Policy 4 – Alpine**

*In the Alpine physiographic zone, avoid, remedy, or mitigate erosion and adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage erosion and adverse effects on water quality from contaminants transported via overland flow;*
2. *having particular regard to adverse effects of contaminants transported via overland flow when assessing resource consent applications and preparing or considering management plans;*
3. *prohibiting dairy farming, and intensive winter grazing and strongly discouraging the granting of resource consents for cultivation.*

### **Policy 5 – Central Plains**

*In the Central Plains physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via artificial drainage and deep drainage;*
2. *having particular regard to adverse effects on water quality from contaminants transported via artificial drainage and deep drainage when assessing resource consent applications and preparing or considering management plans.*

### **Policy 6 – Gleyed**

*In the Gleyed physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via artificial drainage, and overland flow where relevant;*
2. *having particular regard to adverse effects on water quality from contaminants transported via artificial drainage, and overland flow where relevant when assessing resource consent applications and preparing or considering management plans.*

### **Policy 7 – Bedrock/Hill Country**

*In the Bedrock/Hill Country physiographic zone, avoid, remedy, or mitigate erosion and adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage erosion and adverse effects on water quality from contaminants transported via overland flow and artificial drainage where relevant;*
2. *having particular regard to adverse effects on water quality from contaminants transported via overland flow and artificial drainage where relevant when assessing resource consent applications and preparing or considering management plans.*

### **Policy 8 – Lignite-Marine Terraces**

*In the Lignite–Marine Terraces physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via overland flow and artificial drainage where relevant;*



2. *having particular regard to adverse effects on water quality from contaminants transported via overland flow and artificial drainage where relevant when assessing resource consent applications and preparing or considering management plans.*

### **Policy 9 – Old Mataura**

*In the Old Mataura physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via deep drainage;*
2. *having particular regard to adverse effects on water quality from contaminants transported via deep drainage when assessing resource consent applications and preparing or considering management plans;*
3. *strongly discouraging the granting of resource consents for additional dairy farming of cows and additional intensive winter grazing.*

### **Policy 10 – Oxidising**

*In the Oxidising physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via deep drainage, and overland flow and artificial drainage where relevant;*
2. *having particular regard to adverse effects on water quality from contaminants transported via deep drainage, and overland flow and artificial drainage where relevant when assessing resource consent applications and preparing or considering management plans;*

### **Policy 11 – Peat Wetlands**

*In the Peat Wetlands physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via artificial drainage, deep drainage, and lateral drainage;*
2. *having particular regard to adverse effects on water quality from contaminants transported via artificial drainage, deep drainage, and lateral drainage when assessing resource consent applications and preparing or considering management plans;*
3. *strongly discouraging the granting of resource consents for additional dairy farming of cows and additional intensive winter grazing.*

### **Policy 12 – Riverine**

*In the Riverine physiographic zone, avoid, remedy, or mitigate adverse effects on water quality from contaminants, by:*

1. *requiring implementation of good management practices to manage adverse effects on water quality from contaminants transported via deep drainage, and overland flow where relevant;*
2. *having particular regard to adverse effects on water quality from contaminants transported via deep drainage, and overland flow where relevant when assessing resource consent applications and preparing or considering management plans.*

## **Introduction**

- 6.34 The nine physiographic zone policies attracted many submissions, with the majority being on the physiographic zones or the physiographic zone policies generally. The general submissions have been summarised and analysed together, with the more specific submissions discussed under each physiographic zone policy. This analysis also needs to

be considered in conjunction with the analysis in the Introduction section (4) and Provisions relating to farming (7).

### General submissions

6.35 The physiographic zone policies received 34 general submissions, with a number of submitters raising concerns with:

- the appropriateness of the physiographic zone for their property,
- the use of physiographic zones to manage risk, rather than establishing effects based solutions in the Plan.

6.36 To address concerns about the appropriateness of the physiographic zone for their property, several submitters have sought general amendments to provide an opportunity to contest and/or reclassify the physiographic zone following the provision of site specific information. Some submitters have requested that on-farm investigations should be carried out and funded by the Council. Other submitters have requested that the physiographic zones are removed from the Plan until they can be peer reviewed or more scientific information is available.

6.37 Fonterra seeks to include a new policy to provide for those landowners who have evidence of being wrongly zoned and have their application assessed based on the risks inherent to their particular property, as follows:

*When considering the nature, extent and probability of adverse effects of activities with potential adverse effects on water quality, have regard to:*

*(a) the risks of effect inherent in the applicable physiographic zone; or*

*(b) where there is evidence that the site to which the application relates has attributes that are more representative of an alternative physiographic zone, the risks inherent in that alternative physiographic zone.*

6.38 Several submitters suggest that it would be more appropriate for the physiographic zones to sit outside the Plan to avoid the need to go through a plan change process following any science updates or changes to the physiographic zones.

6.39 Submitters have also sought general amendments to the suite of policies, including amendments to ensure it is clear what activities the policies apply to, and include a clear link between good management practices and Appendix N. Two submitters maintain that policies should not disproportionately disadvantage landowners between zones and that a detailed economic impact study on each zone needs to be completed prior to any policies taking effect.

6.40 The submission from Fish and Game notes that it supports the approach taken and that the concept of physiographic units should be retained. However, the submitter has asked for several general amendments to reflect actual water quality and trends, and consider the implications of existing land use and development/intensification on future water quality, particularly in sensitive or over-allocated sub-catchments and catchments. The submitter has not provided any specific amendments in support of its submission.

- 6.41 Several submitters have asked for amendments to simplify and/or rationalise the physiographic policies. Ballance believes that clause 1 of each of the physiographic zone policies could be simplified by simply stating “requiring implementation of good management practices.” Ravensdown has provided a suite of revised physiographic policies which group the policies where the controls are similar. Ravensdown believes the revised policies provide simplicity and removes unnecessary duplication:

Policy 4 – Alpine

In the Alpine physiographic zone, avoid, remedy or mitigate adverse effects on water quality, by:

- Controlling land use activities and,
- Managing the transport of contaminants via overland flow, and
- Implementing Industry Agreed Good Management Practices, and
- Prohibiting new dairy farming and new intensive winter grazing, and
- Not granting resource consents for cultivation, except where the adverse effects are no more than minor.

Policy 5 – Old Mataura and Peat Wetlands

In the Old Mataura and Peat Wetlands physiographic zones, avoid, remedy or mitigate adverse effects on water quality, by:

- Controlling land use activities and,
- Managing the transport of contaminants, and
- Implementing Industry Agreed Good Management Practices, and
- Restricting new dairy farming and new intensive winter grazing, except where the adverse effects are no more than minor

Policy 6

In all other Physiographic zones, avoid, remedy or mitigate adverse effects on water quality, by:

- Controlling land use activities and,
- Managing the transport of contaminants, and
- Implementing Industry Agreed Good Management Practices.

- 6.42 Similarly, FANZ sought to delete Policies 4 to 12 and replace with one policy stating:

In all the physiographic zones, avoid, remedy, or mitigate adverse effects of any land use activities on water quality, by:

- managing the transport of contaminants, and
- implementing Good Management practices, and
- addressing the specific environmental risk to water quality identified for each physiographic area.

- 6.43 Ernslaw One submits that the Plan lacks focus on the susceptibility of the steeplands in Southland to erode and seeks to amend the Physiographic Zone policies to make reference to Erosion Susceptibility Classification mapping produced by Landcare Research on behalf of MPI. The submitter seeks to amend the physiographic zone policies and add new land use rules to apply in the Alpine and Hill Country zones (i.e. vegetation removal, soil disturbance cultivation and earthworks rules) where the erosion susceptibility is classified as “moderate” to “very high”. The submitter has not provided specific amendments to the policies or rules in support of its submission.

## Analysis – general submissions on the physiographic policies

- 6.44 The physiographic zones were developed to better understand Southland’s water resource, including how it moves across the landscape and how this influences water quality. Southland has been divided into nine physiographic zones, which each represent areas of the landscape with common attributes that influence water quality.
- 6.45 The nine physiographic zones were identified using the technical work explained in sections 3 of this report. The first stage of this technical work (“Part 1”) sought to better understand and estimate spatial variation in freshwater hydrochemistry at a regional scale in Southland. A semi-quantitative, mechanistic conceptual model was established to estimate the hydrochemical variation in ground and surface waters and shallow, soil influenced groundwater on the basis of four key drivers:
- (i) precipitation source;
  - (ii) recharge mechanism and water source;
  - (iii) combined soil and geological redox potential, and;
  - (iv) the combination of geomorphic setting and substrate (rock or biological sediment) composition.
- 6.46 The model provides high resolution detail about the natural attributes that govern water quality outcomes, but were considered too complex to be useful for effective policy development. In order to develop a targeted policy framework that is both manageable and technically sound, the understanding of the relationships between the landscape and water quality outcomes were then used to define areas with similar inherent physical and hydrochemical characteristics (i.e. the physiographic zones). This process necessitated some simplification and generalisation of the modelling undertaken during Part 1, such that there may be instances where a property may have some different characteristics to those specified for the physiographic zone mapped.
- 6.47 While there may be some differences at the property scale, the key outcomes sought by the policy and rule framework in the pSWLP remain important to ensure freshwater outcomes for Southland are met. For example, the prohibition of dairy farming and intensive winter grazing in the Alpine areas is considered necessary to protect water quality in those areas and their receiving environments. Strongly discouraging particular activities from occurring on the Old Maitaura, Peat Wetlands and Alpine physiographic zones provides a strong indication to potential investors that the requirement for mitigation to maintain or improve water quality in these areas is significant. It provides better ability to decline consents where the activity is not appropriate, or mitigations required that are commensurate with the risk of both the activity and the physiographic zone. The technical information that supports the physiographic zones is sufficient to start taking targeted steps towards at least maintaining water quality in each zone. The targeted framework set out in the pSWLP (i.e. the use of physiographic zones) is considered the most appropriate option to meet the requirements set out under the NPSFM (to maintain or improve water quality) ahead of catchment specific solutions generated through the FMU limit setting processes. As such, I do not recommend adopting submissions requesting that the physiographic zones be deleted or delayed until further science is available.
- 6.48 As raised by several submitters, the physiographic zone applied to their property may not reflect the key contaminant pathways that occur on that property, meaning that the risk

to water quality and appropriate mitigations may differ to those anticipated by the pSWLP. I agree with the submission from Fonterra and believe it is appropriate for The Council to consider site-specific information when assessing consent applications, such that a consent application for an activity that is “strongly discouraged” in the Peat Wetlands or Old Mataura physiographic zones may be granted with less stringent conditions or mitigations than if the land displayed the typical characteristics of these zones. While the non-complying activity status of these activities still allows the council to assess consent applications on their own merits, I agree with Fonterra that it is useful to include a new policy that provides the Council with specific guidance when processing such consents. However, it is my view that the policy suggested by Fonterra contains unnecessary complexity, and recommend that a simpler policy is included as follows:

*Recognise the need to take into account site specific information to verify key contaminant pathways for each property when assessing resource consent applications for land use and discharge activities.*

- 6.49 While other submitters have not provided any specific amendments to address their concerns, the above policy may provide submitters with confidence that they are not required to adhere to mitigations that do not reflect the reality of their property. I note there are also recommended changes to Rule 23 (Intensive Winter Grazing) that amend the permitted activity threshold for winter grazing along with a range of other changes so that there is consistency across physiographic zones (with the exception of “Alpine”). Submitters may wish to provide comment on this proposed policy in their evidence.
- 6.50 Due to the recommended addition of this policy and the other changes recommended in section 7, I consider that in the event a resource consent is necessary, this is the best process by which any ground truthing of physiographic zones applying to a landholding can be considered.
- 6.51 The section 32 report<sup>193</sup> outlines the likely impact on the market value of land associated with the notified provisions (in particular, the classification of land using physiographic zones and the subsequent rules for each zone). While it is anticipated that there will be a shift in land value associated with the provisions on the Plan, the amendments described above (the inclusion of a new policy and amending the permitted threshold for winter grazing) may buffer any changes.
- 6.52 The pSWLP includes one policy for each of the physiographic zones so that someone using the Plan can easily identify the requirements set out each physiographic zone. While the approach taken by the Council in the pSWLP does result in some duplication between the physiographic zone policies (which can be considered to be inefficient), the duplication has been used to clearly state the requirements for each zone. The submitters may wish to provide additional information to support their requests to deviate from the “one physiographic zone-one policy” approach taken in the pSWLP. I note the suggested amendments from FANZ do not provide sufficient guidance for the individual physiographic zones, which has the effect of weakening the policy position. I do not recommend this submission is adopted.
- 6.53 The risk-based approach underlying the physiographic zones is closely aligned with the effects anticipated when undertaking particular land use and discharge activities in those

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<sup>193</sup> Section 32 Report for the Proposed Southland Water and Land Plan (Section 6.3.5, page 108)

zones. Given that the pSWLP identifies risk-based physiographic zones and mechanisms to manage potential effects, I do not believe there is any need to make any further amendments to ensure the Plan is “effects based”.

- 6.54 Several submitters have sought amendments to ensure it is clear which activities the policies apply to. It is important to note that the policies and rules in the Plan have been drafted so that they must be read together in their entirety. Taking this into consideration, the direction set out in Policy 16 and subsequent rules for farming activities (including dairy farming, intensive winter grazing and cultivation on sloping ground)<sup>194</sup> are sufficiently clear to ensure those using the Plan are aware which activities the physiographic zone policies apply to. I note submitters have not suggested any particular amendments to support their request to make this linkage clearer.
- 6.55 Similarly, the link between good management practices and Appendix N is contained in the rules related to farming activities with the requirement to prepare a Management Plan in accordance with Appendix N. In the absence of any suggested amendments to the policies to provide a link, it is unclear how amendments could be made to the policies without introducing unnecessary detail, which may detract from the intent of the policy. Submitters may also wish to comment on this point further.

## **Recommendation**

- 6.56 Include a new policy as follows:

### **New policy x**

*Recognise the need to take into account site specific information to verify key contaminant pathways for each property when assessing resource consent applications for land use and discharge activities.*<sup>195</sup>

## **Policy 4 (Alpine)**

- 6.57 Sixteen submissions were received that seek specific amendments to, or made comments on Policy 4. Eight submitters seek that the policy is retained as notified. Federated Farmers requests that the policy is deleted.
- 6.58 J Bythell supports Policy 4 but seeks clarification why 800 m elevation was chosen for the Alpine Zone, suggesting that 700m is more appropriate. Ngāi Tahu seek to amend the policy so that lateral drainage is also identified as a key contaminant transport pathway, with Fish and Game and Forest and Bird seeking that cultivation is also prohibited in the Alpine Zone.
- 6.59 DOC also supports the policy in part, however believes that the policy is contrary to Part 2 and section 30 of the RMA and fails to give effect to Section A of the NPSFM. The submitter has sought a number of amendments to ensure that adverse effects on water quality from contaminants transported via overland and lateral flow are reduced. In particular, DOC seeks amendments that support retaining a healthy indigenous vegetation cover and avoiding land development in areas which will cause or accelerate

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<sup>194</sup> Rule 20 (Farming), Rule 21 (Existing dairy farming of cows), Rule 22 (New or expanded dairy farming of cows), Rule 23 (Intensive winter grazing) and Rule 25 (Cultivation on sloping ground).

<sup>195</sup> 277.39 Fonterra

soil erosion. Fish and Game have also sought the addition of a new clause to ensure indigenous vegetation cover is maintained or enhanced.

6.60 Fish and Game also seeks the following amendments to clause 2:

*~~“Having particular regard to Strongly discourage the granting of resource consents that result in adverse effects of contaminants, including sediment, transported via overland flow when assessing consent applications and preparing or considering management plans;”~~*

6.61 Several submitters oppose the use of the words “strongly discourage” in relation to the granting of resource consents. Ballance seeks to delete clause 3 from this policy as they believe it is redundant if clauses 1 and 2 are being met.

## Analysis

6.62 Policy 4 clearly sets out that particular land use and discharge activities are not appropriate in the Alpine physiographic zone, with emphasis on considering the adverse effects of contaminants transported via overland flow for activities that are not prohibited. It is my view that the strong direction set out in the policy is critical to ensure the freshwater outcomes for the region are met, and that the submissions seeking to weaken the policy are inappropriate. There is no evidence presented by submitters to indicate that amending or deleting clause 3 of the policy will still result in water quality outcomes being met. I do not recommend these submissions are adopted.

6.63 The cultivation of land in the Alpine physiographic zone is not encouraged, however there may be some instances where carefully managed cultivation activities are acceptable. The ability to apply for resource consent for such activities provides a consent applicant with an opportunity to demonstrate to the council that the good management practices they will undertake to manage erosion will ensure that the effects of the activity are less than minor.

6.64 Fish and Game have sought amendments to clause 2 of the policy, however my view is that the proposed amendments do not improve the policy. In particular, I note that the addition of the word “sediment” is unnecessary, as it is already provided for by the use of the term “contaminant”. I also note that clause 2 applies to all activities (whether permitted or requiring resource consent), whereas direction about granting or declining consents is more appropriately contained in clause 3. I recommend the amendments to clause 2 (as sought by Fish and Game) are rejected.

6.65 The management of indigenous vegetation in the Alpine Physiographic Zone is appropriately addressed through the Southland District Plan, however the Council does have the responsibility to control land use for soil conservation and the maintenance and enhancement water quality.<sup>196</sup> DOC and Fish and Game have both sought that the policy is amended to ensure that indigenous vegetation cover is protected, maintained and enhanced. While this is a mechanism to assist in reducing sediment and contaminant losses in the Alpine Physiographic Zone, I note that only Fish and Game has sought minor amendments to Rule 25 (Cultivation) to give effect to the proposed changes to Policy 4. Nonetheless, it is my view that the existing direction set out in the policy is

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<sup>196</sup> Section 30(1)(c) RMA

sufficient to maintain and enhance water quality, without the need to introduce new provisions that may be inconsistent with those set out in the district plan.

- 6.66 As part of the technical work that underpins the physiographic zones, a water quality risk assessment was undertaken to determine key contaminant pathways. The assessment evaluated flow pathways and associated attenuation mechanisms to identify the dominant contaminant pathways for each zone, based on risk to water quality outcomes.
- 6.67 The methodology to determine the dominant contaminant pathways is set out in Environment Southland Technical Report *Physiographics of Southland Part 3: Application of the Physiographics of Southland – using physiographic zones to manage land use in Southland according to water quality risk*<sup>197</sup>. Page 68 of that report states:

*“It is noted that the primary contaminant pathways assigned to each physiographic zone do not always reflect the dominant flow pathways (i.e. where significant contaminant attenuation may occur along a specific pathway). For example, in the Gleyed zone, while deep drainage is a major flow pathway, physical attenuation and denitrification in the soil zone significantly reduce the potential for contaminant losses to the saturated zone. As a result, contaminant losses from this unit are primarily associated with the extensive artificial drainage system (mole and tile drains) rather than deep drainage to underlying groundwater.”*

- 6.68 While the dominant contaminant pathways for each zone have been included in the provisions of the pSWLP, there may be other contaminant pathways present in individual zones. Rather than include all potential contaminant pathways for each physiographic zone, focusing on the key contaminant pathways is considered to be a more effective means to reduce risks to water quality outcomes. In the absence of any evidence from DOC to include an additional contaminant pathway for the Alpine physiographic zone, and based on the technical information supporting the physiographic zones, I do not recommend the addition of “lateral drainage” as a contaminant pathway.
- 6.69 The 800 masl boundary for the physiographic zone was developed primarily through the analysis of hydrochemical data, which identified water sourced from above this altitude as having a distinct alpine chemical signature (very dilute/low in dissolved ions).<sup>198</sup> In addition, in parts of Southland this altitude (800 m) also approximates the treeline and distinguishes heavily forested land from the less vegetated alpine zone.

## **Recommendation**

- 6.70 Retain Policy 4 as notified.

## **Policy 5 (Central Plains)**

- 6.71 Ten submissions were received that sought specific amendments to, or made comments on Policy 5. Six submitters support the policy and seek that it is retained as notified. Federated Farmers request that the policy be deleted.

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<sup>197</sup> Hughes, B; Wilson, K; Rissman, C; Rodway E. *Physiographics of Southland Part 3: Application of the Physiographics of Southland – using physiographic zones to manage land use in Southland according to water quality risk*; Environment Southland Technical Report 2016/5 (June 2016). Available on the Environment Southland webpage:

<sup>198</sup> Rissmann et al., 2016



- 6.72 In its submission, Fish and Game note that the Central Plains physiographic zone is highly susceptible to nutrient loss and water degradation resulting from dairy farming. The submitter also notes that no direction is provided in the policy with respect to granting resource consents to establish new or further intensification of existing dairy farming of cows in this physiographic zone.
- 6.73 Similarly, DOC is concerned that the policy fails to reduce the nitrate concentrations in the groundwater under the Central Plains zone, which it believes fails to give effect to the NPSFM. The submitter considers that strong measures are required to halt the continuing decline of the groundwater quality.
- 6.74 In order to protect water quality in the Central Plains physiographic zone, Ngāi Tahu also seek to include lateral drainage in good management practices.

### **Analysis**

- 6.75 As discussed under Policy 4, all potential contaminant pathways have not been specified in the provisions for each physiographic zone, rather they focus on the dominant/key pathways. In the absence of further evidence supporting the inclusion of lateral drainage as a key contaminant pathway for the Central Plains physiographic zone, I do not recommend the submission from Ngāi Tahu be adopted.
- 6.76 Submitters have correctly identified that water quality in the Central Plains physiographic zone is at risk from the effects of further land use intensification. The Council has acknowledged this issue in the technical assessments that support the Plan. This is further addressed in section 7 of this report in relation to the use of physiographic zones and appropriate activity status.

### **Recommendation**

- 6.77 Retain Policy 5 as notified, subject to the conclusions reached in section 7 of this report.

### **Policy 6 (Gleyed)**

- 6.78 Ten submissions were received that sought specific amendments to, or made comments on Policy 6. Eight submitters seek that the policy is retained as notified, where Federated Farmers requests that the policy be deleted. DOC has sought specific amendments to Policy 6 to ensure that the key transport path of deep drainage of phosphorous from podsol soils are also managed.

### **Analysis**

- 6.79 All podzol soils in Southland are classed as having a high phosphorus retention (Topoclimate South, 2001) and because of this phosphorus leaching via deep drainage is not identified as a significant pathway for these particular soils in any of the Physiographic Units. I do not recommend the submission from DOC be accepted.

## Recommendation

6.80 Retain Policy 6 as notified.

## Policy 7 (Bedrock/Hill Country)

6.81 49 submissions were received that sought specific amendments to, or made comments on Policy 7. Six submitters seek that the policy is retained as notified, while Federated Farmers requests that the policy be deleted.

6.82 Fish and Game submits that the development and cultivation of land in the bedrock/hill country physiographic zone has the potential to impact on water quality; catchment water yield; soil erosion; habitat availability/diversity and connectivity; and visual amenity. Consequently, the submitter has sought a number of amendments to the policy to ensure activities that result in adverse effects are strongly discouraged and to ensure that indigenous vegetation cover is maintained or enhanced. In its submission, DOC has sought similar amendments to Fish and Game, noting that overland flow can be managed by retaining indigenous vegetation cover.

6.83 DOC also submits that recharge of aquifers by streams has not been identified as a transport pathway, in particularly for nitrogen. The submitter seeks the following amendments:

*In the Bedrock/Hill Country physiographic zone, avoid, remedy, or mitigate erosion and adverse effects on water quality from contaminants, by:*

*1. maintaining the indigenous vegetation cover where it is present;*

*~~2.~~ requiring implementation of good management practices to manage erosion and adverse effects on water quality from contaminants transported via overland flow, ~~and~~ artificial drainage and restricting new tile drainage and management of catchments of streams which recharge aquifers where relevant;*

*~~2.~~ 3. having particular regard to adverse effects on water quality from contaminants transported via overland flow ~~and~~ artificial drainage and in particular new tile drainage and streams that recharge aquifers where relevant when assessing resource consent applications and preparing or considering management plans.*

*4. strongly discourage activities which increase the quantity of contaminants transported by overland flow to water*

6.84 E O'Connell notes in her submission that characteristics of the Bedrock/Hill Country Physiographic Zone above 300m asl result in lower crop yields and lower stock productivity than land lower down. Given that stock is farmed (and wintered) more conservatively above 300m asl, Ms O'Connell requests that the Bedrock/Hill Country zone be differentiated at this elevation, with recognition made of the more extensive farming practices above this level.

## Analysis

6.85 As discussed under Policy 4, all potential contaminant pathways have not been specified in the provisions for each physiographic zone, rather they focus on the key pathways. In the absence of further evidence supporting the inclusion of tile drainage and aquifers that recharge streams as a key contaminant pathway for the Bedrock/Hill Country

physiographic zone, I do not recommend the submission from DOC, in relation to contaminant pathways, be adopted.

6.86 The management of indigenous vegetation cover is discussed in Section 4.3.31 of this report. For the reasons set out in that section, I do not recommend that the submission from DOC, in relation to vegetation cover, be adopted.

6.87 As described earlier in this report, the process of grouping areas with similar physical and hydrochemical properties into physiographic zones meant that the zones become somewhat homogenous even though some diversity within each zone may exist. Where there is sufficient evidence that different contaminant pathways are prevalent for particular areas within a physiographic zone, “variant” pathways have been identified. There is not sufficient variation within the Bedrock/Hill Country Physiographic Zone to warrant an altitude based differentiation in the key contaminant pathways (i.e. a variant) or in the proposed management tools to manage water quality. As such, I do not recommend the submission from Ms O’Connell be adopted.

### **Recommendation**

6.88 Retain Policy 7 as notified.

### **Policy 8 (Lignite-Marine Terraces)**

6.89 Ten submissions were received that sought specific amendments to, or made comments on Policy 8 (Lignite-Marine Terraces). Seven submitters seek that the policy is retained as notified, while Federated Farmers requests that the policy be deleted.

6.90 DOC submits that deep drainage to aquifers is also a transport pathway for nitrogen, and wetlands in the Lignite-Marine Terraces physiographic zone could play a significant role in reducing losses of nitrogen to water. The submitter has sought amendments to the policy to provide for these matters.

6.91 Ngāi Tahu also seeks to include deep drainage and lateral drainage as a pathway for contaminants for this zone.

### **Analysis**

6.92 As discussed earlier in this report, only the dominant or key contaminant pathways have been included for each physiographic zone. In the absence of evidence supporting the inclusion of additional pathways for the Lignite-Marine Terraces physiographic zones, I do not recommend the submissions from DOC or Ngāi Tahu be adopted.

### **Recommendation**

6.93 Retain Policy 8 as notified.

## Policy 9 (Old Maitaura)

- 6.94 58 submissions were received that sought specific amendments to, or made comments on Policy 9 (Old Maitaura). Eight submitters seek that the policy is retained as notified, while Federated Farmers requests that the policy be deleted.
- 6.95 Ballance seeks to delete clause 3 from this policy as it believes it is redundant if clauses 1 and 2 are being met. A number of other submitters also request that clause 3 is deleted from the policy, with particular discontent with the wording “strongly discourage the granting of consents”. Several submitters have asked for the Old Maitaura physiographic zone to be considered the same as a number of other physiographic zones, including Oxidising, Gleyed, Riverine and Lignite-Marine Terraces (this has the same effect as deleting clause 3).
- 6.96 Fonterra seeks to amend the policy to remove the focus of “strongly discouraging the granting of resource consents for additional dairy farming” and instead focus on the effects of additional dairy farming that would not be considered acceptable.
- 6.97 Lawrence Farms (G Lawrence) notes that “grandparenting” is unfair, work needs to be done on the economic effects of including these provisions in the pSWLP, where others have asked for compensation for the loss of capital value to farm properties.
- 6.98 Forest and Bird seeks to retain the policy with amendment to prohibit dairy farming, intensive winter grazing and cultivation due to the high risks that these activities in this zone are unlikely to meet the Plans’ objectives. The submitter notes that the likelihood of not achieving the objectives is due to susceptibility of nitrate leaching, already high nitrogen levels in ground water aquifers, and the disproportionate high rate of nitrate nitrogen losses and contributions to water degradation. Fish and Game support the policy, however seek amendments so that resource consents that result in adverse effects are strongly discouraged.

## Analysis

- 6.99 In my opinion, the use of the physiographic zones assists in understanding suitable mitigation measures to address potential water quality risks (which are closely aligned with the key contaminant pathways identified for each zone). While the technical information available indicates that intensive farming activities in the Old Maitaura zone are likely to result in a risk to water quality, there are instances where such activities can be appropriately managed to ensure the effects on the environment are less than minor. Without further evidence from the submitters that demonstrates that additional dairy farming and intensive winter grazing should be prohibited, I do not recommend the submissions from DOC, Forest and Bird and Fish and Game be adopted.
- 6.100 Clause 3 of Policy 9 provides clear direction that additional dairy farming and additional winter grazing are not generally considered appropriate activities in the Old Maitaura zone. The amendments sought by Ballance and Fonterra would remove the direction set out for the zone, such that it would constitute a weakening of the policy position. I do not recommend these submissions are adopted.

## **Recommendation**

6.101 Retain Policy 9 as notified.

## **Policy 10 (Oxidising)**

6.102 Seventeen submissions were received that sought specific amendments to, or made comments on Policy 10 (Oxidising). 11 submitters seek that the policy is retained as notified, where one submitter requests that the policy be deleted.

6.103 DOC have sought a new clause specifically to address high nitrate levels in the area, where the granting of resource consents for activities that have adverse effects on water quality from nitrates is strongly discouraged. Fish and Game, Forest and Bird and Ngāi Tahu have all sought similar amendments, with Forest and Bird seeking to prohibit dairy farming, intensive winter grazing and cultivation.

6.104 M A Beer & Sons requests that reference to artificial drainage is removed, as the submitter opposes the idea that “putting drainage tiles in the ground is bad for the land and quality of water”.

## **Analysis**

6.105 Submitters have correctly identified that water quality in the Oxidising physiographic zone is at risk following further land use intensification. The Council has acknowledged this issue in the technical assessments that support the Plan, with an option identified in the section 32 report to classify new dairy farming and winter grazing in the Oxidising zone as non-complying activities (in addition to the Peat Wetlands and Old Maitāhara zones). This issue is further addressed in section 7 of this report in relation to the use of physiographic zones and activity status.

6.106 There is clear evidence that artificial drains can act as a conduit for contaminants (in addition to the primary purpose of drainage for water logged soils). Given the available information demonstrates that some farming land uses and associated discharges need to be carefully managed where artificial drains are present, I do not recommend that reference to artificial drainage is removed from Policy 10.

## **Recommendation**

6.107 Retain Policy 10 as notified, subject to the conclusions reached in section 7 of this report.

## **Policy 11 (Peat Wetlands)**

6.108 Fifteen submissions were received that sought specific amendments to, or made comments on Policy 11 (Peat Wetlands). Six submitters seek that the policy is retained as notified, where one submitter requests that the policy be deleted.

6.109 Forest and Bird seeks to retain the policy with amendment to prohibit dairy farming, intensive winter grazing and cultivation due to the high risks that these activities in this zone are unlikely to result in meeting the Plans’ objectives. The submitter notes that the

likelihood of not achieving the objectives is due to susceptibility of nitrate leaching, already high nitrogen levels in ground water aquifers, and the disproportionate high rate of nitrate nitrogen losses and contributions to water degradation. DOC is concerned that the policy allows for the further degradation of water quality, which the submitter states is contrary to Part 2 of the RMA (in particular s5 and 6(c)) and fails to give effect to the NPSFM and the NZCPS. The submitter has sought amendments to address its concerns, including the prohibition of additional dairy farming, intensive cattle or deer grazing and intensive winter grazing. Fish and Game and Forest and Bird have sought similar amendments.

- 6.110 Coasthaven Farms and Paterson Gavara Trust requested that the developmental status and range of soils within the zone be acknowledged, particularly with regard to P retention, organic matter and other soil defining characteristics. In addition, the submitter would like the Plan to consider and acknowledge coastal properties which drain to the ocean, rather than to a lagoon, tidal estuary, river or lake.
- 6.111 Several submitters seek amendments to clause 3 of the policy, with Fonterra seeking to remove the focus of “strongly discouraging the granting of resource consents for additional dairy farming” and instead focus on the effects of additional dairy farming that would not be considered acceptable. DHL wish to include a proviso to the end of clause 3 where the granting of consents will only be discouraged if the activity will have adverse environmental effects that cannot be avoided, remedied or mitigated. Ballance seek to delete clause 3 from this policy as it believes it is redundant if clauses 1 and 2 are being met.
- 6.112 Mt Linton Station seeks a different planning framework where existing land use is allowed but a gradual phasing or change of practice is favoured. The submitter considers that Farm Plans should be used as an approach to make sure good management practices are implemented, risk identified and mitigation put in place in a reasonable and practical timeframe that fits farming budgets.

## **Analysis**

- 6.113 As stated earlier, the use of the physiographic zones assists in understanding suitable mitigation measures to address potential water quality risks (which are closely aligned with the key contaminant pathways identified for each zone). While the technical information available indicates that intensive farming activities in the Peat Wetlands zone are likely to result in a risk to water quality, there are instances where such activities can be appropriately managed to ensure the effects on the environment are acceptable. The direction set out in Policy 11 (and subsequently reflected in the non-complying activity status for dairy farming and intensive winter grazing in the relevant rules) acknowledges that while there is likely to be a risk to water quality as a result of these activities, there may be instances (i.e. true exceptions) where consent may be granted, such as properties that do not exhibit the typical characteristics associated with their physiographic zone. The use of a prohibited activity status has a high legal test and in my opinion, the submitters have not justified that this position is necessary to achieve the Plan’s objectives (particularly Objectives 6, 7 and 8). Without further evidence from the submitters that demonstrates that additional dairy farming and intensive winter grazing should be prohibited, I do not recommend the submissions from DOC, Forest and Bird and Fish and Game be adopted.

- 6.114 Clause 3 of Policy 11 provides clear direction that additional dairy farming and additional winter grazing are not generally considered appropriate activities in the Peat Wetlands zone. The amendments sought by Ballance and Fonterra would remove the direction set out for the zone, reducing the effectiveness in the ability to achieve the objectives of the pSWLP. I note “the effects of additional dairy farming that would not be considered acceptable” are set out elsewhere in the Plan<sup>199</sup>. It is not clear how focusing on these matters would be a more effective or efficient way of achieving the objectives than the direction set out in Policy 11. I do not recommend these submissions are adopted. I note the amendments sought by DHL are not necessary, as the criteria for granting or declining non-complying activities are already set out in section 104D of the RMA.
- 6.115 In response to the concerns raised by Coasthaven Farms and Paterson Gavara Trust, I note that the proposed new policy (as recommended in section 4.2.3.4) will provide clear direction to those using the Plan that site specific soil information will be considered when processing resource consent applications.

### **Recommendation**

- 6.116 Retain Policy 11 as notified.

### **Policy 12 (Riverine)**

- 6.117 Ten submissions were received that seek specific amendments to, or make comments on Policy 12 (Riverine). Six submitters seek that the policy is retained as notified, while Federated Farmers requests that the policy be deleted.
- 6.118 Fish and Game notes that the Riverine Physiographic zone is susceptible to nutrient loss and water degradation from dairy and winter grazing, however due to flushing by alpine water, nitrogen is transported down catchment and likely contributes significant load to downstream ecosystems. The submitter seeks amendments to provide direction with respect to the granting of resource consents for new, or further intensification of existing dairy farming of cows and additional intensive winter grazing. Ngāi Tahu also seeks amendments to discourage the granting of consents for new or additional dairy farming of cows and additional winter grazing.
- 6.119 DOC notes that streams that receive water from high nitrate aquifers are likely to exceed the nitrate toxicity standards for freshwater in the NPSFM. The submitter has sought amendments to the policy to strongly discourage the granting of resource consents which increase the loss of nitrates to groundwater.

### **Analysis**

- 6.120 DOC, Fish and Game and Ngāi Tahu have correctly identified that water quality in the Central Plains physiographic zone is at risk from the effects of further land use intensification. The amendments sought by these submitters would discourage consents for new dairy farming and additional intensive winter grazing, which may be more commensurate with a non-complying activity status. The Council has acknowledged this

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<sup>199</sup> In particular, Policy 15

issue in the technical assessments that support the Plan. This issue is further addressed in section 7 of this report in relation to the use of physiographic zones and activity status.

## Recommendation

6.121 Retain Policy 12 as notified, subject to the conclusions reached in section 7 of this report.

## Glossary: Physiographic zone

6.122 The definition of “Physiographic zone” states:

*The zones as depicted on Map Series 4: Physiographic Zones*

## Submission and analysis

6.123 The definition of “Physiographic zone” received six submissions, with one in support seeking the definition be retained.

6.124 Federated Farmers seek that the reference to physiographic zones be deleted from the plan in its entirety. It is recommended throughout this report to retain the physiographic zones and therefore I do not recommend the corresponding definition be deleted.

6.125 Beef and Lamb seek that the definition is deleted on the basis that they seek that the physiographic zone maps are kept outside of the plan. It is recommended in section x of this report that the physiographic zone maps are retained in the plan (with higher resolution for some zones), and as such I do not recommend deleting the definition of physiographic zones.

6.126 Several submitters seek that the definition be amended to provide clarity to plan users. FarmRight seek a clearer definition of physiographic zones in relation to intensive winter grazing, whereas Ravensdown and the Fertiliser Association NZ seek the following amendments:

*“A physiographic zone represents areas of the landscape with common attributes that influence water quality, such as climate, topography, geology and soil type. Zones differ in the way sediment, microbes, and nutrients such as nitrogen and phosphorus accumulate and are transferred through the soil, aquifers and into waterbodies.”*

*The zones ~~as~~ are depicted on Map Series 4: Physiographic Zones and individually described in the Plan, Part A, pages 18 – 21.”*

6.127 It is my view that the amendments sought by Ravensdown and the Fertiliser Association NZ are useful improvements and provide the clarification to plan users by including a definition/description of the physiographic zones in one place (being the glossary) in lieu of reading the introductory section of the pSWLP. I recommend the submissions from Ravensdown and the Fertiliser Association NZ be accepted.



## Recommendation

6.128 That the definition of “Physiographic zone” be amended as follows:

*“A physiographic zone represents areas of the landscape with common attributes that influence water quality, such as climate, topography, geology and soil type. Zones differ in the way sediment, microbes, and nutrients such as nitrogen and phosphorus accumulate and are transferred through the soil, aquifers and into waterbodies.”<sup>200</sup>*

*The zones ~~as~~ are depicted on Map Series 4: Physiographic Zones and individually described in the Plan, Part A, pages 18 – 21.”*

## Policy 37 – Climate Change

6.129 Policy 37 reads:

*Avoid or mitigate adverse effects on the environment arising from climate change by recognising and providing for the development and protection of the built environment and infrastructure in a manner that takes into account the potential effects of rising sea levels and the potential for more variable and extreme weather patterns in coming decades.*

## Submissions

- 6.130 Policy 37 received 16 submissions with five submissions in support, seeking that it is retained as notified. Rimu Grasslands and Leicester Downs support the policy and seek to increase its priority by moving the policy into the top 5 policies.
- 6.131 DOC is opposed to Policy 37, as it considers it is inconsistent with the NZCPS, and consequently seeks that the policy is deleted. R Van Gool also opposes Policy 37, stating that individuals and district councils should be held responsible to mitigate or avoid any adverse effects.
- 6.132 Several submitters seek minor wording changes, including the deletion of ‘avoid or mitigate’ and replace with ‘manage’ and replacing the word “by” with “while”.
- 6.133 Ernslaw One is concerned about the social cost of sea level rise and seeks that the pSWLP includes a coastal hazards policy and rules to address the impacts of sea level rise. The submitter also seeks the use of a “LIDAR” digital terrain model to identify areas at risk from flooding and inundation.
- 6.134 S McDonald and R Halder request rules to aid policy implementation. The submitters state that the rules would need to identify the role of the farmer, the manager on the land in coping with extreme and/or variable climate and weather conditions.
- 6.135 Real Journeys seeks to include reference to the increased occurrence of flood events in the policy. B Smith requests clarification of the meaning of the policy, the anticipated sea level rise and the process for the public to comment on steps to avoid or mitigate effects.

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<sup>200</sup> 661.49 Ravensdown; 803.54 Fertiliser Association NZ

## Analysis

- 6.136 The pSWLP is to be read together in its entirety, where no one policy has priority over another. The number of a policy does not correspond to the order or importance of policies. Amending the Plan to change the policy number will therefore not increase the priority of the policy, as sought by Rimu Grasslands and Leicester Downs and as such I do not recommend the numbering is changed.
- 6.137 In regards to the submission from DOC, I agree that the wording of Policy 37 is inconsistent with the NZCPS, particularly Policy 25 – Subdivision, use, and development in areas of coastal hazard. However, it is my view that it is still important to include policy direction in relation to climate change, particularly as this climate change policy was drafted to achieve the pSRPS<sup>201</sup> and section 7(i) of the RMA. Rather than delete the policy, I recommend the policy is amended so that it is consistent with the NZCPS. DOC may wish to comment in evidence on the suggested amendments.
- 6.138 In the same respect, amending the policy to remove ‘avoid’ would potentially create difficulties, as it would effectively reduce options to just mitigation, to manage the issue. This would not be consistent with Policy 25 of the NZCPS. For this reason, I do not recommend that the policy is amended to delete this reference.
- 6.139 With respect to coastal issues in particular, the Council is currently in the process of reviewing the Southland Coastal Plan. It is considered that the Southland Coastal Plan is a better forum to comprehensively review coastal hazards and sea-level rise. For the other submissions seeking clarification of climate change in general or seeking further policy guidance I note that the pSRPS has extensive policy direction for climate change/natural hazards. No further amendments are recommended in response to these submissions.

## Recommendation

- 6.140 Amend Policy 37 as follows:

*Avoid or mitigate ~~increased risks~~ adverse effects on the environment arising from climate change, particularly taking ~~by recognising and providing for the development and protection of the built environment and infrastructure in a manner that takes into account the potential effects of rising sea levels and the potential for more variable and extreme weather patterns in coming decades.~~*<sup>202</sup>

## Policy 38 – Natural Hazards

- 6.141 Policy 38 reads:

*Reduce the susceptibility of the Southland community and environment to natural hazards by improving planning, responsibility and community awareness for the avoidance and mitigation of natural hazards.*

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<sup>201</sup> See 8.4 Methods, in particular.

<sup>202</sup> 210.68 DOC

## Submissions & Recommendation

6.142 All 11 submissions received seek to retain Policy 38 and therefore the policy is recommended to be retained without amendment.

### Policy 39 – Application of the permitted baseline

6.143 Policy 39 reads:

*When considering any application for resource consent for the use of land for a farming activity, Environment Southland will consider all adverse effects of the proposed activity on water quality, whether or not this Plan permits an activity with that effect.*

### Submissions

6.144 Policy 39 received 37 submissions with two in support seeking that the policy be retained.

6.145 SCB seeks to be consulted on matters within its authority and jurisdiction.

6.146 Twenty-four submitters seek that Policy 39 be deleted. Several of the submitters that seek to delete Policy 39 are concerned that the policy singles out farming. Ballance states that it is appropriate to control effects but activity specific controls are inappropriate. Fulton Hogan state that removing the application of the permitted baseline from resource consent applications provides a regime counter to the direction of existing case law.

6.147 Similarly, the specific decisions requested seek recognition of the economic benefits of farming and recognition of investment and infrastructure on farm. Other submissions seek changes such as timeframes, or exemptions, for example excluding existing sheep farming, to the consenting process.

6.148 Fish and Game, DOC and Forest and Bird seek to amend the policy to refer to water quantity as well.

### Analysis

6.149 The concerns raised by a large number of the submitters on Policy 39 about the removal of the permitted baseline are recognised. However, the intent of the policy is to capture farming activities that are less common land uses but have large N losses that are not captured by the permitted thresholds and proposed provisions. Application of the permitted baseline to such farming activities therefore has the potential to adversely affect water quality and risk the achievement of the Plan's water quality objectives.

6.150 The legality of Policy 39 was raised in a number of submissions. This is addressed in section 2 of this report.

6.151 In response to SCB request, section 95A to 95G outline the process for notification of resource consents. While a regional plan can contain provisions relating to notification,

for example directing that consent for a particular activity will not be notified<sup>203</sup>, this is to be specified in a rule, rather than at a policy level. As such, I do not recommend changes to the policy in relation to this submission.

## **Recommendation**

6.152 Retain Policy 39 as notified.

## **Policy 39A – Integrated Management**

6.153 Policy 39A reads:

*To improve integrated management of freshwater and the use and development of land in whole catchments, including the interactions between freshwater, land and associated ecosystems (including estuaries).*

## **Submissions**

- 6.154 Policy 39A received 14 submissions with seven submissions in support seeking that Policy be retained. Two submissions, from L & V Cowan and Hort NZ, seek to delete Policy 39A. Hort NZ, while supporting integrated management, as required by the RMA, consider that the policy directs an inappropriate approach to consenting, as in their view, integrated management requires consideration of factors beyond the individual consent application. L & V Cowan have concerns about the cost and paperwork and generally the regulation imposed on people in relation to this policy.
- 6.155 Fonterra seeks clarification of how Policy 39A will achieve integrated management in the context of individual resource consent applications. Fonterra seeks clarification on the expectations to be placed on consent applicants.
- 6.156 DHL seeks amendment to improve integrated management through new initiatives, specifically nutrient user groups. This submission has been addressed in Section 7.2 Farming.
- 6.157 R Kempthorne seeks to amend the policy to reflect the effects within upper/middle/lower aspects of catchments rather than the whole.
- 6.158 Forest and Bird seeks an amendment to include the coastal marine area when referring to associated ecosystems. Forest and Bird states that the coastal marine area is also the Regional Council's responsibility.
- 6.159 Aratiatia Livestock seeks that Council should review the Manapouri Hydro Scheme consents. This submission has been addressed in Section 8 Water Quantity.

## **Analysis**

- 6.160 In relation to Hort NZ's concerns that integrated management requires consideration of factors beyond the individual consent application, I note that the policy will provide

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<sup>203</sup> Section 77D.

consenting officers with guidance to not consider applications in isolation. In my view this is appropriate, as it assists in achieving Objective 1, which seeks that land water and associated ecosystems are managed as integrated resources. I do agree that the policy needs a minor rewording for clarification.

- 6.161 In response to L & V Cowan, my view is that the policy does not have unreasonable costs or introduce a level of regulation that is unnecessary.
- 6.162 In relation to the clarity sought by Fonterra as to how integrated management will be considered in resource consent applications, my view, as noted above is that it will ensure that such applications are not considered in isolation, but that in considering the interactions between resources, a greater degree of integrated management can be achieved.
- 6.163 R Kempthorne's concerns have been noted. However, the reference within the policy to whole catchments does not preclude consideration of effects on particular parts of a catchment. Rather, it ensures that consideration is given to various interactions within the catchment as a whole.
- 6.164 The concerns raised by Forest and Bird have been addressed in other places in this report specifically the legal section in section 2. I agree that integrated management in a general sense includes the coastal marine area. However, the pSWLP does not control activities within the CMA and therefore inclusion of this reference in the policy would not be implemented through this Plan's provisions. Further, the inclusion of "estuaries" provides for Forest and Bird's concern in regards to freshwater in the CMA.
- 6.165 Some submitters read the policy as a general policy not specifically for consenting considerations. The amendment I recommend should address this.

## **Recommendation**

- 6.166 Amend Policy 39A as follows:

*To ~~improve~~consider<sup>204</sup> integrated management of freshwater and the use and development of land in whole catchments, including the interactions between freshwater, land and associated ecosystems (including estuaries).*

## **Policy 40 – Determining the term of resource consents**

- 6.167 Policy 40 reads:

*When determining the term of a resource consent consideration will be given, but not limited, to:*

- 1. granting a shorter duration when there is uncertainty regarding the nature, scale, duration and frequency of adverse effects from the activity or the capacity of the resource;*
- 2. relevant tangata whenua values and Ngāi Tahu indicators of health;*
- 3. the duration sought by the applicant, plus material to support the duration sought;*
- 4. the permanence and economic life of any capital investment;*

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<sup>204</sup> C116

5. *the desirability of applying a common expiry date for water permits that allocate water from the same resource or land use and discharges that may affect the quality of the same resource;*
6. *the applicant's compliance with the conditions of any previous resource consent; and*
7. *the timing of development of FMU sections of this Plan, and whether granting a shorter or longer duration will better enable implementation of the any revised frameworks established in those sections.*

## Submissions

- 6.168 Policy 40 received 77 submissions with 17 submissions in support seeking that it is retained.
- 6.169 Eight submitters seek to delete Policy 40 entirely. Other submitters seek to delete parts of the policy including Fulton Hogan & Southern Aggregates seek to delete (2), three submitters seeking to delete (6) and five submitters seeking to delete (7).
- 6.170 Six submitters seek to amend Policy 40 to 15-25 year consents for all current and future farming operations. Other submitters seek clarification of timeframes and transparency of timeframes. Several submitters seek a set a timeframe for all resource consents.
- 6.171 Generally, the submitters' reasoning relates to the economic investment made. For example, INZ state that investment certainty is paramount if irrigators are to invest in efficiency. Several submitters seek that consideration of capital investment when considering the duration of consents for example improvements to effluent systems. Some of these submitters specifically support Policy 40(4).
- 6.172 DHL opposes the use of common expiry dates for water permits. DHL seeks a specific amendment to provide suitable review conditions. Fonterra generally supports Policy 40, however seeks specific amendments to (1) and (4), and a minor amendment to (7). Firstly, Fonterra seeks to amend (1) to refer to irreversible adverse effect. Secondly, the amendment to (4) is as follows "the permanence and economic life of any capital investment, particularly where the investment serves to avoid or mitigate adverse effects of the activity".
- 6.173 The Oil Companies support consideration of longer and shorter term consents, depending on an activity and assessment of effects. The Oil Companies also seeks to include reference to section 128 in Policy 40, noting that reviews under section 128 are underutilised by territorial and regional authorities but are an appropriate way of dealing with adverse effects arising from implementation of consents.
- 6.174 Fish and Game supports the policy, however, seeks to amend it to include reference to cumulative adverse effects in accordance with the definition of effects in section 3 of the RMA.
- 6.175 GDC, ICC and SDC support Policy 40 where the permanence and economic life of any capital investment is a consideration for determining the term of a resource consent. However, they seek that social, cultural, economic and environmental wellbeing as well as health and safety are also considered because many of the territorial authorities' infrastructure-related consents are necessary to undertake their necessary functions within their communities such as potable water supply, stormwater management and wastewater management.

- 6.176 Progressive Engineering Southland seeks the addition of a new policy that enables the Council to recognise good management practices already implemented on farm when considering resource consent applications and determining the term of resource consents.

## **Analysis**

- 6.177 This policy is a mechanism for consideration of consent duration during the consent processing. In general, the submissions received highlighted concerns about the consequences of the duration of time for which consents may be granted. A number of submissions were received seeking to delete Policy 40 or parts of Policy 40. These submitters shared concerns about the shortening of consent durations and concern with the alignment of consenting with the FMU process. Some submitters seek more direction in the policy through specification of a set timeframe for all resource consents.
- 6.178 One of the purposes of the policy is to provide for the opportunity to bring consents in line with the limits that will be set in the Plan as the development of the FMU sections occurs. A number of submitters argue that Council has the option to achieve this through performing a consent review. However, such a review would come at a large cost to Council, and could result in less certainty for consent holders. In my view, relying on consent reviews is less appropriate than the policy direction proposed. I also note that the wording of the policy is such that it directs consideration of timeframes, rather than mandating any set duration. This allows for consideration on a case-by-case basis as to whether, in any given situation, consent duration should be aligned with the FMU process or not, including consideration of other matters identified in the policy, such as capital investment.
- 6.179 The capital investment made by farmers is identified in the reasoning of a majority of the submissions opposing shortening consent durations. For example, DHL considers that the certainty of farming operations is eroded when consents are granted for shorter terms than they would ordinarily be, and it also significantly increases consenting costs. Submitters such as Seaview Trust and Oraka Farms state that consents should also not be aligned with the FMU process because of the uncertainty around when community processes will take place and when decisions will be made. I understand the concerns of the submitters, however, as noted above, the policy explicitly directs consideration of capital investment. This must be considered alongside other factors, such as the risk of over-allocation and the requirements under the NPSFM in relation to this. I also note that in the absence of directive policy guidance, the Council is in any case able to determine a lesser duration than the maximum limits set out in section 123 of the RMA. In my view, providing some policy guidance is more appropriate, and particularly in relation to alignment with FMU processes, and is a more efficient and effective way to assist in the achievement of the Plan's water quality objectives.
- 6.180 Fish and Game seeks to consider cumulative effects when determining consent durations. Cumulative effects are encompassed in the meaning of effect in the RMA. It is considered that there is no need to duplicate the definition.
- 6.181 In my view, the request by GDC, ICC & SDC to include consideration of social, cultural, economic and environmental wellbeing is more appropriate to the consideration of whether a consent should be granted, rather than the duration of the consent. The

submitters may wish to expand on why social, cultural, economic and environmental wellbeing, as opposed to the matters listed, should be considered when determining consent duration.

6.182 I note that the matters listed in Policy 40 are not all inclusive, and the Council may have regard to other matters including the good management practices already implemented on farm. However, given that the pSWLP sets good management practice as a minimum requirement for all farming activities, I do not consider it needs to be explicitly included in Policy 40, or as a separate policy. I recommend the submission from Progressive Engineering Southland be rejected.

6.183 A minor amendment is sought by Fonterra in clause (7). I agree that the clause as currently written is incorrectly worded. I recommend a minor correction. In addition, I consider that the opportunity to explicitly consider what GMPs have been adopted, may encourage greater uptake of these GMPs and, in part, reward good environmental outcomes, as sought by Progressive Engineering Southland.

### **Recommendation**

6.184 Amend Policy 40(6) and (7) as follows:

6. *the applicant's compliance with the conditions of any previous resource consent, and adoption, particularly voluntarily, of good management practices<sup>205</sup>; and*
7. *the timing of development of FMU sections of this Plan, and whether granting a shorter or longer duration will better enable implementation of the ~~any~~<sup>206</sup> revised frameworks established in those sections.*

### **Policy 41 – Matching monitoring to risk**

6.185 Policy 41 reads:

*Consider the magnitude of environmental effects and risk when determining requirements for auditing and supply of monitoring information on resource consents.*

### **Submissions**

6.186 Eighteen submissions were received on Policy 41. Ten submissions seek that the policy be retained as notified. Federated Farmers seeks to delete Policy 41.

6.187 A few specific amendments to Policy 41 are requested by submitters. Ravensdown supports a risk based approach. However, it seeks some amendments for clarification. INZ seeks amendments to take into account regional monitoring networks and to avoid conditions that duplicate these.

6.188 Bristol Grove Dairies seeks that the policy should also apply to farming enterprises, and a farm with a good track record of environmental compliance should have less auditing and monitoring than one that continually breaches consents.

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<sup>205</sup> 647.3 Progressive Engineering Southland

<sup>206</sup> C116



- 6.189 M Tayler seeks specific amendments to the policy to consider the magnitude of environmental effects “relative to cost of improvement option, be it regulation/rules, education and GMP’s or farm management plans”. M Tayler submits that there are alternatives to regulation such as education and promotion of good management practices.
- 6.190 There are also other submissions that have been made on each of the consenting consideration policies and which have been addressed in the analysis of Policy 39. As such, they have not been repeated here.

### **Analysis**

- 6.191 Policy 41 is intended to provide consenting guidance to match monitoring conditions to the level of risk. Ravensdown considers the term ‘magnitude’ is uncertain, and would prefer the term ‘significance’ to be consistent with the terminology used in the RMA. I disagree that ‘significance’ and ‘magnitude’ have similar definitions. I note that Schedule 4(1)(i) of the RMA refers to scale and significance of the activity’s effects on the environment. However, the RMA does not specifically define ‘significance’. In my opinion the definition of significance refers to the importance whereas magnitude refers to the size. Section 108 of the Act is general in what monitoring can be required of the consent holder. Because the policy is intended to provide guidance to consenting officers the use of ‘magnitude’ is intended to allow for discretion when drafting monitoring conditions. As the Act isn’t explicit about monitoring to be matched to risk when considering consenting conditions and because the purpose of the policy is to provide consenting guidance, I recommend ‘magnitude’ be retained.
- 6.192 The concerns of Bristol Grove Dairies & M Tayler are directly related to “risks” and in my opinion, is adequately covered by the existing policy.
- 6.193 INZ’s submission to take into account regional monitoring networks and avoid duplication with these is noted. The purpose of this policy is to provide guidance at resource consent level. This is to allow for case by case assessment on monitoring required and does not preclude consideration of other monitoring already being undertaken. No changes are recommended.
- 6.194 Federated Farmers submit that the policy is superfluous as Council already matches monitoring to risk when setting the monitoring requirements for resource consents. However, the current framework doesn’t explicitly provide for consideration of the magnitude of environmental effects and risk when determining monitoring requirements. It is my opinion that the policy is not superfluous and provides consenting officers appropriate guidance.

### **Recommendation**

- 6.195 Retain Policy 41 as notified.

## Freshwater Management Unit Process Policies

### Policy 44 – Implementing Te Mana o te Wai

6.196 Policy 44 sets out part of the guidance for FMU limit setting processes, by seeking to implement Te Mana o te Wai in these processes. As outlined in the introduction of the pSWLP, Te Mana o te Wai puts the mauri (inherent health) of the water body and its ability to provide for te hauora o te tangata (the health of the people) and te hauora o te wai (the health of the waterbody) to the forefront of freshwater management. Policy 44 lists nine specific values that particular regard will be given to, noting that there may be additional regional and local values to be determined during the FMU limit setting process.

6.197 As outlined in the section 32 Report for the pSWLP, in accordance with the NPSFM, Council has identified five FMUs based on Southland’s surface water catchments. The FMUs identified are:

- Fiordland and Islands
- Maitai – Toetoes Harbour
- Aparima and Pourakino
- Oreti and Waihopai – New River Estuary
- Waiau – Te Waewae Lagoon.

6.198 Policies 44 to 47 and Rule 2 of the pSWLP provide the context for the development of Environment Southland’s FMU response.

6.199 Policy 44 reads:

*Te Mana o te Wai is recognised at a regional level by tangata whenua and the local community identifying values held for, and associations with, a particular waterbody and freshwater management unit.*

*Particular regard will be given to the following values, alongside any additional regional and local values to be determined in the freshwater management unit limit setting process:*

- *Te Hauora o te Wai/ the health and mauri of water;*
- *Te Hauora o te Tangata/ the health and mauri of the people;*
- *Te Hauora o te Taiao/ the health and mauri of the environment;*
- *Mahinga kai/ food gathering, places of food;*
- *Mahi māra/ cultivation;*
- *Wai Tapu/ Sacred Waters;*
- *Wai Māori/ municipal and domestic water supply;*
- *Au Putea/ economic or commercial development;*
- *He ara haere/ navigation.*

### Policy Constraints

6.200 The policy constraints in respect of the NPSFM have generally been set out in section 2, Legal and Statutory Context above.

- 6.201 It is of particular note in relation to Policy 44 that the NPSFM also contains freshwater objectives for a range of tangata whenua values, intended to recognise the national significance of Te Mana o te Wai.
- 6.202 The RPS sets region-wide objectives, policies and methods for achieving the integrated management of the natural and physical resources in Southland. Of relevance to Policy 44 – Implementing Te Mana o te Wai, are the following objectives and policies relating to:
- sustaining the quality of the region’s water resources to meet the needs of a range of uses and safeguarding its life-supporting capacity (Objective 5.1, Policy 5.2, 5.3 and 5.8);
  - ensuring water quality is maintained and wherever practicable enhanced during use and development of water and land resources (Objective 5.2, Policy 5.2 and 5.5)
  - ensuring activities do not compromise water quality standards established for the region (Objective 5.3, Policy 5.1 and 5.2)
  - recognising the relationship of Maori with water (Objective 5.4, Policy 5.4 and 5.8).
- 6.203 The decision version of the pSRPS (currently under appeal) has a number of provisions that are relevant. Objective WQUAL.1 (Water quality goals) sets out the overall framework for the management of water quality in Southland. Of particular relevance is Objective WQUAL.1(c) that requires water quality in the region to be maintained, or improved in accordance with freshwater objectives formulated under the NPSFM, and WQUAL.1(d) which requires water quality to be managed to meet the reasonably foreseeable social, economic and cultural needs of future generations.
- 6.204 Objective WQUAL.2 – Lowland water bodies<sup>207</sup> aims to halt the decline, and improve water quality in lowland water bodies and coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands in accordance with the NPSFM. Objective WQUAL.3 – Water in natural state requires water quality to be maintained where it is in its natural state.
- 6.205 These objectives are supported by a number of policies, and those of particular relevance to implementing the NPSFM are Policy WQUAL.1 (Overall management of water quality) which recognises that all waterbodies in the region have specific values, and that these must be identified to formulate freshwater objectives in accordance with the NPSFM. Policy WQUAL.2 (All waterbodies) requires particular regard to be given to the major contaminants being nitrogen, phosphorus, sediments and microbiological containments. Policy WQUAL.3 (Wetlands and outstanding freshwater bodies)<sup>208</sup> sets out the approach to identifying and protecting the significant values to wetlands and outstanding freshwater bodies within the region. Policy WQUAL.6 – Social, economic and cultural benefits requires recognition of these potential benefits when managing water. Method WQUAL.1 Regional Plans requires that the Council establish and maintain provisions in regional plans in accordance with the NPSFM, and Method WQUAL.6 – Land use effects on water quality which, among other points, requires a timetable for setting freshwater objectives.

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<sup>207</sup> Still subject to appeal

<sup>208</sup> Still subject to appeal

- 6.206 Objective WQUAN.1 – Sustainably managing the region’s water resources requires that flows, levels and allocation regimes of surface water and groundwater in the region are developed in accordance with the NPSFM. This is supported by Policy WQUAN.2 – Over-allocation and Policy WQUAN.3 - Regional plans.
- 6.207 Te Mana o te Wai is consistent with the intent of the iwi management plan Te Tangi a Taurira - *The Cry of the People* and supports application of ki uta ki tai (mountains to the sea).

### Submissions and analysis

- 6.208 There were 13 submissions on Policy 44, seven seeking its retention, and six seeking amendments as set out below.
- 6.209 Federated Farmers seeks to delete the policy and replace it with new wording, as it considers that the effects to be managed are unclear. The submission seeks that the catchment limit-setting process recognises and provides for “Te Mana o te Wai, The NPSFM national objectives framework, the need to use land and freshwater resources for drinking water, primary production, commercial and industrial activities; and the ecological, recreational, aesthetic and amenity values of lakes, rivers, hapua and wetlands.” Policy 44 relates to implementing Te Mana o te Wai, and within the NPSFM 2014, there is a range of community and tangata whenua values listed within Appendix 1: National values and uses for freshwater. This list contains the compulsory national values, and additional national values, which are directly replicated within Policy 44. Given that this list is taken directly from the NPSFM, I do not support the submission by Federated Farmers to delete Policy 44, as the submission will put Te Mana o te Wai as part of a list of considerations, whereas Policy 44 as currently worded, more accurately reflects that Te Mana o te Wai encompasses a number of values as outlined in Appendix 1: National values and uses for fresh water in the NPSFM.
- 6.210 SCB seeks an amendment to clarify which islands “Fiordland and the islands” refers to. The Fiordland and the Islands FMU is contained within Map Series 7, Map 1 within Part B of the pSWLP. I consider that this map, which is also colour coded, depicts all of the Islands, and as such I do not consider that further detail is required. I therefore do not recommend adopting the submission of the SCB in relation to the Islands.
- 6.211 A Wilson and S Wilson support in part the FMU Policies 44-47 in the pSWLP, but seek that “the W & L plan needs to clarify the limit setting process method of community engagement. Iwi and Environment Southland’s special relationship values are not to be used as a proxy for local community values. The limit setting process and management of FMUs should be done via a truly collaborative process.” The Oil Companies support retaining Policy 44, but seek clarity on how “Freshwater Management Units will be developed and how stakeholders will have an opportunity to participate in the process.” Both of these submissions relate more to Policy 47, and how the FMU process and community engagement will actually work, and as such these submission points will be addressed under the analysis of Policy 47 below.
- 6.212 P & L Cruickshank seeks that the policy is amended to allow for “deviations being allowed regardless of existing rights”. It is not clear what “existing rights” the submitter is referring to, as ongoing existing use rights generally relate to district plans under section 10 and section 10A of the RMA. Section s20A, applicable to regional plan rules,

still requires that consent be obtained for existing activities (where a rule is introduced requiring that consent be obtained), providing a 6-month grace period to do so. I acknowledge that the implications of new rules on existing activities is a matter that should be considered in the FMU process, and specifically that the NPSFM requires consideration of “any implications for resource users, people and communities arising from the freshwater objectives and associated limits including implications for actions, investments, ongoing management changes and any social, cultural or economic implications” (Policy CA2(f)v.) These considerations will need to be weighed up alongside other requirements. I therefore do not recommend adopting this submission point of P & L Cruickshank.

## **Recommendation**

6.213 Retain Policy 44 as notified.

## **Policy 45 – Priority of FMU policies and rules**

6.214 Policy 45 sets out the priority of the FMU policies and rules, including that there may be additional catchment-specific objectives and policies developed through the limit setting process. Policy 45 also outlines that as FMU sections of the Plan are developed there will not be changes to the region-wide objectives or policies. It also states that where an FMU policy addresses the same matter as another policy, the former will prevail.

6.215 Policy 45 reads:

1. *In response to Ngāi Tahu and community aspirations and local water quality and quantity issues, FMU sections may include additional catchment-specific objectives and policies. These FMU objectives and policies will be read and considered together with the region-wide objectives and policies. Any policy on the same subject matter in the relevant FMU section of this Plan prevails over the relevant policy within this Regional Policies Section, unless it is explicitly stated to the contrary.*

*As the FMU sections of this Plan are developed in a specific geographical area, FMU sections will not make any changes to the region-wide objectives or policies and will not deviate from the structure and methodology outlined in these Process Policies.*

*Note: As the FMU sections are developed in a specific geographical area, it is unfair if changes are made to region-wide objectives and policies, which apply in other parts of Southland, without the involvement of those wider communities.*

## **Submissions and analysis**

6.216 There were 27 submissions on Policy 45, five are seeking that it is retained and the remaining submissions are seeking amendments or further clarification on the wording as set out below:

6.217 B+LNZ seeks clarification as to whether the “FMU limit setting process will cause changes to the Water and Land Plan and ensure that FMU policies and methods can be catchment specific and override region wide rules that may apply to that catchment.” Hort NZ seeks that values are established in the FMU process and not prescribed in the

region wide section of the Plan. The intent as set out in Environment Southland's Progressive Implementation Programme is that there will be plan changes for all of the Freshwater Management Units as part of implementing the NPSFM. It is anticipated that any plan changes, including identification of values will be relevant to the specific FMU, and will be contained within the pSWLP. I therefore do not recommend adopting any changes as a result of the clarification sought within the B+LNZ or Hort NZ submissions in relation to the FMU limit setting process.

- 6.218 J Bythell seeks to retain Policy 44, but seeks clarification “whether a community and/or Ngāi Tahu seeking section-specific objectives and policies means sub-catchments within a Freshwater Management Unit (FMU) could aspire to higher standard than those set for the broader FMU.” As part of the FMU process, it is anticipated that catchment limits will be determined via a community and council process, taking into account social, cultural, economic and scientific information to determine the future limits. At this point, it is impossible to outline what any future catchment limits may be, given that the process has not commenced. I therefore do not recommend adopting any changes as a result of the clarification sought within J Bythell's submission in relation to the FMU limit setting process.
- 6.219 D Clarke seeks that the Maitai catchment is split into two, if not three areas. H Diack seeks amendments to allow sub-catchments to be formed. J C & AH MacDonald seeks that catchments with no dairy or minimal should have a different structure and methodology. A number of submissions seek amendments to “provide for the use of lower order FMU at a more localised level.” These points are considered under Policy 46 – Identified FMUs, in the following section.
- 6.220 Fonterra support Policy 45 in part, but seeks amendments to enable the “pSWLP to recognise that further changes may need to be made to the region-wide provisions as a result of the FMU process.” The intent as set out in Policy 45 is that “FMU sections will not make any changes to the region-wide objectives or policies” meaning that any changes to these provisions as a result of FMU process would need to be subject to a separate plan change process. In my view this is appropriate as changes to the region-wide objectives and policies will have region-wide impacts. This is reflected in the note under Policy 45 that explicitly states “As the FMU sections are developed in a specific geographical area, it is unfair if changes are made to Region-wide objectives and policies, which apply in other parts of Southland, without the involvement of those wider communities.” I therefore do not recommend adopting the submission sought by Fonterra in relation to allowing for changes to the region-wide objectives and policies to be made through the FMU limit setting process.
- 6.221 Forest and Bird and Fish and Game both support the policy, but seek amendments that the FMU-specific policies must not be more lenient or less protective of water quality, quantity or aquatic ecology than region-wide provisions. Objective A2 of the NPSFM requires that the overall quality of fresh water within a region is maintained or improved, and under Policy A1 every regional council is required to make or change regional plans to the extent needed to ensure that plans establish freshwater objectives and set freshwater quality limits for all freshwater management units. Given these requirements under the NPSFM I do not recommend adopting any changes as a result of the amendments sought within the Forest and Bird and Fish and Game submissions in relation to the FMU limit setting process.

- 6.222 Ravensdown seeks that the heading is amended to read: “Priority of FMU Objectives and Policies.” The text contained within Policy 45 references that “...FMU sections may include additional catchment-specific objectives and policies...” As such, for clarity I recommend adopting the submission, and adding in the word “objective” as per the submission sought by Ravensdown.
- 6.223 FANZ seeks amendments to “provide for the introduction at the FMU level, of water quality limits and targets to be implemented using region wide rules and policies.” Within Southland, the FMUs will be developed catchment-by-catchment and will involve conversations with the wider community and council. Given that any resultant plan change for an identified FMU may have specific objectives, policies and rules, it would be unfair to impose these region-wide as the wider community would not have been privy to those conversations. Within the submission, changes are sought to include reference to values, attributes and limits, and I support this change to get the NPSFM terminology into the pSWLP. Overall, I do not recommend adopting the changes sought by FANZ to provide for water quality limits and targets to be implemented using region wide rules and policies, but do recommend adopting the reference to values and attributes as contained with the submission.
- 6.224 Federated Farmers supports Policy 45 in part, but seeks amendments so that the policy will “provide for catchment-specific values, objectives, standards and rules.” The submitter also seeks clarity by what is meant by “FMU’s will not deviate from the structure and methodology.” Federated Farmers also submit that the advice note is unnecessary. This submission point is similar to the request by FANZ outlined above in respect of using NPSFM terminology, and changes have already been recommended to be adopted in improve readability. To further improve readability I recommend adopting the reference to include region-wide “provisions”, however instead of stating provisions, I recommended retaining the existing language contained within Policy 45 and state rules. I also recommend adopting the deletion of the reference to “and will not deviate from the structure and methodology outlined in these Process Policies.” as set out in the Federated Farmers submission to provide clarity and to improve Plan readability. I do not support adopting the request to remove the Note, as in my opinion it provides clarity for Plan users, for the reasons set out earlier.
- 6.225 P & L Cruickshank seek amendments to allow deviations due to existing use rights. This submission has been considered in relation to Policy 44 above, and the same assessment and recommendation applies here.

## Recommendations

- 6.226 Amend Policy 45 as follows:

***Policy 45 – Priority of FMU objectives,<sup>209</sup> policies and rules***

*4. ———<sup>210</sup>In response to Ngāi Tabu and community aspirations and local water quality and quantity issues, FMU sections may include additional catchment-specific objectives, and policies, values and attributes.<sup>211</sup> These FMU objectives, and policies, values and attributes<sup>212</sup> will be read and*

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<sup>209</sup> 661.30 Ravensdown

<sup>210</sup> Clause 16

<sup>211</sup> 803.30 FANZ

<sup>212</sup> 803.30 FANZ

*considered together with the region-wide objectives and policies. Any policy on the same subject matter in the relevant FMU section of this Plan prevails over the relevant policy within this Regional Policies Section, unless it is explicitly stated to the contrary.*

*As the FMU sections of this Plan are developed in a specific geographical area, FMU sections will not make any changes to the region-wide objectives, ~~or policies~~ or rules, and will not deviate from the structure and methodology outlined in these Process Policies.<sup>213</sup>*

*Note: As the FMU sections are developed in a specific geographical area, it is unfair if changes are made to Region-wide objectives and policies, which apply in other parts of Southland, without the involvement of those wider communities.*

## **Policy 46 – Identified FMUs**

6.227 Policy 46 sets out the five identified freshwater management units, and references the associated map contained within the pSWLP Part B, on Map Series 7, Freshwater Management Units, Map 1.

6.228 Policy 46 reads:

*The FMU Sections of this Plan are based on the following identified Freshwater Management Units for Southland, as shown on Map Series 7: Freshwater Management Units:*

- *Fiordland and the islands;*
- *Aparima;*
- *Mataura;*
- *Ōreti; and*
- *Waiau.*

## **Submissions and analysis**

6.229 There are 37 submissions to Policy 46, with a large number of submitters opposed to the policy. The opposition to this policy was mainly around the concern that the current FMUs were too large and that they should be broken up in to sub-catchments. Three submissions seek to retain Policy 46 as drafted.

## **Create additional sub-catchments**

6.230 There were approximately 18 submissions seeking that additional sub-catchments are created. The main reasons related to smaller catchments being more representative, with some further submission examples listed below.

6.231 Ardoyne Farms Dairys opposes Policy 46 as “*existing catchments are too large and need to be reviewed into smaller units.*”

6.232 R Greer seeks amendments as this would “*empower local farmers to address water quality issues within their communities.*”

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<sup>213</sup> 265.63 Federated Farmers



- 6.233 J C & A H MacDonald opposes Policy 46 and seek amendments as *“in Southland there are at least 25 waterways... and that’s how many FMU’s there has to be.”*
- 6.234 Meridian opposes Policy 46 in part, and seeks amendments to state *“providing where circumstances show that the freshwater objectives and water quality and quantity limits would be better served by establishing smaller FMU’s at a sub-catchment level this will be undertaken.”*
- 6.235 Riverfield Farms recommends that *“each FMU is spilt into 3 based on Upper, Mid and Lower areas”* to fairly represent the FMU.
- 6.236 Rimu Grasslands & Leicester Downs seeks further subdivision of FMUs, and seeks that the Aparima FMU should be broken down into Headwater, Upper, Lower and Coastal Aparima.
- 6.237 Furthermore, submissions as set out in this paragraph were received under Policy 44, but are more relevant to Policy 46 and state the following: D Clarke seeks that the Mataura catchment is spilt into two, if not three areas. H Diack seeks amendments to allow sub-catchments to be formed. J C & AH MacDonald seeks that catchments with no dairy or minimal should have a different structure and methodology. A number of submissions seek amendments to *“provide for the use of lower order FMU at a more localised level.”*
- 6.238 These submissions outlined above broadly seek a reduction in the size of the five identified Freshwater Management Units to create smaller sub-catchments based, for example around waterways, communities, or upper, mid and lower areas. The five identified FMUs, and the existing identified sub-catchments (as shown on *Map Series 7, Freshwater Management Units, Map 1*) show the freshwater management unit boundaries where the future limits will be set. The FMU boundaries have been identified as the *main catchments in the Southland region, being, Oreti River, Aparima River, Mataura River and Waiau River, The Fiordland and the Islands FMU is largely within* public conservation land, including Fiordland National Park and Rakiura National Park, and towns within this FMU include Milford Sound and Oban. I note that the extent of the coastal boundary is drawn at the mouth of each of the estuarine environments (following a *ki uta ki tai* [mountains to the sea] approach).
- 6.239 I do not consider that the creation of specific additional sub-catchments within Policy 46 will be beneficial to implementing the NPSFM currently, as a range of water quality and quantity limits can be set within an overall FMU (i.e. at a sub-catchment level, where that is more appropriate), and having larger FMUs does not preclude this. The establishment of limits will be established through a community and council process which is yet to be determined. However, in order to provide some flexibility during the upcoming community and council process, I do support adopting the Meridian submission where *“providing where circumstances show that the freshwater objectives and water quality and quantity limits would be better served by establishing smaller FMU’s at a sub-catchment level this will be undertaken.”* However, rather than including the Meridian submission as part of Policy 46, I instead recommend adopting it as part of Policy 47 - FMU Processes below, as Policy 46 directly gives effect to Policy CA1 of the NPSFM which requires Council to identify FMUs. By including this within Policy 47, it would not create specific sub-catchments but should circumstances arise, where a smaller FMU is appropriate then this could be undertaken within Policy 47 - FMU processes.

### Specific requests for separate catchments

- 6.240 A number of submissions seek additional catchments to be identified, with the requests listed below:
- 6.241 S Baker and W Shaw seek that Grindstone Creek catchment is a separate catchment.
- 6.242 L Colling seeks that the Pourakino catchment is on its own as this is a different area with no towns affecting water.
- 6.243 Forest and Bird and Fish and Game seek that Waituna is added as an FMU.
- 6.244 R Kempthorne opposes Policy 46 in part, and seeks that the “*Waiau FMU map and all supporting documentation must be changed to reflect the true catchment movement of water.*”
- 6.245 These submission points outlined above are similar to the submissions seeking additional sub-catchments; however rather than sub-catchments, these ones seek separate Freshwater Management Units being created for Grindstone Creek, Pourakino, Waituna and Waiau. The five identified FMUs, and the existing identified sub-catchments (as shown on Map Series 7, Freshwater Management Units, Map 1) show the freshwater management unit boundaries where the future limits are proposed to be set.
- 6.246 I will specifically refer to the Waituna catchment (including Carrans Creek, Moffats Creek and Waituna Creek) as it is already incorporated as a sub-unit within the Matura Freshwater Management Unit. Including Waituna within this broader FMU will create a manageable and efficient process from a management perspective, will align with the Gorge Road community and existing community relationships, and will reflect groundwater connections. I therefore do not recommend adopting the submission of Forest and Bird and Fish and Game in relation to allowing for adding Waituna as a separate FMU.
- 6.247 As per my recommendation above in respect of the creation of sub-catchments, I do not consider that the creation of additional FMUs within Policy 46 will be beneficial to implementing the NPSFM within Southland currently. The establishment of limits will be established through a community and council process, and the creation of additional FMUs is not supported. The five FMUs have been based on the main catchments in the Southland region, being Oreti River, Aparima River, Matura River, Waiau River and then one FMU covering Fiordland and the Islands. These five FMUs have established monitoring programmes and science programmes that will assist with setting future water quality and water quantity limits and targets to achieve freshwater objectives. I therefore do not recommend adopting the submissions of S Baker and W Shaw, L Colling or R Kempthorne in relation to creating additional FMUs.

### General comments

- 6.248 P & L Cruickshank seek amendments to allow deviations due to existing use rights. This submission has been considered in relation to Policy 44 above, and the same assessment and recommendation applies here.
- 6.249 D Harris seeks a “*review of the current FMU system and significantly reduce the timeframe for limit setting.*” Fish and Game seeks to “*amend the pWLP to include specified time frames, including start*

*and completion dates, for individual FMU's in relation to the setting of limits (including objectives, policies and rules)."* The amended NPSFM was issued by notice in gazette on 4 July 2014. It took legal effect on 1 August 2014, thereby revoking the National Policy Statement for Freshwater Management 2011. One of the implications of the 2014 document is the shortened timeframe for implementation from 31 December 2030 to 31 December 2025<sup>214</sup>. This has required Council to review its previously adopted staged implementation programme<sup>215</sup>, and adopt and notify any amendments to the Progressive Implementation Programme (PIP), by 31 December 2015. Under Council's current PIP, the NPSFM will be fully implemented by 2025, thus meeting the NPSFM requirements. Therefore, I do not recommend adopting the submission of D Harris or Fish and Game to review the existing FMU system to include specific start and completion dates, or to amend the 2025 timeframe.

- 6.250 Ravensdown and FANZ seek that Policy 46 be deleted, and that the information is instead added as a schedule. However, I consider that Policy 46 should be retained as it sets out the identified Freshwater Management Units for the Southland region and it provides the course of action to achieve or implement the pSWLP objectives. I therefore do not recommend adopting the submission of Ravensdown and FANZ in relation to the deletion of Policy 46 and adding a schedule. Furthermore, Policy CA1 of the NPSFM explicitly requires that the council identify FMUs that include all freshwater bodies within its region, and Policy 46 gives effect to that requirement.
- 6.251 Real Journeys and SCB seek a definition for "the islands." This has been considered in relation to Policy 44 above, and the same assessment and recommendation applies here.
- 6.252 The submission of A Wilson and S Wilson support in part the FMU policies 44-47 in the pSWLP, but seek that "the W & L plan needs to clarify the limit setting process method of community engagement. Iwi and Environment Southland's special relationship values are not to be used as a proxy for local community values. The limit setting process and management of FMUs should be done via a truly collaborative process." As outlined for Policy 2 in section xxx above, the FMU processes will likely result in a range of community ascribed values, some of which are likely to align with the Ngāi Tahu indicators of health. There is nothing in the Plan that constrains the identification of community values to those already identified by Ngāi Tahu. As such, I do not recommend adopting the submission of A Wilson and S Wilson to clarify community engagement for the limit setting process.

## Recommendation

- 6.253 Amend Policy 46 as follows:

*The FMU Sections of this Plan are based on the following identified Freshwater Management Units for Southland, as shown on Map Series 7: Freshwater Management Units:*

- *Fiordland and the islands;*
- *Aparima;*
- *Mataura;*
- *Ōreti; and*

<sup>214</sup> Council may extend the date to 31 December 2030 if it considers that:

- i. meeting that date would result in lower quality planning; or
- ii. it would be impracticable for it to complete implementation of a policy by that date

<sup>215</sup> Notified on 10 November 2012

- *Waiau.*

Where circumstances show that the freshwater objectives and water quality and quantity limits would be better served by establishing sub-catchments this will be undertaken.<sup>216</sup>

## Policy 47 – FMU processes

6.254 Policy 47 sets out the FMU process, and sets out 4 specific process points that will need to occur for each freshwater management unit.

6.255 Policy 47 reads:

*The FMU sections will:*

1. *establish freshwater objectives for each catchment, having particular regard to the national significance of Te Mana o te Wai, and any other values developed in accordance with Policies CA1-CA4 and Policy D1 of the National Policy Statement for Freshwater Management 2014;*
2. *set water quality and water quantity limits and targets to achieve the freshwater objectives;*
3. *set methods to phase out any over-allocation, within a specified timeframe; and*
4. *assess water quality and quantity based on Ngāi Tahu indicators of health.*

## Submissions and analysis

6.256 There were 37 submissions on Policy 47, eight opposing, seven seeking to retain the policy and the remaining either supporting the policy in part or seeking amendments as set out in more detail below:

### 5.4.3.1 Ngāi Tahu indicators of health

6.257 R Kempthorne opposes Policy 47(4) and seeks to include “in conjunction with Nationally recognised water quality standards and indicators from NIWA.” Within the NPSFM there is the National Objectives Framework under section CA, which includes attribute tables which provide numeric attribute states. Given the information already contained with the NPSFM, which this Plan is required to give effect to, I do not recommend adopting the submission by R Kempthorne in respect of national water quality standards and indicators from NIWA.

6.258 A number of submitters oppose Policy 47(4) and seek that Ngāi Tahu indicators of health are removed. Ardel Dairies seeks that the rule is removed “*until full clarification of Ngāi Tahu indicators of health are defined.*” AR Byars & L J Trust also seek a testing procedure. J C and AH MacDonald seek amendments to assess water quality and quantity based on Ngāi Tahu indicators of health is all that is required.

6.259 Federated Farmers seeks to delete reference to Ngāi Tahu indicators of health and replace with “*standards in the NPS-FM and additional standards developed following the value and objective setting process.*”

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<sup>216</sup> 562.9 Meridian

6.260 The submissions outlined above either seek reference to Ngāi Tahu indicators of health being deleted, or further clarity given. As set out within the section 32 Report, Te Ao Marama Inc assessed how the pSWLP contributes towards meeting Ngāi Tahu objectives and outcomes. The Ngāi Tahu indicators of health are not specifically defined in the pSWLP, however Te Tangi a Taurira (Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008) contains a list of indicators used by tangata whenua to assess stream health, as follows:

- Shape of the river
- Sediment in the water
- Water quality in the catchment
- Flow characteristics
- Flow variations
- Flood flows
- Sound of flow
- Movement of water
- Fish are safe to eat
- Uses of the river
- Safe to gather plants
- Indigenous vs. exotic species
- Natural river mouth environment
- Water quality
- Abundance and diversity of species
- Natural and extent of riparian vegetation
- Use of river margin
- Temperature
- Catchment land use
- Riverbank condition
- Water is safe to drink
- Clarity of the water

6.261 Objective TW.2 of the pSRPS aims to ensure all local authority resource management process and decisions take into account iwi management plans. Policy 47 supports this, by assessing water quality and quantity based on Ngāi Tahu indicators of health. Policy 47(4) also gives effect to Objective 4 of the pSWLP by setting out that Ngāi Tahu indicators of health will be used in order to ensure that tangata whenua values are identified and reflected in the management of each FMU. As per the recommendations for Policy 2 of the pSWLP I recommend some alternative wording to better align with the outcome sought by the policy, however I do not recommend including the above list within Policy 47 – FMU processes. I therefore do not recommend adopting the submissions above which either seek reference to Ngāi Tahu indicators of health being deleted, or further clarity given.

### **Additional research required**

6.262 Ballance supports in part Policy 47, but seeks further information and clarity on the FMU process, a collaborative approach and provisions based on substantiated scientific research. Within the submission, it also seeks “*an indicative guideline for the Freshwater*

*Management Unit establishment process should be provided within the pSWLP.”* Further information and clarity will be provided as each FMU goes through the limit setting process, and will meet the requirements of the NPSFM. I therefore do not recommend adopting the submission of Ballance in relation to additional information and clarity on the FMU process.

- 6.263 A number of submissions seek provision for a collaborative process to enable the community to have input into the limit setting process. The intent as set out in the PIP is that there will be a community and council process to develop limits and subsequent plan changes for all of the FMUs as part of implementing the NPSFM. Whilst the exact process for community engagement has not yet been determined, elected members will make the final decision about the process. I do not recommend determining a precise engagement process as part of Policy 47 as requested by a number of submitters.
- 6.264 B+LNZ seeks an amendment to include reference to *“irrigation and stock drinking water needs for production purposes”* to give further regard to economic aspects. Within the NPSFM section CA sets out the National Objectives Framework. Policy CA2 (f) (v) requires *“any implications for resource users, people and communities arising from the freshwater objectives and associated limits including implications for actions, investments, ongoing management changes and social, cultural or economic implications.”* Given the requirements contained within the NPSFM, which includes the requirement for economic analysis, I do not support adopting the submission of B+LNZ to give further regard to irrigation and stock drinking water needs for production purposes. I also note that Policy 47 of the pSWLP does not reference various activities and therefore adding reference to this particular water use (without referring to a range of other uses) would be unhelpful.
- 6.265 H & H Blakely seek that Council undertakes a study with farmers to look at the impact of nutrient losses. Council has existing science programmes and an economic project underway to support the future limit setting process. I therefore do not recommend adopting the submission of H & H Blakely to undertake additional research to look at the impact of nutrient limits as part of Policy 47 of the pSWLP.

## **General**

- 6.266 P & L Cruickshank seeks amendments to allow deviations due to existing use rights. This submission has been considered in relation to Policy 44 above, and the same assessment and recommendation applies here.
- 6.267 DOC seeks amendments to Policy 47 to include reference to the NZCPS 2010, Crown land managed by the Department of Conservation and relevant Management Plans and Strategies prepared under other Acts. Forest and Bird also seek to include reference to the NZCPS, relevant National Park Management Plans and Conservation Strategies. Section 2 of this report sets out the Legal and Statutory context and references how a number of these Acts, Plans and Strategies interact. As part of any FMU process, assessment of a wide range of Acts, Plans and Strategies will need to be considered, and in my opinion should not be listed within Policy 47. I therefore do not recommend adopting the submissions of DOC and Forest and Bird in relation to referencing additional Acts, Plans or Strategies.
- 6.268 R Shaw seeks an amendment to the policy to see cultivated land calculated as a percentage of land owned e.g. 25%. Fairview Eastern oppose Policy 47 and see that *“the*

*size of the farm in stock units should determine the amount of winter crop put in.*” These submission points directly relate to Rule 23 and Rule 25, and are addressed in Section 7 of this report. However, I do not consider adding reference to winter grazing or cultivation within Policy 47 – FMU processes appropriate, and do not recommend including them.

- 6.269 D Harris seeks that the FMU system is revisited and that the timeframe for limit setting is reduced. This submission has been considered in relation to Policy 46 above, and the same assessment and recommendation applies here.
- 6.270 Federated Farmers seeks amendments to include reference to values, standards and monitoring. Hort NZ supports Policy 47 in part, but seeks to add a new requirement to “*identify values for the FMU as set out in Policy 44.*” Determining the values of each FMU is an important part of implementing the NPSFM. In terms of referencing standards and monitoring within Policy 47, I do not consider that this is necessary given the prescriptive wording already contained within Appendix 2: Attribute tables, and therefore do not recommend adopting the submission of Federated Farmers. I do however recommend adopting the inclusion of “values” within Policy 47 as requested by Federated Farmers and Hort NZ.
- 6.271 Ngāi Tahu seeks to retain Policy 47 as worded and include: “*where there is evidence of a decline in the health of a waterbody over time an approach must be taken to reduce contaminates, sediments and point source discharges over time.*” W & T Holder seeks to amend Policy 47(3) to state “*set methods to bring over-allocated consents in line with all consents new, existing and proposed by the date of implementation of this plan*”.
- 6.272 “*Over-allocation*” is defined within the NPSFM as the situation where the resource:
- (a) *Has been allocated to users beyond a limit; or*
  - (b) *Is being used to a point where a freshwater objective is no longer being met.*
- 6.273 Policies A2, B5 and B6 of the NPS-FM address over-allocation, and require regional councils to set a defined timeframe and methods in regional plans by which over-allocation must be phased out. This is a process which will need to occur during the catchment limit setting process, and in conjunction with the community and the council. In my opinion, the wording contained within Policy 47 (3) meets the requirements of the NPSFM, and provides a course of action as per the intent of a policy contained within a plan. Furthermore, there are other provisions in the pSWLP that more directly deal with over-allocation, for example, Policy 42. It is the Plan as a whole that gives effect to the NPSFM. Given these points, I do not recommend adopting the submission of W & T Holder or Ngāi Tahu to set methods to bring over-allocated consents in line by the date of implementation of the Plan.
- 6.274 Meridian seeks an amendment to include reference to sub-catchments. I support this change, as it will provide a clear link to *Map Series 7, Freshwater Management Units, Map 1*. To provide further clarity to Plan users, I also recommend amending Policy 47 (1) from “*catchment*” to Freshwater Management Unit, which will also provide further connection to the title of Policy 47, being FMU processes. I therefore recommend adopting the submission of Meridian to refer to sub-catchments.
- 6.275 Fish and Game seeks amendments to state that the FMU sections will “support the implementation of the region wide objectives by:” and include reference in Policy 47(1) to “specific” freshwater objectives, and within Policy 47(2) to achieve the “region wide

and specific” freshwater objectives. The Southland region has been spilt into five FMUs and will implement the requirements of the NPSFM. Policy 47(1) states that “establish freshwater objectives for each catchment”, and given this wording I do not recommend adopting the submissions of Fish and Game in respect of changes to Policy 47.

- 6.276 A Wilson and S Wilson support in part the FMU policies 44-47 in the pSWLP, but seek that “*the W & L plan needs to clarify the limit setting process method of community engagement. Iwi and Environment Southland’s special relationship values are not to be used as a proxy for local community values. The limit setting process and management of FMUs should be done via a truly collaborative process.*” The Oil Companies support retaining policies 44-47, but seek clarity on how “*Freshwater Management Units will be developed and how stakeholders will have an opportunity to participate in the process.*” As outlined for Policy 2, and Policy 46 above, the FMU processes will likely result in a range of community ascribed values, some of which are likely to align with the Ngāi Tahu indicators of health; this will occur in conjunction with a community and council process. There is nothing in the Plan that constrains the identification of community values to those already identified by Ngāi Tahu. As such, I do not recommend adopting the submission of A Wilson, S Wilson or the Oil Companies to clarify community engagement for the limit setting process.

## Recommendation

6.277 Amend Policy 47 as follows:*The FMU sections will:*

1. ~~establish freshwater~~ *Identify values and establish freshwater*<sup>217</sup> *objectives for each Freshwater Management Unit including at a catchment or sub-catchment level*<sup>218</sup> ~~catchment~~, *having particular regard to the national significance of Te Mana o te Wai, and any other values developed in accordance with Policies CA1-CA4 and Policy D1 of the National Policy Statement for Freshwater Management 2014;*
2. *set water quality and water quantity limits and targets to achieve the freshwater objectives;*
3. *set methods to phase out any over-allocation, within a specified timeframe; and*
4. *assess water quality and quantity based on taking into account*<sup>219</sup> *Ngāi Tahu indicators of health.*

## New Policies requested

### Submissions and analysis

- 6.278 There are five submissions seeking new policies, all of which relate to community engagement and collaboration as part of the FMU process.
- 6.279 Federated Farmers seeks that “Environment Southland will work to drive engagement and collaboration with *landowners, iwi, and communities through the planning and management of freshwater.*”
- 6.280 The Pourakino Catchment Group seeks a new policy that will: “enable community involvement and participation in freshwater and land management through collaboration with Catchment Groups.”

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<sup>217</sup> 256.64 Federated Farmers; and 390.20 Hort NZ

<sup>218</sup> 562.9 & 562.10 Meridian

<sup>219</sup> 25.21 Ardel Dairies



- 6.281 S Wilson and A Wilson seek the inclusion of two new policies, one seeking that “the pSWLP needs to describe how the limit setting process will take place and under what method the wider community will be involved in this process.” Within the submission, the submitters encourage Council to adopt the collaborative approach to the limit setting process. The submitters seek that the following policy is also included in the pSWLP: “Water and Land Plan needs to outline a mechanism with which iwi values and wider community values are found or ascribed through a collaborative process.”
- 6.282 As outlined earlier in this report, there are five FMUs identified, based on the main catchments in the Southland region, being, Oreti River, Aparima River, Mataura River, Waiau River, and one FMU covering Fiordland and the Islands. Each of these identified FMUs have communities that will likely be interested in, and will want to be involved in conversations around limit setting. In terms of the FMU process, this has been outlined above in the Freshwater Management Unit Process Policies (Policies 44-47) within the pSWLP. Overall, it is anticipated that the establishment of limits will be established FMU-by-FMU through a community and council process, which will take into account catchment specific information (including social, cultural, economic and scientific) to determine the future limits.
- 6.283 Policies within the decision version of the pSRPS relevant to implementing the NPSFM in respect of community engagement include Policy WQUAL.1 (Overall management of water quality) which recognises that all waterbodies in the region have specific values, and that these must be identified to formulate freshwater objectives in accordance with the NPSFM. Method WQUAL.1 Regional Plans requires that the Council identifies values for each FMU and outlines that the Council will work with tangata whenua, the community, territorial authorities, industry, stakeholders and the agricultural sector. Method WQUAL.6 (c) (Land use effects on water quality) also lists that the Council will work with the wider community.
- 6.284 In my opinion, the direction contained with the pSRPS, specifically WQUAL.1, Method WQUAL.1 (a) and (f), and Method WQUAL.6 (c) combined with Policy 47 (FMU processes) sets out the requirement for setting objectives, limits, methods and Ngāi Tahu indicators of health for each FMU. Whilst the detailed process for community engagement has not yet been set by Council, it is outlined within the pSRPS that the Council will work with the community. As such, I do not recommend adopting the submissions of Federated Farmers, Pourakino Catchment Group or A Wilson (first request for a new policy) in regards to community engagement and collaboration for the limit setting process.
- 6.285 In response to S Wilson and A Wilson’s request for a new policy related to the mechanism that will ascribe community values, I note that as outlined for Policy 2 above, the FMU processes will likely result in a range of community ascribed values, some of which are likely to align with the Ngāi Tahu indicators of health. There is nothing in the Plan that constrains the identification of community values to those already identified by Ngāi Tahu. As such, I do not recommend adopting the submissions of S Wilson and A Wilson to insert a new policy on how community values will be determined during the limit setting process.

## Submissions seeking new policies

6.286 Several submitters have sought the addition of new policies, which can be described as either being of a general nature, or those related to a particular topic or activity. The analysis of submissions seeking a new policy that is related to a topic or activity is included in the relevant section of the section 42A report.

## Additional policies of a general nature

### Submissions and analysis

6.287 Several submitters seek the addition of a new policy that recognises that the use and development of rural land resources enables communities to provide for their social, economic and cultural wellbeing. Similarly, Federated Farmers seeks the addition of two new policies that also provide for these matters, as follows:

*Recognise the importance of water and land use to the economic and social wellbeing of Southland.*  
*Allow discharges of contaminants to enable the community to provide for its economic and social wellbeing.*

6.288 The new policies sought by submitters to recognise the importance of water and land use in enabling social and economic wellbeing largely repeat Objective 2 of the pSWLP. Policies are the course of action to achieve or implement the objective; simply restating an objective does not describe how that objective will be achieved. I note that when considering an application for resource consent, the regional council (as the consent authority) must have regard to any relevant provisions of a plan or proposed plan.<sup>220</sup> Given that matters sought by the submitters are already provided for as an objective, and that the Council must have regard to this provision when considering resource consent applications, I do not consider that an additional policy is required.

6.289 I note the new policy requested by Federated Farmers (to allow discharges of contaminants to enable the community to provide for its economic and social wellbeing) is directive in nature, where it could be interpreted that the Council must grant resource consent applications for the discharge of contaminants. I note that this presumption is inconsistent with the rule framework set out in the pSWLP and in my view, would not ensure that the relevant objectives of the Plan are achieved. I do not recommend this submission is adopted.

6.290 Three submitters seek the addition of a new policy that acknowledges the financial investment made in existing farm infrastructure when making decisions on resource consent applications. I note that specific guidance is included on this matter in the RMA,<sup>221</sup> where the consent authority must have regard to the value of the investment of the existing consent holder when considering a resource consent application for a replacement consent. It is also addressed specifically in Policy 40. It is my view that this guidance is sufficient and do not recommend that it is duplicated here.

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<sup>220</sup> Section 104(1)(b)(i) of the RMA.

<sup>221</sup> Section 104(2A) of the RMA.

- 6.291 Several submitters seek the addition of a new policy to manage the impact of urban land use on water quality. While the submitters have not provided specific wording, it is my view that the existing policies<sup>222</sup> are sufficient to address the impacts of both rural and urban land use on water quality.
- 6.292 IAL submits that the pSWLP requires a new policy or policies to ensure that land use and discharge activities do not adversely affect the ability to efficiently operate existing physical resources, such as IAL. In particular, the submitter is concerned that the rules in the Plan may allow the generation of standing pools of water within close proximity to/or within the flight paths for the airport, attracting birds that may result in significant adverse effects on the safe and efficient operation of aircraft using the airport.
- 6.293 As the submitter has not provided any specific amendments to give effect to its submission, it is difficult to determine whether or not the pSWLP requires amendment. In the absence of such information, I do not recommend the submission from IAL be adopted.
- 6.294 Forest and Bird seeks the addition of a new policy to manage structures and the disturbance of the bed of lakes and rivers to preserve or protect relevant matters listed in section 6 of the RMA. In my view these matters are already sufficiently covered in Policy 28 and do not need to be duplicated.

## **Recommendation**

- 6.295 That no new policies of a general nature are included in the pSWLP.

## **General Rules**

- 6.296 This section of the report addresses Rule 1 to 4 (inclusive). These rules apply to all activities that are managed under the pSWLP and provide direction or conditions in addition to those set out in the remaining Region-wide Rules. These four general rules are largely well supported by submitters.

### **Rule 1**

- 6.297 Rule 1 reads:

*Any activity must comply with all applicable rules within the Regional Rules Section of this Plan, unless it is explicitly stated to the contrary in any other applicable rule in this Plan.*

### **Submissions**

- 6.298 Rule 1 received 14 submissions, with ten in support seeking that it is retained as notified. P & L Cruickshank opposes Rule 1 on the basis that the rule is repressive. The submitter does not specify any specific relief in their submission.

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<sup>222</sup> Policies 13, 14, 15, 17, 30, 35, 36 and Policy A4 of the NPSFM.

- 6.299 G & M Mitchell seeks amendments so that the physiographic zones apply when science guarantees where these areas are. This submission does not appear to be relevant to Rule 1.
- 6.300 KiwiRail seeks that Rule 1 is removed on the basis that it does not consider that it meets the requirements set out in section 63 and 68 of the RMA. The submitter notes that as the wording of Rule 1 does not relate to an activity, it does not add anything to the accepted position in respect of a breach of a permitted activity standard, and the rule is otherwise redundant. In lieu of deleting the rule, the submitter suggests that it may be included in the introductory commentary text contained in the Plan.
- 6.301 Similarly, NZTA submits that Rule 1 is an advice note to inform Plan users on interpretation of the Plan. While NZTA supports the inclusion of this information at the start of the rules section of the Plan, it considers it should be included as an Interpretation Note.

### **Analysis**

- 6.302 Rule 1 of the pSWLP clarifies the relationship between the region-wide rules and any other rules in the Plan. I note that the rule provides certainty for those using the Plan. There is strong support for the inclusion of this rule.
- 6.303 While the RMA is not prescriptive in how a rule should be written, I note that the pSWLP has been drafted so that it is read together in its entirety. As such, the guidance given through Rule 1, read in conjunction with the other rules in the Plan meets the direction set out in the RMA. I do not recommend that the rule be deleted or renamed as an interpretation note.

### **Recommendation**

- 6.304 Retain Rule 1 as notified.

### **Rule 2**

- 6.305 Rule 2 reads:

*Any rule on the same subject matter in the relevant FMU section of this Plan prevails over the relevant rule within the Regional Rules Section, unless it is explicitly stated to the contrary in any applicable rule in this Plan.*

### **Submissions**

- 6.306 Rule 2 received 14 submissions, with nine in support seeking that it is retained as notified. P & L Cruickshank opposes Rule 2 on the basis that the rule is repressive. The submitter does not specify any specific relief in their submission. FANZ seeks that Rule 2 is deleted on the basis that it considers that the rules should apply regionally, with limits and targets set locally through the FMU process. In its submission, FANZ caution against complex rules based on the objectives in the FMU.

- 6.307 NZTA submits that Rule 2 is an advice note to inform Plan users on interpretation of the Plan. While the NZTA supports the inclusion of this information at the start of the rules section of the Plan, it considers it should be included as an Interpretation Note.
- 6.308 Forest and Bird supports the inclusion of Rule 2, however seeks amendments to ensure that any FMU-specific policies, objectives or rules are no more lenient or less protective of water quality, quantity and aquatic ecology than the region-wide provisions.
- 6.309 C and L Stratford submits Rule 2 creates uncertainty for those applying for replacement resource consents shortly before an FMU process for their area. They believe there should be provision made for existing resource consents to automatically roll over on the same conditions, until the FMU process outcomes are known and consent can be reapplied for. The submitter states that the costs of the roll over should be reasonable and questions whether or not the Council has the resourcing to deal with the multiple consent applications that will be triggered once the FMU process is concluded.

### **Analysis**

- 6.310 Rule 2 of the pSWLP clarifies the relationship between the region-wide rules and any other rules that may be included in the Plan to address catchment specific issues identified through the FMU limit setting process. This rule is consistent with Policies 45 and 47. The rule provides certainty for those using the Plan and a reduction in the text required for each new section of the Plan developed through the FMU process. There is strong support for the inclusion of this rule.
- 6.311 I note that section 68(5)(b)(i) of the RMA states that a rule in a plan may make provision for different parts of a region. As discussed under Rule 1, the RMA is not prescriptive in how a rule should be written and the pSWLP has been drafted so that it is read together in its entirety. As such, the guidance given through Rule 2, read in conjunction with the other rules in the Plan meets the direction set out in section 68 of the RMA. I do not recommend that the rule be deleted or renamed as an interpretation note.
- 6.312 I do not agree with the submission of Forest and Bird, as it seeks to fetter the Council's discretion in the future, and could presumably be changed as a part of any future FMU plan-change, rendering the provision meaningless.
- 6.313 Rule 2 only applies once an FMU section has been notified, as such the concerns outlined by C and L Stratford are unclear. I do not recommend the submission is accepted.

### **Recommendation**

- 6.314 Retain Rule 2 as notified.

### **Rule 3**

6.315 Rule 3 reads:

*When considering applications for controlled activities or restricted discretionary activities, in addition to the matters over which:*

*(a) control is reserved; or*

*(b) exercise of discretion is restricted;*

*the decision-maker may also consider the lapse period sought, the duration of the resource consent sought, the review of the conditions of a resource consent, the need for a bond and the collection, recording, monitoring and provision of information concerning the exercise of a resource consent.*

### **Submissions**

6.316 Rule 3 received 14 submissions, with ten in support seeking that it is retained as notified. P & L Cruickshank opposes Rule 3 on the basis that the rule is repressive. The submitter does not specify any specific relief in their submission.

6.317 KiwiRail and the NZTA both submit that Rule 3 covers matters that are already provided for in the RMA (including sections 108 and 128), irrespective of activity status.

6.318 Fulton Hogan & Southern Aggregates submits that Rule 3 does not allow for considering the positive effects of a proposal. When considering a restricted discretionary or controlled activity if the positive effects are not listed as a matter of discretion or control then they may not be considered by a decision maker. The submitter seeks amendments to Rule 3 to enable positive effects of the proposal to be considered.

### **Analysis**

6.319 Section 87A of the RMA states that the consent authority's power to impose conditions on a resource consent for a controlled activity or a restricted discretionary activity is restricted to the matters over which control is reserved or discretion is restricted. Rule 3 was developed to provide clarity for Plan users and to avoid duplication in text for each controlled or restricted discretionary activity rule. While the submissions from KiwiRail and the NZTA correctly identifies that the rule covers matters that are already addressed by other sections of the RMA, it is my view that given this rule is not inconsistent with the RMA, it is more useful from a Plan users perspective and should be retained.

6.320 The submission from Fulton Hogan & Southern Aggregates has merit however I note that the meaning of effect (as set out in section 3 of the RMA) includes both positive and adverse effects. I note that a number of the restricted discretionary rules in the pSWLP restricts the Council's discretion to "effects on" a number of matters and does not restrict discretion to only considering adverse effects. As such, I do not consider that the requested amendments are necessary and recommend this submission is rejected.

### **Recommendation**

6.321 Retain Rule 3 as notified.

## **Rule 4**

6.322 Rule 4 reads:

*Any activity that:*

- (a) would otherwise contravene Sections 13(1), 14(2), 14(3) or 15(1) of the RMA; and*
- (b) is not classified by this Plan as any other class of activity listed in Section 87A of the RMA; is a discretionary activity.*

## **Submissions**

6.323 Rule 4 received 16 submissions, with 13 in support seeking that it is retained as notified. P & L Cruickshank opposes Rule 4 on the basis that the rule is repressive. The submitter does not specify any specific relief in their submission.

6.324 KiwiRail submit that Rule 4 as proposed appears to paraphrase section 87B of the RMA and is therefore unsure what value this rule adds to the pSWLP. The submitter also notes that there are other catch-all types rules within the pSWLP, such as Rule 69 in relation to structures, which appear to have the same effect as Rule 4.

## **Analysis**

6.325 Rule 4 was developed to provide certainty to Plan users and to remove the need to refer to the RMA to determine what activity status should be afforded to a consent application that is not explicitly classified in the Plan. While I am not aware of any guidance or direction set out in the RMA that states that a regional rule must not duplicate the contents of the RMA, in my view it is good planning practice to include such direction in a regional plan (rather than rely on section 87B of the RMA). I do not recommend the submission from KiwiRail is adopted.

## **Recommendation**

6.326 Retain Rule 4 as notified.

## **7. Water Quality**

### **General Policies and Rules**

7.1 The pSWLP contains four general water quality policies and 12 more general water quality rules.

#### **Policy A4**

7.2 Policy A4 is copied directly from the NPSFM.

#### **Submissions**

7.3 There are seven submissions on Policy A4 of the NPSFM. Aratiatia Livestock seeks to retain the policy as notified, whereas Fonterra seeks that the policy is deleted, on the basis that it is unnecessary. Fonterra submits that the requirement to include this policy only applies in respect of operative plans and consider that all matters listed in Policy A4 of the NPSFM are addressed in other policies.

7.4 Fulton Hogan also believes it is unnecessary to repeat the NPSFM in the Plan and suggest that it is referenced in the statutory context section of the pSWLP.

#### **Analysis**

7.5 Policy A4 of the NPSFM includes specific direction for regional councils to ensure that regional plans include the policy listed in Policy A4, and that policy will apply until any changes made under Schedule 1 to give effect to Policy A1 and A2 have become operative.

7.6 The pSWLP is not required to give effect to Policy A1 and A2 (amongst others) of the NPSFM as the Council has notified a progressive implementation programme. As such, Policy A4 would need to be inserted into the pSWLP once it is made operative. Strictly speaking, it is not necessary to include the policy in the pSWLP at this stage, I consider it appropriate to show the policy in the Plan to provide context.

7.7 The remaining four submissions seek to make amendments to the policy. I note that the policy is uplifted directly from the NPSFM and therefore I consider that it is not appropriate to make changes to this policy. I do not recommend these submissions are accepted.

#### **Recommendation**

7.8 Retain Policy A4 as notified.



## Policy 13

7.9 Policy 13 reads:

*Manage land use activities and discharges (point source and non-point source) to land and water so that water quality and the health of humans, domestic animals and aquatic life, is protected.*

## Submissions

7.10 Policy 13 received 28 submissions with 14 submitters seeking that the policy be retained as notified.

7.11 Alliance seek that Policy 13 is deleted on the basis that it is inconsistent with higher order documents. In particular, they note that the use of the word “protected” is a higher test to meet than that set out in the RMA, NPSFM and pSRPS, which typically refers to “safeguard”. The submitter is concerned that the protection of certain values or elements amounts to a requirement to avoid all effects.

7.12 Fonterra, Federated Farmers, Ravensdown, FANZ, the Oil Companies, HWRG and several individual submitters raise similar concerns about the use of the word “protected”, as they consider it is a particularly high threshold or is inconsistent with higher order documents and the objectives of the pSWLP. A number of suggested amendments have been put forward by submitters to address their concerns, including:

- rather than “manage” land use activities and discharges, amend the policy to be more enabling of such activities;
- rather than “protect” water quality, amend the policy to specify that water quality is to be maintained or improved or effects on water quality are avoided, remedied or mitigated.

7.13 In addition, the Oil Companies seek amendments to ensure that the policy focuses on the functions of the regional council.

7.14 SCB seeks amendments to include reference to significant indigenous biodiversity also being protected.

7.15 Forest and Bird seek that the policy is amended to provide clearer direction to decision makers. It is unclear what specific relief the submitter is seeking, and the submitter may wish to clarify this, within the scope their submission allows, at the hearing.

## Analysis

7.16 The word “protect” has particular meaning in the context of resource management, where it has been canvassed by the courts:

The Environment Court in *Royal Forest and Bird Protection Soc of NZ Inc v New Plymouth DC*<sup>223</sup> followed previous Environment Court and Court of Appeal<sup>224</sup> decisions in

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<sup>223</sup> *Royal Forest and Bird Protection Soc of NZ Inc v New Plymouth DC* [2015] NZEnvC 219.

<sup>224</sup> *Port Otago Ltd v Dunedin CC* EnvC C004/02, *Environmental Defence Society v Mangonui County Council* [1989] 3 NZLR 257; (1989) 13 NZTPA 197 (CA), at p 262.

interpreting "protection" as meaning "to keep safe from harm, injury or damage."<sup>225</sup> The Environment Court in *Port Otago Ltd v Dunedin City Council* also accepted that the word 'maintain' includes the meaning of 'protection'.<sup>226</sup>

- 7.17 In light of the Supreme Court's decision in *King Salmon*<sup>227</sup>, the Environment Court held that section 6(c) imposes a duty on the Council to protect Significant Natural Areas, however it also held that "*The nature of the protection required to meet a territorial authority's duty in any given instance is one to be determined by that authority when preparing or reviewing its district plan*".<sup>228</sup>
- 7.18 The Supreme Court held that although section 6 does not give primacy to preservation or protection, this does not mean that "*a particular planning document may not give primacy to preservation or protection in particular circumstances*".<sup>229</sup>
- 7.19 The use of "protect" in the context of Policy 13 would be to keep water quality safe from damage, i.e. the equivalent to "maintaining" water quality. Similarly, I note that the health of humans, domestic animals and aquatic life would also be protected. In preparing regional plans, a regional council must give effect to any relevant national policy statement<sup>230</sup>. While I agree with submitters that the protection of human health, domestic animals and aquatic life is arguably a higher threshold than that required by Objective A1 of the NPSFM, in my opinion, this policy is not a mirror of Objective A1 and does not need to use the same words.
- 7.20 With respect to the use of the word "manage", I consider this to be relatively neutral in a regulatory context, with little gained by 'enabling' the activities, while presumably protecting the identified values.
- 7.21 I note that the provisions contained in a regional plan are restricted to the functions of the regional council. As such, I do not recommend that any amendments are necessary to make this clearer.

## Recommendation

- 7.22 Retain Policy 13 as notified.

## Policy 14

- 7.23 Policy 14 reads:

*Prefer discharges to land, rather than direct discharges to water.*

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<sup>225</sup> *Royal Forest and Bird Protection Soc of NZ Inc v New Plymouth DC* [2015] NZEnvC 219, at [63].

<sup>226</sup> *Port Otago Ltd v Dunedin CC* EnvC C004/02 at [42].

<sup>227</sup> *Environmental Defence Society Inc v New Zealand King Salmon Company Limited* [2014] 1 NZLR 593, [2014] NZRMA 195, (2014) 17 ELRNZ 442 (SC).

<sup>228</sup> *Royal Forest and Bird Protection Soc of NZ Inc v New Plymouth DC* [2015] NZEnvC 219, at [65].

<sup>229</sup> As above, at [149].

<sup>230</sup> Section 67(3)(a) of the RMA.

## Submissions

- 7.24 Policy 14 received 28 submissions with 14 in support seeking that it be retained as notified. Bathurst Resources seeks that the policy is deleted, on the basis that the submitter does not consider there should be a preference for one receiving environment over another, rather that the focus should be on which achieves the better environmental outcome.
- 7.25 Ten submitters share similar concerns with Bathurst Resources. These submitters commonly seek amendments to the policy which ensure the reference to ‘discharge’ is specific to the discharge of contaminants or point source discharges. In addition, submitters seek that the preference to discharge to land is conditional on whether or not the discharge to land is practicable or appropriate and the adverse effects associated with a discharge to land are less than a discharge to water. Several submitters note that this approach is more consistent with the pSRPS<sup>231</sup>.
- 7.26 A Fleck raises concerns with existing discharges to water from urban sources, whereas B Smith seeks that the pSWLP is used to change the mindset of farmers, council staff and members of the public to acknowledge the high intrinsic value of effluent when applied to land.

## Analysis

- 7.27 Policy 14 outlines a simple preference for discharges to be to land, rather than to water. While there are typically less adverse environmental effects associated with discharges to land over direct discharges to water, I note that the pSWLP does not prohibit discharges to water.
- 7.28 While the provisions in the Plan provide for the discharge to water (where appropriate), it is my view that amendments that align the policy with the direction set out in the pSRPS will be useful for those implementing the Plan. I recommend that the submissions that seek acknowledgement that at times the adverse effects of a discharge to water can be less than discharges to land be accepted. I note that these amendments will result in a policy that better reflects the pSRPS, and are also likely to address the concerns of the remaining submitters that seek similar amendments.
- 7.29 I acknowledge that discharges to water are of particular concern to Ngāi Tahu. On this basis, I recommend specific recognition of effects of cultural values, when considering whether a discharge to water is preferable.

## Recommendation

- 7.30 Amend Policy 14 as follows:

*Prefer discharges of contaminants to land, rather than direct over discharges of contaminants to water, unless the adverse effects, with particular regard to cultural effects, associated with a discharge to land are greater than a discharge to water.*<sup>232</sup>

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<sup>231</sup> Policy WQUAL.7 of the pSRPS

<sup>232</sup> 48.21 Ballance

## Policy 15

7.31 Policy 15 reads:

*Maintain and improve water quality by:*

- 1. despite any other policy or objective in this Plan, avoiding new discharges to surface waterbodies that will reduce water quality beyond the zone of reasonable mixing;*
- 2. avoiding point source and non-point source discharges to land that will reduce surface or groundwater quality, unless the adverse effects of the discharge can be avoided, remedied or mitigated;*
- 3. avoiding land use activities that will reduce surface or groundwater quality, unless the adverse effects can be avoided, remedied or mitigated; and*
- 4. avoiding discharges to artificial watercourses that will reduce water quality in a river, lake or modified watercourse beyond the zone of reasonable mixing;*

*so that:*

- 1. water quality is maintained where it is better than the water quality standards specified in Appendix E “Water Quality Standards”; or*
- 2. water quality is improved where it does not meet the water quality standards specified in Appendix E “Water Quality Standards”; and*
- 3. water quality meets the Drinking-Water Standards for New Zealand 2005 (revised 2008); and*
- 4. ANZECC sediment guidelines (as shown in Appendix C of this Plan) are met.*

## Submissions

7.32 Policy 15 received 27 submissions, with six in support seeking that the policy is retained as notified.

7.33 Ballance submits that Policy 15 should be amended to better align with Objective A2 of the NPSFM, in particular, that “overall” quality of freshwater is maintained “or” improved. Several other submitters also seek similar amendments.

7.34 Several submitters seek that reference to the drinking water standards be deleted on the basis that not all water bodies will be managed for this purpose and therefore do not need to meet those standards. Alternatively, Ravensdown seeks that clause (3) is amended to clarify that these standards only apply in surface water bodies where water is taken for municipal or domestic water supply purposes. SDC also seeks similar relief. Fonterra seeks to amend ‘water quality’ to groundwater quality’.

7.35 Similarly, some submitters seek that reference to the ANZECC guidelines are deleted on the basis that these are guidelines only and exceedances of the guidelines will trigger further investigation as to whether they pose a threat. Submitters are concerned that there is a risk that they could be used as a firm target or limit.

7.36 Bathurst Resources submits that it is difficult to understand how Policy 15 is intended to function. In particular, they note that clause (1) relates to new discharges to surface water bodies and does not include the words “*unless the adverse effects can be avoided, remedied or mitigated*” (as included in the following clauses). The submitter seeks clarification whether or not the policy seeks to draw a distinction between new discharges and renewals of existing discharges.

- 7.37 W & T Holder seek that clause (1) applies to all discharges, and not just new discharges, whereas Ernslaw One seeks to include a new clause to address water degradation caused by existing consented or permitted direct and diffuse discharges from farming.
- 7.38 Also in reference to clause (1), Fonterra submits that “*despite any other policy or objective*” is problematic, as they understand that a policy cannot override an objective. However, it accepts that policies can be ranked for the purpose of achieving the relevant objectives.
- 7.39 Forest and Bird seek that the policy is amended to delete the proviso “*unless the adverse effects of the discharge can be avoided, remedied or mitigated*” set out in clauses (2) and (3), as they believe this would still provide for significant adverse effects. Fonterra submits that, in relation to clause (2) and (3), that “*avoiding*” discharges or land use activities “*unless the adverse effects of the discharge can be avoided, remedied or mitigated*” is confusing and counterintuitive. Conversely, several submitters seek amendments to clauses (1) and (4) to add the proviso “*unless the adverse effects can be avoided, remedied or mitigated*”. Similarly, ICC seeks amendments to clauses (3) and (4) to enable a reduction in water quality within the mixing zone.
- 7.40 Fish and Game seeks to include reference to natural wetlands and lagoons to clause (4).
- 7.41 Bathurst Resources submits that the policy does not provide for discharges to waterbodies where the water quality is already below the water quality standards set out in Appendix E, noting that the policy effectively prohibits such activities. Meridian also raises similar issues in its submission. Bathurst Resources submits that if after mixing, a proposed discharge has no more than minor adverse effects on water quality, then that discharge should be a permitted activity.
- 7.42 Federated Farmers and Ernslaw One seek amendments to the water quality standards so they align with the National Objectives Framework in the NPSFM.
- 7.43 The Oil Companies also raise concerns that the policy is complicated and unwieldy and as a result, the policy intent is unclear. The submitter seeks amendments to Policy 15 to ensure the policy is clear and workable and does not unduly preclude discharges across the region (in particular, new discharges to surface water bodies). The submitter also seeks changes so that the referenced standards are appropriate to the nature of the discharge.
- 7.44 P F Olsen seeks to maintain reliance on reasonable mixing, but exclude temporary effects from plantation harvesting. As an alternative, the submitter seeks that spatial or temporal bounds are redefined.
- 7.45 The submitter also seeks to add the following new clauses:
- (5) *Where water quality is at or below community agreed objectives (or Attribute States as per the NPS-Freshwater), set timelines for Council to (5) Call in existing discharge consents and reduce the permitted loadings by applying reallocative mechanisms in tune with the already suggested principles of market transfer mechanisms operating within a ‘Natural Capital’ framework*
  - (6) *place a sinking lid on total cow numbers in each of Southlands physiographic zones*

- (7) *require a resource consent (restricted discretionary) to apply urea or other nitrogenous fertilisers*

## Analysis

- 7.46 Policy 15 outlines the restrictions and requirements for discharges to either surface water or land based discharges in order to maintain or improve water quality so that water quality limits or targets are met. Policy 15 gives effect to a number of objectives contained in the pSWLP, particularly Objective 6. As discussed in section 5 of this report, the genesis of Objective 6 sits with Objective A2 of the NPSFM and Objectives WQUAL.1 and WQUAL.2 of the pSRPS. As the pSWLP is to be read together in its entirety, the requirement to “maintain and improve” water quality must be taken in the context of the direction set out in Objective 6 of the pSWLP. I therefore do not recommend submissions seeking amendments so that water quality is either maintained “or” improved are adopted, as the amendments sought are inconsistent with community aspirations as set out in the pSRPS and with Objective 6 of the pSWLP.
- 7.47 Several submitters seek to either delete reference to drinking water standards or clarify that clause (3) only applies to waterways that are managed for drinking water purposes. I agree that drinking water standards should only apply to water that is used for drinking water purposes and recommend these submissions be accepted.
- 7.48 I consider that the ANZECC guidelines for sediment are a suitable standard to apply, in lieu of catchment specific limits and targets established via future FMU processes. This matter is also raised with respect to the Appendix containing these standards, and is addressed in section 12 of this report.
- 7.49 In response to submissions regarding clause (1), I note that the requirement to maintain and improve water quality<sup>233</sup> means that it is necessary to avoid effects on water quality from new discharges beyond the mixing zone. The reference to avoiding discharges directly to surface water bodies where they have the effect of reducing water quality (whether they be artificial or natural watercourses), is deliberate so as to ensure that preference is given to land based discharges (as set out in Policy 14), where there is the opportunity for mitigation and remedial work (including uptake or treatment of contaminants) prior to reaching ground or surface water.
- 7.50 The term “avoid” in this context has the specific meaning of “not allow” (as described in section 2 of this report). The submissions do not describe how mitigation or remedial action beyond the mixing zone will ensure there are no adverse effects on water quality and as such, I do not recommend these submissions are adopted. This also applies to submissions seeking similar amendments to clause (4).
- 7.51 I agree that there does not appear to be any significant policy direction for existing discharges to surface water and agree with submitters that this needs to be clarified. The intention of this policy, in relating to “new” discharges is to at least maintain existing water quality. It is not intended to apply to all discharges, as this would have the effect of requiring a significant improvement. Additional policy wording for existing discharges is recommended to be added, as new clauses (1A) and (5).

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<sup>233</sup> Objective A2 NPSFM, Objectives WQUAL.1 and WQUAL.2 pSRPS and Objective 6 pSWLP

- 7.52 In regards to the submission from Fonterra regarding clause (1), I agree that a policy cannot override an objective on the same subject matter. As such, I recommend that clause (1) is amended by deleting the words “or objective”.
- 7.53 I also consider that the two parts of Policy 15, read in conjunction, do not allow for significant adverse effects, as suggested in the submission from Forest and Bird. As such, I do not recommend its submission is adopted. In regards to the submission from Fonterra on clauses (2) and (3), it is unclear why avoiding discharges unless the adverse effects can be avoided, remedied or mitigated is confusing or counterintuitive. The use of the word “avoid” in two places within these clauses is necessary to achieve the desired environmental outcomes for the region (to maintain and improve water quality). I note the word applies separately to “avoiding” the activity and “avoiding” effects.
- 7.54 The submission from Fonterra to amend ‘water quality’ to ‘groundwater quality’ in clause (3) is appropriate given surface water quality (with some exceptions) is unlikely to meet DWSNZ and is rarely used (untreated) for potable supply.<sup>234</sup>
- 7.55 ICC correctly identify that clauses (2) and (3) do not include reference to the effects on water quality beyond the reasonable mixing zone. I consider that it is only appropriate to apply the reasonable mixing zone to direct discharges to surface water, and not appropriate for any subsequent discharge to surface water from land based discharges. I do not recommend the submission from ICC be adopted.
- 7.56 As identified in the submission from Fish and Game, Policy 15 does not include explicit reference to natural wetlands and lagoons. The methods described in the pSWLP to determine reasonable mixing zone only apply to rivers, lakes and artificial watercourses, such that the wording of the policy means there is no allowance for reasonable mixing for wetlands. The reasonable mixing zone calculation also does not apply to lagoons. However, given the explicit reference to “river, lake or modified watercourse” in clause (4), wetlands and lagoons have been unintentionally excluded. I recommend the submission from Fish and Game is adopted in part.
- 7.57 In the second part of Policy 15, clause (2) seeks that water quality is improved if it is below the water quality standards set out in Appendix E. I note that any future consent application for a discharge to water will be assessed on its own merits. If a proposed discharge will not reduce water quality beyond the zone of reasonable mixing, but the water quality standards are not being met for the receiving water body, it is anticipated that this consent application can still be granted (provided all other environmental effects are avoided, remedied or mitigated so that the effects are acceptable). I do not consider that specific amendments are necessary to acknowledge that natural processes or variation may occur affecting the ability of a water body to meet water quality standards.
- 7.58 The amendments sought by the Oil Companies have merit, however I note the policy intent and direction for managing effects of the different types of discharges is potentially lost. While the environmental outcomes will likely remain the same under the amendments sought by the Oil Companies, it is important to retain the specific (and strong) direction of the policy so that those using the Plan are clear when certain discharge activities are to be avoided.

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<sup>234</sup> B Hughes

- 7.59 I do not consider that there should be any allowances for any temporary discharges where there may be a reduction in water quality, as this is inconsistent with the NPSFM, pSRPS and Objective 6. As such I do not recommend the submission from P F Olsen on this matter be adopted. Additionally, I note that the remaining new clauses sought by P F Olsen are likely to be addressed in the FMU limit setting processes. Therefore, I do not recommend adopting these points prior to this process.
- 7.60 The Territorial Authorities identify a typographical error in clause (4). The recommended amendments to clause (4) (in response to the submission from Fish and Game) removes the typographical error.

## Recommendation

- 7.61 Amend Policy 15 as follows:

*Maintain and improve water quality by:*

1. *despite any other policy ~~or objective~~<sup>235</sup> in this Plan, avoiding new discharges to surface waterbodies that will reduce water quality beyond the zone of reasonable mixing;*
  - 1.A. *avoiding, remedying or mitigating the adverse effects of existing discharges to surface waterbodies, beyond the zone of reasonable mixing;<sup>236</sup>*
  2. *avoiding point source and non-point source discharges to land that will reduce surface or groundwater quality, unless the adverse effects of the discharge can be avoided, remedied or mitigated;*
  3. *avoiding land use activities that will reduce surface or groundwater quality, unless the adverse effects can be avoided, remedied or mitigated; and*
  4. *avoiding discharges to artificial watercourses that will reduce water quality in a river, lake, ~~or~~ modified watercourse, natural wetland or lagoon<sup>237</sup> beyond the zone of reasonable mixing;*
- so that:*
1. *water quality is maintained where it is better than the water quality standards specified in Appendix E “Water Quality Standards”; or*
  2. *water quality is improved where it does not meet the water quality standards specified in Appendix E “Water Quality Standards”; and*
  3. *groundwater quality meets the Drinking-Water Standards for New Zealand 2005 (revised 2008) where water is used for drinking<sup>238</sup>; and*
  4. *ANZECC sediment guidelines (as shown in Appendix C of this Plan) are met; and*
  5. *additionally, in the case of existing discharges, improves water quality where water quality is degraded, to the point of being overallocated.<sup>239</sup>*

## New policy: Non-regulatory methods

- 7.62 Federated Farmers consider it is important to use non-regulatory methods as well as regulatory methods to maintain and improve water quality. They request the inclusion of the following policy:

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<sup>235</sup> 277.23 Fonterra

<sup>236</sup> 381.8 Holder W & T

<sup>237</sup> 752.59 Fish and Game

<sup>238</sup> 661.23 Ravensdown

<sup>239</sup> 895.27 Oil Companies



*Environment Southland in collaboration with landowners, iwi, and communities develop a package of effective non-regulatory methods aimed at improving water quality. These could include:*

- *provision of information about water quality and quantity issues in each catchment;*
- *demonstration projects and case studies;*
- *provision of advice and information at a farm/property or activity scale, where applicable in conjunction with industry organisations, on improving water quality;*
- *financial assistance programmes for environmental infrastructure such as riparian retirement, wetland protection and development and restoration of priority waterways.*

7.63 A and B Hunt also seek the addition of a similar policy.

7.64 The use of non-regulatory methods in regional plans is optional under section 67 of the RMA. The pSWLP does not contain any non-regulatory methods and therefore I do not consider it appropriate to adopt the submission of Federated Farmers as there are no methods within the pSWLP to achieve such a policy. Further, the pSRPS contains direction for Council to provide information and advice regarding good management practices including, Method WQUAL.5 “Provide information and advice to territorial authorities, consent holders and the community on good management practices to reduce the effects of land use on water quality” and Method WQUAL.12 (“Provide information and advice to the community on land management practices that maintain or improve water quality, and align this advice with industry resources and programmes where appropriate”). To implement the pSRPS Council has established work programmes, for example the Council’s Land Sustainability Team, to work with landowners, iwi and communities to implement good practice across the region.

### **New policy: Industrial and trade processes**

7.65 Fonterra has requested the inclusion of the following policy: “Minimising the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) by requiring the adoption of the best practicable option to manage the treatment and discharge of contaminants derived from industrial and trade processes.”

7.66 In my opinion I do not consider a specific policy relating to discharges from industrial and trade processes is necessary. Direction is provided under Policy 15 of the pSWLP for discharges from industrial and trade processes. I therefore do not recommended the adoption of the submission by Fonterra.

### **Rule 5 - Discharges to surface waterbodies that meet water quality standards**

7.67 Rule 5 reads:

*Except as provided for elsewhere in this Plan the discharge of any:*

- (a) contaminant, or water, into a surface waterbody; or*
- (b) contaminant onto or into land in circumstances where it may enter a surface waterbody;*

*is a discretionary activity provided the following condition is met:*

- (i) the discharge does not reduce the water quality below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone; and*
- (ii) the discharge does not contain any raw sewage.*

## Submissions

- 7.68 Rule 5 received 23 submissions with eleven in support. Nine submissions seek that Rule 5 is retained as notified.
- 7.69 Alliance seeks to ensure that the water quality standards in Appendix E have been appropriately developed or remove reference to the Appendix. Additionally, Alliance introduces a general submission requesting that Council better clarify the relationship and resulting activity status between the various discharge rules and delete rules that are unnecessarily duplicated.
- 7.70 A number of submitters, including Hort NZ, seek to amend the activity status of Rule 5.
- 7.71 SDC and ICC seek that Rule 5 is amended to specifically provide for any council stormwater or sewage discharges as a discretionary activity, in line with similar submissions on Rules 15 and 33. The Councils received further submissions opposing this submission point from a number of parties.
- 7.72 Alliance, Forest and Bird and SDC question how Rule 5 will apply when water quality upstream of the discharge already breaches water quality standards. Forest and Bird seek to classify such discharges as non-complying activity. D Harris seeks to change wording so that the discharge should not cause the water quality levels to be exceeded anywhere downstream of the discharge, taking into account all existing discharges.
- 7.73 Three submitters, including Ballance, support the rule but seek clarification whether the rule is intended to address both point and non-point source discharges.
- 7.74 FANZ supports Rule 5 on the condition that fertiliser application to land where it may enter a surface waterbody is provided for elsewhere in the Plan.
- 7.75 Ernslaw One seeks to retain Rules 5-8 subject to Rule 15 encompassing storm water generated in plantation forests. PF Olsen generally supports Rule 5, but seeks a clarification in respect of an issue such as the incidental deposition of natural organic matter, like pine needles, to surface waterbodies.
- 7.76 Meridian seeks to amend Rule 5 to include the discharge activities that form part of the Manapouri Power Scheme. Meridian received further submissions opposing this submission point from a number of various parties.

## Analysis

- 7.77 Alliance has questioned the development of Appendix E. Rule 5 and Appendix E of the pSWLP are essentially unchanged from the existing RWP. At the outset, I understand that the existing framework is working appropriately at present. Further analysis of Appendix E is included below.
- 7.78 In response to Alliance's general query, discharge rules specifically address certain discharges that could result in adverse effects on the quality of the Southland waterways, such as discharges of fertiliser, pest control substances or discharges from subsurface drainage systems. If a discharge does not have a specific rule that applies to it, the

assessment will be completed against one of Rules 5 to 7. In my opinion, there are no duplications within the discharge rules that warrant deletion.

- 7.79 Rule 5 is a catch-all rule, drafted to ensure that any discharges to water not more specifically addressed within the pSWLP are able to be addressed by Council. In my opinion, it is not appropriate that these ‘other’ discharges to water are discouraged by including them in the pSWLP as non-complying. This would affect current practice for a significant number of landholders and commercial entities within Southland, and I note the requirement for the resulting water quality to meet specific standards. Similarly, due to the catch-all nature of the rule, I do not consider that a restricted discretionary activity status is appropriate. The rule will encompass many types of discharges, so the effects Council may need to look at will be wide-ranging and difficult to restrict. Council needs the discretion to look at all aspects of a proposed discharge to ensure that adverse effects are appropriately managed. Overall, I recommend the activity status of Rule 5 is retained, particularly in light of the ‘catch-all’ nature of this rule, with specific rules to address a range of specific discharge situations.
- 7.80 SDC and ICC are seeking amendments to the discharge rules that affect council discharges to ensure that all discharge activities undertaken by the councils will be at most, discretionary. The councils appear to be concerned that a discharge of stormwater from a council system during high rainfall may contain traces of sewage caused by an overflow of the sewage system. This would result in the discharge becoming a non-complying activity. The councils therefore suggest a separate provision to deal with all council discharges from reticulated stormwater systems and community sewerage schemes as discretionary activities. I note that the regional council is required to align the rules within the pSWLP to give effect to higher order documents such as the RPS and NPSFM which require maintaining or improving water quality. Therefore, even if a discharge is necessary or has other ‘benefits’, if it reduces the water quality below an ascertained level, non-complying activity status will likely be appropriate. If the water quality is not reduced, then the activity will meet the threshold of Rule 5 and become a discretionary activity. In my opinion, a discharge that contains raw sewage is appropriately addressed as a non-complying activity.
- 7.81 Rule 5(i) states: *the discharge does not reduce the water quality below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone.* The test is that the discharge subject to the consent application doesn’t reduce the water quality below the standards. Therefore, if the water quality is already reduced but the discharge will have no effect on water quality, potentially even improving the resultant water quality, then the rule applies. If the water quality will be further reduced by the discharge, then the more stringent activity status of Rule 6 will apply.
- 7.82 Some submissions on Rule 5 suggest it is unclear whether the rule will apply to non-point source discharges and request clarification. Federated Farmers considers that the use of the term ‘reasonable mixing zones’ suggests the intention for Rule 5 to apply only to point source discharges, as determining the mixing zone of non-point discharges is generally not possible. Additionally, causes of contaminants entering waterways through non-point source discharges are covered by other specific rules throughout the pSWLP. These include discharge rules for agrichemicals (Rules 9 and 10), fertilisers (Rule 14) and farming rules (Rules 20-25). Despite this, there may be other sources of contaminants entering waterways through non-point source discharges that are not covered by these specific rules mentioned above. In my view, even if Rule 5 were amended to apply

specifically to point source discharges, non-point source discharges not otherwise captured in Rules 9, 10, 14 and 20-25 would be captured by Rule 4, which is also a discretionary activity rule. As such, I see no practicable benefit in amending Rule 5.

- 7.83 To respond to the submission from FANZ, fertiliser application is dealt with under Rule 14 of the pSWLP.
- 7.84 I do not consider the amendment requested by Ernslaw One appropriate, as the current drafting of Rule 5 will adequately assess and deal with the forestry runoff if Rule 15 is not amended to accommodate it. I consider this to be appropriate.
- 7.85 The amendment suggested by Meridian would result in the submitter being able to discharge any level of contaminant as a discretionary activity, even if the discharge breached the established water quality standards in Appendix E. This does not align with the pSWLP objectives or the NPSFM which seek to prevent further decline in water quality. I recommend this submission is not accepted.

### **Recommendation**

- 7.86 Retain Rule 5 as notified.

### **Rule 6 - Discharges to surface waterbodies that do not meet water quality standards**

- 7.87 Rule 6 reads:

*Except as provided for elsewhere in this Plan the discharge of any:*

- (a) *contaminant, or water, into a surface waterbody; or*  
(b) *contaminant onto or into land in circumstances where it may enter a surface waterbody that does not meet the conditions in Rule 5;*  
*is a non-complying activity.*

### **Submissions and analysis**

- 7.88 Rule 6 received 18 submissions with eight submissions seeking the rule be retained as notified.
- 7.89 A large number of submitters, including Federated Farmers, Ernslaw One and SDC repeat their submission from Rule 5 or seek amendments that reflect changes to Rule 5. Because these submissions were analysed under Rule 5 above, they are not addressed further here.
- 7.90 L Esler seeks clarification of the implications of the rule for ICC when large volumes of runoff enter its drainage systems as a result of heavy rain. Rule 6 is a 'catch-all' rule, and it is anticipated that the majority of the discharges from ICC infrastructure will be covered by other, more specific rules. In any event, I consider that a non-complying activity status for discharges that will reduce water quality is appropriate, given the policy direction in the NPSFM and Objective 6 of this Plan.

## **Recommendation**

7.91 Retain Rule 6 as notified.

## **Rule 7 - Other discharges to water**

7.92 Rule 7 reads:

*Except as provided for elsewhere in the Plan, the discharge of any contaminant or water into water is a discretionary activity.*

## **Submissions and analysis**

7.93 Rule 7 received fifteen submissions with eight in support seeking that the rule be retained as notified.

7.94 A number of submitters, including Federated Farmers, Alliance and Ernslaw One repeat their submission from Rule 5. Because these submissions were analysed under Rule 5 above, they are not reassessed here.

7.95 FANZ and Ravensdown seek to amend Rule 7 to apply to discharges to groundwater specifically. Rules 5 and 6 are aimed towards meeting water quality standards in relation to surface water, however, as noted under the analysis of Rule 5, they are intended to apply to point source discharges. Rule 7 is a catchall clause designed to ensure every discharge of water to water that is not specifically included in the pSWLP will be assessed for consent, whether this be to ground or surface water. Therefore, I do not agree that the submitted amendment is appropriate. That said, given that general Rule 4 covers the same activities, this rule could be deleted. However, no submitter has specifically sought this.

7.96 W & T Holder consider that with freshwater management, no contaminant should be discharged into freshwater, so the submission seeks that Rule 7 be amended to a non-complying activity and any restrictions should include any actual decrease in water quality above and below the discharge point. This is a very strong level of protection and as mentioned above, including Rule 7 as a non-complying activity would significantly constrain current practice for a number of landholders and commercial entities within Southland. I do not consider this to be appropriate. A discretionary activity status will allow Council to assess all impacts of the discharge and base the benefit against the requirements for water quality contained within the objectives and policies of the pSWLP and all higher order documents, including the RMA.

## **Recommendation**

7.97 Retain Rule 7 as notified.

## **Rule 8 - Discharges of surface water**

7.98 Rule 8 reads:

*The discharge of surface water into a surface waterbody or artificial watercourse is a controlled activity provided the following conditions are met:*

- (a) the discharge was lawfully established prior to 1 January 2010;*
- (b) the lawfully established discharge point has not changed; and*
- (c) at the downstream edge of the reasonable mixing zone, the discharge does not reduce the water quality of the receiving waters or give rise to any of the following effects in the receiving water:
  - (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
  - (ii) any conspicuous change in visual clarity;*
  - (iii) the rendering of freshwater unsuitable for consumption by farm animals; or*
  - (iv) any significant adverse effects on aquatic life, other than the target species**

*Environment Southland will restrict the exercise of its control to the following matters:*

- 1. the potential for flooding of any person's property, as a result of the discharge;*
- 2. erosion of the bed or banks of the receiving surface waterbody or artificial watercourse, as a result of the discharge; and*
- 3. actual or potential effects on existing water users and aquatic ecosystems.*

### **Submissions**

- 7.99 Twenty submissions were received on Rule 8, with nine submissions in support, seeking the rule be retained as notified.
- 7.100 A number of submitters, including Federated Farmers, Alliance and Ernslaw One repeat their submission from Rule 5. Because these submissions were analysed under Rule 5 above, they are not reanalysed here.
- 7.101 DHL seeks an exception to Rule 8(c)(ii) to apply to discharges from natural causes such as heavy rainfall or flooding.
- 7.102 Fairmount Perendale Stud Farm seek to amend (c)(ii) to make provision for any conspicuous permanent change in visual clarity after a determined period and not just a settling period of the initial drainage disturbance.
- 7.103 Forest and Bird seeks to amend Rule 8 to ensure the activity status meets NPSFM and NZCPS objectives, and where water is over allocated these activities should become non-complying.
- 7.104 GDC, IDC and SDC seek to remove an error referring to 'target species' which appears to have been taken from the agrichemicals rule.
- 7.105 SDC seeks clarification of the activity status of activities that do not meet the controlled activity conditions.

## Analysis

- 7.106 This rule relates to pre-2010, legally established discharges of surface water - prior to the current RWP becoming operative. The discharge, and its effects on visual clarity of the receiving waterbody, will not change from what has previously been enabled. In my opinion, the requested amendments from Fairmount Perendale Stud Farm and DHL is not required or appropriate.
- 7.107 As stated above, the discharge is to provide for previously established lawful discharges, so the effects on water quality, quantity and natural character have already been assessed. In my opinion, the FMU processes will establish community outcomes and any need to improve existing water quality and how that will be achieved. On this basis, I do not support the changes sought by Forest and Bird.
- 7.108 I support the submission to correct what appears to be a typo from GDC, ICC and SDC, as the wording does not fit within Rule 8 and appears to be an error. I also note, for the benefit of SDC, if a discharge does not meet the conditions under Rule 8 they will fall within the general discharge Rules 5 to 7.

## Recommendation

- 7.109 Amend Rule 8 as follows:

...  
(c) ...  
(iv) any significant adverse effects on aquatic life, ~~other than the target species~~<sup>240</sup>  
...

## Rule 9 – Discharge of agrichemicals onto or into surface water

- 7.110 Rule 9 reads:

*The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agent and marker dyes, into surface water, is a permitted activity provided the following conditions are met:*

- (a) *the discharge is for the purpose of eradicating, modifying or controlling excessive growth of aquatic plants, and does not exceed the quantity, concentration or rate necessary, as recommended by the manufacturer;*
- (b) *the agrichemical is approved for aquatic use within New Zealand under the Hazardous Substances and New Organisms Act 1996;*
- (c) *all practicable measures are taken to minimise spray drift beyond the target area;*
- (d) *the discharge does not give rise to any of the following effects in the receiving water:*
- (i) *the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
- (ii) *any conspicuous change in visual clarity;*
- (iii) *the rendering of freshwater unsuitable for consumption by farm animals;*
- (iv) *any significant adverse effects on aquatic life, other than the target species;*
- (e) *there is no adverse effect on any water takes permitted by the RMA, this Plan or under a resource consent;*

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<sup>240</sup> 330.12 GDC, IDC and SDC

- (f) *there are no recorded historic heritage sites in the surface waterbody or artificial watercourse, at the point of discharge or within 1 km downstream of the discharge point;*
- (g) *the discharge does not take place into water within natural state waters, or into waters subject to a water conservation order*

## Submissions and analysis

7.111 Rule 9 received 37 submissions with 21 submissions seeking to retain the notified wording. G & B Stevenson seek to prohibit the activity.

7.112 On 1 April 2017, the Resource Management (Exemption) Regulations 2017 will come into force that exempt brodifacoum, rotenone and sodium fluoroacetate from section 15 of the RMA, which restricts the discharge of contaminants into the environment. Therefore, I recommend that an advisory note be included into the pSWLP that illustrates this:

*Note: Any discharge of brodifacoum, rotenone and sodium fluoroacetate that complies with the Resource Management (Exemption) Regulations 2017 is managed by those standards and not by this regional plan.*

7.113 Rural Contractors of NZ seek an amendment to the introduction of the rule so it reads “onto or into surface water...” to align with the heading. In my opinion, the submission from Rural Contractors of NZ should be accepted as the rule intends to apply to agrichemicals being discharged either onto or into surface water, and this will provide some additional certainty to the public, as it aligns with plain-English interpretations of these RMA terms.

7.114 DOC seeks to remove the requirement to align with the manufacturers recommendation in Rule 9(a) as an unnecessary requirement. The requirement in the rule is to not exceed the manufacturer’s “quantity, concentration or rate”. If there is some justification to exceed the maximum recommendations, that may benefit from an external analysis of effects on non-target species, and accordingly, I do not recommend the requirement be deleted.

7.115 Alliance seeks to amend Rule 9(b) to require that the use of any agrichemical is in accordance with any approval and conditions issued in accordance with the Hazardous Substances and New Organisms Act 1996 (HSNO Act). Overall, I support the inclusion of the clarification as this creates more alignment between the pSWLP and the HSNO Act and ensures it covers the application methods, not just the type of agrichemical. However, I am concerned at duplication of requirements between the EPA and the Regional Council, and accordingly, do not recommend this be added.

7.116 The submission from DOC to allow significant effects on ‘other exotic weeds’ as well as the ‘target species’ in Rule 9(d)(iv) has merit in environmental protection. Exotic weeds are of low value and permitting a discharge of agrichemicals to affect them has a positive benefit on the environment. I recommend the submission is accepted.

7.117 Federated Farmers seeks to delete Rule 9(f) relating to protection of historic heritage as it questions any adverse effect agrichemicals would have on a historic heritage site. HNZ seeks to retain this provision. It is unclear what effect, if any, agrichemicals will have on historic heritage sites. I recommend this part of Rule 9 be deleted, unless HNZ can



clarify what adverse effects are caused by agrichemicals on historic heritage sites that warrant controls.

- 7.118 A number of submitters including NZTA seek the deletion of the reference to water conservation orders within Rule 9(g). The Environment Southland staff submission seeks to include an exemption when a discharge is in accordance with the Soil Conservation and Rivers Control Act 1941. Removal of the reference to the water conservation orders, as is sought by NZTA and others, may not align with the water conservation orders themselves, which provide an exemption for flood protection work. The amendments sought by the Environment Southland staff submission more accurately align with what is included in the water conservation orders, which provide for work in accordance with the Soil Conservation and Rivers Control Act 1941. I recommend the Environment Southland staff submission is accepted.
- 7.119 Alliance seeks to amend Rule 9(g) to prevent the discharge of these chemicals within close proximity to identified potable water supplies, such as those sites set out in Appendix J, to prevent potential health risks from contamination. I support this submission from Alliance as it increases the protection from potentially harmful discharges that could affect human health, which aligns with the requirements of the NPSFM and pSWLP objectives. I suggest the amendment is added to Rule 9(g) rather than becoming a separate point and recommend the following wording, which imposes restrictions only in relation to water takes from surface water, is used:
- (g) the discharge does not take place into water within natural state waters, ~~or~~ into waters subject to a water conservation order, or occur within the microbial health protection zone of a surface water drinking water supply site identified in Appendix J, or where no such zone is identified, within 250 metres upstream of the abstraction point of a surface water drinking water supply site identified in Appendix J.*
- 7.120 DOC seeks to amend Rule 9(g) to allow a biosecurity incursion response required under the Biosecurity Act within natural state waters and waters subject to a water conservation order. SIEIA seeks to delete Rule 9(g) as outbreaks of noxious weeds can occur in natural state waters or waters subject to a water conservation order and this clause hinders any response to any outbreak. It is unclear why these amendments should be accepted. I consider that due to the sensitive nature of the waterbodies in question, this additional protection of a consent procedure is necessary. The Biosecurity Act requirement would be considered when Council is assessing the resource consent in any event. If the event was a true emergency, the enabling provisions of section 330 of the RMA and the provisions of the Biosecurity Act would also apply. I suggest DOC and the SIEIA provide evidence as to whether this provision would prevent immediate action in response to a biosecurity threat.
- 7.121 Ngāi Tahu seek to add protection from discharges to ‘mātaimai reserve or taiāpure’ to Rule 9(g). The amendment sought aligns with wording used elsewhere in the pSWLP and relates to specifically identified food gathering areas, which warrants protection. Incorporating ‘mātaimai reserve or taiāpure’ within this rule will ensure they are taken into consideration when agrichemicals are being discharged near waterways.
- 7.122 D Diprose seeks that a record of spray used, date, rate and area sprayed added to Appendix N. I recommend the submission from D Diprose is not accepted as the

purpose of Appendix N is the future planning for on farm management rather than data recording for waterbodies.

- 7.123 Real Journeys seeks a provision to provide for the use of herbicides in and around waterways unrelated to agriculture. SCB seek to include the use of chemicals for the control of pest plants along waterways to assist in the development of riparian areas along the margins of waterways as a discretionary activity, in a separate rule if necessary. It should be noted that Rule 9 only relates to the use of agrichemicals on aquatic plants and the resultant direct application to water. Rule 10 applies to the application of agrichemicals to land where the discharge may enter water and will apply to these situations, so these submissions are not recommended to be accepted.
- 7.124 Hort NZ seeks to add additional clauses requiring compliance with certain levels of best practice, qualifications and recording, intended to provide additional spray management protection. It is noted that these are specific requirements set out in the HSNO Act and the New Zealand Standard for Management of Agrichemicals, which will apply regardless of whether they are included in the pSWLP. The pSWLP does contain Appendix D which provides good spray management guidance and includes extracts from the Standard. In my opinion, the level of protection is sufficient, however, there should be reference to Appendix D (if it is retained, and the appropriate standards, if it is not retained) within Rule 9. I support the amendment sought by Hort NZ to include reference to the Air Plan applying. This does not affect the rule itself, but clarifies to individuals seeking consent that the Air Plan will also apply to them.
- 7.125 M & B Howe seek to ensure the rules apply to urban spray discharges to the stormwater system. In my opinion, the rule applies to all surface water, so would include artificial watercourses.

## Recommendation

- 7.126 Amend Rule 9 as follows:

*The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agent and marker dyes, into or onto<sup>241</sup> surface water, is a permitted activity provided the following conditions are met:*

(c) *the agrichemical use is in accordance with Appendix D and<sup>242</sup> all practicable measures are taken to minimise spray drift beyond the target area;*

...

(g) *the discharge does not take place into water within natural state waters, mātaimai reserve or taiāpure<sup>243</sup> or into waters subject to a water conservation order<sup>244</sup>, or occur within the microbial health protection zone of a surface water drinking water supply site identified in Appendix J, or where no such zone is identified, within 250 metres upstream of the abstraction point of a surface water drinking water supply site identified in Appendix J;<sup>245</sup>*

(h) *the discharge does not take place into waters subject to the Maitai River Water Conservation Order or identified in item 1 of schedule 1 of the Oreti River Water Conservation Order, unless the discharge is undertaken pursuant to the Soil Conservation and Rivers Control Act 1941.<sup>246</sup>*

<sup>241</sup> 390.24 Hort NZ

<sup>242</sup> 390.24 Hort NZ

<sup>243</sup> 797.33 Ngāi Tahu

<sup>244</sup> 247.6 Environment Southland; 523.6 G McGregor; and others

<sup>245</sup> 17.29 Alliance

<sup>246</sup> 247.6 Environment Southland

Note: Provisions in the Regional Air Plan will also apply to the discharge of agrichemicals.<sup>247</sup>

Note: Any discharge of brodifacoum, rotenone and sodium fluoroacetate that complies with the Resource Management (Exemption) Regulations 2017 is managed by those standards and not by this regional plan.<sup>248</sup>

## **Rule 10 - Discharge of agrichemicals to land where they may enter water**

7.127 Rule 10 reads:

*The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agents and marker dyes onto or into land where they may enter water is a permitted activity provided the following conditions are met:*

- (a) the agrichemical is approved for use within New Zealand under the Hazardous Substances and New Organisms Act 1996, and the use and discharge of the substance is in accordance with all the conditions of the approval;*
- (b) all practicable measures are taken to minimise spray drift beyond the target area<sup>2</sup>;*
- (c) the discharge shall not be to natural state waters or to waters subject to a water conservation order.*

<sup>2</sup> *Appendix D of this Plan contains an extract from New Zealand Standard 8409: 2004 (Management of Agrichemicals) providing guidance on minimising spray drift*

### **Submissions**

7.128 Rule 10 received 34 submissions, with 19 submissions seeking to retain the proposed wording.

7.129 Five submitters, including Ardel Dairies seek to remove Rule 10(c). G McGregor and NZTA seek to seek the deletion of the reference to water conservation orders within Rule 10(c), similar to their submission on Rule 9.

7.130 Rural Contractors of NZ seek an amendment to the title and opening paragraph of the rule so it refers to “...onto or into land including where they may enter water...” to ensure the rule covers discharges to land where waterways are not present.

7.131 The Environment Southland staff submission seeks to provide more detail to the conditions in Rule 10(c). The submitted amendment is similar to the Environment Southland staff submission on Rule 9(g), but not as onerous as the environmental risk of discharging chemicals to ground is not as high as discharging to surface water.

- (c) ~~the discharge shall not be to natural state waters or to waters subject to a water conservation order.~~ there is no reduction in the quality of water beyond the zone of reasonable mixing for natural state waters and waters subject to the Maitai River Water Conservation Order or identified in item 1 of schedule 1 of the Oreti River Water Conservation Order.*

7.132 DOC seeks to amend Rule 10(c) to allow a biosecurity incursion response required under the Biosecurity Act.

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<sup>247</sup> 390.24 Hort NZ

<sup>248</sup> Resource Management (Exemption) Regulations 2017

- 7.133 Growplan seeks to add a number of chemicals not from agrichemical sources, such as agricultural wrapping or treated timber, which it considers causes adverse environmental effects.
- 7.134 Hort NZ seek to add a note that the provisions in the Regional Air Plan will also apply to the discharge of agrichemicals.
- 7.135 Real Journeys seeks a provision to provide for the use of herbicides in and around waterways unrelated to agriculture.
- 7.136 Ngāi Tahu seek to add protection from discharges to ‘mātaimai reserve or taiāpure’ to Rule 10(c).

### Analysis

- 7.137 I do not agree with the submissions to delete part or all of Rule 10(c). The purpose of this rule is to protect the water quality within sensitive waterways and statutorily protected areas. I support the amendments sought by the Environment Southland staff submission on the basis of the analysis supporting similar changes under Rule 9.
- 7.138 I support the submission from Rural Contractors of NZ as it should be recognised that use of agrichemicals on land when there is no water source present could still have adverse effects on the environment and a landholder should take care to adhere to the permitted activity conditions.
- 7.139 I support the amendment submitted by Hort NZ to include reference to the Air Plan applying. This does not affect the rule itself, but clarifies to individuals seeking consent that the Air Plan will also apply to them.
- 7.140 The amendments sought to Rule 10(c) by DOC, Real Journeys and Ngāi Tahu are the same as the submissions for Rule 9(g). I recommend accepting the Ngāi Tahu submission and rejecting the others on the same basis.
- 7.141 The submission from Growplan is somewhat unclear. I suggest that the submitter clarify its position at the hearing.

### Recommendation

- 7.142 Amend Rule 10 as follows:

*The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agents and marker dyes onto or into land including<sup>249</sup> where they may enter water is a permitted activity provided the following conditions are met:*

...

- (c) *the discharge shall not be to ~~natural state waters or to waters subject to a water conservation order~~<sup>250</sup>; mātaimai reserve or taiāpure<sup>251</sup> and there is no reduction in the quality of water beyond the zone of reasonable mixing for natural state waters and waters subject to the Mataura River*

<sup>249</sup> 698.3 Rural Contractors of NZ (G Mathieson)

<sup>250</sup> 247.7 Environment Southland; 523.7 G McGregor; and 614.17 NZTA

<sup>251</sup> 797.34 Ngāi Tahu

## **Rule 11 – Vertebrate Pest Control**

### **Introduction**

- 7.143 The June 2011 Parliamentary Commissioner for the Environment Report<sup>253</sup> noted that New Zealand has one of the highest extinction rates of native species in the world, largely due to predation by introduced mammals. It stated that introduced mammals are costly to both the economy and the environment. Possums, wild deer and stoats can carry bovine TB and can infect cattle and farmed deer. Also, possums, deer, wild pigs, rats, feral cats and stoats threaten native ecosystems.
- 7.144 In April 2016, the Ministry for the Environment (MfE) released a consultation document titled ‘Streamlining the regulatory regime for pest control’.<sup>254</sup> This consultation document proposes a nationwide consistent approach to vertebrate pest control. The proposals are based on the recommendations of the Parliamentary Commissioner for the Environment, who highlighted the problems of the duplication of existing controls under the Hazardous Substances and New Organisms (HSNO) Act and the RMA. Rule 11 of the pSWLP, as notified, aligns with the proposals from MfE, where it is a permitted activity to discharge vertebrate pest poison provided certain conditions are met, including where the agrichemical is approved under the HSNO Act.

### **Submissions**

- 7.145 There are 29 submissions on this rule, with the majority of submitters, including RTIAB, Fish and Game and Aaron Wilson supporting the rule. There is a submission from Hort NZ which requests that the term agrichemical is replaced by a different term to avoid confusion. There are also four submissions from OSPRI, DOC, Southland TBfree Committee and Forest and Bird that request that it be permitted to discharge vertebrate pest poisons directly to water.
- 7.146 There are seven submissions opposed to this rule, including from B Whyte, SIEIA, T Little and L Morris.

### **Analysis**

- 7.147 The submission from Hort NZ has merit in that a vertebrate pest poison is excluded from the definition of an agrichemical in the pSWLP. However, in an effort to be consistent with the wording of the rule, I consider that the rule should refer to “poison” rather than “product” as Hort NZ requests.
- 7.148 I have concerns with the request to allow, as a permitted activity, the discharge of vertebrate pest poisons directly to water. While those submitters that request this change

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<sup>252</sup> 247.7 Environment Southland

<sup>253</sup> Evaluating the use of 1080: Predators, poisons and silent forests. The Parliamentary Commissioner for the Environment. June 2011

<sup>254</sup> Ministry for the Environment. 2016. Streamlining the regulatory regime for pest control consultation document. Wellington: Ministry for the Environment

identify that 1080 readily breaks down in water, brodifacoum and other anti-coagulants do not. I have been advised that, in fact, they can be very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.<sup>255</sup> Therefore, I have concerns that the use of anti-coagulants does not meet the requirements of Section 70 of the RMA. The submitters may want to present evidence that show that anticoagulants do not have significant adverse effects on aquatic life. However, given the rule is managing all vertebrate pest poisons and not just 1080, I do not recommend these submission points be adopted.

7.149 I consider that the submissions that oppose the use of 1080 are contrary to the national-level policy analysis regarding the use of 1080 especially that contained in the Parliamentary Commissioner for the Environments' report on the use of 1080. On that basis, I recommend these submissions be rejected.

7.150 On the 1 April 2017, the Resource Management (Exemption) Regulations 2017 came into force that exempted brodifacoum, rotenone and sodium fluoroacetate from section 15 of the RMA, which restricts the discharge of contaminants into the environment. Therefore, I recommend that an advisory note be included into the pSWLP that illustrated this.

## Recommendation

7.151 Amend Rule 11 to read:

*The discharge of vertebrate pest control poisons, including sodium monofluoroacetate (1080), baits, pre-feed and deer repellent, into or onto land where it may enter water is a permitted activity provided the following conditions are met:*

- (a) the ~~vertebrate pest control poison~~ ~~agrichemical~~<sup>256</sup> is approved for use within New Zealand under the Hazardous Substances and New Organisms Act 1996, and the use and discharge of the substance is in accordance with all the conditions of the approval; and<sup>257</sup>*
- (b) the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J.*

*Note: Any discharge of brodifacoum, rotenone and sodium fluoroacetate that complies with the Resource Management (Exemption) Regulations 2017 is managed by those standards and not by this regional plan*<sup>258</sup>

## Rule 12 - Discharge of non-toxic dyes

7.152 Rule 12 reads:

*The discharge of non-toxic dyes for investigative purposes onto or into water other than within natural state waters is a controlled activity.*

*Environment Southland will restrict the exercise of its control to the following matters:*

- (a) the type of dye used;*
- (b) the amount of dye used and the rate of application;*
- (c) any requirements for public notice of the test occurring;*

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<sup>255</sup> Memo from James Dare to Bryan Scoles regarding pesticides to water dated 23 November 2016

<sup>256</sup> 390.26 Hort NZ

<sup>257</sup> Cl 16 – improve clarity

<sup>258</sup> Resource Management (Exemption) Regulations 2017

(d) *duration of the test.*

*An application for resource consent under Rule 12 will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

## **Submissions**

- 7.153 Rule 12 received 11 submissions with nine seeking to retain the notified wording.
- 7.154 Alliance seeks clarification of the relationship between the discharge rules as it may be unclear which rules may apply to some activities. This submission was analysed under Rule 5 above so is not reanalysed here.
- 7.155 ICC seeks that to the activity status be changed to a permitted activity, subject to meeting required standards.

## **Analysis**

- 7.156 I do not agree with the submission from ICC that this provision should be a permitted rather than controlled activity. The benefits of being able to track a discharge immediately do not outweigh the benefits of having knowledge about where these discharge points are and the details of the testing being undertaken. It also provides a degree of comfort to residents and water abstractors, who may be concerned about what is being added to water they are using.

## **Recommendation**

- 7.157 Retain Rule 12 as notified.

## **Rule 13 - Discharge from installed subsurface drainage systems**

- 7.158 Rule 13 reads:

- (a) *The discharge of land drainage water to water from an on-farm subsurface drainage system, is a permitted activity, provided:*
- (i) *there is no conspicuous change to the colour and/or clarity of the receiving waters at a distance of 20 metres from the point of discharge;*
  - (ii) *the discharge does not render freshwater unsuitable for consumption by farm animals;*
  - (iii) *the discharge does not cause or exacerbate the flooding of any other landholding;*
  - (iv) *the discharge does not cause any scouring or erosion of any land or bed of a waterbody beyond the point of discharge;*
  - (v) *for any new drains or the maintenance or upgrading of existing drains, the location of the sub-surface drains and outlet relative depth and position is mapped and provided to Environment Southland upon request; and*
  - (vi) *the discharge does not cause any significant adverse effects on aquatic life.*
- (b) *The discharge of land drainage water to water from an on-farm subsurface drainage system that does not comply with Rule 13(a), is a discretionary activity.*

## Submissions

- 7.159 Rule 13 received about 200 submissions with 41 submitters seeking to retain the notified wording. A total of 23 submitters oppose or seek the deletion of the entire rule. J Gardyne seeks deletion of Rule 13 because it comes under Rule 5, 6 and 7. He considers the rule is unfair as it does not affect roads and council drainage networks. Mt Peel Station seeks deletion of the rule applying in the Bedrock/Hill Country Physiographic Zone.
- 7.160 A & S Wilson seek deletion of all conditions and Rule 13(b) so that subsurface drainage is a purely permitted activity. Smithill seek that Rule 13 applies to all land uses. SDC queries why this discharge has a permissive activity status compared to others, such as reticulated stormwater, and seeks an analysis of equitability and costs and benefits of the rules. A number of submitters, including M Evans, seek to remove sub-surface drainage as a consented activity and instead include it within the management plan process.
- 7.161 T Staut and H Thys request that industry standards and best practice management be formalised. J Minty submits that tile drains should remain open to access cleaning and maintenance. J Stringer seeks to allow for tile drains to have some algal growth in them.
- 7.162 Carmyllie Farm seeks changes to Rule 13 to allow drainage of wetlands to achieve farmable land and discharges are not assessed for water clarity until the work is finished.
- 7.163 PT & SB Dale Trust seek to include a provision where farmers do not have the opportunity to drain into a wetland so they can tap into existing road culverts or install its own culvert escape routes.
- 7.164 Waikaia Plains and St Patrick Farms seek to replace mapping requirement with the monitoring of the receiving stream at entry and exit boundaries or at outlet point to show status at an agreed time during a heavy rainfall period as evidence of effects i.e. Clarity, N, P.
- 7.165 Hayden Peter Trust seeks a clarification of what can be tiled in the future i.e. the definition of critical source area versus a waterway and suggests use of riparian planting species that do not enter drains.
- 7.166 D Harris seeks a clause to be added regarding the discharge not having an adverse effect on water quality it is discharged into.
- 7.167 Fonterra seek to delete the word 'installed' from the heading. S McDonald and R Halder suggest the title may be more accurate as 'Artificial Drainage or Installed Drainage'.
- 7.168 RD & NJ Copland Family Trust seek that Rule 13(a)(i) be amended to 100m. Southern Farms NZ seeks the deletion of the 20m distance completely.
- 7.169 Fairmount Perendale Stud Farm submit that Rule 13(a)(i) should be changed to make provision for any conspicuous change in visual clarity after a determined period from an initial drainage disturbance.



- 7.170 A number of submitters, including DHL and Mt Linton Station, seek an amendment to Rule 13(a)(i) to allow for an initial drainage disturbance due to events such as extreme weather events, drainage maintenance or drainage installation.
- 7.171 A provision allowing the cleaning of tile drains is sought by 32 submitters, who suggest various alternatives. Several submitters state that the clarity of the receiving water cannot be controlled during this process and that should be explicitly allowed. G Baldwin seeks a provision that allows drain cleaning and placing of new tile drain systems without raising concerns about dirty water. Hort NZ seeks to amend Rule 13(a)(i) and (a)(ii) to ensure the condition occurs ‘after reasonable mixing’.
- 7.172 Aurum Farming seeks an amend Rule 13(a)(iii) to allow for natural drainage from one property to another. W Devine also seeks that this right be reflected within the provisions of the pSWLP.
- 7.173 A total of 23 submitters seek the deletion of Rule 13(a)(v) relating to the mapping of tile drains. A number of submitters request this requirement be reduced to only new systems or to new systems and those that are upgraded. Many submitters also request the deletion of the requirement to provide the information to Council. R McCrostie seeks to have it stated mapping is good farming practice but voluntary. Civil Tech seek an amendment so that only the drain outlets are required to be mapped.
- 7.174 P Duffy seeks the retention of Rule 13(a)(v) and Council to provide a standard map for use by farmers and a clear list of the information required. A Horrell seeks clarification of mapping requirements and level of accuracy required. A number of submitters, including J McRae, submit that mapping should be required ‘to the best of the farmers’ knowledge’. M Gill submits that it is Council’s responsibility to provide digital mapping programme to make recording easier for farmers. D & K Shallard seek to ensure co-operation with farmers re tile maps and drainage.
- 7.175 Fish and Game considers that Rule 13(a)(i) and (vi) are too uncertain, and clearer and measurable standards are required, similar to those included within the Otago Regional Plan. Also, they seek to amend Rule 13(a) to include the following additional condition:
- (vii) The discharge does not reduce the water quality standard below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at a distance of 20 metres from the point of discharge.*
- 7.176 Hort NZ seeks to delete Rule 13(a)(vi), relating to the protection aquatic life
- 7.177 The Environment Southland staff submission seeks to add a new Rule 13(a)(vii) as follows:
- (vii) The discharge does not contain drainage water from a wetland.*
- 7.178 R van Gool and S Crack seek to delete Rule 13(b). Donald Farm seek to amend it from a discretionary to a controlled activity. Hort NZ seek to amend Rule 13(b) to a restricted discretionary activity, limited to the standards in Rule 13 that cannot be met.
- 7.179 G & T McKenzie Partnership suggest that filtering or sediment traps be encouraged, where practical. Ernslaw One seeks to remove any reliance on reasonable mixing and

require a bio-filter or constructed wetland, or other effective measure as approved by Council.

## Analysis

- 7.180 Subsurface drainage systems are used extensively throughout Southland to maintain soil conditions for agricultural activities. They are an essential part of agricultural development in many areas of Southland. The negative effect of this activity is that the drainage systems can be a significant transport pathway for agricultural contaminants directly to waterways.
- 7.181 It has been acknowledged by Council that control of this extensive and necessary activity is difficult. Initial drafts of Rule 13 included a requirement for new drainage systems to incorporate a natural or constructed wetland or specifically designed filtration and nutrient reduction system, however, this proposal was subject to heavy criticism by the community and considered to be an ineffective requirement by Council.
- 7.182 Council is seeking to reduce the effects of these subsurface drainage systems primarily through non-regulatory approaches, such as education and advice through catchment support groups.
- 7.183 I disagree with the submission from J Gardyne to remove Rule 13 as discharges from tile drains will be covered by Rules 5, 6 and 7. These rules cover discharges in general and range from discretionary to non-complying. Due to the large amount of subsurface drainage systems across the Southland region, I consider that permitted activity status is appropriate, subject to conditions. I do not consider, as suggested by many submitters, that the conditions should be removed, or that the rule should apply to only some physiographic zones, as potential adverse effects from the discharge from tile drains is not exclusive to particular zones.
- 7.184 The submission from T Staut and H Thys seeking inclusion of industry standards and best practice has merit, however, if these are to be included they would be best situated within Appendix N. I suggest that the submitter provide more details about what these standards would be, and how they would be applied. The rule does not currently limit algal growth, unless the growth does not meet one of the conditions in Rule 13(a). The submission from J Minty relates to best practice and I do not recommend a provision relating to keeping drains open be included within the rule.
- 7.185 Any work proposed to drain a wetland will be controlled by Rule 74 and will require a consent. I agree with the Environment Southland staff submission that this could be made clearer.
- 7.186 The activity of tapping into existing road culverts or installing individual culvert escape routes the PT & SB Dale Trust are seeking to provide for will be managed as a discretionary activity under the current rules of the pSWLP. I suggest the submitter is invited to provide further detail on what this activity may include and reasoning for including this activity as a specific provision of the pSWLP.
- 7.187 The submissions from Waikaia Plains and St Patrick Farms requiring monitoring as opposed to mapping has environmental benefits, but I believe that the change will be

difficult to be practically applied. I invite the submitters to provide a practical example of how monitoring could be applied to this rule.

- 7.188 Regarding the submission from the Hayden Parker Trust, Rule 13 does not limit the location of the drains, if the activity meets the conditions set out in the rule. Each application will be considered on a case by case basis, however, any drain that requires works/structures in a waterway will also need to comply with the relevant rules related to beds of rivers and lakes. The submission also raises a submission point on riparian planting which is unclear. I suggest the submitter clarify this point at the hearing.
- 7.189 In my opinion, the submission from D Harris, seeking protection of water quality, goes to the heart of the management of drainage networks. In my opinion, the conditions of Rule 13(a) provide controls on the discharges from tile drains that are permitted. Any discharges that breach these conditions will become a discretionary activity. In my opinion, this, in combination with non-regulatory methods, will adequately protect water quality, as an interim step ahead of FMU processes.
- 7.190 I support the submission from Fonterra to remove “installed” from the heading of the rule and disagree with the submission of S MacDonald and R Halder. The use of “installed” fails to add anything to the rule, and could be construed in a confusing way.
- 7.191 I suggest that the RD & NJ Copland Family Trust and Southern Farms NZ provide evidence to justify the extension of the mixing zone beyond 20m or having an unlimited mixing zone. In the absence of evidence from submitters supporting a change to the distance, I recommend the notified distance be retained.
- 7.192 Many submissions on Rule 13(a)(i) and (ii) relate to specific activities within the drainage systems, or climatic events that will generate significant contaminant release into waterways, but that only occur for a short period. These include drain installation, drain maintenance, drain cleaning and flooding or heavy rainfall. These are required activities or incidental effects of the running of a subsurface drainage system which may result in a breach of the permitted activity conditions. However, the pSWLP objectives and higher order documents, including the NPSFM and RMA, require that water quality is maintained or improved. Discharges are still required to meet the section 70 requirements in the RMA, whether they are short or long term. Activities such as installation, maintenance and cleaning may require additional on-site mitigations to meet these standards.
- 7.193 I do not support the submission from Hort NZ seeking the inclusion of a level of reasonable mixing as opposed to the 20 metre limit, but would welcome more evidence on this matter. As I understand it, many discharges from subsurface drainage are to narrow waterways less than 2 metres wide. Under the reasonable mixing zone definition, the mixing zone within these small waterways would be short and may be difficult to adhere to, therefore, the 20 metre distance may be more appropriate.
- 7.194 The purpose of mapping the drainage systems is to provide Council with relevant information about where contaminants may be entering a waterway. Council will then be able to determine whether outlets within an area are creating significant adverse effects on a waterway and potentially, where the contaminants are from. Considering the significant potential for these drainage systems to transport contaminants directly to waterways, it is important for this information to be retained.

- 7.195 It was noted by a number of submitters that mapping of currently installed drains would be onerous, as it would be difficult for landholders to determine where previously established drains had been placed. I acknowledge that this is a difficulty, particularly where land has been subdivided and drainage networks cross property boundaries with no obvious surface features. However, I consider that the lack of information about the nature and location of drainage networks is a significant impediment to managing them appropriately, in both a non-regulatory and regulatory sense. For new drains or those maintained or upgraded, the requirement to map the drain and outlet is not onerous and, in my opinion, should be retained so that potential sources of contamination can be identified. I also recommend that to better identify the outlet of drains, these should be identified and mapped. The submissions to delete the requirement to provide information to Council would defeat the purpose of the rule, as recording and providing this information to Council is the purpose of Rule 13(a)(v). If the information is recorded but only retained by the landholder, it becomes redundant, and likely of no use to future owners or occupiers of the land.
- 7.196 A small number of submitters have sought to clarify the mapping requirements or make it easier for the mapping to occur. In my opinion, this is best dealt with either in Appendix N or outside of the pSWLP, as technology and processes for achieving this mapping are likely to evolve over time.
- 7.197 Fish and Game seek to include clearer and more measurable standards, similar to those included within the Otago Regional Plan. In my opinion, this may have merit. However, as mentioned above, community feedback has strongly supported non-regulatory approaches, and I am supportive of this, along with the conditions of Rule 13, at least as an interim step ahead of the FMU processes.
- 7.198 In my opinion, Rule 13(a)(iv) aligns with the requirements of section 70 of the RMA and Hort NZ does not identify how deletion of this condition will still achieve the requirements of section 70. Accordingly, I recommend Rule 13(a)(vi) be retained as notified.
- 7.199 I do not agree with the Donald Farm or Hort NZ submissions seeking to change the activity status of Rule 13(b). Due to the significant amount of subsurface drainage systems throughout Southland and the various types, various contaminants carried and various discharge points, I do not consider a different activity status would be appropriate. Discretionary activity status allows Council to assess all aspects of the discharge when make a consenting decision. I recommend the notified wording of Rule 13(b) is retained.
- 7.200 The submissions from Ernslaw One and G & T McKenzie Partnership have merit, however, a provision requiring treatment before discharge was proposed by Council and, as well as receiving strong community opposition during the pre-consultation process in 2015, it was also considered impractical to implement in many instances. As noted above, Council considers that adopting non-regulatory methods to address this issue will achieve greater outcomes, at least in the short term. The efficacy of this approach will no doubt be tested through the FMU limit setting processes, and the non-regulatory approach may need modification at that stage.

## Recommendation

7.201 Amend Rule 13 as follows:

*Rule 13 - Discharge from ~~installed~~<sup>259</sup> subsurface drainage systems*

- (a) *The discharge of land drainage water to water from an on-farm subsurface drainage system, is a permitted activity, provided the following conditions are met<sup>260</sup>:*
- (i) *there is no conspicuous change to the colour and/or clarity of the receiving waters at a distance of 20 metres from the point of discharge;*
  - (ii) *the discharge does not render freshwater unsuitable for consumption by farm animals;*
  - (iii) *the discharge does not cause or exacerbate the flooding of any other landholding;*
  - (iv) *the discharge does not cause any scouring or erosion of any land or bed of a waterbody beyond the point of discharge;*
  - (v) *for any new drains or the maintenance or upgrading of existing drains, the location of the sub-surface drains and outlet relative depth and position is mapped and provided to Environment Southland upon request; ~~and~~<sup>261</sup>*
  - (vi) *the discharge does not cause any significant adverse effects on aquatic life-;*
  - (vii) *The discharge does not contain drainage water from a wetland; and<sup>262</sup>*
  - (viii) *for any existing drains, the location of the outlet position is mapped and provided to Environment Southland upon request.<sup>263</sup>*
- (b) *The discharge of land drainage water to water from an on-farm subsurface drainage system that does not comply with Rule 13(a), is a discretionary activity.*

## Definition: Subsurface Drainage System

7.202 The definition of subsurface drainage received seven submissions with Fish and Game and FANZ supporting the notified wording and five submitters, including Federated Farmers, seeking to delete ‘mole’ from the definition as mole drains are not permanent.

7.203 Mole drains may not be permanent, but they are a source of nutrient leaching that reduces water quality in receiving waterbodies. I suggest the submitters that are seeking to remove mole drains from the definition provide evidence to support their submission which shows that water quality is not reduced by this form of drainage.

## Definition: Agrichemical (from NZS 8409 Management of Agrichemicals)

7.204 The definition of “Agrichemical” received five submissions with Fish and Game supporting the notified wording. Hort NZ seeks that the definition is amended to specify that the wording is from the 2004 New Zealand standard, whereas Environment Southland requests that the reference to the New Zealand standard be removed from the definition. In addition, Environment Southland seeks that the words “in any agriculture, horticulture or related activity” be deleted from the definition on the basis that it excludes other activities such as road maintenance or works undertaken in accordance

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<sup>259</sup> 277.41 Fonterra

<sup>260</sup> Cl16 – to make consistent with other rules

<sup>261</sup> Cl 16 – to improve clarity

<sup>262</sup> 247.8 Environment Southland

<sup>263</sup> 133.2 Civil Tech

with the Soil Conservation and Rivers Control Act 1941. NZTA and G McGregor request similar amendments.

- 7.205 I agree that the amendments sought by Environment Southland, NZTA and G McGregor are necessary to ensure that Rules 9 and 10 are applicable to activities outside of agriculture or horticulture. I also note that the reference to a New Zealand standard does not impact the implementation of the rules and therefore recommend this reference be deleted.

### **Recommendation**

- 7.206 That the definition of “Agrichemical (from NZS 8409 Management of Agrichemicals) be amended as follows:

#### ***Agrichemical (from NZS 8409 Management of Agrichemicals)***

*Any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used ~~in any agriculture, horticulture or related activity~~, to eradicate, modify or control flora and fauna. For the purposes of this Plan, it includes agricultural compounds, but excludes fertilisers, vertebrate pest control products and oral nutrition compounds.<sup>264</sup>*

### **Rule 14 - Discharge of fertiliser**

- 7.207 Rule 14 reads:

- (a) *The discharge of fertiliser in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:*
- (i) *there is no direct discharge of fertiliser into a surface waterbody, water in an artificial watercourse or into groundwater; and*
  - (ii) *there is no fertiliser discharged when the soil moisture exceeds field capacity; and*
  - (iii) *where any permanently flowing river, lake, lagoon, estuary, artificial watercourse or wetland:*
    - (1) *has riparian planting from which stock is excluded, fertiliser may be discharged up to the paddock-side edge of the riparian planting, but not onto the riparian planting, except for fertiliser required to establish the planting; or*
    - (2) *does not have riparian planting from which stock is excluded, fertiliser is not discharged directly into or within 10 metres of the bed or within 10 metres of a wetland boundary or any identified significant indigenous biodiversity site.*
- (b) *The discharge of fertiliser in circumstances where the fertiliser may enter water that does not meet the conditions of Rule 14(a) is a non-complying activity.*

### **Submissions**

- 7.208 Rule 14 received 92 submissions with 19 submitters seeking to retain the notified wording. There are six submitters seeking to delete or oppose the rule.
- 7.209 Rural Contractors NZ seeks to amend Rule 14 to clarify the rule applies to discharging of fertiliser to land.

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<sup>264</sup> 247.38 Environment Southland

- 7.210 F & K Allan seek to allow aerial applications of fertiliser to hill/high country blocks as a permitted activity provided all fertiliser applications by air are accompanied by GPS coordinates. A number of other submitters seek this for all aerial applications provided it is limited to a specified weight of product at one time.
- 7.211 M Taylor seeks to allow aerial application provided all practicable measures have been taken to limit fertiliser entering waterways/gullies. The submitter considers this could be achieved through the farm management plan or through a restricted discretionary activity. Whyte Partnership seeks a provision permitting top dressing using a plane where small amounts of fertiliser end up in the water.
- 7.212 Clover Bell seek Rule 14(a)(i) be amended to read:
- (i) there is no deliberate direct discharge...*
- 7.213 Fish and Game seeks to amend Rule 14(a)(i) to include wetland and ephemeral or intermittent waterbody with an active bed.
- 7.214 Federated Farmers seek to delete Rule 14 and keep the wording from the current RWP, but with a discretionary activity status if the conditions are not met.
- 7.215 S & J Gamble oppose the approach taken for application of deadly poisons and chemicals entering waterways and seek a discretionary, rather than permitted, approach.
- 7.216 H & K Gardyne seek to amend Rule 14 to reflect the significant effect timing and quantity of fertiliser use has on the environment.
- 7.217 Drylands Farming and Drysdale Family Trust seek that Rule 14 state that ‘no N based fertiliser be discharged when soil conditions are not suitable, based on soil moisture and temperature levels’ and ‘suitability’ should be based on evidence from Ravensdown, Ballance, FANZ or a combination of the three.
- 7.218 Ernslaw One submitted a technical amendment to Rule 14 that includes developing a rule cascade to ensure that farmers applying phosphate based fertiliser test for cadmium, and where levels exceed the national average of 0.65 mg Cd/kg, require the testing laboratory to report those tests to Council. Where cadmium levels approach trigger levels defined in “Appendix 4 of MAF 2011”<sup>265</sup>, the activity status for application of phosphate fertiliser should move from controlled to non-complying.
- 7.219 MMSL opposed the sections of Rule 14 that relate to the discharge of fertiliser directly to waterways as it considers any discharge of granular fertiliser releases fines/dust that contains nitrogen or phosphorus and may be blown directly into waterways. MMSL submit that farmers wishing to fertilise close to waterways should use either fine particle fertiliser or liquid fertiliser and keep GPS mapping records showing proof of placement. The submitter suggests that dusty fertilisers like Super Phosphate can only be applied a set distance from waterways unless a minimum ratio of dust/fines can be reliably met to achieve very minimal dust/fines.

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<sup>265</sup> Ministry of Agriculture and Forestry. 2011. Cadmium and New Zealand Agriculture and Horticulture: A Strategy for Long Term Risk Management

- 7.220 Fonterra seeks clarification that the term “riparian planting” includes ungrazed grass. M Gillespie seeks to replace ‘riparian planting’ with ‘riparian margin of 1m or greater’ so that fertiliser can be applied up to the paddock-side edge of the riparian margin. Some submitters, including Scandrett Rural, seek to amend ‘riparian planting’ to the defined ‘riparian margin’.
- 7.221 Forest and Bird seeks an amendment to ensure Rule 14 applies to coastal lagoons and estuaries and the riparian planting is set at 10m.
- 7.222 R Hamilton seeks to amend Rule 14(a)(ii) to replace ‘discharge’ with ‘application’ to give farmers more control.
- 7.223 A total of 19 submitters, including S Marshall, seek to amend the 10m limit in Rule 14(a)(iii)(2) to 3m. A small number of submitters, including S & T Henderson, seek deletion of the 10m limit entirely. Some submitters, including NZ Groundspread Fertiliser, seek to amend Rule 14 so that fertiliser can be spread to the fence that is protecting the waterway as per the current RWP. C & L Stratford seek the 10m buffer to apply universally, despite the presence of a riparian margin.
- 7.224 T & J McRae seek to have Rule 14 tied in with the farm management plan. A Horrell seeks to amend Rule 14 by moving the issue to become part of the farm management plan and introduce a number of alternative mitigation methods as opposed to just riparian planting or a buffer strip. Also, the submission seeks a review of the 10m buffer zone requirement.
- 7.225 Ravensdown seeks the removal of ‘identified significant indigenous biodiversity site’ from Rule 14(a)(iii)(2) or the addition of ‘that includes surface water’ at the end of the rule to clarify the site must be one that contains surface water for the rule to apply.
- 7.226 Ballance and FANZ considered the drafting of Rule 14 relating to significant biodiversity sites is unclear and seek a separate clause added to the rule to improve readability/clarity:
- (iii) *there is no fertiliser discharged directly into or within 10 metres of the boundary of any identified significant indigenous biodiversity site;*
- 7.227 Hort NZ seeks to amend Rule 14(a)(iii)(2) as follows:
- (2) *Does not have riparian planting from ~~which stock is excluded~~, fertiliser is not discharged ~~directly into or best management practices as set out in Code of Practice for Nutrient Management (Fertiliser Association 2013) will be used within 10 metres of a bed where the slope is over 10 degrees~~ or within 10 metres of a wetland boundary or any identified significant indigenous biodiversity site.*
- 7.228 Hort NZ, FANZ and Ravensdown seek to change the activity status for Rule 14(b) to restricted discretionary, with discretion limited to the standards in Rule 14 that cannot be met.
- 7.229 Kapuka Farms seeks clarification whether Rule 14 applies to artificial watercourses, as the definition of surface water excludes them.



- 7.230 A total of six submitters, including Stoney Creek Station, consider Rule 14 is unnecessary as good farm management practices will ensure that no direct discharge of fertiliser into a waterbody occurs.

### Analysis

- 7.231 I consider the amendment Rural Contractors NZ is seeking to make it clear Rule 14 applies to discharging to land is probably unnecessary, but may make the rule clearer to users of the Plan. The ultimate purpose of the rule is to ensure fertiliser does not enter waterways. As there is additional management of diffuse implications of fertiliser use through the farming rules, a 'note' is appropriate to the effect that while fertiliser discharge is permitted, the implications in terms of nutrients is potentially subject to other rules.
- 7.232 I do not agree with the submissions stating that Rule 14 will prevent aerial topdressing. This activity can still occur provided the contaminants from the discharge do not directly enter any waterway or breach any of the other conditions within Rule 14(a). If it is likely that a discharge may enter water, then the applicator should, in my opinion, change to a more accurate approach or apply for a consent.
- 7.233 The submission from Clover Bell is not appropriate as allowing accidental discharges, as requested by the submitter, will make enforcement of this rule nearly impossible.
- 7.234 S & J Gamble's submission is noted, but the rule already prevents discharge of fertiliser directly to water, so no further modification is necessary.
- 7.235 I support the submission from Fish and Game to include reference to wetlands within Rule 14(a)(i) for clarity, however I consider the further inclusions submitted are not appropriate. There will be some level of nutrient rich water that will be washed into waterways from ephemeral or intermittent streams during a heavy rain event. However, preventing discharge of fertiliser into any of these areas would cause difficulty for landholders, particularly those on hill country where these ephemeral and intermittent waterways are common. I consider that this issue would be more appropriately dealt with in the farm management plan, or via some other non-regulatory approach.
- 7.236 I support the submission from Forest and Bird to apply Rule 14 to coastal lagoons and estuaries. The current wording of the pSWLP does not cover them because they are explicitly excluded from the definition of surface waterbody. Including them will align the rule with Objective 6 of the pSWLP and the NZCPS. Lagoons and estuaries are specified in Rule 14(a)(iii) so are not required to be referenced elsewhere in the rule. It is not practical to require 10 metres of riparian planting in all locations as this puts too high a burden upon landholders and has the potential to significantly affect economic viability of some areas. The 10 metre setback is intended to apply where there is no riparian zone next to the waterway – it effectively incentivises riparian planting.
- 7.237 The submission from H & K Gardyne, Drylands Farming and Drysdale Family Trust consider that there is insufficient guidance on the best practice for fertiliser application. I support the basis of these submissions but consider that advice and information outside of the pSWLP is a better place for this information. Application of fertiliser directly into water is unnecessary and can have significant adverse effects on water quality. Any

activity therefore seeking to directly deposit to water should, in my opinion, remain a non-complying activity.

- 7.238 The submission from Ernslaw One is seeking to deal with the extensive presence of cadmium due to the overapplication of phosphate. I do not consider that this amendment is appropriate for this Plan framework, but it is acknowledged as an emerging land management issue for fertiliser use.
- 7.239 I agree with the steps suggested by MMSL to reduce indirect discharge of fertiliser into waterways, however the submissions contain suggestions that are best practice as opposed to regulatory measures. The submitter may wish to provide its suggested amendments in the form of rules for the Hearing Panel, provided they within the scope of the original submission. Alternatively, they might like to suggest best practice additions elsewhere in the pSWLP.
- 7.240 The submissions seeking a new definition for “Riparian Planting” has been analysed below, with the recommendation not to include a definition in the pSWLP. It is, in my opinion, common sense that un-grazed pasture grass does not constitute “riparian planting”, and to do so would defeat the purpose of the setback element of the rule.
- 7.241 The submission by R Hamilton to replace the word ‘discharge’ with ‘application’ is not appropriate, as the word ‘discharge’ has been used in the framework of section 15 of the RMA. R Hamilton suggests if a fertiliser is applied to land at an appropriate rate prior to an undesirable climatic event, discharge to water is then out of the landholders control. I consider that it is the landholders’ responsibility to ensure that fertiliser is applied appropriately, including in consideration of predicted weather events.
- 7.242 The submissions that seek to have the riparian planting reduced generally seek to have the limit removed, or reduced to 3m. As noted by some submitters, the pSWLP includes rules for cultivation that include setback requirements from waterways. Both Rule 14 and the cultivation rule (Rule 25) are seeking to prevent the runoff of contaminants to waterways. The setback distances for cultivation are also the same as those for winter grazing, and consideration of the appropriate setback distance for these two activities are discussed in full in section 7.2 of this report. In my opinion there are some efficiencies to be gained from aligning these setback distances with those used in Rule 14 for fertiliser application. However, I note that the setbacks relating to cultivation and winter grazing are recommended to be varied depending on a number of factors including slope angle and whether there is existing fencing in place at a 3m setback. Overall, I consider it most efficient and appropriate to align the fertiliser rule with the minimum setback recommended for cultivation, being 3m. From a practical point of view, fertiliser is unlikely to be applied to within 3m of a waterway where a larger setback for cultivation is required under Rule 25.
- 7.243 I consider an amendment to address the submission from T & J McRae is unnecessary, as a current requirement of the farm management plan is to complete a nutrient budget. As well as opposing the 10m buffer zone, A Horrell suggests this provision would best be dealt with as part of the farm management plan and suggests the addition of a number of alternative mitigation methods. I support the introduction of different methods for reducing fertiliser runoff as different areas will require different approaches to mitigation. Within this rule however, anything too specific will become difficult to assess and this is therefore best covered in a FEMP.

- 7.244 I support the submissions from Ravensdown, Ballance and FANZ to create the new clause for significant indigenous biodiversity to improve clarity and include ‘that includes surface water’. In my opinion this improves the clarity of the rule and the intended protection of significant indigenous biodiversity sites. The inclusion of a reference to surface water ensures the rule aligns with section 15 of the RMA which aims to manage discharges of contaminants to water, or which may enter water. I recommend these submissions are accepted.
- 7.245 The pSWLP retains the non-complying activity status from the RWP for any fertiliser discharge that does not comply with the permitted activity conditions. I do not consider the submitters seeking to change the activity status to restricted discretionary have provided reasoning to justify this change, and in the absence of this, I recommend it be remain as a non-complying activity.
- 7.246 Both surface water and artificial watercourses are referred to throughout Rule 14, therefore it is unclear what clarification Kapuka Farms requests. As part of this report it has been recommended that reference to surface waterbody throughout the pSWLP be removed and replaced with “a lake, river, natural wetland, artificial watercourse or modified watercourse”. It is therefore possible this amendment will achieve the outcome sought by Kapuka Farms. However, the submitter is invited to address this should they wish at the hearing.
- 7.247 Discharges of fertiliser directly to water or where it may enter water can result in significant adverse effects to waterways, so it is important these activities are managed through the pSWLP rather than leaving management up to farmers implementing best practice. I therefore do not agree with the submission requesting fertiliser management be through the farm management plan.

**Definition: Fertiliser**

- 7.248 The definition of fertiliser received seven submissions with Fish and Game seeking to retain the notified wording.
- 7.249 Ballance, Hort NZ and FANZ seek to replace the definition of fertiliser with the one from the regulations within the Agricultural Compounds and Veterinarian Medicines (ACVM) Act 1997 to achieve national consistency. Ravensdown seeks to amend the definition to include non-nutrient attributes of the fertiliser, but exclude plant growth regulator substances to align with the ACVM definition. Ernslaw One and P F Olsen seek to include cadmium within the definition.
- 7.250 I support the submissions that seek to align the definition of fertiliser within the pSWLP with the definition within the ACVM regulations to achieve national consistency. This will reduce any potential confusion. Following my analysis of Ernslaw One’s submission above, I recommend that cadmium is not included within the definition.

## Recommendations

7.251 Amend Rule 14 as follows:

- (a) *The discharge of fertiliser to land<sup>266</sup> in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:*
- (i) *there is no direct discharge of fertiliser into a ~~surface waterbody~~ lake, river, modified watercourse, natural wetland, coastal lagoon, estuary,<sup>267</sup> water in an artificial watercourse, or into groundwater; and*
  - (ii) *there is no fertiliser discharged when the soil moisture exceeds field capacity; and*
  - (iii) *there is no fertiliser discharged directly into or within 3 metres of the boundary of any identified significant indigenous biodiversity site that includes surface water;<sup>268</sup>*
  - (iv) *where any permanently flowing river, lake, lagoon, estuary, artificial watercourse or wetland:*
    - (1) *has riparian planting from which stock is excluded, fertiliser may be discharged up to the paddock-side edge of the riparian planting, but not onto the riparian planting, except for fertiliser required to establish the planting; or*
    - (2) *does not have riparian planting from which stock is excluded, fertiliser is not discharged directly into or within ~~40~~<sup>269</sup> metres of the bed or within ~~40~~<sup>270</sup> metres of a wetland boundary ~~or any identified significant indigenous biodiversity site.~~<sup>271</sup>*
- (b) *The discharge of fertiliser in circumstances where the fertiliser may enter water that does not meet the conditions of Rule 14(a) is a non-complying activity.*

7.252 Amend the definition of fertiliser as follows:

*Means a substance or biological compound or mix of substances or biological compounds ~~Any substance (whether in solid or fluid form)~~<sup>272</sup> that is described as or held out to be for, or suitable for sustaining or increasing the growth, productivity or quality of plants or animals through the application of the following essential nutrients to plants or soils: nitrogen, phosphorus, potassium, sulphur, magnesium, calcium, chloride, sodium as major nutrients; or manganese, iron, zinc, copper, boron, cobalt, molybdenum, iodine, selenium as minor nutrients or fertiliser additives., and includes non-nutrient attributes of the materials used in fertiliser; but does not include substances that are plant growth regulators that modify the physiological functions of plants<sup>273</sup>.*

### Definition: Riparian Planting

7.253 A Horrell and J White seek a definition of riparian planting. The term is used once in Policy 16 and three times in Rule 14 of the pSWLP, with submissions arising regarding its use in Rule 14 only. A submission from Fonterra on Rule 14 requests that it be clarified whether the reference to riparian planting includes ungrazed grass. In my opinion, the phrase does not require a definition within the pSWLP due to the common sense meaning of the phrase being clear and its common use through industry

<sup>266</sup> 698.4 Rural Contractors of NZ (G Mathieson)

<sup>267</sup> 247.41 Environment Southland - Definition of surface waterbody

<sup>268</sup> 48.31 Ballance

<sup>269</sup> 296.3 Gardyne Trust & C K Gardyne; 365.2 M & D Heenan; and others

<sup>270</sup> 296.3 Gardyne Trust & C K Gardyne; 365.2 M & D Heenan; and others

<sup>271</sup> 48.31 Ballance

<sup>272</sup> 803.50 Fertiliser Association of NZ

<sup>273</sup> 661.47Ravensdown

commentary (e.g. The Sustainable Dairying: Water Accord, developed by representatives from farmers, dairy companies, central government, regional councils and the Federation of Māori Authorities). In my opinion, it is clear that ungrazed grass is not riparian planting, so will not satisfy the requirement of the phrase.

## **Rule 15 - Stormwater Discharge**

### **Introduction**

7.254 Stormwater has the potential to carry high levels of contaminants into surface water. Contaminants may include sediment, oil and grease, organic material, faecal material and hazardous chemicals. Rule 15 enables discharges of stormwater to land where it may enter a surface water body as a permitted activity, provided the discharge avoids certain adverse effects on freshwater, which are addressed through a range of permitted activity conditions. Resource consent is required under Rule 15 if these conditions are not able to be met.

### **Policy constraints**

7.255 Section 15 of the RMA governs the discharge of contaminants, including the discharge of any contaminant or water into water, or any contaminant onto land in circumstances where the contaminant may enter water. For the purposes of the pSWLP, stormwater is defined as water containing contaminants and is described in the glossary as “surface water run-off subsequent to precipitation”. Under section 15(1) no person may discharge stormwater unless allowed by a regulation, a rule in a regional plan as well as a rule in a proposed regional plan for the region, or a resource consent.

7.256 Section 70 of the RMA contains specific direction with respect to regional rules for discharges. The regional council cannot permit a discharge unless it is satisfied that any of the following effects are not likely to arise, in the receiving waters, after reasonable mixing:

- (c) *the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
- (d) *any conspicuous change in the colour or visual clarity:*
- (e) *any emission of objectionable odour:*
- (f) *the rendering of fresh water unsuitable for consumption by farm animals:*
- (g) *any significant adverse effects on aquatic life.*

7.257 The most relevant part of the RPS in relation to Stormwater discharge is section 5.5 – Water Quality.

7.258 Objective 5.1 requires that the quality of the region's water resources is sustained so as to meet the needs of a range of uses, including safeguard the life-supporting capacity of water and related ecosystems. Objective 5.3 requires ensuring that the discharge of contaminants into water does not compromise water quality standards established for the region. These objectives are supported by Policy 5.5 which directs the relevant authorities to consider during plan-making and consent processes, the effects of land use and development on ground water and surface water quality, including both point and

non-point source discharges and to ensure any adverse effects are avoided, remedied or mitigated.

- 7.259 Objective WQUAL.1 of the pSRPS requires that water quality in the region safeguards: the life-supporting capacity of water and related ecosystems; and the health of people and communities. This is supported by Policy WQUAL.1 which requires that discharges and land uses activities are managed to maintain water quality, or improve it, to ensure freshwater objectives are met.
- 7.260 These overarching objectives are taken into account within the pSWLP and are represented by a number of objectives, including Objectives 3, 6, 13, 14, 15 and 18. Because managing stormwater relates directly to freshwater quality these objectives are all important to consider. Together with these objectives, Policy 13 *Management of land use activities and discharges*, Policy 14 *Preference for discharges to land* and Policy 15 *Maintaining and improving water quality* guide Rule 15 *Discharge of stormwater*, are relevant and must be implemented by Rule 15.
- 7.261 Rule 15 of the pSWLP is specific to the discharge of stormwater. Other discharges are captured by Rules 5 to 19. Rule 15 combines existing Rules 11 and 12 of the RWP and is considered to be a more simplistic and practical solution.<sup>274</sup>
- 7.262 Section 3.5.2 of Te Tangi a Tauria encourages that where possible that the discharge of wastewater to water be avoided and preferably be to land. Where any discharge is to water, it encourages that the discharge be treated to a high standard to minimise any potential adverse effects to the receiving environment. Additionally, Te Tangi a Tauria considers some discharges to water as culturally unacceptable.

## Submissions

- 7.263 Of the 32 submissions on Rule 15, 11 submitters request the rule is retained without changes. Several forestry sector submitters request clarification on whether the reference to roads and parking areas within the rule applies to stormwater run-off within plantation forests and to diffuse discharges during and immediately following harvesting operations. Likewise, P F Olsen requests that the rule adopts conditions relating to industry best practice codes, such as those within the proposed National Environmental Standard for Plantation Forestry.
- 7.264 D Diprose requests that the rule not allow any vehicle washing fluids to directly enter the storm water drains. Federated Farmers requests that Rule 15 be replaced with Rule 11 and Rule 12 of the existing RWP.
- 7.265 Forest and Bird, Fish and Game and W & T Holder all request that amendments be made to this rule so that clear and measurable standards are incorporated into this rule. Specifically, Forest and Bird and Fish and Game request that “*the discharge does not reduce the water quality below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone*”. Additionally, Fish and Game request that there be no “*conspicuous change in the colour or visual clarity of the receiving waters at the downstream edge of the reasonable mixing zone*”

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<sup>274</sup> Section 32A Report. Pg.182

- 7.266 ICC, SDC and GDC request that there be amendments to this rule, including incorporating the discharge from reticulated stormwater networks into Rule 15, and deleting clause (c) altogether. The effect of this latter change would be that any stormwater discharge containing any sewage, contaminants from on-site wastewater systems and mobile toilets, or agricultural effluent would not be a non-complying activity. SDC also seeks clarification over where the responsibility lies for instances where open drains/modified water courses run through urban areas that originate well outside the urban boundary and as such contaminants have the potential to have built up before their drains reach the urban boundary.
- 7.267 ICC seek a related amendment to the definition of “Reticulated system” so that it only applies to “*Territorial Authority owned and operated systems for distribution of water, and collection and conveyance to discharge point of stormwater and sewerage*”. The submitter is concerned that the definition only applies to stormwater and captures other reticulated systems such as rural drainage systems. I note that the definition is only used in relation to Rule 15, which is specific to stormwater and therefore do not recommend any changes to the definition.
- 7.268 KiwiRail requests that rail be included in clause (v) so that any discharge of stormwater from the rail network that enters natural state waters is a permitted activity. NZDF request that the discharge of stormwater from temporary training activities be included within the permitted activity framework.
- 7.269 Ravensdown and FANZ both request that the activity status be lowered for clause (b) and (c) to restricted discretionary and discretionary respectively. SCB request that reference to “other person’s property” be removed from clause (vi) due to its concerns that this could result in permitting a discharge to cause flooding, erosion or instability to public land as it potentially may not be viewed as a “person’s” land.
- 7.270 Ngāi Tahu request that consideration is given for discharges to any mātaihai reserve or taiāpure. The Oil Companies request that an advice note be included in the rule that states that a discharge permit is not required from Council when the discharge is into a reticulated stormwater system.

## Analysis

- 7.271 Submissions from the forestry sector requesting clarification that stormwater run-off from parking areas and roads within plantation forests be made explicit and diffuse run-off after harvesting is not supported. It appears these submitters<sup>275</sup> are referring to subclause (v) which states:

*except for the discharge of stormwater from a roof, road or vehicle parking area, the discharge is not into water within natural state waters;*

- 7.272 Without knowing how significant the adverse effects of sedimentation from plantation forestry into natural state waters are, I am reluctant to propose any changes to that effect. Any adoption of best practice codes in relation to this are not supported either on the basis that that it would be difficult to list all the appropriate codes that should apply, or conversely including a general statement about codes of practice that could be meaningless. Additionally, I am reluctant to reference the proposed National

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<sup>275</sup> 249.22 Ernslaw One; 622.2 Rayonier

Environmental Standard for Plantation Forestry as it is uncertain how this will change given the large opposition encountered during its submission process.

- 7.273 I consider the request by D Diprose to not allow the discharge of vehicle washing fluids into a stormwater network as unnecessary as the rule currently does not allow this. This is due to the fact that vehicle washing fluids are not stormwater and are therefore managed under Rules 5 and 6 which require consent for the discharge of contaminants. Stormwater is defined as “*Surface water run-off subsequent to precipitation*”.
- 7.274 In response to the submissions by Forest and Bird, Fish and Game and W & T Holder to include a condition requiring adherence to the Appendix E Water Quality standards, I consider such a condition to be unnecessary and inefficient. This is because the nature of discharges permitted under this rule are already sufficiently limited through the conditions, such that the risk of the standards in Appendix E being breached is unlikely. However explicitly requiring this as a permitted standard introduces potential monitoring and compliance issues. In my view, the low level of risk associated with permitted discharges is such that the additional costs associated with monitoring and compliance is not justified.
- 7.275 However, I do recommend adopting the part of the submission from Fish and Game insofar as that there needs to be consideration given so that there is not conspicuous change to the colour and clarity to the receiving environment as a result of stormwater discharge, in accordance with section 70 of the RMA.
- 7.276 The submission by Federated Farmers that requests that Rule 15 be replaced by Rules 11 and 12 is unnecessary as Rule 15 is already an amalgamation of the two rules. Federated Farmers claim that “*Rule 15(a) only refers to discharges onto or into land, but 15(a)(iv) refers to discharges to a surface waterbody*”. However, Rule 15 (a) clearly incorporates discharges into surface waterbodies as shown underlined below.

*The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a surface waterbody, including an artificial watercourse, is a permitted activity provided the following conditions are met:*

- 7.277 I consider the request by ICC, SDC and GDC to incorporate the discharge from a reticulated stormwater network into Rule 15 clause (b) unnecessary, as the rule already applies to stormwater discharging from a reticulated network, because condition (a)(i) is not met if the discharge is from a reticulated system.
- 7.278 I consider the request to remove clause (c) of Rule 15 by ICC, SDC and GDC, and similarly Ravensdown’s and FANZ request for (c) to be discretionary, to be inappropriate and contrary to the NPFMS. This clause makes the discharge of stormwater, where the discharge contains sewage, contaminants from on-site wastewater systems, mobile toilets or agricultural effluent a non-complying activity. The nature of stormwater discharges are such that stormwater networks can potentially become an express path for contaminants to reach a waterbody, for example, ageing infrastructure can result in untreated raw sewage being transported through the stormwater network. By having clause (c) as non-complying it strongly discourages this from occurring. In my view, this is necessary in order to ensure that stormwater discharges are managed to protect water quality and the health of humans, domestic animals and aquatic life (Policy 13). I also recognise that the physical upgrades of infrastructure such as sewage and stormwater systems will be costly



and will require time to implement, but I do not consider that these costs outweigh the need to better manage these discharges. This approach also acknowledges that maintaining and improving water quality requires a response from both the rural and urban sectors.

- 7.279 In relation to SDC's request that seeks clarification over where the responsibility lies for those contaminants entering the reticulated system, I can only advise that given that it is the submitters system the ultimate responsibility lies with the operator of any particular reticulated system to ensure that any discharge meets any consent conditions.
- 7.280 The rail network does not appear to be close to any of the natural state water in Southland so I am unsure as to what referring to rail in clause (a)(v) would achieve. The submitter may want to present evidence at the hearing that illustrates where they think this might be an issue.
- 7.281 I consider the request by the NZDF as inappropriate as the discharge from a military training activity can potentially contain hazardous substances, therefore I consider that it appropriate that any discharge from military training activities which cannot meet the permitted activity standards be investigated via a consenting process.
- 7.282 The request to amend the activity status of clause (b) from discretionary, to restricted discretionary, by Ravensdown and FANZ, in my view is inappropriate. In my experience, restricted discretionary activity status is best used when the effects of an activity that need to be managed are well-known, and therefore discretion can be limited to only those matters. Discretionary status, on the other hand, is better suited to activities where there might be a range of potential effects, some of which may not be able to be anticipated, and it is therefore not appropriate to try and confine the Council's discretion. Additionally, it may also be used where the range of matters the Council should be considering is wide and therefore better left 'open', rather than having a long and unwieldy list of matters of discretion. In this instance, both submitters seek that discretion be limited to the matters in the condition that is not met, and therefore it is not clear what exactly this would be restricted to. By way of example, where the discharge does not meet condition (a)(i) because it is a discharge from a reticulated system, or where the discharge is from a road or vehicle parking area and discharges directly into natural state waters, there are a range of potential effects from such a discharge. As such, it is my view that discretionary status is more appropriate.
- 7.283 In relation to SCB's concerns that the rule as notified could result in permitting a discharge of stormwater that could cause flooding, erosion or instability to public land as it could potentially be not viewed as a person's land, I note that the RMA defines a "person" to explicitly include "the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporated". Reference to "any other person's property" is necessary to make it clear that the clause does not apply to the property of the discharging party.
- 7.284 The request by Ngāi Tahu that consideration is made for discharges to any mātaihai reserve or taiāpure may be more relevant to the other rules in the pSWLP concerning discharges. The submitter may wish to present evidence at the hearing that clarifies their request with respect to Rule 15.

7.285 I consider the request by the Oil Companies as inappropriate as Environment Southland's role is to manage discharges out of reticulated stormwater systems not to regulate who can discharge into these systems. Rather, it is the owner of a reticulated stormwater system who has responsibility for authorising discharges into the system, including ensuring these meet any conditions of the resource consent for the reticulated system.

## Recommendation

7.286 Amend Rule 15 as follows:

### *Rule – 15 Discharge of Stormwater*

- (a) *The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a ~~surface waterbody~~ lake, river, natural wetland, modified watercourse or, ~~including an~~<sup>276</sup> artificial watercourse, is a permitted activity provided the following conditions are met:*
- (i) *the discharge is not from a reticulated system;*
  - (ii) *the discharge does not originate from industrial or trade premises where hazardous substances are stored or used unless:*
    - (1) *hazardous substances cannot enter the stormwater system; or*
    - (2) *there is an interceptor system in place to collect stormwater that may contain hazardous substances and discharge or divert it to a trade waste system; or*
    - (3) *the stormwater contains no hazardous substances except oil and grease and the stormwater is passed through an oil interceptor system prior to discharge; and*
  - (iii) *the discharge does not contain any sewage, contaminants from on-site wastewater systems and mobile toilets, or agricultural effluent;*
  - (iv) *for discharges to a ~~surface waterbody~~ lake, river, natural wetland, modified or artificial watercourse<sup>277</sup> the discharge does not result in:*
    - (1) *the production of any conspicuous oil or grease films, scums, foams or floatable or suspended materials;*
    - (2) *the rendering of freshwater unsuitable for the consumption by farm animals;*
    - (3) *significant adverse effects to aquatic life;*
    - (4) *any conspicuous change in the colour or visual clarity of the receiving waters at the downstream edge of the reasonable mixing zone<sup>278</sup>*
  - (v) *except for the discharge of stormwater from a roof, road or vehicle parking area, the discharge is not into water within natural state waters; and*
  - (vi) *for discharges to land, the discharge does not cause flooding, erosion, or land instability to any other-person's property.*
- (b) *The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a ~~surface waterbody~~ lake, river, natural wetland, modified or artificial watercourse<sup>279</sup> that does not meet one or more of the conditions in Rule 15(a), excluding condition (a)(iii) is a discretionary activity.*
- (c) *The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a ~~surface waterbody~~ lake, river, natural wetland, modified or artificial watercourse<sup>280</sup> that does not meet Rule 15(a)(iii) is a non-complying activity.*

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<sup>276</sup> 247.41 Environment Southland

<sup>277</sup> 247.41 Environment Southland

<sup>278</sup> 752.107 Fish and Game

<sup>279</sup> 247.41 Environment Southland

<sup>280</sup> 247.41 Environment Southland

## **Rule 16 - Discharge of water from bores and wells**

7.287 Rule 16 reads:

*The discharge of water from any bore or well into a surface waterbody or water in an artificial watercourse or onto or into land where it may enter a surface waterbody or water in an artificial watercourse, as a result of aquifer testing, is a permitted activity provided the following conditions are met:*

- (a) the discharge does not cause flooding of any other person's property, erosion of the bed or banks of the receiving waterbody or land instability; and*
- (b) where the discharge is to water, there is no conspicuous change to colour and clarity of the receiving waters at a distance of 20 metres from the point of discharge.*

### **Submissions**

7.288 Rule 16 received 18 submissions, with 15 in support seeking that the rule is retained as notified.

7.289 Alliance seeks that the relationship and resulting activity status between the various discharge rules are clarified, and that rules are deleted if there is any unnecessary duplication. Because this submission was analysed under Rule 5 above, it is not reassessed here.

7.290 NZTA seeks that the rule is amended to provide for all discharges of water from bores and wells and not just discharges from aquifer testing activities. In particular, the submitter notes that dewatering on construction sites often require the discharge of water to water. The submitter considers that these "minor activities" should be allowed by way of permitted activity conditions.

7.291 F D Enterprises submits that it is impractical for a farmer to get consent for the purpose of testing wells, stating this is adding additional time and expense to the operation. The submitter seeks that condition (b) of Rule 16 is amended to exclude discharges associated with testing wells.

### **Analysis**

7.292 Rule 16 specifically permits the discharge of water from aquifer testing, provided the discharge meets the conditions of that rule. Given that the rule is specific to discharges associated with aquifer testing, the request from F D Enterprises has the effect of deleting condition (b). The inclusion of condition (b) is important to ensure the effects of the discharge permitted by the rule are adequately managed and as such, I do not recommend the amendment sought by F D Enterprises is adopted.

7.293 The effects associated with the discharge of water from aquifer testing is reasonably well understood, with the activity largely being confined to a short duration (i.e. usually up to seven days). The discharge of groundwater for other purposes (such as dewatering) may occur over a much greater period of time which may result in adverse effects that are not anticipated for an activity of a lesser scale, including effects on nearby water takes. Given that these "other" activities and the associated adverse effects are not well defined, I do not consider it appropriate to extend the rule to cover other such activities. I consider that other discharges of water to water are appropriately managed under Rule 5 where

consent is required as a discretionary activity. I do not recommend the submission from NZTA is accepted.

## **Recommendation**

7.294 Retain Rule 16 as notified.

## **Rule 17 - Dust Suppressants**

### **Introduction**

7.295 This provision was drafted in relation to the use of used oil as a dust suppressant on gravel roads in Southland, given that the contaminants within used oil are known to be hazardous to both human health and the environment.

7.296 As currently drafted, the rule allows for the use of dust suppressants as a permitted activity, provided they are new oils that have not been contaminated, or are more benign oils such as vegetable oil. There are also application controls in relation to these oils, namely the rate of application and set back requirements from waterways. Additionally, it is a permitted activity if the dust suppressant is approved under HSNO.

7.297 Waste oil contains a large number of hazardous contaminants which are picked up when the oil is used in engines and transmissions, including a number of carcinogens.<sup>281</sup> These contaminants can be transferred to the environment during application of the waste oil as a dust suppressant or once the surface of the oiled road breaks down. This breakdown causes the road to become dusty again, and the contaminants bind to the dust, which can be blown into the air or shifted by traffic or water flow.

### **Submissions**

7.298 There were 32 submissions on this rule, with the majority of submitters including Federated Farmers, Fulton Hogan & Southern Aggregates, Fish and Game and Ballance supportive of the rule. SDC seeks clarification around the use of bitumen products as a dust suppressant.

7.299 Eleven submissions were received in opposition to the rule, with a large proportion of those requesting the use of used oil be a permitted activity. These submitters include Lowburn Ag, Three Rivers CG and M Colling. There were two submissions, by Ernslaw One and P F Olsen, stating that new light fuel oil and new light lubricating oil are both eco-toxic and as such should be removed as a permitted activity from the rule. These two submissions also mentioned that there are number of other commercially available dust suppression products that are significantly less toxic than new light fuel oil and new light lubricating oil.

### **Analysis**

7.300 The permitted use of used oil as a dust suppressant is a contravention of the requirements for the disposal of oil under the HSNO Act. The RMA, in particular

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<sup>281</sup> Memo from Nick Ward regarding Used Oil dated 24 February 2016 (included in pSWLP Section 32 Report)

section 15(1)(d), states that no person may discharge any contaminant from any industrial or trade premises onto or into land unless it is expressly allowed by an NES or a rule in a regional plan. Due to the actual or potential adverse environmental effects of the discharge of used oil to land, I consider it inappropriate for the use of used oil as a dust suppressant to be a permitted activity.

- 7.301 The rule currently allows for the application of HSNO approved bitumen-based products such as ottaseal and conventional seal. Questions raised by SDC, Ernslaw One and P F Olsen also identified a lack of clarity in relation what dust suppression products are allowed as a permitted activity under this rule. Therefore, I consider it appropriate to include as a permitted activity the ability to discharge non-hazardous dust suppressants.
- 7.302 Submissions identified that there are a number of commercial dust suppressants available that are significantly less toxic than lubricating oil and new light fuel oil. The origin of this rule was based around Environment Canterbury's rule and after discussions with Environment Canterbury Staff they considered that its rule could be improved so that it allowed for the ability to use non-hazardous substances as a permitted activity. Non-hazardous products, such as wood pulp, would not normally go through a HSNO approval process, and the drafting of the rule as proposed would not expressly enable these non-hazardous products to be used as a dust suppressant without first obtaining resource consent.
- 7.303 Additionally, if these recommendations are accepted there is potentially reason to change the activity status from restricted discretionary to discretionary for discharges that are outside of the permitted activity conditions, since the specific conditions relating to application rate and location would no longer be present in the rule, and as such it renders the matters on which Environment Southland can restrict its discretion meaningless.
- 7.304 If the above recommendation is accepted, it would result in the consequential removal of the definition of light fuel oil given this rule is the only place within the pSWLP that the term light fuel is used.

## Recommendation

7.305 Amend Rule 17 as follows:

- (a) *The discharge of a dust suppressant onto or into land in circumstances where a contaminant may enter water is a permitted activity, provided one of the following conditions are met:*
- (i) ~~*the dust suppressant is not a hazardous substance; or the discharge is only of vegetable oil, or of new light fuel or new lubricating oil and is:*~~
- ~~(1) *applied in a manner that does not result in pooling or run-off, with a maximum application rate not exceeding 2 litres per square metre per day and 4 litres per square metre per annum; and*~~
- ~~(2) *not within 20 metres of a surface waterbody, the Coastal Marine Area, a bore or soakhole; or*~~<sup>282</sup>
- (ii) *the dust suppressant is approved under the Hazardous Substances and New Organisms Act 1996 and the use and discharge of the dust suppressant is in accordance with all conditions of the approval.*

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<sup>282</sup> 622.21 P F Olsen; 750.14 SDC; and 249.23 Ernslaw One

(b) *The discharge of ~~oil as~~<sup>283</sup> a dust suppressant onto or into land in circumstances where a contaminant may enter water that does not meet ~~one or more of~~<sup>284</sup> the conditions in Rule 17(a) is a restricted discretionary activity.*

*Environment Southland will restrict the exercise of its discretion to the following matters:*

*1. ~~the actual and potential environmental effects of not meeting the condition or conditions of Rule 17(a)~~<sup>285</sup>*

### ***Light Fuel***

*Means Number 2, 3 or 4 Fuel Oil or diesel.*<sup>286</sup>

## **Rule 18 – Discharge of water from purging of instruments at a water treatment plant**

7.306 Rule 18 reads:

*The discharge of water containing contaminants from the purging of instruments at a water treatment plant onto or into land in circumstances where contaminants may enter water is a permitted activity, provided the following conditions are met:*

- (a) the volume of water discharged does not exceed 3 cubic metres per day;*
- (b) the concentration of chlorine shall not exceed 2 milligrams per litre;*
- (c) the pH of the discharge shall be between 6 and 8; and*
- (d) the discharge does not result in overland flow to surface water or beyond the landholding boundary, or ponding*

### **Submissions**

7.307 Rule 18 received 12 submissions, with nine in support seeking that the rule is retained as notified.

7.308 Alliance seeks that the relationship and resulting activity status between the various discharge rules are clarified, and that rules are deleted if there is any unnecessary duplication. Because this submission was analysed under Rule 5 above, it is not further reanalysed here.

7.309 SCB seeks to add a condition to Rule 18 to ensure that any increase in temperature from discharge activities is controlled.

### **Analysis**

7.310 The submission from SCB has merit, however the submitter does not provide a suitable temperate range, or what increase in temperature that may be appropriate. In the absence of a specific amendment sought to the rule accompanied by supporting information, I do not recommend the submission from SCB is adopted.

### **Recommendation**

7.311 Retain Rule 18 as notified.

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<sup>283</sup> Consequential to removal of conditions, per 622.21 P F Olsen; 750.14 SDC; and 249.23 Ernslaw One

<sup>284</sup> Cl16 – to correct the grammar of the rule

<sup>285</sup> Consequential to removal of conditions, per 622.21 P F Olsen; 750.14 SDC; and 249.23 Ernslaw One

<sup>286</sup> 622.21 P F Olsen

## Rule 19 – Discharge of water associated with water treatment processes

7.312 Rule 19 provides for the discharge of water containing contaminants associated with water treatment processes from a water treatment plant, as a controlled activity, subject to conditions being met that include: a 7,500m<sup>3</sup> limit on the associated water take; a requirement that the amount of water discharged not exceed 8% of the daily water take; and the discharge not giving rise to specified effects in the receiving waters (which reflect those set out in s70(1) of the RMA).

### Submissions

7.313 Rule 19 received 12 submissions, with six in support seeking that the rule is retained as notified.

7.314 Alliance seeks that the relationship and resulting activity status between the various discharge rules are clarified, and that rules are deleted if there is any unnecessary duplication. Because this submission was analysed under Rule 5 above, it is not discussed further here.

7.315 Several submitters seek the inclusion of additional conditions to either ensure compliance with the Water Quality Standards set out in Appendix E<sup>287</sup>, or other such standards including the NES for Sources of Human Drinking Water or that the water is “swimmable”. One submitter seeks that a condition is added to ensure no significant deterioration is observed in nitrogen, phosphorus and *E. coli* concentrations in the waterway.

7.316 NZDF seeks the addition of a permitted activity rule to expressly provide for discharges from temporary military training activities directly into surface water. The submitter has provided a suite of permitted activity standards as follows:

- (a) *Cleaning and disinfectant rinse shall be discharged to land only and shall not enter any surface waterbody or coastal marine area by overland flow.*
- (b) *The discharge shall not cause erosion at or adjacent to the discharge point.*
- (c) *The discharge shall not give rise to any flooding of land or assets upstream of the discharge point under any conditions.*
- (d) *The discharge shall not cause exceedance in trigger values for 95% species protection for substances that are toxic to aquatic ecosystems (as measured relative to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2000) in receiving water bodies after reasonable mixing;*
- (e) *The discharge shall meet the following water quality standards 20 m downstream of the discharge point:*
  - (i) *No conspicuous change in the colour or visual clarity of the receiving water;*
  - (ii) *No emission of objectionable odour;*
  - (iii) *No production of conspicuous oil or grease films, scums or foams, or floatable materials;*
  - (iv) *No rendering of fresh water unsuitable for consumption by farm animals;*
  - (v) *No significant adverse effects on aquatic life.*

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<sup>287</sup> Such as Forest and Bird

*The Consent Authority is notified no less than 10 working days prior to the activity commencing, and provided details of the activity including the dates the activity will be undertaken and discharge location.*

## **Analysis**

- 7.317 Rule 19 provides for the discharge of water containing contaminants associated with water treatment processes into or onto land in circumstances where contaminants may enter water. The submission from NZDF seeks a permitted activity rule for the discharge of contaminants directly to surface water, so long as that discharge meets a suite of permitted activity standards. Despite the inclusion of such standards, a permitted activity rule allowing the discharge of a contaminant directly to water is, in my opinion, inconsistent with Policy 14. Given the preference in the Plan for discharges to land over direct discharges to surface water, it is my view that a permitted activity rule for temporary military activities is not appropriate, particularly if the discharge allows for a degradation in water quality, or may affect downstream water takes, especially for drinking water.
- 7.318 Submissions seeking the inclusion of additional water quality standards have merit, particularly the requirement to ensure the discharge “does not reduce the water quality standard below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone.” The inclusion of these standards better give effect to Objective 6 and Policy 15 of the pSWLP. I note the standards set out in Appendix E includes a standard for water temperature, *E. coli*, ammonia and other water quality indicators that are affected by elevated concentrations of nitrogen and phosphorus (such as filamentous algae). Including the water quality standards from Appendix E as a condition of the rule may address the concerns raised by SCB, P Tayler and M Tayler. I note that an allowance for degradation to water quality within the reasonable mixing zone is only appropriate for direct discharges to surface water and should not apply to discharges to land in circumstances where contaminants may enter water.
- 7.319 The NES for Sources of Drinking Water provides guidance to regional councils for setting permitted activity rules in regional plans (amongst other things). Regulation 10 of the NES for Sources of Drinking Water states that a regional council must not include a rule in its regional plan to allow a permitted activity upstream of an abstraction point where the drinking water meets the health quality criteria. Under sections 2 and 4 of the NES for Sources of Drinking Water, the health quality criteria is defined as meeting the Drinking Water Standards for New Zealand 2005. As such, it is my view that it is more appropriate to include the Drinking Water Standards for New Zealand 2005 (revised 2008). This also better aligns with Objective 8 of the pSWLP. It is my view that the submission from P Tayler provides sufficient scope to make this amendment.

## **Recommendation**

- 7.320 Amend Rule 19 as follows:

*The discharge of water containing contaminants associated with water treatment processes from a water treatment plant onto or into land in circumstances where contaminants may enter water is a controlled activity, provided the following conditions are met:*

- (a) *the associated water take does not exceed 7,500 cubic metres per day;*



- (b) *the discharged volume of water containing contaminants does not exceed 8% of the daily water take;*
- (c) *the discharge does not give rise to any or all of the following effects in the receiving water:*
  - (i) *the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
  - (ii) *any conspicuous change in visual clarity;*
  - (iii) *the rendering of freshwater unsuitable for consumption by farm animals;*
  - (iv) *any significant adverse effects on aquatic life.*
- (d) *the discharge does not reduce the water quality standard below any standards set for the relevant waterbody in Appendix E "Water Quality Standards".*<sup>288</sup>

*Environment Southland will restrict the exercise of its control to the following matters:*

1. *the assimilative capacity and drainage characteristics of the soil;*
2. *compliance with the ANZECC Guidelines for Fresh and Marine Water Quality (2000) and/or the Drinking Water Standards for New Zealand 2005 (Revised 2008)<sup>289</sup> ~~WHO~~ Guidelines for Drinking-water Quality (4th Edition 2011);*
3. *the separation distance of the discharge from surface waterbodies, artificial watercourses, subsurface drains, the coastal marine area, residential dwellings, landholding boundaries and drinking water sources;*
4. *management of the discharge, including discharge methods.*

## **New Rule**

- 7.321 NZFS seeks the addition of a new rule that provides for the discharge of contaminants or water to surface waterbodies resulting from firefighting emergency response and training activities. They seek that such activities are permitted however do not suggest any conditions for the rule.
- 7.322 In their submission, NZFS state that it is comfortable that it can comply with the water quality standards outlined in Appendix E, however would prefer to have a rule which clearly excludes it from having to demonstrate compliance to the Council each time it undertakes its vital operational role.
- 7.323 I note that section 330 of the RMA provides an exemption to sections 9, 12, 13, 14 and 15 for emergency works. Given that section 330 applies to firefighting emergencies and only requires retrospective consent to be sought where the adverse effects of the activity continue, I do not consider that it is necessary to specifically provide for the discharge of contaminants or water to surface waterbodies, associated with fire-fighting emergencies, as a permitted activity. While a permitted activity rule may be appropriate for the discharge of water to water associated with fire-fighting training, the framework proposed by the submitter does not include any standards that must be adhered to, including the duration, rates, volumes or any water quality standards that will be adhered to. Given that the training events are likely to be pre-planned and taking into consideration the potential adverse effects associated with the discharge of contaminants and/or water to water, it is my view that these activities are best managed via a resource consent.

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<sup>288</sup> 279.66 Forest and Bird

<sup>289</sup> 793.2 P Tayler

## Definition: Reasonable Mixing Zone

7.324 “Reasonable Mixing Zone” is defined as:

*When determining the size of the zone of reasonable mixing, minimise the size of the area where the relevant water quality standards are breached. The zone shall not be larger than:*

- (a) *for river and artificial watercourse locations with flowing water present at all times:*
  - (i) *no longer than 10 times the width of the wetted channel or 200 metres along the longest axis of the zone (whichever is the lesser), and*
  - (ii) *occupies no greater than two-thirds of the wetted channel width at the estimated Q95 for that location;*
- (b) *for river and artificial watercourse locations, with intermittent flows, no longer than 20 metres at times of flow and 0 metres at no flow;*
- (c) *when within a drinking water supply site identified in Appendix J, 0 metres.*

## Submissions

7.325 Five submissions have been received on the definition of reasonable mixing zone. Southland Fish and Game support the definition and seek its retention. Southland’s Territorial Authorities seek the ability to determine the zone of reasonable mixing through resource consent application processes as “at some discharge locations the mixing zone specified in the definition may result in very small mixing zones in narrow waterways, irrespective of the flows, resulting in overly restrictive provisions for discharges in some streams”. A Wilson seeks “a definition of what a “reasonable mixing zone” may actually look like in the real world”. The Oil Companies seek the following amendments for clarity and to ensure the definition does not act like a rule:

### *Reasonable Mixing Zone*

~~*When determining the size of the zone of reasonable mixing, minimise the size of the area where the relevant water quality standards are breached. The zone shall not be larger than:*~~

- (a) *for river and artificial watercourse locations with flowing water present at all times:*
  - (i) *no longer than 10 times the width of the wetted channel or 200 metres along the longest axis of the zone (whichever is the lesser), and*
  - (ii) ~~*occupies*~~ *no greater than two-thirds of the wetted channel width at the estimated Q95 for that location;*
- (b) *for river and artificial watercourse locations, with intermittent flows, no longer than 20 metres at times of flow and 0 metres at no flow;*
- (c) *when within a drinking water supply ~~site~~ protection zone identified in Appendix J, 0 metres.*

## Analysis

7.326 With respect to the submission of A Wilson it is unclear what aspects of the definition the submitter is referring to. In the absence of further information, I do not recommend this submission be accepted.

7.327 Whilst I acknowledge traditionally the ‘Reasonable Mixing Zone’ could be determined through the resource consent process, in my opinion this approach introduces an element of ambiguity into the pSWLP and lends itself towards the creation of double standards. As such, I do not recommend accepting the submission from the Territorial Authorities.

7.328 The submission of the Oil Companies is partially accepted. I agree that there are parts of the definition that provide policy direction specifically, “*When determining the size of the zone of reasonable mixing, minimise the size of the area where the relevant water quality standards are breached*”. I therefore recommend this part of the definition be deleted. With respect to the reference to drinking water supply sites (clause (c)), it is unclear whether this is referring to drinking water sites or zones. The Oil Companies have sought this is amended to read drinking water supply zones. In my opinion in order to achieve the objectives and policies of the pSWLP both need to be included. However as currently worded it is unclear what within a drinking water supply site means. If the hearing panel considers there is scope it is my view that is appropriate to align part (c) of this definition with the rule framework in the pSWLP which generally requires a 250 metre setback from drinking water supply sites.

## Recommendation

7.329 Amend the definition to read:

### *Reasonable Mixing Zone*

~~*When determining the size of the zone of reasonable mixing, minimise the size of the area where the relevant water quality standards are breached.*~~<sup>290</sup>*The zone shall not be larger than:*

- (a) *for river and artificial watercourse locations with flowing water present at all times:*
  - (i) *no longer than 10 times the width of the wetted channel or 200 metres along the longest axis of the zone (whichever is the lesser), and*
  - (ii) *occupies no greater than two-thirds of the wetted channel width at the estimated Q95 for that location;*
- (b) *for river and artificial watercourse locations, with intermittent flows, no longer than 20 metres at times of flow and 0 metres at no flow;*
- (c) *when within a drinking water supply zone or 250 metres upstream of a drinking water supply site, sourced from surface water,<sup>291</sup> identified in Appendix J, 0 metres.*

## New Definitions

7.330 Ballance and FANZ seek to include a definition for “best practicable option”. This definition is not necessary as it is defined in the RMA.

7.331 Fish and Game seek to include a definition of “conspicuous change to colour and clarity of the receiving waters” that includes a numerical measure. In my opinion this definition is not appropriate or necessary as the phrase is self-explanatory and used in section 70 of the RMA

## Appendix E

### Provisions

7.332 Appendix E – Water Quality Standards contains standards for discharges that generally apply following reasonable mixing with the receiving waters. The standards are set out according to the type of water body and include a range of matters such as temperature, pH, clarity, bacterial and fungal growth, and contaminant concentrations.

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<sup>290</sup> 895.61 Oil Companies

<sup>291</sup> 895.61 Oil Companies

- 7.333 Appendix E is referred to in Policy 15, which seeks to maintain and improve water quality by a range of actions, so that (amongst other matters) water quality is maintained where it is better than the water quality standards specified in Appendix E, or improved where it does not meet these standards. Rule 5, which is a default rule governing discharges to surface waterbodies that are not otherwise captured in the pSWLP rules, requires that discharges do not reduce water quality below the relevant standard in Appendix E in order for the discharge to be a discretionary activity; where this condition is not met, the discharge becomes a non-complying activity under Rule 6.

## Submissions

- 7.334 Appendix E received 13 submissions. Fish and Game and Forest and Bird seek to retain the proposed wording and DHL seeks to delete the Appendix.
- 7.335 Several submissions, including Federated Farmers, seek clarification or amendments they consider necessary to align the appendix with the NPSFM. SCB seek clarification of the term 'Natural State Waters'.
- 7.336 Federated Farmers and Alliance seek clarification of how Appendix E and the FMU provisions will align and whether the limits in Appendix E are interim or temporary catchment limits or whether they will remain for assessment against all point source discharge permits. Alliance seek a review of the Appendix to ensure the provisions have been developed undertaking a robust analysis of each water body, are not onerous and are appropriate in each circumstance. Alliance are concerned that it is not clear what will be changed/impacted by the FMU limit setting process.
- 7.337 DHL questions the lack of detail specific to waterways within the Southland region, such as the level of 'natural colour and clarity' that is not to be altered. The submitter also seeks to amend paragraph 2 of Appendix E so the standards will not apply where this is an unavoidable result of an established land use that cannot be reversed.
- 7.338 DairyNZ seek a number of clarifications including of the use of the term 'reasonable mixing' and if diffuse discharges are cumulatively meant to comply with Appendix E standards. It also seeks specific amendments to align the Appendix with the NOF and only apply it in certain circumstances and not to wetlands. Fish and Game also seek to amend Appendix E to align with the standards in the NOF, or where these are not available in the NOF, such as for dissolved reactive phosphorus, the applicable standard in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000 Guidelines).
- 7.339 Fonterra seek amendment of the specification relating to clarity in Maitua 3 to align with the wording in Fonterra's discharge consent.
- 7.340 Forest and Bird and Fish and Game consider the water quality standards are inadequate and submit a number of additional parameters that should be achieved. D Harris seek to include standards for nitrogen and dissolved phosphorus.
- 7.341 Meridian seeks an exclusion for effects caused on the Waiau catchment by the Manapouri Power Scheme and clarify that the natural quality of Natural State Waters will

not be altered 'after reasonable mixing', to take into account what is established in Policy 15.

- 7.342 Ravensdown seeks to amend Appendix E so the attributes set out apply at the FMU level instead.

### **Analysis**

- 7.343 Appendix E provides water quality standards that have been transferred across from the current RWP. In response to the majority of these submissions, it should be noted that Appendix E serves a slightly different purpose to the setting of water quality limits required in the NPSFM. The various attribute states and national bottom lines contained within the NPSFM will be dealt with as part of the more specific limit setting process when evaluating the individual FMUs. This will include assessments specific to the Waiau catchment. In my view it would be inappropriate to incorporate certain attribute states within Appendix E at this time, as they may not be appropriate for all waterways. I also note that the NPSFM provides direction on the process to be followed in order to determine the appropriate attribute states and water quality limits and therefore it would be premature, and not follow the NPSFM direction, to prescribe these in Appendix E at this time.
- 7.344 At this time, prior to the more specific FMU limit setting process, Appendix E provides water quality standards that are intended to maintain water quality. These standards will need to be met where discharges are captured under Rule 5. Given the direction in Policy 15, they are also likely to be considered in resource consent applications for discharges. In my view, given that these standards are the same as those currently stated in the RWP, it is appropriate to retain these standards until the more specific limit setting process is undertaken.
- 7.345 In response to SCB seeking clarification of the term 'Natural State Waters', I note that these are defined within the glossary of the pSWLP.
- 7.346 The change DHL seeks to paragraph 2 is not supported. A direction like this would be better contained within the relevant policy or rule, and I consider the change would not be consistent with the direction in Objective 6 or Policy 15.
- 7.347 The clarifications that DairyNZ and Meridian seek in relation to discharges can be determined by the first sentence of Appendix E which clarifies that the standards apply following reasonable mixing, unless otherwise stated. Policy 15 contains direction for the assessment of applications where an activity results in diffuse discharges. This states that discharges reducing water quality should be avoided unless the adverse effects of the discharge can be avoided, remedied or mitigated. The levels set out in Appendix E will be the standard which will determine whether water quality needs to be maintained or improved. Whether those discharges are point or non-point source, Policy 15 will still apply.

### **Recommendations**

- 7.348 Retain Appendix E as notified.

## **Farming**

### **Introduction**

7.349 This section of the report addresses the provisions notified in the pSWLP which seek to manage the effects of farming activities on water quality. Specifically, this includes Policy 16, which provides direction on the management of farming activities that affect water quality, Rules 21 – 25, which address the use of land for farming activities (and related discharges), and Appendix N which sets out requirements for Management Plans on which the rules rely.

7.350 The section of the report is split into the following sub-sections:

- Permitted farming and Farm Environmental Management Plans;
- Dairy Farming
- Winter Grazing
- Cultivation

### **How the farming provisions work in the notified pSWLP**

7.351 Before turning to analysis of submissions on various provisions, the following provides a summary of how the pSWLP provisions fit together as a whole.

7.352 Farming is managed both according to the physiographic zone within which the activity is located and the type of activity. The former allows for different controls to be placed within different zones, based on how susceptible the zone is to nutrient losses. The latter allows for less restrictive controls on lower risk activities and a greater degree of management to be targeted towards higher risk activities. By way of example, the use of land for any type of farming activity on a landholding less than 20 ha is permitted. Whereas, the use of land for dairy farming of cows in the Alpine physiographic zone is a prohibited activity.

7.353 The intention behind the farming policies and rules, when applied in conjunction with the other rules of the pSWLP, is to halt any further decline in water quality in Southland, until the FMU processes take effect. The FMU processes are where the community outcomes and responses, at a more fine-grained level, can be established and then applied.

7.354 A key element of the pSWLP provisions is the use of management plans to manage nutrient losses from farming activities. This can be either through the preparation and implementation of a Farm Environmental Management Plan (FEMP) or membership of an Independently Audited Self-Management Scheme (IASM). Uptake of FEMPs is encouraged by allowing many farming activities to continue without resource consent provided a FEMP is prepared and implemented within a certain timeframe, and where resource consent is required, providing a less restrictive activity status where a FEMP is prepared and implemented.

7.355 Appendix N of the pSWLP then outlines the requirements of a FEMP. FEMPs must include measures to manage riparian zones, cultivation, wintering and effluent

application, nutrient budgeting as well as GMPs specific to the property, taking into account the physiographic units the property is located in, and the key transport pathways for those zones.

- 7.356 Rule 20 relates to farming activities generally, other than on a landholding less than 20 ha. The rule does not apply to dairy farming of cows or intensive winter grazing. For other farming activities, the rule provides a permitted activity status up to a specified time (e.g. 30 May 2018, 30 May 2019, 30 May 2020) and then the permitted activity status from that date only applies where a FEMP has been prepared and implemented or through membership of an IASM. The requirement for a FEMP/IASM membership is staged according to physiographic zones.
- 7.357 Rule 21 is specific to the existing dairy farming of cows and provides a permitted activity status, subject to conditions which include limitations on intensification and the requirement for a FEMP/IASM membership. It excludes the Alpine physiographic zone.
- 7.358 Rule 22 requires consent for all new or expanded dairy farms, with the activity status dependent on the physiographic zone within which it is located and a FEMP/IASM membership. As part of this rule any dairy farming of cows in the Alpine physiographic zone is a prohibited activity.
- 7.359 Rule 23 relates to intensive winter grazing, providing a permitted activity status up until 30 May 2018, and beyond that with a FEMP/IASM membership and subject to a range of other conditions such as proximity to water bodies and limitations on the scale of the grazing in particular physiographic zones. Where these conditions are not met, a resource consent is required, except that after 30 May 2018 the use of land for intensive winter grazing within the Alpine physiographic zone is a prohibited activity.
- 7.360 While the rules relating to farming activities are land use rules, as opposed to discharge rules, Rule 24 is a discharge rule intended to ensure that the discharge of contaminants to land that are incidental to farming activities authorised by Rules 20 - 23 do not require a separate discharge consent.
- 7.361 Rule 25 addresses cultivation on sloping ground, especially where in proximity to water bodies. In general, it includes a requirement for consent to be obtained for cultivation within specified distances of water bodies, relative to the slope of the land, or for cultivation over 20 degrees in slope.

### **Key Issues in the Submissions**

- 7.362 The submissions on these provisions are wide-ranging, and range in detail from lengthy submissions from industry groups, through to several hundred hand-written submissions from individuals. While every provision is submitted on to some extent, there are a number of common themes that run through the submissions. These themes include:
- the failure to recognise the economic implications of the provisions in the pSWLP;
  - the short timeframes to prepare FEMPs, and the content of the FEMPs, especially in relation to nutrient budgets;
  - criticism of the permissive framework for farming;

- the reliance on GMPs, including questioning whether this will be adequate to solve the issues facing Southland, what the GMPs are and whether these are already being undertaken;
- the use of the physiographic zones within the pSWLP, including whether they should be a trigger for a resource consent, the various area thresholds that apply to different physiographic zones and the accuracy of the mapping;
- which physiographic zones ought to be subject to more restrictive controls, be it more physiographic zones, less physiographic zones or different physiographic zones;
- the kinds of stock and activity that should be subject to intensive winter grazing controls;
- whether cultivation needs to be controlled and, in particular, in relation to slope and the slope-based setback distances from waterways.

7.363 In some instances, there are a hundred or more submissions seeking the same general outcome. These submissions are seldom identical in terms of the reasons or the particular change the submitter would like to see. However, they are variations on a theme. In order to keep this section of the report manageable in terms of complexity and size, every specific submission point has not been addressed – they are grouped by the theme, but I recognise that there may be submitters that consider their particular point has been misinterpreted or ignored. For that I apologise, and can only encourage any such submitters to explain their points to the Hearing Panel at the hearing.

7.364 Two other sets of provisions, relating to tile drains and stock exclusion from waterbodies have received a similarly large number of submissions. While these are addressed elsewhere in this report, there are some overlaps, which will be highlighted where necessary.

7.365 Because of the integrated nature of these provisions, some submissions have been made seeking changes to several provisions, but which ultimately stem from the same concern. For example, because Rules 21-23 are specific to dairy farming of cows and intensive winter grazing, these activities are generally explicitly excluded from the general farming rules in Rule 20, and submitters seeking changes to how dairy farming of cows and intensive winter grazing is managed seek related changes across these provisions. Similarly, submitters with concerns about the FEMP/IASM membership approach taken in the pSWLP have submitted across a number of provisions in relation to this approach. Therefore, where possible, the main concern is discussed once, rather than per provision.

7.366 There are a range of policy constraints, which are outlined further below, which necessitate action by Environment Southland to maintain existing water quality, and improve water quality where it is degraded.<sup>292</sup> This is a primary test, against which the submitters requests have been measured.

## **Key Responses to Submission Points**

7.367 The key responses to the submission points outlined above, and explained in far greater detail in the sections below, are:

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<sup>292</sup> Objective A2 of the NPSFM



- **Physiographic zones** – it is recommended that physiographic zones continue to be used as the basis for managing nutrient issues in Southland. However, it is recognised that the physiographic zones are subject to some uncertainty, and further work is being undertaken. On that basis, changes are recommended that:
  - ◆ remove some of the differentiation between different physiographic zones, particularly in relation to intensive winter grazing thresholds;
  - ◆ timeframes for undertaking certain actions are recommended to be based on catchments, rather than physiographic zones; and
  - ◆ there is an improved process where more than one physiographic zone affects a property;
- setbacks for cultivation, and the specific controls relating to cultivation are revised, to enable a simple resource consent path to better manage riparian areas. There is also an increased emphasis on managing critical source areas, rather than entire cultivation areas;
- timeframes to prepare FEMPs have been adjusted, so that the number required per year is more evenly spread and targeted towards the order in which the FMU processes will be undertaken;
- there are a number of adjustments to all of the rules, to improve certainty, clarity and workability, particularly in light of criticism by a number of submitters about the complexity of the rule framework.

### **Key outstanding issues**

7.368 The submission points are analysed, and a range of recommendations are made. However, there are some clear issues that warrant attention from submitters in evidence, and will require further consideration. These include:

- how far should the region-wide provisions of the pSWLP go in terms of regulation of diffuse discharges, and how much should be left to future FMU processes;
- what GMPs are currently occurring, what that is achieving in terms of halting any further decline in water quality, how industry can be encouraged to help with this, what (if any) regulatory regime should sit behind GMPs, and, is reliance on GMPs enough for the future;
- how to effectively deal with “critical source areas”, in terms of their definition, identification and management, in a way that is efficient and certain in terms of the pSWLP provisions.

### **Policy context**

#### **Resource Management Act 1991 (RMA)**

7.369 The Council has a number of functions under section 30(1) of the RMA that are relevant to this aspect of the pSWLP. They include:

- establishing, implementing and reviewing objectives, policies and methods to achieve integrated management of the natural and physical resources of the region (section 30(1)(a));

- preparing objectives and policies in relation to any actual or potential effects of the use, development or protection of land which are of regional significance (section 30(1)(b));
- the control of the use of land for the purpose of the maintenance and enhancement of the quality of water in water bodies, and the maintenance and enhancement of ecosystems in water bodies (section 30(1)(c));
- the control of discharges of contaminants into or onto land or water, and discharges of water into water (section 30(1)(f));
- if appropriate, setting rules in a regional plan to allocate the water quality. i.e. the capacity of water to assimilate contaminants from discharges.

7.370 In addition, section 67 requires Regional Councils to give effect to:

- any national policy statement and the New Zealand coastal policy statement; and
- any regional policy statement.

### **National Policy Statement for Freshwater Management 2014 (NPSFM)**

7.371 Objective A2 of the NPSFM requires the overall quality of fresh water within a region to be maintained or improved. In many locations in Southland water quality is declining, as detailed in section 3 of this report.

7.372 Under the NPSFM, water resources are considered over-allocated (in terms of quality and quantity) if they have been allocated to users beyond a limit; or are being used to a point where a freshwater objective is no longer being met. If this is the case, then over-allocation must be addressed so that freshwater objectives, limits or targets are met within a defined timeframe. However, as outlined in section 2 of this report, the Council has set out a time-staged implementation programme for the NPSFM, and the pSWLP does not, and is not required, at this point in time, to set targets or limits.

### **Regional Policy Statement for Southland 1997 (RPS)**

7.373 The most relevant part of the RPS in relation to farming is 5.5 Water Quality.

7.374 Objective 5.1 requires the quality of the region's water resources to be sustained to meet the needs of a range of uses, including the reasonably foreseeable needs of future generations, and to safeguard the life-supporting capacity of water and related ecosystems. This is supported by Policy 5.5 which requires local authorities to assess the effects of land use and development on ground water and surface water quality, including both point and non-point source discharges, and provide for any adverse effects to be avoided, remedied or mitigated.

7.375 Objective 5.2 requires that in the use and development of water and land resources, and the discharges of contaminants, water quality is maintained and, wherever practicable, enhanced. Similarly, Objective 5.3 requires that the discharge of contaminants into water does not compromise water quality standards established for the region. These objectives are supported by Policy 5.2 which requires all point source discharges to comply with water quality standards after reasonable mixing.

## Proposed Southland Regional Policy Statement 2012 (pRPS)

7.376 The following provisions are particularly relevant:

### *Objective WQUAL.1*

*Water quality in the region:*

- a. safeguards the life-supporting capacity of water and related ecosystems;*
- b. safeguards the health of people and communities;*
- c. is maintained, or improved in accordance with freshwater objectives formulated under the NPS-FM 2014;*
- d. is managed to meet the reasonably foreseeable social, economic and cultural needs of future generations.*

### *Objective WQUAL.2<sup>293</sup>*

*Halt the decline, and improve water quality in lowland water bodies and coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands in accordance with freshwater objectives formulated in accordance with the NPS-FM 2014.*

### *Policy WQUAL.1*

- a. Identify values of surface water, groundwater, and water in coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and formulate freshwater objectives in accordance with the NPS-FM 2014.*
- b. Manage discharges and land use activities to maintain water quality, or improve it, to ensure freshwater objectives are met.*

### *Policy WQUAL.2*

*In managing water quality, particular regard will be had to the following contaminants:*

- a. nitrogen;*
- b. phosphorus;*
- c. sediment;*
- d. microbiological contaminants.*

### *Policy WQUAL.11*

*Integrate the management of land use, water quality, water quantity, coast and air, and the use, development and protection of resources wherever possible to achieve the freshwater objectives formulated in accordance with Policy WQUAL.1.*

7.377 Policy WQUAL.2 in the pRPS is one provision which provides more specific direction on the management of land use activities. The approach taken by the physiographic zone work supports Council's direction in Policy WQUAL.2 by focusing on nitrogen and phosphorus in particular. The pSWLP uses this as a foundation for establishing controls for land use activities which produce these contaminants.

## **Policy 16 – Farming activities that affect water quality**

7.378 Policy 16 seeks to manage the environmental effects from all farming activities by introducing the requirement for all farming activities to implement a management plan; manage sediment run-off risk from farming and hill country development; and manage collected and diffuse run-off and leaching of contaminants.

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<sup>293</sup> Still under appeal

7.379 In addition, the policy provides clear direction for the consideration of farming activities that require resource consent.

7.380 Policy 16 reads:

1. *Minimising the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) from farming activities by:*
  - (a) *strongly discouraging the establishment of new dairy farming or new intensive winter grazing activities in close proximity to sensitive waterbodies identified in Appendix Q;*
  - (b) *strongly discouraging applications to establish new, or further intensify existing dairy farming of cows or intensive winter grazing activities where the effects on the quality of water, including cumulatively, of groundwater, waterbodies, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands cannot be avoided or fully mitigated or in areas where water quality is already degraded to the point of being overallocated.*
2. *Requiring all farming activities, including existing activities, to:*
  - (a) *either implement a Management Plan, as set out in Appendix N, or be listed on the Environment Southland Register of Independently Audited Self-Management Participants;*
  - (b) *actively manage sediment run-off risk from farming and hill country development by requiring setbacks from waterbodies, riparian planting, limits on areas or duration of exposed soils and the prevention of stock entering surface waterbodies;*
  - (c) *manage collected and diffuse run-off and leaching of nutrients, microbial contaminants and sediment through the identification and management of higher risk physiographic zones on a regional scale, and critical source areas within individual properties.*

## Submissions

7.381 Policy 16 received approximately 90 submissions, with the majority in opposition seeking various amendments. Three submitters seek that the policy is retained as notified. Five submitters seek that the policy is deleted, with only two of these submitters providing alternative relief.

7.382 Ravensdown seeks that the policy is deleted and replaced with the following:

*Minimise the adverse effects of farming activities on water quality in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater by:*

- (a) Controlling the establishment of new dairy farming and new intensive winter grazing activities; and*
- (b) Requiring all farming activities, including existing activities, to either prepare and implement a Farm Management Plan as set out in Appendix N, or be part of an Independently Audited Self- Management scheme approved by the CEO of the Southland Regional Council.*

7.383 FANZ also seeks that the policy is deleted and replaced with the following:

*Minimise the adverse effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) of farming activities by:*

- (a) avoiding, remedying or mitigating the adverse effects of farming activities on water quality, and*

- (b) controlling farming activities in close proximity to the sensitive water bodies in Appendix Q, and
- (c) controlling new intensive farming and intensification of existing farming activities, where effects cannot be avoided, remedied or mitigated, in areas where water quality is already degraded to the point of being over-allocated.
- (d) requiring all farm activities to implement Farm Management Plans as set out in Appendix N that manage:
  - sediment loss,
  - diffuse runoff,
  - nutrient leaching and
  - microbial contaminants in waterway, or  
be listed on the Environment Southland Register of Independently Audited Self-Management Participants.

(note implementation should be staged to provide for developing capability to deliver, and identifying priority areas).

- 7.384 Schrader Mains opposes Policy 16 on the basis that it has a presumption against establishing new or expanding existing dairy farming and intensive winter grazing activities, which it states is inappropriate as it does not reflect the environmental effects of these activities. The submitter considers that the policy should be effects based in order to achieve Objectives 1, 2, 6 and 7. The submitter seeks that Clause 16(1)(b) is deleted and replaced with a new policy that provides guidance for resource consent applications for new or expanding dairy farming of cows or intensive winter grazing, which includes assessment matters such as the sensitivity of the receiving environment; whether the receiving environment is over-allocated; the effects, including cumulative effects, on water quality; and the value of investment in infrastructure (amongst other things).
- 7.385 A number of submitters oppose the use of the words “strongly discourage” in Policy 16(1)(a) and (b) and seek that either these words are deleted or replaced with alternatives such as “managing the effects of”. Landpro also seeks clarification within the policies which is the highest test, strongly discourage, or strongly discourage unless fully mitigated (in reference to Policy 16 and the physiographic zone policies).
- 7.386 Fish and Game’s submission seeks a stronger policy position on the basis that it considers Policy 16 is currently inconsistent with sustainable management and section 5 of the RMA. In particular, it seeks to replace the words “minimise the environmental effects” with “avoid, remedy or mitigate the environmental effects” and replace the words “strongly discouraging new applications” with “avoid new applications”.
- 7.387 Several submitters seek that “close proximity” (from Policy 16(1)(a)) is defined, as they believe that the policy, as currently worded, is ambiguous. DairyNZ and Schrader Mains has suggested a distance of 100 metres, others have either suggested that the policy applies to all activities in those catchments, or upstream of those waterbodies. Other submitters have asked Council to define an appropriate distance and provide reasons why that distance is deemed appropriate.
- 7.388 Several submitters also raise concerns with the use of the terms “fully mitigated” in Policy 16(1)(b). Fonterra submits that reference to “fully” should be deleted or such other phrases included as necessary to ensure the policy focuses on managing effects within acceptable boundaries. Two submitters seek this clause is deleted in its entirety on

the basis that it is unbalanced and does not facilitate the consideration of consent applications on a case-by-case basis.

- 7.389 SCB seek to include a new clause to Policy 16(1) to ensure that any approvals for freshwater aquaculture take into account the potential adverse effects on water quality. Fish and Game seek several additional amendments to Policy 16, including amendments to ensure the effects on wetlands and lakes are also included in the policy and insert a schedule outlining where "water quality is already degraded to the point of being over-allocated " as referred to in Policy 16(1)(b).
- 7.390 Several submitters request to delete the requirement to submit a FEMP. Others seek to delete all provisions related to farming activities and replace with farmer education and enabling farmers to operate at GMP.
- 7.391 J Gunton (Gunton Farms) raises concerns that Policy 16(2)(b) penalises farmers as a result of adverse weather events. Other submitters agree with setbacks to manage sediment run-off risk but seek that any limits on exposed soils are guidelines only.
- 7.392 Several submitters seek that each landholding should be treated on a case by case basis until confident the physiographic zones are true and correct. Other submitters raise concerns about the 20ha and 50ha permitted activity thresholds for intensive winter grazing.
- 7.393 A Horrell seeks that the policy is amended to recognise that preventing land use change is not a prerequisite to improving water quality. They seek that the Council gains an understating of farm systems and drivers of productivity gains and farmer behaviour and assess the amount of land available for dairy conversion and its likelihood of conversion and if the conversion will negatively impact on water quality.
- 7.394 Hort NZ requests that Policy 16 is amended to include the following text at the beginning of the policy:

*Enable the use of land for farming activities while:*

- 7.395 The submitter also seeks to amend Policy 16(2)(a) as follows:

*Actively manage the risk of sediment run off from farming activities and hill country development by identifying critical source areas and assessing the risk associated with the activity to be undertaken and use mechanisms, such as setbacks from water bodies, riparian plantings ~~limits on areas or duration of exposed soils and the prevention of stock entering surface waterbodies;~~ or sediment control mechanisms to minimise the risk of sediment run off.*

- 7.396 R Kempthorne seeks to amend Policy 16 to better reflect the issues associated with the modified Waiau catchment.
- 7.397 Landpro seeks that there is a timeframe for preparing and operating in accordance with a management plan, i.e. 12 months from the date of notification from the Plan.

- 7.398 Some submitters note that the provisions around IASM are uncertain, as there are few details about the scheme. MPI seek that the provisions for the implementation of any IASM schemes are retained, along with amendments to provide additional clarity and certainty, including:
- (i) what the requirements are for IASM scheme participants in order to be listed on the IASM Register; and
  - (ii) the requirements of IASM scheme providers in order to obtain Environment Southland’s approval of either the scheme or the scheme provider.
- 7.399 Several submitters raise concerns that the policy focuses on dairy farming and winter grazing and seek amendments to either include all intensive farming practices or the farming of livestock. J & M Shallard seek that the change of land use specifically to dairy should be a permitted or discretionary activity provided management plans and resource consents clearly meet standards for nutrient use, effluent management, water usage, soil conservation, animal welfare and any new dairy farming activity can prove it will demonstrate best practice. I note submissions on the activity status of particular farming activities are assessed under the relevant rule associated with that farming activity.
- 7.400 A Wilson and S Wilson note that Policy 16 is applicable to the limit setting phase and should therefore become operative following the FMU limit setting processes. In addition, these submitters submit that clause 2(c) needs to be clarified as they state that Physiographic Zones are a risk identification tool not a management technique. They suggest that clause 2(b) should be rewritten to state “...*the management of critical source areas within individual properties.*”
- 7.401 Federated Farmers seek the addition of two new policies that recognise the importance of forage crops and land drainage. The submitter also seeks the addition of a new policy that specifically provides for discharges as follows:

*“Allow discharges of contaminants to enable the community to provide for its economic and social wellbeing.”*

## Analysis

- 7.402 Policy 16 has been carefully crafted to ensure that effects from farming activities do not contribute to the continued decline of water quality in the Southland region, consistent with the clear guidance set out in higher-order planning documents<sup>294</sup> that water quality must be maintained where water quality is not degraded, and improved where water quality has been degraded by human activities. There is also clear scientific evidence that particular farming activities contribute to the loss of contaminants to the environment.<sup>295</sup> The provisions set out in the pSWLP<sup>296</sup> will ensure appropriate on-farm mitigations are in place to maintain water quality, including suitable mitigation for high risk farming activities (such as cultivation, dairy farming and intensive winter grazing) in high risk areas as identified via the physiographic zones.

<sup>294</sup> Including Objective A2 of the NPSFM (2014), Objectives WQUAL.1 and WQUAL.2 of the pSRPS.

<sup>295</sup> See the Parliamentary Commissioner for the Environment’s report: Water quality in New Zealand: Land use and nutrient pollution, November 2013

<sup>296</sup> Including Objectives 6-9; Policies 4-12; Policy 16 and Rules 20-25

- 7.403 The words “strongly discourage” have been purposefully used to ensure that some farming activities do not occur unless the effects of those activities are avoided or mitigated as appropriate. This part of the policy focuses on higher risk farming activities. Avoiding or mitigating effects from these activities is particularly important to ensure consistency with the NPSFM and pSRPS. The strong policy direction provides Council with a better ability to decline resource consents for new or expanded dairy farming of cows, intensive winter grazing or cultivation of land that are classified as non-complying and where the potential effects of those activities are deemed to be more than minor.<sup>297</sup> Given the importance of the words “strongly discourage”, I do not recommend adopting submissions that seek to delete these words in relation to (1)(b). I note the words “strongly discourage” will be applied on a case by case basis, reading the pSWLP in its entirety in conjunction with the section 104D test set out in the RMA for non-complying activities. This will provide consent applicants and the consent authority with sufficient guidance when processing farming activities in each of the physiographic zones.
- 7.404 Similarly, I note the word “avoid” has particular meaning that has recently been canvassed by the Supreme Court,<sup>298</sup> where the Court held that “avoid” has its ordinary meaning of “not allow” or “prevent the occurrence of”. Including the word “avoid” in Policy 16 would then suggest a prohibited activity status for some farming activities would be appropriate. As discussed in section 6 of this report, I note there may be instances where new dairy farming or new intensive winter grazing activities can be appropriately managed so that the effects of the activity are less than minor.
- 7.405 In response to the submission from A Horrell, I note that the policy and rule framework does not prohibit such activities, rather it ensures a precautionary approach where the Council and landowners must carefully consider any future development where it is not commensurate with water quality outcomes for the Southland region. I note that the future FMU limit setting processes will further explore the issues raised in the submission from A Horrell.
- 7.406 Taking into account the submissions on Policy 16, I do not recommend adopting stronger policy direction that has the effect of prohibiting new dairy farming activities or new intensive winter grazing activities and therefore recommend that the submission from Fish and Game in relation to using the word “avoid” is not accepted.
- 7.407 Even though I do not recommend that the use of the word “avoid” is included (in relation to certain farming activities), I note the primary purpose of the policy is to minimise adverse effects on the environment as a result of farming activities, rather than enabling such activities to occur. Taking into account the water quality information available for the Southland region and the key contaminant pathways identified for each physiographic zone, there is no doubt that there will be some instances where some farming activities will not be enabled, therefore I do not recommend adopting the submission from Hort NZ that seeks to include the words “*Enable the use of land for farming activities while.*” at the beginning of Policy 16, nor do I recommend the submissions from Federated Farmers to include new policies are accepted.
- 7.408 In response to other matters raised in Fish and Game’s submission, I consider that replacing the words “minimise the environmental effects” with “avoid, remedy or

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<sup>297</sup> Section 104D RMA (particular restrictions for non-complying activities).

<sup>298</sup> *Environmental Defence Society Inc v The New Zealand King Salmon Co Ltd* [2014] NZSC 38



mitigate the environmental effects” is an appropriate amendment to Policy 16 that is consistent with the requirements set out in section 5 of the RMA. I recommend the submission from Fish and Game in relation to the use of the words “avoid, remedy or mitigate” be adopted. Similarly, I agree that the policy should also apply to all wetlands and lakes, and not just coastal lakes.

- 7.409 The use of the words “fully mitigated” in Policy 16 was carefully considered when drafting the pSWLP, where “fully” provides, in no uncertain terms, that there must be no adverse effects on water quality associated with the proposed activity. It is my view that removing the word “fully” may result in the approval of resource consent applications that have a minor adverse effect, which will not assist in achieving water quality outcomes for the Southland region. I do not recommend that clause 16(1)(b) is deleted, nor do I recommend that the term “fully” be deleted as requested by many submitters.
- 7.410 I note that the inclusion of “areas where water quality is already degraded to the point of being over-allocated” in Policy 16 is a nod to the future FMU limit setting process, where additional information will be obtained to determine whether waterbodies are degraded to the point of being “over-allocated”. As these processes are yet to be completed, there is not sufficient information available to include a list of such waterbodies in a separate schedule. I note that these will be included within the provisions of the pSWLP by the way of a future plan change. As such, I do not recommend the submission from Fish and Game seeking the inclusion of such a schedule be adopted.
- 7.411 As set out in section 3 of this report, some activities may require on farm-practices that are better than GMP to ensure the effects on water quality are appropriately avoided or mitigated. The FEMP is a place for all farmers to consider the impact from their property and identify and implement environmental management practices that are applicable to their property. The process of preparing, implementing and recording the environmental management practices is recognised as beneficial to both the farmer and the environment. It also provides records of current practice and nutrient losses that may be of assistance to the farmer when participating in future FMU limit setting processes. Given that GMP is a minimum requirement to ensure water quality outcomes for the Southland region are met, and taking into account the benefits of record keeping for future FMU processes, I do not consider it appropriate to delete the requirement to prepare a FEMP.
- 7.412 I note that, in isolation, the use of the term “close proximity” in clause 16(1)(a) may be considered to be somewhat vague and may not provide those using the Plan with sufficient certainty or guidance. However, when read in conjunction with the rule framework for stock exclusion, new or expanded dairy farming and intensive winter grazing, I do not consider that the term needs to be better defined or the policy amended to provide greater certainty. However, with the specification in the rule regime of a setback distance, I recommend removing “strongly” from “strongly discouraging” in (1)(a), as the hydrological situation may mean that some areas within the setback do not affect the waterbody, and such activities ought not to be “strongly discouraged”. I also note the recommendation in relation to Appendix Q in section 11 of this report, and recommend a consequential amendment to this policy.
- 7.413 I understand there is very little aquaculture occurring in fresh waterbodies in the Southland region, however there is opportunity for development in this area. I note there no direction in the pSWLP for aquaculture activities and general Rule 4 would

potentially apply, meaning that any resource consent application would be considered as a discretionary activity<sup>299</sup>. Given that aquaculture and the effects of these activities are not well known in the Southland region, it is my view that specific policy direction for this activity is not appropriate prior to the FMU limit setting processes. Rather, the general policies related to water quality are considered sufficient to ensure any effects associated with such activities are appropriately managed. I do not recommend that a new clause is required to specifically address aquaculture, as requested by the SCB.

- 7.414 Similarly, I note that any catchment specific issues (such as those raised by R Kempthorne) will likely be addressed in future FMU processes, and catchment specific amendments to a more general activity based policy are not supported.
- 7.415 The requirement to adhere to setbacks from waterbodies from farming and hill country development is discussed in detail in the sections of this report that relate to Rule 23 (Intensive Winter Grazing) and Rule 25 (Cultivation on sloping ground). These sections of the report provide justification for the use of setbacks and the appropriateness of those setback distances. I note that requiring setbacks is a method to reduce the risk to water quality associated with run-off of sediment (and other contaminants). While some may view the requirements set out in 16(2)(b) as penalising farmers for something they cannot control (i.e. weather conditions), they are necessary management tools to minimise the adverse effects of farming activities on water quality. I do not recommend any amendments to Policy 16 which either delete reference to the management tools that assist in reducing adverse effects on waterways as a result of run-off or include setbacks as guidelines only.
- 7.416 Ravensdown, FANZ and Hort NZ seek a number of amendments to Policy 16 which have the effect of weakening the policy position. This position is reflected in the rule regime that flows from Policy 16, and together, the package of provisions are, in my view, necessary to achieve the Plan's water quality objectives. I therefore do not recommend the submissions from Ravensdown, FANZ or Hort NZ are adopted.
- 7.417 I note the timeframes for preparing and implementing FEMP are set out in the relevant rule for farming activities (Rule 20). I do not recommend that Policy 16 is amended to include timeframes, as requested by Landpro.
- 7.418 Some submitters note that the provisions around IASM are uncertain, as there are few details about the scheme. MPI seek that the provisions for the implementation of any IASM schemes are retained, along with amendments to provide additional clarity and certainty, including:
- (i) what the requirements are for IASM scheme participants in order to be listed on the IASM Register; and
  - (ii) the requirements of IASM scheme providers in order to obtain Environment Southlands approval of either the scheme or the scheme provider.

Fonterra also provide a range of matters that an IASM should or should not achieve.

- 7.419 Some parties have also submitted regarding the uncertainty of IASM in relation to Rule 21 and 22, including what the system would require, who would administer it and what

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<sup>299</sup> Other rules in the pSWLP would likely apply as well, such as for bed disturbance or structures, but would depend on the specific proposal.

the outcomes for water quality might be. Others supported the inclusion of IASM, but requested more detail in the pSWLP, such as the expectations of the IASM scheme provider in respect of the preparation, implementation, certification and monitoring of management plans, and the standards and criteria Council will apply to determine whether to recognise a particular IASM provider.

7.420 IASM was included in the pSWLP after a number of industry groups approached Council during the engagement process on the Working Draft Water and Land in 2015 requesting IASM be included to provide them with sufficient time and incentive to develop the concept more fully. However, many submitters have requested that they be removed, or significant additional detail be provided about how the concept would be implemented.

7.421 The as notified pSWLP will require around 4,000 FEMPs by mid-2020. While the FEMPs are intended to be able to be completed by farmers, in my opinion, farmers will need support from their industries to achieve this and an IASM scheme may be the most efficient way to assist them. I acknowledge that the existing provision is silent on the requirements of an IASM. As a starting point, I consider that additional provisions could be added to Appendix N of the pSWLP which could outline the components of an IASM, such as:

- completeness of FEMP templates relative to the objectives and policies of this Plan and issues within each physiographical zone;
- the audit procedures and the process for reviewing such procedures;
- requirements for adoption and implementation, in order for a participant to be ‘registered’;
- liability and responsibility of scheme administrators for performance of participants;
- qualifications/training/background of the auditors;
- reporting frequency and public availability of results;
- funding.

7.422 The Hearing Panel may wish to explore this further with those submitters that supported the IASM being retained to see if they consider these components are necessary and/or sufficient. As stated earlier, this was included at the request of industry groups, and is an adjunct to the Plan rules. The Plan rules will continue to function without IASM schemes coming to fruition. That said, I am somewhat uncomfortable about the vagueness of the concept in the pSWLP, as it currently stands, but I am hesitant to draw out specific words to be added to the Plan from the submissions, and welcome evidence on this topic from the submitters.

7.423 Seven submitters seek that “Independently audited self-managed participants” is defined in the pSWLP, however only Dairy Holdings suggests wording for the definition, as follows:

*Means the register of those landholders who choose to manage their property in accordance with independently audited self-management principles set out in [refer to guidance document]. The register can be found on the Environment Southland website.*

- 7.424 It is my view that Policy 16 and the relevant rules are sufficiently certain (in that it includes reference to a register of the participants), such that a separate definition is not necessary.
- 7.425 As addressed in Section 7.2 of this report, the Environment Southland staff submission seeks that all references to Farm Management Plans should be amended to read “Farm Environmental Management Plan” as the requirements set out in Appendix N are specific to environmental management, and for clarity, the title should reflect this. While the Council did not specifically request that this amendment is also made to Policy 16, for consistency I also recommend that the reference to “a Management Plan” in Policy 16 is amended to read “a Farm Environmental Management Plan” as a consequential change to Council’s submission.

## Recommendation

7.426 Amend Policy 16 as follows:

1. *~~Minimising~~ Avoiding, remedying or mitigating<sup>300</sup> the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) from farming activities by:*
  - (a) *~~strongly~~<sup>304</sup> discouraging the establishment of new dairy farming or new intensive winter grazing activities in close proximity to sensitive waterbodies identified in Appendix A ~~Q~~<sup>302</sup>;*
  - (b) *strongly discouraging applications to establish new, or further intensify existing dairy farming of cows or intensive winter grazing activities where the effects on the quality of water, including cumulatively, of groundwater, ~~waterbodies~~, lakes, rivers, modified water courses, wetlands,<sup>303</sup> coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands cannot be avoided or fully mitigated or in areas where water quality is already degraded to the point of being overallocated.*
2. *Requiring all farming activities, including existing activities, to:*
  - (a) *either implement a Farm Environmental<sup>304</sup> Management Plan, as set out in Appendix N, or be listed on the Environment Southland Register of Independently Audited Self-Management Participants;*
  - (b) *actively manage sediment run-off risk from farming and hill country development by requiring setbacks from waterbodies, riparian planting, limits on areas or duration of exposed soils and the prevention of stock entering surface waterbodies;*
  - (c) *manage collected and diffuse run-off and leaching of nutrients, microbial contaminants and sediment through the identification and management of higher risk physiographic zones on a regional scale, and critical source areas within individual properties.*

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<sup>300</sup> 752.60 Fish and Game

<sup>301</sup> CI 16, Schedule 1 RMA

<sup>302</sup> Consequential to recommendations in section 11 of this report

<sup>303</sup> 752.60 Fish and Game

<sup>304</sup> 247.1 Environment Southland

## Use of Physiographic zones

7.427 Submissions on the use of physiographic zones, and the appropriate activity status for farming activities within different zones, raise consistent issues across the farming, dairying, and intensive winter grazing provisions. On that basis, they are dealt with once here, with appropriate cross references where required. I note that general submissions on physiographic zones have been addressed in relation to the issues and policies relating to physiographic zones earlier in this report. Submissions on physiographic zones issues and policies need to be considered together with this analysis on the farming rules, as the physiographic framework is primarily implemented through the farming rules.

### Submissions

7.428 A large number of submitters, including Agricentre South, Glendhu Dairies and PGG Wrightson, consider that all references to physiographic zones should be removed from the farming rules, submitting that the physiographic zones are not at a farm scale and are not verified on the ground. Many submit that including physiographic zones, and different restrictions based on the zones, pre-empts the catchment limit setting process.

7.429 A number of submissions, including Slattery Trust, Eyre Creek and Paraemara, do not consider it appropriate to have stricter controls in some physiographic zones. For example, B+LNZ seeks to make all rules consistent across physiographic zones, using the least restrictive specifications, if the physiographic rules are retained. Some submitters are concerned that more restrictions in these zones create winners and losers within the Plan, and that such classification should be left until limit setting. Federated Farmers, along with many other submitters, do not consider that enough is known about nutrient loading and whether there are over allocated catchments within Southland to classify these zones differently from other physiographic zones, and that the regulation is an unjustified impedance on property rights. Concerns are raised by some submitters, including Belgard Family Trust and R J Stewart, that there will be a significant drop in property prices within physiographic zones subject to greater controls, on the basis that options for using the land would be reduced.

7.430 A significant number of submitters, including Federated Farmers and Fonterra, consider that a discretionary activity classification for new and expanded dairy farming and intensive winter grazing is too restrictive for the physiographic zones which are less susceptible to nutrient loss. The submitters are concerned about the financial implications of a discretionary activity status and submit that the matters pertaining to an application for new or expanding dairy farming of cows are sufficiently well defined to justify a restricted discretionary activity status. The submitters consider a restricted discretionary status would improve clarity and certainty for applicants, and make the process more efficient and cost-effective.

7.431 Other submitters, including Forest and Bird and Fish and Game, consider the controls based on physiographic zones are not strict enough. For example, some contend that intensive winter grazing in the Peat Wetlands and Old Mataura physiographic zones should be prohibited activities.

- 7.432 Some submitters consider intensive winter grazing in the Riverine, Bedrock/Hill Country and Oxidising physiographic zones should be treated the same as Old Matura and Peat Wetlands. Ngāi Tahu, DOC and Fish and Game contend that new dairy farming should be a non-complying activity in the Oxidising, Central Plains and Riverine physiographic zones. There are submissions in support of intensive winter grazing being a prohibited activity in the Alpine physiographic zone.
- 7.433 A number of submitters challenge the physiographic zone that has been identified for their property, and either request a review or, like Fonterra, request a process by which this can be reviewed, potentially through a resource consent process.

## Analysis

- 7.434 The summary of the scientific analysis, in terms of water quality in Southland and the development and external review of the development of the physiographic zones has been set out in section 3 of this report. In my opinion, the science, both in terms of water quality and physiographic zones, has gone through adequate analysis and review processes. Further review and advancement of the science is always beneficial, but at some point it needs to be determined that the science is fit for the purpose upon which it is being relied. In my opinion, that point has been reached and I recommend rejection of the many submissions that seek further science reviews, discarding of the physiographic zones, or substantial delay in any rules taking effect. This recommendation is made in light of the revisions to the way in which physiographic zones are recommended to be used in the pSWLP.
- 7.435 Similarly, I disagree with submitters such as Federated Farmers, who consider that not enough is understood about contaminant levels in Southland catchments to classify physiographic zones such as Old Matura and Peat Wetlands differently to other zones.
- 7.436 Having more stringent requirements in some physiographic zones based on each zone's susceptibility to contaminant loss of those zones does not, in my opinion, pre-empt the limit setting process, as some submitters contend. The limit setting process, due to be undertaken over the coming years, will result in actions and rules which deal with issues and values specific to each FMU, as required by Policies A1 and A2 of the NPSFM. The pSWLP is a region-wide response to a series of region-wide issues, designed to accommodate future FMU specific changes, not pre-empt them.
- 7.437 Having more stringent RMA requirements in some areas rather than others is a common occurrence, particularly in urban, urban fringe, coastal or outstanding landscape areas. I acknowledge that it is new with respect to physiographic zones, but this itself does not justify not taking this approach. Differentiation is likely to be further developed through the FMU processes to come. In my experience, there tend to be other factors, such as soil and topography, market conditions, commodity pricing and interest rates that likely have greater impacts on property values. While I don't disagree that there may be an impact on property values due to RMA controls, through staging and allowing adjustment over time, as is set out in the pSWLP and the time-staged NPSFM implementation, these impacts have been minimised to the extent possible. Treating everyone the same is likely to impose an unwarranted burden on some landowners, and I consider that to be both inefficient and unjustified.

- 7.438 The Old Maitaura and Peat Wetlands physiographic zones, due to their predominant flow pathways, are more susceptible to contaminant loss compared to other physiographic zones. Given this susceptibility, and the trends identified in water quality within those zones, in my opinion, a non-complying activity status for more intensive activities, such as new or expanded dairy farming or intensive winter grazing is the most appropriate activity status. In accordance with section 104D of the RMA, a non-complying activity status requires that in order for consent to be granted, the activity has either no more than minor effects, or is consistent with the objectives and policies of the pSWLP, and is therefore more likely to contribute to at least maintaining water quality. This contrasts to a discretionary activity classification, which has a lesser test under the RMA.

### **New and expanded dairy farming**

- 7.439 Most dairy farming activity occurs on land classified as Land Use Classes 1 – 4. The notified rules for new or expanded dairy farms across most (94%) of the potential dairy farming land (LUC 1-4) would result in a discretionary activity status. This is the same activity classification as dairy conversions under Rule 17A of the existing RWP. The pSWLP has therefore in effect resulted in only 6% of potential dairy land having a different activity status to the current planning regime. I therefore do not agree that having physiographic zones classified as discretionary is overly restrictive, or burdensome, nor do I consider it places a moratorium on new dairy farming. For these reasons, I do not support the submissions from the likes of Slattery Trust, Eyre Creek, Paraemara and B+LNZ.
- 7.440 If new dairy farming of cows was a restricted discretionary activity, as suggested by a number of submitters, the assessment would only need to cover those matters to which discretion is limited (which would need to be listed within Rule 22). Federated Farmers and others have provided some matters of discretion in its submissions. In my opinion, these matters of discretion are limited in their extent, and I do not consider that they address the full range of potential effects that the Plan is seeking to manage. The alternative is to have a more comprehensive list of matters of discretion, but I consider that this list would need to be sufficiently extensive that it would render any ‘restriction’ academic – the result would effectively be a restricted discretionary activity in name alone. In my view, this demonstrates that a discretionary activity status is the most appropriate.
- 7.441 Several submitters questioned the rationale for classifying dairy farming of cows in the Oxidising, Central Plains and Riverine physiographic zones as discretionary rather than non-complying. In my opinion, there is some scientific rationale for new and expanded dairy farming in the Riverine, Central Plains and Oxidising physiographic zones to be treated the same as in the Old Maitaura and Peat Wetlands zones.
- 7.442 Like the Old Maitaura zone, soils and aquifers in the Oxidising and Riverine physiographic zones have limited ability to remove nitrate. Surface and groundwater nitrate concentrations in the Oxidising zone are among the highest in the region and nitrate levels in groundwater exceed the drinking water standard maximum allowable values (MAV) in some locations. The main difference between Oxidising and the Old Maitaura zone is that nitrate moves through the aquifers in the Oxidising zone more quickly, so there is less time for nitrate concentrations to build up in groundwater.

- 7.443 In the Riverine zone, the relatively low concentrations of nitrate in surface and groundwater are due to flushing by river water from the Alpine and Bedrock/Hill Country zones. While it is not clear whether the nitrogen load from the Riverine physiographic zone is having a direct significant impact on downstream ecosystems, both the New River and Jacobs River estuaries are showing signs of degradation and decreasing water quality, and the Riverine zone's contribution to the nitrogen load may be disproportionate to land area. It is noted that the catchment limit setting process will focus on issues relating to contaminant load.<sup>305</sup>
- 7.444 The issue is different in the Central Plains physiographic zone, where dry, cracking soils in summer and autumn provide a direct pathway to aquifers which then contribute to base flow for surface water.<sup>306</sup> In winter and spring, when soils are wet, this cracking isn't an issue. Aquifers in this zone have elevated nitrate levels and are particularly susceptible to nitrate accumulation. Surface water nitrate levels within the Central Plains zone are the highest of any physiographic zone in Southland.
- 7.445 While there was information available demonstrating risk to water quality in these zones, the Council was concerned that greater restrictions would undermine public acceptance of the rest of the pSWLP, and concluded that the most appropriate regulatory response was to classify dairy farming in the Riverine, Central Plains and Oxidising physiographic zones as discretionary activities. The Council also considered the risk to water quality from further intensification in these zones will be dealt with through the catchment limit setting process. The Council was also concerned that, given the extent of land covered by these physiographic zones, which makes up 33% of the potential dairy land, the economic and social cost of a non-complying activity status would be too significant. This last issue has been raised in a number of submissions, particularly from individual submitters and those in opposition to original submitters seeking this activity status change.
- 7.446 I acknowledge that there are significant arguments both for and against non-complying activity status in the Riverine, Central Plains and Oxidising physiographic zones. These matters have been raised in submissions, but in the nature of submissions, often the reasons and evaluation, in terms of costs and benefits is limited. Given the complexity of this issue and the magnitude of the potential impacts, I hope that submitters address this issue thoroughly, and the Hearing Panel explore this issue further with submitters and experts. Until evidence and legal submissions are presented, I am not in a position to make a recommendation on the appropriate activity status.
- 7.447 DOC raises concern that Rule 22 encourages dairying in the Bedrock/Hill Country and parts of the Gleyed zone with podsol soils, and has requested that new or expanded dairy farming in these areas be a non-complying activity. Neither of these areas have been identified as having high susceptibility to contaminant loss under dairy farming operations<sup>307</sup>.
- 7.448 A discretionary activity status for new and expanded dairy farming of cows in the Bedrock/Hill Country physiographic zone, and on podsol soils within the Gleyed zone is

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<sup>305</sup> Memorandum: Physiographic Zones – Susceptibility of Particular Parts of Southland to Dairy Grazing and Winter Grazing practices, Environment Southland 2016.

<sup>306</sup> This nutrient pathway does not tend to show in Overseer, which tends to show low levels of loss below the root zone in these areas.

<sup>307</sup> Memorandum: Physiographic Zones – Susceptibility of Particular Parts of Southland to Dairy Grazing and Winter Grazing practices, Environment Southland 2016.



the same activity status as dairy conversions under the RWP in these areas. While new and expanded dairy farming in these zones is not ‘strongly discouraged’ through the Physiographic Zone policies, there are still stringent tests relating to avoiding and mitigating effects on water quality that will apply to discretionary consent decisions. I therefore do not support the relief sought in relation to this issue in this submission.

### **Intensive winter grazing**

- 7.449 A number of submissions, including Federated Farmers and the Lower Aparima CG, do not consider it appropriate to have stricter controls in Old Maitara and Peat Wetlands physiographic zones compared with other zones. Conversely, Forest and Bird requests that intensive winter grazing in the Old Maitara and Peat Wetlands physiographic zones be prohibited.
- 7.450 As I understand it, soils and aquifers in the Old Maitara physiographic zone have limited ability to remove nitrate. Water moves slowly through the aquifers meaning that nitrate builds up, and in many places, exceeds the drinking water maximum acceptable value (MAV) of 11.3 mg/L nitrate-nitrogen. The Old Maitara zone has the highest groundwater nitrate concentrations of any physiographic zone, with a median of 10.0 mg/L. This groundwater contributes base flow to surface waterbodies (such as the Waimea Stream) which shows significant degradation and declining water quality trends, posing a significant risk to human health and biota<sup>308</sup>.
- 7.451 In the Peat Wetlands physiographic zone, soils are susceptible to phosphorus and *E.coli* loss. Both *E.coli* and phosphorus are elevated in streams, with increasing trends of phosphorus and some of the highest *E.coli* levels in Southland.
- 7.452 The science suggests that the Old Maitara and Peat Wetlands physiographic zones are more susceptible to contaminant loss compared to other physiographic zones. As I understand it, intensive winter grazing is generally accepted as having higher levels of nutrient, microbial contaminant and sediment losses, even with careful management, due to the intense stocking, effective removal of vegetation and occupation by stock primarily in the winter months. Given this combination of increased risk with higher sensitivity, I consider a non-complying activity status for new intensive winter grazing above the permitted activity threshold is appropriate.
- 7.453 Several submitters questioned the rationale for classifying new intensive winter grazing in the Oxidising and Riverine physiographic zones as discretionary. Similar to the analysis above for new or increased dairy farming, there is scientific rationale for intensive winter grazing in the Riverine and Oxidising physiographic zones to be treated the same as in the Old Maitara and Peat Wetlands zones.
- 7.454 Like the Old Maitara zone, soils and aquifers in the Oxidising and Riverine physiographic zones have limited ability to remove nitrate. Surface and groundwater nitrate concentrations in the Oxidising zone are among the highest in the region and nitrate levels in groundwater exceed the drinking water standard MAV in some locations. The main difference between the Oxidising and the Old Maitara zones is that nitrate moves through the aquifers in the Oxidising zone more quickly so there is less time for nitrate concentrations to build up in groundwater. In the Riverine zone, the relatively

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<sup>308</sup> Memorandum: Physiographic Zones – Susceptibility of Particular Parts of Southland to Dairy Grazing and Winter Grazing practices, Environment Southland 2016.

low concentrations of nitrate in surface and groundwater are due to flushing by river water from the Alpine and Bedrock/Hill Country zones.

- 7.455 As is the case for new or increased dairy farming, there were specific reasons for adopting a discretionary activity status for these zones, and in my view these reasons, including considering the social and economic wellbeing of the community alongside environmental considerations, are still valid. Further, I am of the view that the FMU limit setting process will focus on issues relating to performance in these physiographic zones, uptake and outcomes from implementation of GMPs and contaminant load, and thereby provide a relatively short-term review process. As with new or increased dairying, my preference is to have the issue of the appropriate activity status for intensive winter grazing addressed in legal submissions and evidence of submitters before making a recommendation.
- 7.456 DOC suggested the Bedrock/Hill Country zone be classified as non-complying, with a permitted activity limit of 20 ha on the basis of overland flow risk. The Winter Cropping Spatial Analysis report<sup>309</sup> identifies that the Bedrock Hill Country physiographic zone is a particular risk, because of the large size of the zone and the comparatively large amount of intensive winter grazing occurring in the zone. However, ahead of hearing evidence on the matter, I consider that a discretionary activity classification for new intensive winter grazing in the Bedrock/Hill Country zone is appropriate because overland flow is a relatively easy transport pathway to identify and mitigate against (compared to lateral and deep drainage, for example). A discretionary activity status enables the consideration of resource consents while ensuring that appropriate mitigation is in place. In my view this will be a considerable improvement over the current situation.

### **Mixed physiographic zones**

- 7.457 A large number of submitters, including B+LNZ, D Stevens, and H Diack, have identified that the provisions relating to situations where more than one physiographic zone are located on a landholding are:
- Confusing;
  - inefficient in that it might separate a small area of the farm into different management;
  - require actions under different timeframes;
  - do not work in practice.
- 7.458 Some submitters, including B+LNZ, have requested that the whole of a landholding be given the rule framework of the least restrictive physiographic zone on the property, and others have suggested that the predominant zoning should apply to the whole landholding.
- 7.459 Having considered these submissions and the feedback from the Council's resource consent team, I acknowledge that the situation where more than one physiographic zone is located on a landholding could be improved.

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<sup>309</sup> Spatial analysis of winter forage cropping in Southland and the implications for water quality management, Environment Southland Technical Report, SRC Publication No 2016-13, November 2016.

- 7.460 Through the recommended change of the date requirements such that the requirement for FEMP's is aligned to the dates for limit setting in FMUs, rather than physiographic zones, the number of landholdings that are "split" is significantly reduced. The revised mapping, discussed in section 12 of this report, now identifies property boundaries as well as physiographic zones. It is clear, just from the one sheet of mapping attached to section 12 as an example, that the physiographic zones are complex with respect to some landholdings and a significant number of properties are in more than one physiographic zone. The changing of the basis by which the staging of requirements under the pSWLP is recommended to occur will address much of this issue.
- 7.461 The remaining issue is with respect to the activity status of new or increased dairy farming or intensive winter grazing between the various physiographic zones. As has been discussed earlier, the pSWLP identifies the Old Matura and Peat Wetlands zones as being more susceptible to nutrient losses, and has attributed a non-complying activity status to these two zones. As is identified in the analysis below, it is recommended that the permitted activity threshold for intensive winter grazing across all zones be maintained at 50 ha, rather than a more restrictive threshold of 20 ha for these two physiographic zones.
- 7.462 In my opinion, that also provides a useful threshold for consideration of landholdings that are within two or more physiographic zones. In my opinion, it is appropriate to construct the rule framework for intensive winter grazing, so that the activity status is based on where on the landholding the intensive winter grazing occurs. If it is within the two more sensitive physiographic zones, and totals more than 50 ha, then the more restrictive activity status should apply to it.
- 7.463 The situation is somewhat more complex with respect to increased or new dairy farming, which may occur over a whole property. The notified pSWLP enabled a relatively small degree of flexibility, (10 ha of the more sensitive physiographic zone). In my opinion, given the simplicity of maintaining a single 50 ha threshold, I am of the view that the activity status should be decided by the most restrictive physiographic zone activity status, with an allowance of 50 ha that may have a more restrictive status being able to be disregarded.

### **New provisions related to farming activities**

- 7.464 DHL seeks to include provisions in the pSWLP to provide for the concept of a "Nutrient User Group" (including a new policy and rule). I note that Nutrient User Groups are being used in a regulatory context in parts of Canterbury where there are on-farm limits associated with the discharge of nutrients (in particular, nitrogen). Given that the provisions set out in the pSWLP do not set on-farm nutrient allowances or numeric discharge limits, it is my view that the Nutrient User Group provisions sought by DHL are unnecessary. Should any future FMU process indicate that on-farm limits are necessary or appropriate, it is my view that this topic could be reconsidered. I do not recommend accepting the submissions from DHL in relation to Nutrient User Groups.

## **Farming and Farm Environmental Management Plans (FEMPs)**

### **Background to Provisions**

7.465 Many farmers and industry groups have been proactive about understanding their impact on water quality, and investing in mitigations, such as streamside fencing and planting to reduce that impact. This has been supported by voluntary farm environment planning initiatives from both Environment Southland and industry groups. However, there is a continuing decline in water quality in many parts of Southland as outlined in section 3, and the legislative requirements around freshwater management present an opportunity for the pSWLP to further encourage this type of ‘on-farm’ action. The pSWLP introduces this through requiring farmers to prepare and implement FEMPs. FEMPs are a key part of the package of methods within the pSWLP, alongside other non-regulatory methods, intended to give effect to the NPSFM and to achieve the pSWLP’s water quality objectives.

### **Provisions related to Farm Environment Management Plans**

7.466 The pSWLP policy and rule framework addresses nutrient losses from farming activities through the requirement for either a FEMP or membership of an Independently Audited Self-Management Scheme (IASM). While no IASM programmes exist now, it is envisaged they will be developed by industry groups and Environment Southland. The FEMP and IASM process will allow many farming activities to continue to operate without resource consent provided a FEMP is prepared and implemented within a certain timeframe, and where resource consent is required, providing a less restrictive activity status where a FEMP is prepared and implemented.

7.467 Appendix N of the pSWLP outlines the requirements for a FEMP. FEMPs must include measures to manage riparian zones, cultivation, wintering and effluent application, nutrient budgeting as well as GMPs specific to the property, taking into account the physiographic zones the property is located in, and the key transport pathways for those zones. Much of the information on GMPs and physiographic zones will sit outside of the Plan, so that it can be updated as science, technology and practices evolve.

### **Rule 20 and Appendix N**

7.468 Rule 20 is the base rule applying to the use of land for farming activities. As notified, it separates the timeframes for FEMPs by physiographic zone, and sets the framework for managing dairying and intensive winter grazing separately to other farming activities. Rule 20 also enables IASM, as an alternative to FEMPs.

7.469 Appendix N contains the requirements for FEMPs. Part A sets out that management plans can either be individual plans covering the matters set out in Part B of the appendix, or can be based on industry-prepared templates, subject to the template being approved by the Chief Executive of the Council as covering the requisite matters.

7.470 Part B then sets out requirement for such individual plans or industry templates, which (in brief) include requirements for: property details; nutrient budgets; and GMPs, particularly related to the key transport pathways and contaminants relevant to the physiographic zone. It also includes requirements, where applicable to a particular farm,

relating to: riparian management; cultivation; intensive winter grazing; collected agricultural effluent; and irrigation management.

## **Submissions and analysis**

7.471 Some 340 submissions were received on Rule 20 and over 300 submissions were received on Appendix N. Because of the volume of submissions and the recurring nature of the issues raised across submissions, these have been analysed on a topic basis as follows:

- staging of FEMPs;
- FEMPs and resource consents;
- whether FEMPs should be required;
- Appendix N – content of FEMPs;
- Implementation.

## **Staging of FEMPs**

### **Submissions**

7.472 A large number of submitters, including Ballance, Caughey and Jedburgh Station, are concerned that the timeframes for preparing FEMPs are not achievable, and request the date be extended to 2025, or 10 years from when the pSWLP becomes operative. Some submitters raise concerns that the expertise to prepare the FEMPs will not be available in the timeframes required, particularly outside the dairy industry, and that preparation will be very expensive. Other submitters are of the view that farmers, rather than consultants, should be able to draft FEMPs.

7.473 Some submitters support staging FEMPs based on physiographic zones. For example, NZ Deer support staging being based on physiographic zones as it “demonstrates an appreciation for likely water quality issues and approaches required for farms within these zones”. Others request that FEMPs be required at the same time across all physiographic zones, and are concerned that the notified staging will be meaningless because so many farms cross several physiographic zones, and most farms will require an FEMP under Rule 23 first (which relates to intensive winter grazing). Some submitters request that the staging should be done through Rule 23 instead of being required under both Rule 20 and 23, while others suggest staging through Rule 20 instead of Rule 23. The Environment Southland staff submission outlines that to avoid confusion, the staging dates should be 1 May rather than 30 May because 1 May each year is when the intensive winter grazing season begins.

7.474 A number of submitters, including Landpro, and Nokomai Station, also identify that the Alpine physiographic zone is missing from Rule 20 and needs to be specifically included in the rule framework.

### **Analysis**

7.475 FEMPs form a key element of how the pSWLP manages farming activities in order to help achieve water quality objectives. They provide a tangible way for it to be demonstrated how any individual farming activity is contributing towards water quality being maintained or improved. In my opinion, extending the timeframes to prepare an

FEMP until 2025 is incompatible with the upcoming limit setting process, as the FMU processes will extend over several years. The updated trend information for Southland indicates that suspending FEMPs for almost another decade is not likely to achieve the objectives of the pSWLP or the higher-level planning documents.

- 7.476 That said, I agree that the staging through Rule 20 and 23 should be amended, as further analysis on the notified version indicates that around 3,000 farmers would be required to complete their FEMP by 30 May 2018, and less than 200 FEMPs required in 2019 and 2020 combined.
- 7.477 While I support the intention of staging the FEMPs by physiographic zone, which targets those areas most susceptible to contaminant loss first, I agree that for those farmers on multiple physiographic zones, this approach is overly complex. Instead, I recommend amending Rule 20 so that FEMPs are staged by FMU, with timeframes aligned with FMU processes and commencing after the pSWLP is expected to be operative. This would see very few farms required to prepare their FEMP by 1 May 2019 (Fiordland and the Islands FMU), approximately 1,500 required by 1 May 2020 (Mataura and Aparima FMUs), and the remaining 1,500 to be prepared by 1 May 2021 (Waiau and Oreti FMUs).
- 7.478 There are about 150 farms which have land in two or more FMUs. Under the recommended amendments, there would be different dates by which the FEMP must be prepared for different parts of the same farm. I recommend that for this relatively small proportion of farms, that the date be driven by whichever is the largest, by land area, FMU on the relevant landholding.
- 7.479 I also recommend changing the date to 1 May to align with the intensive winter grazing season as suggested in the Environment Southland staff submission.

## **Should an FEMP be required?**

### **Submissions**

- 7.480 A wide range of submitters, including Agribusiness Consultants and S Marshall, have suggested that FEMPs should be voluntary, that no information should need to be submitted to Environment Southland and that FEMPs should be a tool for a narrower range of farming activities. Other submitters, such as W & B Clarke & Son and P Howe, focus on education and culture change to generate improvement in good management practices rather than regulating FEMPs.

### **Analysis**

- 7.481 The pSWLP was developed on the basis of GMPs being adopted by all farmers, so that everyone is 'playing their part' in resolving Southland's water quality issues. However, in considering the range of submissions received, the resources available to advise, and assist with the preparation of FEMPs, and the diversity of farming activities in Southland, it may be that further targeting of even the permitted activity FEMPs is appropriate. In my opinion, an FEMP is a useful tool to focus the mind of all farmers, but there may be an opportunity to refine some elements. This is particularly so for the nutrient budget element of the FEMP, which often cannot be completed by a farmer.

- 7.482 Under the notified Rule 20, sheep, beef and deer farms between 20 and 100 ha are explicitly excluded from preparing a nutrient budget under Rule 20(e). At this scale, these farm systems typically have very low nutrient inputs, so the marginal benefit of these farm systems preparing a nutrient budget is considered low. In my opinion, the same argument applies to larger, extensive sheep, beef and deer properties. The removal of a nutrient budgeting requirement for these properties would provide confidence that these farmers could prepare an FEMP themselves, possibly with support from their industry group. As nutrient losses from these extensive properties are generally low, I consider this to be a relatively low risk, for a considerable reduction in costs.
- 7.483 The same is not necessarily true of arable cropping, horticulture, dairy farming and intensive winter grazing on smaller properties. I do not agree that relying on education and voluntary practices is sufficient – some farmers have already taken these steps, while others would appear not to have. I consider that some level of regulatory backstop, is appropriate.
- 7.484 On this basis, I have recommended a range of amendments to Rule 20 and Appendix N to refine the FEMP requirements.

## **FEMPs and resource consents**

### **Submissions**

- 7.485 There are a large number of requests for Rule 20 to require either an FEMP or a resource consent, not both. Some submitters see the FEMP as essentially a resource consent to farm, and request that:
- if a farmer has an FEMP he or she should not have to obtain a resource consent; or
  - an FEMP be a substitute for resource consent, if GMPs are being implemented.

### **Analysis**

- 7.486 For most farming activities, such as Rule 20, 21 and 23(a), the FEMP (along with the other permitted activity standards) is an alternative to obtaining a resource consent, while providing a framework to manage on-farm actions. Like all permitted activity standards, there is no approval process for the FEMP, only the ability for Environment Southland to monitor compliance.
- 7.487 For farming activities where there is a greater risk of contaminant loss, such as dairy conversions, FEMPs form part of a resource consent application, which provides an approval process for the FEMP.
- 7.488 As such, I do not agree that the FEMP is effectively a resource consent to farm. For lower risk farming activities, the FEMP does not require Council review and approval, while for higher risk farming activities, it does as part of the resource consent application. In my opinion, this is an appropriate framework, and will enable Council involvement to be balanced according to environmental risk. In the event that an applicant does not

wish to prepare an FEMP, this is provided for, with generally a more restrictive activity classification.

## Other intensive farming activities

### Submissions

- 7.489 Some submitters, including DOC, raise concern that dairy farming and intensive winter grazing are the only intensive farming activities specifically listed in Rule 20, and DOC notes that intensive deer farming in the hill country has had significant adverse effects on water quality. Others, including Forest and Bird, question whether intensive horticulture is captured by Rule 20, and if so request that it be excluded from 20(a) on the basis that even on smaller landholdings, intensive horticulture should have to prepare an FEMP. Consequently, these submitters request that intensive horticulture should be defined. A definition of farming activity is also requested by several submitters to improve clarity.
- 7.490 Several submitters, including Ravensdown, FANZ and A Horrell, raise that Rule 20(e) only mentions sheep, beef and deer farmers, and that given the multi-industry nature of most farms, should refer instead to ‘farming activities, other than dairy farming of cows and intensive winter grazing’.
- 7.491 DOC submits that Rule 20 is contrary to Part 2 of the RMA and fails to give effect to the NPSFM and the NZCPS or to take into account the significance of transport pathways of contaminants, and the *“extremely poor water quality in receiving water bodies, in particular:*
- *in groundwater, the high nitrate levels such as in the Central Plains and Riversdale/Balfour area including areas which breach the NPSFM bottom line national standards for freshwaters;*
  - *the very significant adverse effects of high nitrate levels on surface water quality and the health of freshwater ecosystems and more particularly the cumulative effects of nitrates in water on the health of estuaries by causing excessive algal growth in particularly New River and Jacobs Creek Estuaries;*
  - *the adverse effects of nutrients on Southland’s rivers health during low flow periods, some lakes and the degraded state of Southland’s estuaries and lagoons. Lagoons such as Waituna are at serious risk of flipping to an algal dominated state.*
  - *the adverse effects of soil loss from land on soil health and the effects of the deposited sediment in streams, rivers, estuaries, lagoons and lakes on life supporting capacity of these ecosystems.*
  - *the rule seems to allow farming in wetlands.”*

### Analysis

- 7.492 Dairy farming and intensive winter grazing are specifically mentioned in Rule 20 because these activities are controlled under Rules 21-23 rather than Rule 20. There is no such rule for deer farming. Like other farming activities, deer farming requires an FEMP to be prepared and implemented in accordance with Appendix N. Additionally, the pSWLP includes additional requirements around cultivation, intensive winter grazing and stock exclusion, all of which apply to deer farming as to other farm systems. Therefore, I do not consider further changes to address DOC’s submission are appropriate.
- 7.493 Intensive horticulture will be required to prepare a FEMP under Rule 20, like other farming activities. It is understood that the majority of intensive horticulture operations in Southland, such as tulip growing, occur on landholdings greater than 20 ha, and as such would be required to prepare a FEMP like any other farming activity. For small



properties that may be highly intensive and not be captured by the rule framework, it is my opinion that it is appropriate to rely, ahead of the FMU processes, on the Council's Land Sustainability Team and industry groups to encourage and facilitate the adoption of GMPs on these small properties. I do not consider it necessary to define intensive horticulture, as like farming, I consider it is relatively self-evident, and adding a definition may result in more contention about what is subject to the rule framework, rather than less.

7.494 I consider that it is important to consider the framework for the pSWLP, and in particular:

1. the Plan, and FEMP requirements in particular, do not exist in a vacuum. There are a range of actions by industry groups, individual farmers and Environment Southland's Land Sustainability Team that work in concert with these FEMP provisions. This means that specific farmers and smaller industry groups are able to be actively, and possibly more effectively, targeted by non-regulatory methods;
2. the FMU processes will occur over the coming years, and if there is a need to more actively manage activities, including specific farming activities, in a FMU, then the opportunity exists to refine the requirements in the foreseeable future.

7.495 Overall, the pSWLP gives effect to the NPSFM and the RPS/pRPS through reading the Plan as a whole, and Rule 20 is not designed to give effect to these higher order documents in isolation.

## **Appendix N – content of the FEMP**

### **Submissions and Analysis**

7.496 This section follows the same order as the provisions in Appendix N, and addresses the changes requested to the content of various sections of Appendix N.

### **General**

7.497 A number of submitters, including R Kempthorne, J Gardyne, H & H Blakely, request fewer requirements in Appendix N to make it more manageable and farmers more receptive to it. DairyNZ requests that the requirements be aligned with Sustainable Milk Plans and the Sustainable Dairy Water Accord (SDWA), or that a technical working group be established to finalise management plan requirements and implement it. Federated Farmers believe the FEMP requirements go beyond the Regional Council's functions under section 30 of the RMA (for example having requirements for heritage sites), and question why industry prepared management plans should have additional requirements over and above the information listed. Some submitters stress the need to change the FEMP throughout the year, even if it has been submitted to Environment Southland. The EPFNZ request confirmation that sections of the FEMP that are not relevant to its operation, such as B.6 – Riparian Management, B.7 – Cultivation, and B.8 – Intensive winter grazing.

7.498 There are several requests for minor changes, including that:

- the name 'Management Plan' to be changed to 'Farm Environment Plan', or 'Farm Environmental Management Plan';
- the FEMP be 'reviewed' at least once every 12 months, rather than 'updated';
- legal description of the land and farm name be removed from the requirements;
- the requirement for details of all resource consents held, including a copy of each consent be removed;
- the reference to e(ii) in Part B.9 of Appendix N be removed, as it is an error;
- Appendix N refer to 'the next 12 month period' rather than specifying months; and
- the word 'location' be added to the sixth bullet point of Part B.3.

7.499 DairyNZ requests that the FEMP be aligned with Sustainable Milk Plans (SMPs) and the SDWA. As I understand it, there is significant alignment between SMPs as well as B+LNZs Land Environment Plan II (LEP II), although there are some ways in which the three plans differ. For example, the SMP and LEP II are industry specific, whereas the FEMP is designed to be broadly applicable across industries. Discussions are ongoing about implementing the FEMP across industries to best utilize existing resources, and, in my opinion, Appendix N enables approval of the industry templates, or development of a IASM scheme, to accommodate the requested alignment, without further amendment.

7.500 I agree that there is a need for flexibility in the FEMP to change throughout the year. The Appendix requires the FEMP to be updated at least once every 12 months, so there is nothing to stop more regular reviews if needed. I agree that it would be useful to remove the references to specific month references in Appendix N, with the exception of intensive winter grazing, and replace them with the phrase "*in the next 12 month period*".

## **Nutrient budgets**

7.501 A number of submitters outside the dairy industry, including M & L Beattie, Carmyllie Farm, and G W & E L Gardyne Trust & C K Gardyne, raise concerns about the requirement to prepare a nutrient budget. Some feel that Overseer has been specifically developed for the dairy industry, and is not applicable to their farm system. Others are concerned about the cost of completing a budget, and oppose the requirement to undertake soil tests to support the budget. Conversely, others suggest soil tests as an alternative to preparing a budget for non-dairy operations. Some request additional clarity around terms such as 'material change' and 'review input data'. There is general concern that there is not sufficient industry capacity to prepare the required number of nutrient budgets in the timeframes specified in the pSWLP.

7.502 As I understand it, there is currently no better tool for understanding the transport of nitrogen through farm systems than Overseer. Looking ahead to catchment limit setting, Overseer provides the opportunity to regulate on the basis of nitrogen outputs as opposed to inputs, which feedback from the agricultural community suggests is their general preference. As such, the more information the community has around nutrient budgeting, the better position the community will be in to make informed decisions through the catchment limit setting process.

- 7.503 There is however, limited capacity currently to prepare Overseer nutrient budgets in the Southland region. Of the approximately 4,000 FEMPs that will be required, there are approximately 1,000 dairy farms, which, as Federated Farmers point out, already have nutrient budgets. As discussed above, I recommend FEMPs be staged by FMUs. This will also have the effect of ‘smoothing’ the requirement for nutrient budgets, and enable them to be completed in each FMU, ahead of the catchment limit setting process commencing in that area.
- 7.504 As stated above, there is an opportunity to further target the requirement for a nutrient budget, as this is likely the most expensive element of an FEMP, and for some types of farming activities, nitrogen may not be the contaminant that is most important. In my opinion, requiring a nutrient budget from smaller properties, and ones that are essentially extensive sheep and beef, is likely to impede the uptake of farmer-led FEMPs. On this basis, I have recommended changes to shift these elements from Rule 20 to Appendix N and adjusted Appendix N to further target the requirement for nutrient budgets.
- 7.505 The Overseer website states that “*Overseer has been developed, and continues to be developed, to produce nutrient budgets for the majority of farm systems in New Zealand currently, including: dairy, sheep and beef, deer, dairy goats, kiwifruit, apples, grapes, avocados, peaches plus seed, grain and vegetable crops.*” I acknowledge that this does not include the egg producers or pig farmers. However, provision B.4 – Nutrient Budget of Appendix N states that either Overseer, “or an equivalent model approved by the Chief Executive of Southland Regional Council” can be used. While this does not require an amendment to Part B.4 of Appendix N, there is an ability for farmers or industry groups that do not fit within the existing Overseer model to seek approval to use an equivalent alternative.

### **Riparian management plan**

- 7.506 Federated Farmers considers that a riparian management plan isn’t necessary as stock exclusion from waterbodies is required by Rule 70 and Environment Southland doesn’t need to know about the location of riparian planting. B+LNZ requests that the management measures for critical source areas and overland flow be removed from the riparian management plan. B+LNZ also requests that the definition of critical source areas specify a maximum area agreed by industry (a specific number is not offered in the submission) and that critical source areas only need to be identified within intensive winter grazing and cultivated areas of a property.
- 7.507 The Environment Southland staff submission on Part B.6 – Riparian Management Plan notes that (ii) and (iii) could be rationalised into a single requirement as they deal with similar issues.
- 7.508 In my opinion, the value of riparian management is broader than stock exclusion. Stock exclusion primarily deals with direct deposition of contaminants into waterways, but riparian management more broadly, including management of critical source areas, is important for reducing contaminant loss from overland flow, as well as enhancing biodiversity and improving aquatic habitats. I also consider that more effective management of riparian areas, particularly in terms of riparian planting, has a range of water quality and ecological benefits. This can include macro invertebrate health and, with shading, suppression of nuisance weed and aquatic plant growth. Over the longer term, I consider that better riparian management, including extensive use of riparian planting, will likely be one of the key responses that enables Southland water quality to

meet community expectations. I consider that it would be disingenuous to suggest at this point that riparian planting will not be required in the future, but I acknowledge that these kinds of improvements in water quality are the purpose of the FMU processes to come.

- 7.509 Critical source areas can vary greatly in size, and arguably a larger critical source area requires greater management rather than less, so I do not consider it appropriate to specify a maximum size for critical source areas in the definition. For those concerned about how to identify critical source areas, there is guidance material available on the Environment Southland website.
- 7.510 As is explained in sections below in relation to intensive winter grazing and cultivation, formulating a rule framework that results in the effective management of critical source areas is difficult. If this is able to be achieved, it will help resolve a number of issues with respect to sedimentation, overland flow, *E. Coli*, cultivation and intensive winter grazing. I welcome any suggestions and evidence on the way this can be made both more certain and more effective in evidence from submitters.
- 7.511 I agree that as there is no requirement for exclusion from critical source areas and riparian areas in Rule 70, that these should be removed from (i). I also agree that there is some duplication between (ii) and (iii) and that (ii) could be interpreted to require sheep exclusion. As such, I recommend that (ii) and (iii) of Part B.6 – Riparian Management Plan be rationalised into a single requirement, and the phrase “*in relation to sheep*” be removed.

### **Good management practices**

- 7.512 Some submitters, including DOC and Fish and Game, request that Table 1 be expanded to include all the transport pathways identified by the Physiographics of Southland science. As I understand it, these submitters are primarily requesting that lateral drainage be added as a separate column to Table 1. The Hearing Panel may wish to clarify this with submitters during the hearing. Other submitters request that the variants be removed from Table 1, or that Table 1 be removed altogether. Some submitters request that the GMP section refer to the next ‘12 month period’ rather than specifying the next ‘June to May period’. Ngāi Tahu requests that GMPs be reviewed and updated on a 5 year basis.
- 7.513 In my opinion, Table 1 in Part B.5 Good Management Practices is important because it narrows down which GMPs are relevant and useful in each physiographic zone. This can then link effectively to plain-English guidance material developed and held outside of the Plan that assists with choosing and implementing on-farm actions. Without it, there is a risk that farmers would choose GMPs that address issues not present on their property, with comparatively low benefit compared to the cost. Similarly, without the variants included in the Table, the Table risks becoming too generic and encouraging GMP actions that do not have benefits on some properties. Conversely, there is a risk that farmers may not choose the GMPs that will have the most benefit to water quality.
- 7.514 In my opinion, one of the most useful elements of the physiographic zones and variants is being able to target GMPs to where they will be of most benefit. Lateral drainage is incorporated into the notes in an attempt to reduce the complexity of the Table. This is because the mitigation measures are generally the same as for deep drainage and it is only

applicable in the Peat Wetlands physiographic zone. However, I am comfortable with Table 1 being amended to make lateral drainage more explicit.

- 7.515 I acknowledge that GMP practices are evolving, and there is a need to update expectations over time. Appendix N has been (re)drafted to be outcome oriented, and generally does not require specific actions to be implemented. The guidance GMPs that are appropriate for each physiographic zone is intended to sit outside the pSWLP, so that they can be updated as industry knowledge develops and innovation occurs. Therefore, setting a review date is not recommended, but the intention of Ngāi Tahu, in terms of review and updating, will be achieved outside the pSWLP.
- 7.516 Thirteen submissions seek that “good management practice” is defined in the pSWLP, five of which provide suggested wording for the definition. Of these, four submissions seek reference to “Industry-Agreed Good Management Practices Relating to Water Quality”<sup>310</sup>. While the good management practices included in this document may apply to some physiographic zones, I note they may not be the most appropriate methods in all instances. Without a thorough review on the applicability of “Industry-Agreed Good Management Practices Relating to Water Quality” to all physiographic zones, in my view it is not appropriate to extrapolate these good management practices so that they also apply to the Southland region.
- 7.517 It is also my view that the remaining suggested definitions of “good management practice” are not sufficiently certain to provide any additional value to the implementation of the rules. Given that the specific good management practices that will be applied to each property will vary and likely to change over time, I do not consider that a specific definition is included in the Glossary.

### **Cultivation and intensive winter grazing**

- 7.518 Some submitters, including B+LNZ, Hort NZ and Fonterra, request alterations to the buffer distances listed in Part B.6 – Cultivation. B+LNZ requests that slope classes and buffer strips be removed from the intensive winter grazing map requirements, as well as the requirement to specify GMPs to avoid the conspicuous discolouration of sedimentation of adjacent waterbodies on the basis that it is covered in Rule 23. Federated Farmers request that the cultivation map only be required where there is cultivation of crops which are not going to be intensively winter grazed.
- 7.519 Several submitters, including Ballance, B+LNZ and R Irwin, request that the requirement to map tile drains be limited to areas to be cultivated or intensively winter grazed, and the requirement include the phrase ‘where known’ or be limited to new drains and drains being maintained. Some submitters note that this requirement is repeated over several of the maps required by Appendix N.
- 7.520 Buffer distances and their relationship to slope are discussed further below in relation to intensive winter grazing and cultivation. The inclusion of buffer distances, critical source area management and GMPs in Appendix N is important for those preparing the FEMP (such as the farm owner) and implementing it (e.g. staff and contractors). However, I acknowledge that repeating the buffer distances explicitly in Appendix N, Part B.7 (a)(ii) simply repeats Rule 25, and doesn’t add a great deal of benefit. I recommend adjusting

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<sup>310</sup> Published by the Canterbury Matrix of Good Management project in September 2015. Available at: [http://ecan.govt.nz/publications/General/Industry\\_Agreed\\_GMPs\\_A5\\_Version2\\_Sept2015\\_FINAL.pdf](http://ecan.govt.nz/publications/General/Industry_Agreed_GMPs_A5_Version2_Sept2015_FINAL.pdf)

this requirement to refer to the rule and enable greater flexibility to manage critical source areas.

- 7.521 I also agree that given the potential for overlap between Parts B.7 Cultivation, and B.8 Intensive winter grazing it would be useful to require only a single map to be prepared. As Part B.7 consists solely of the cultivation map, I recommend that Part B.7 and B.8 be combined.
- 7.522 Several submitters request that the requirement to map tile drains be limited to areas to be cultivated or intensively winter grazed. Mapping of new and upgraded tile drains is a requirement under Rule 13 and also a requirement of some of the farming rules. This could be removed from Appendix N, and maintain the reliance on the rules, as is suggested relating to the deletion of buffer distances and slopes from Appendix N. That said, understanding where tile drains are across a farm is essential for implementing GMPs designed to address contaminant loss from artificial drainage. Further, understanding the network of tile drains across the region will be of value for catchment limit setting. The requirement is repeated in several maps because it is relevant to several sections. However, I can see benefits in condensing this into a single mapping requirement.
- 7.523 As pointed out by Federated Farmers, the second matter of discretion listed in Rule 23(c) for existing intensive winter grazing operations above the permitted activity threshold is duplicated in Part B.8 – Intensive winter grazing. As such, I recommend that the requirement remain in Appendix N, where it is applicable to all FEMPs, but be removed from Rule 23(c).

### **Collected agricultural effluent**

- 7.524 The EPFNZ raise concern that while Part B.9 – Collected Agricultural Effluent appears to be designed for the dairy industry, the submitter may be caught by it, and request clarity on how it would apply to them. A number of submitters, including Federated Farmers, request the removal of the requirement to avoid applying collected agricultural effluent at soil temperatures below 5 degrees. The Environment Southland staff submission identifies that the requirements of Part B.9 read more like a permitted activity standards than the rest of Appendix N, which seeks to encourage farmers to reflect on the way their farming practices interact with the broader environment. The submitter also highlights the potential for duplication between Part B.9 and Effluent Management Plans, which are often required by resource consent conditions. The submission therefore suggests the following alternative wording:

9. *Effluent Management Plan*

*An Effluent Management Plan is prepared and implemented, and records in written and/or map form:*

- (a) a plan of how effluent will be managed when soils are at or above field capacity and/or during adverse weather conditions;*
- (b) a maintenance schedule for effluent disposal infrastructure (maintenance or irrigators, checking anti-siphon/ switch-off systems, desludging the pond etc);*
- (c) identification of drains, surface waterways, sub-surface drainage and critical source areas in the effluent disposal areas so that the risk of effluent entering water can be avoided; and*

- (d) *a plan of how effluent application rates will be monitored to ensure any consent requirements are being met.*

7.525 It is recommended that Part B.9(c) be removed from Appendix N as requested by a number of submitters. I also recommend that the remaining requirements of Part B.9 be amended as suggested in the Environment Southland staff submission, to remove the need for a separate Effluent Management Plan through the resource consent process, and have the FEMP be the sole plan needed for resource consent applications. In this manner there will not be a duplication of management plans.

## **Irrigation management**

7.526 Some submitters, including B+LNZ and Hort NZ, note that B.10 – Irrigation Management is written more like a rule, and should be removed, with the requirement instead being to map irrigated areas. Federated Farmers oppose the references to the codes of practice, and request that the references do not contain the date published, to avoid them becoming outdated. The Three Rivers CG request clarification that Part B.10 relates to water irrigation only. INZ suggest the following alternative wording for B.10, based on the wording developed for Environment Canterbury’s Plan Change 5:

### *10. Irrigation Management*

- (a) *New irrigation systems are designed and installed and operated in accordance with industry best practice codes of practice and standards*
- (b) *Existing irrigation systems have an annual performance assessment and are maintained so as they apply irrigation at their optimal efficiency.*
- (c) *All applications of irrigation are justified through soil moisture monitoring or soil water budgets*
- (d) *The timing and depth of irrigation applied takes account of crop requirements and soil plant available water.*
- (e) *Staff are trained in the operation, maintenance and use of irrigation systems.*
- (f) *Records of (a) – (e) are kept and provided to the Southland Regional Council upon request.*

7.527 I agree with submitters that Part B.10 is written like a rule, and that the irrigation management requirements are more like consent conditions. I recommend that, as suggested by B+LNZ, irrigated areas be added to the requirements of Part B.3 – Farm Plan, and Section B.10 be amended as recommended by INZ in line with Environment Canterbury’s Plan Change 5.

## **Auditing**

7.528 A large number of submitters, including D Loveridge, Hopcroft Farm, and R Moseby, request clarity on how FEMPs will be managed, whether they will be audited and also clarity around the time period between audits. Some, including Federated Farmers, oppose Environment Southland setting up an auditing regime for FEMPs as they are concerned it will be “*resource intensive, unwieldy and unlikely to have any impact on water quality*”, as well as result in rates increases.

7.529 Some submitters, including Eyre Creek and Wilkins Farming, oppose the requirement to provide FEMPs to Environment Southland on request. One of the reasons for this is

concern that some of the information in the FEMPs will be commercially sensitive, and if provided to Environment Southland could be made publicly available under the Local Government Official Information and Meetings Act 1987.

- 7.530 For clarity, the pSWLP does not set up auditing regime for FEMPs, and as outlined above, there is not an approval process for FEMPs required under permitted activity rules. Auditing is likely to be a requirement under FEMPs developed as a part of a resource consent process and will likely be ‘case-by-case’ as to what is most appropriate. In my view, this targets auditing to where it is justified in order to ensure that effects on water quality are appropriately mitigated, and I do not recommend any auditing requirements be introduced into the pSWLP.
- 7.531 Environment Southland will undertake monitoring, as a part of its RMA functions, as well as implementation assistance through the Land Sustainability Team. As this is subject to funding and management decisions of Environment Southland, commitments cannot be made through the Plan or this section 42A report. However, I consider that it is unlikely to lead to a resource intensive and unwieldy regime that might result in rates increases, as suggested by Federated Farmers.
- 7.532 I agree that information held by the Council may be subject to the Local Government Official Information and Meetings Act 1987. However, there are provisions in the Local Government Official Information and Meetings Act 1987 that restrict the disclosure of information that is commercially sensitive.

## Recommendation

- 7.533 Amend Appendix N as follows:

### ***Appendix N – Farm Environmental<sup>311</sup> Management Plan Requirements***

*The following definitions are relevant to Appendix N.*

*Critical Source Area means: areas of enriched nutrient or sediment sources and hydrological activity that occur in small parts of a catchment or farm, but contribute a disproportionately large amount of nutrient or sediment to the environment (e.g. steep hills, gullies or swales).*

### ***Part A – Farm Environmental<sup>312</sup> Management Plans***

*A Farm Environmental Management Plan can be based on either of:*

1. *the material set out in Part B below; OR*
2. *industry prepared Farm Environmental Management Plan templates and guidance material that:*
  - (a) *includes the material set out in Part B below; ~~contains a methodology that will enable development of a plan that will identify actual and potential environmental effects and risks specific to the property, addresses those effects and risks and has a high likelihood of appropriately avoiding, remedying or mitigating those effects, includes objective performance measures; and~~<sup>313</sup>*
  - (b) *has been approved as meeting the criteria in (a) and being acceptable to the Southland Regional Council by the Chief Executive of the Southland Regional Council.*

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<sup>311</sup> 247.9 Environment Southland

<sup>312</sup> 247.9 Environment Southland

<sup>313</sup> 265.109 Federated Farmers



## ***Part B – Farm Environmental Management Plan Content***

1. *A written Farm Environmental Management Plan is:*
  - *prepared and retained, identifying the matters set out in numbers 2–10 below;*
  - ~~*updated*~~ *reviewed*<sup>314</sup> *at least once every 12 months, and the review documented*<sup>315</sup>; *and*
  - *provided to the Southland Regional Council upon request.*
  
2. *The following property details are recorded:*
  - *physical address;*
  - *description of the ownership and contact details* ~~*name of a contact person;*~~
  - *legal description of the land* ~~*and farm name;*~~
  - *a list details of all resource consents held, including a copy of each consent.*<sup>316</sup>
  
3. *A map(s) or aerial photograph(s) at a scale that clearly shows:*
  - (i) the boundaries of the property;*  
~~*the location of significant farm infrastructure;*~~<sup>317</sup>
  - (ii) the physiographic* ~~*unit*~~ *zone(s)*<sup>318</sup> *and variant(s) (where applicable*<sup>319</sup>*) in which the land is located;*
  - (iii) the location of any critical source areas,*
  - (iv) the location of permanent* ~~*or*~~ *and intermittent rivers/streams, lakes/ponds, modified watercourses, artificial watercourses, drains, ponds, regionally significant wetlands, and natural* ~~*or*~~ *wetlands;*<sup>320</sup>
  - (v) the location of riparian vegetation and fences (or other stock exclusion methods)*<sup>321</sup> *adjacent to waterbodies;*
  - (vi) the location on all water* ~~*ways*~~ *bodies where stock access or crossing occurs;*
  - (vii) where known, the location of any subsurface drainage system(s) and the depth of the outlet below the top of the bank* ~~*relative depth and position, including the outlet(s) of any such systems;*~~  
~~*the location of any known and recorded heritage site;*~~  
~~*the location of any areas within or adjoining the property that are identified in a District Plan as “significant indigenous biodiversity”.*~~<sup>322</sup>
  - (ix) land where cultivation is planned over the next 12 month period;*
  - (x) the total extent of land that may be intensively winter grazed on the property*
  - (xi) land to be intensively winter grazed for the next period 1 May to 30 September;*
  - (xii) the following details with respect to the land identified in (ix) to (xi):*
    - (1) buffer strips along waterways;*
    - (2) land with a slope greater than 9 degrees;*
  - (xiii) the dispersal location and application rate of any silage leachate, solid animal or vegetative waste or horticultural wash water.*<sup>323</sup>

<sup>314</sup> 62.15 B+LNZ

<sup>315</sup> Consequential amendment

<sup>316</sup> 123.6 Caughey, 298.9 J Gardyne, 803.44 FANZ

<sup>317</sup> 123.6 Caughey, 298.9 J Gardyne, 803.44 FANZ

<sup>318</sup> Error, should be ‘zones’ throughout plan, not ‘units’

<sup>319</sup> 62.15 B+LNZ

<sup>320</sup> Consequential amendment

<sup>321</sup> 265.109 Federated Farmers

<sup>322</sup> 123.6 Caughey, 298.9 J Gardyne, 803.44 FANZ

<sup>323</sup> 797.49 Ngāi Tahu

4. Nutrient Budget

*A nutrient budget based on soil nutrient tests has been prepared, using the latest version of the OVERSEER model, in accordance with the latest version of the OVERSEER Best Practice Data Input Standards, or an equivalent model approved by the Chief Executive of Southland Regional Council, for all farming activities except sheep, beef and deer farming where there is no dairy support occurring and no more than 20 ha of intensive winter grazing, and:*<sup>324</sup>

- (i) where a material change in the land use associated with the farming activity occurs (being a change exceeding that resulting from normal crop rotations or variations in climatic or market conditions) the nutrient budget shall be prepared at the end of the year in which the change occurs, and also three years after the change occurs;*
- (ii) where a material change in the land use associated with the farming activity does not occur, the nutrient budget shall be prepared once every three years;*
- (iii) an annual review of the input data used to prepare the nutrient budget shall be carried out by or on behalf of the landowner for the purposes of ensuring the nutrient budget accurately reflects the farming system. A record of the review shall be kept by the landowner.*

5. Good Management Practices

*(a) A good management practices section which identifies:*

*(i) the range of general good management practices which will be undertaken on farm over the coming 12 month*<sup>325</sup> ~~*June to 31 May*~~ *period. Examples of general good management practices are provided on the Southland Regional Council website. These must include:*

- (1) good management practices to manage critical source areas to reduce contaminant losses, particularly associated with overland flow, such as areas where stock will be excluded and where vegetation will be planted.*
- (2) proposed good management practices for cultivation, such as contour ploughing, strip cultivation or direct drilling.*
- (3) good management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land for intensive winter grazing.*<sup>326</sup>

~~*(ii) the physiographic zones, and variants (where applicable) within the property;*~~

~~*(iii) the key transport pathways and contaminants (where applicable) for each of the physiographic zones within the property, from Table 1 below;*~~<sup>327</sup>

~~*(iii#) the range of good management practices for any relevant key transport pathways for the physiographic zone(s) and any variant(s) present on the property*~~<sup>328</sup> *which will be undertaken on farm over the coming 12 month* ~~*June to 31 May*~~ *period. A list of example actions to consider for each of the* ~~*mitigations*~~ *key transport pathways is provided on the Southland Regional Council website;*

~~*(iii#) upon 12 monthly review, the good management practices that were undertaken in the previous 12 month*~~ ~~*June to 31 May*~~ *period and the good management practices to be implemented over the coming 12 month* ~~*June to 31 May*~~ *period;*

~~*(iv) a range of good management practices will be implemented each year.*~~<sup>329</sup>

<sup>324</sup> 429.7 N J & J L Joyce

<sup>325</sup> 62.15 B+LNZ

<sup>326</sup> 661.43 Ravensdown

<sup>327</sup> 62.15 B+LNZ

<sup>328</sup> 661.43 Ravensdown

<sup>329</sup> 62.15 B+LNZ

**Table 1: Key transport pathways and contaminants for each physiographic zone<sup>330</sup>**

Physiographic zone	Key transport pathways (✓)		
	Overland flow <sup>†</sup>	Deep drainage (leaching to groundwater) <sup>‡</sup>	Artificial Drainage <sup>†</sup>
Alpine	✓	-	-
Bedrock/Hill Country	✓(o)	-	✓(a)
Central Plains	-	✓	✓
Gleyed	✓(o)	-	✓
Lignite-Marine Terraces	✓(o)	-	✓(a)
Old Mataura	-	✓	
Oxidising	✓(o)	✓	✓(a)
Peat Wetlands	-	✓*	✓
Riverine	✓(o)	✓	-

**NOTE:**

<sup>†</sup>Overland flow and artificial drainage transport nitrogen, phosphorus, microbes and sediment

<sup>‡</sup>Deep drainage transports nitrogen, except in Peat Wetlands, see \* below

\*Deep drainage transports phosphorus rather than nitrogen, and lateral drainage of phosphorus and microbes through the soil is also a key pathway in the Peat Wetlands (mitigations are the same as for deep drainage)

✓(o) denotes that overland flow is only a key transport pathway in the parts of the steeper parts of the physiographic zone, referred to as the (o), or overland flow variant (refer to physiographic zones map)

✓(a) denotes that artificial drainage is only a key transport pathway in parts of the physiographic zone where there is artificial drainage, referred to as the (a), or artificial drainage variant (refer to physiographic zones map)

<u>Physiographic zones</u>	<u>Key transport pathways</u>
<u>Alpine</u>	<u>Overland flow</u>
<u>Bedrock/Hill Country no variant</u>	=
<u>Bedrock/Hill Country overland flow</u>	<u>Overland flow</u>
<u>Bedrock/Hill Country artificial drainage</u>	<u>Artificial drainage</u>
<u>Central Plains</u>	<u>Deep drainage of nitrogen</u> <u>Artificial drainage</u>
<u>Gleyed no variant</u>	<u>Artificial drainage</u>
<u>Gleyed overland flow</u>	<u>Artificial drainage</u> <u>Overland flow</u>
<u>Lignite-Marine Terraces no variant</u>	=
<u>Lignite-Marine Terraces overland flow</u>	<u>Overland flow</u>
<u>Lignite-Marine Terraces artificial drainage</u>	<u>Artificial drainage</u>
<u>Old Mataura</u>	<u>Deep drainage of nitrogen</u>
<u>Oxidising no variant</u>	<u>Deep drainage of nitrogen</u>
<u>Oxidising overland flow</u>	<u>Deep drainage of nitrogen</u> <u>Overland flow</u>
<u>Oxidising artificial drainage</u>	<u>Deep drainage of nitrogen</u> <u>Artificial drainage</u>
<u>Peat Wetlands</u>	<u>Artificial drainage</u> <u>Deep drainage of phosphorus</u> <u>Lateral drainage of phosphorus and E.coli</u>
<u>Riverine no variant</u>	<u>Deep drainage of nitrogen</u>
<u>Riverine overland flow</u>	<u>Deep drainage of nitrogen</u> <u>Overland flow</u>

6. *Riparian Management Plan*
- (a) *A Riparian Management Plan is prepared and implemented, and records in written and/or map form:*
- (i) *methods to exclude stock to ensure contaminant losses, particularly associated with overland flow, are minimised,<sup>331</sup> where required, from waterbodies, critical source areas and riparian areas;*
  - ~~(ii) in relation to sheep, the mitigation measures to manage critical source areas to ensure contaminant losses, particularly associated with overland flow, are minimised~~
  - (iii) *the mitigation options to minimise overland flow including areas where stock will be excluded and areas where vegetation will be planted;*
  - (iii) *the type of vegetation to be planted and how it will be maintained;*
  - (iv) *the grazing of appropriately fenced riparian margins for weed control purposes;*
  - (v) *the access to waterways for maintenance purposes, and in particular the waterways maintained by the Southland Regional Council in accordance with the Southland Flood Control Management Bylaw 2010.*
- ~~(b) An up-to-date copy of the Riparian Management Plan is kept and provided to the Southland Regional Council upon request.<sup>332</sup>~~

7. ~~*Cultivation*~~

- ~~(a) A cultivation map showing:~~
- ~~(i) land where cultivation is planned over the next period 1 June to 30 May;~~
  - ~~(ii) waterbodies;~~
  - ~~(iii) buffer strips along those waterbodies as follows:<sup>333</sup>~~
    - ~~(1) 3 m buffer where slopes are 4 degrees or less~~
    - ~~(2) 10 m buffer where slopes are greater than 4 degrees and up to 16 degrees~~
    - ~~(3) 20 m buffer where slopes are greater than 16 degrees~~
    - ~~(4) as specified in resource consent conditions where the slopes are greater than 20 degrees;~~
  - ~~(iv) any proposed good management practices for cultivation, such as contour ploughing, strip cultivation or minimum tillage.~~

8. ~~*Intensive winter grazing*~~

- ~~Where intensive winter grazing is undertaken, an intensive winter grazing section which contains:~~
- ~~(a) Good management practices:~~
- ~~(i) to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land for intensive winter grazing;~~
  - ~~(ii) to avoid the conspicuous discolouration or sedimentation of any adjacent waterbodies;~~
- ~~(b) an intensive winter grazing map showing the total extent of land that may be intensively winter grazed on the property which includes the following details in respect to that land:~~
- ~~(i) the extent of land to be intensively winter grazed for the next period 1 May to 30 September;~~
  - ~~(ii) critical source areas;~~
  - ~~(iii) waterbodies;~~
  - ~~(iv) slope classes;~~
  - ~~(v) buffer strips;~~
  - ~~(vi) location of sub-surface drains their outlet position and relative height.<sup>334</sup>~~

<sup>331</sup> 803.44 FANZ

<sup>332</sup> Cl16 – redundant, as already required earlier

<sup>333</sup> 247.32 Environment Southland

<sup>334</sup> 661.43 Ravensdown

96. Collected Agricultural Effluent Management Plan  
 For discharges authorised under Rule 35, an Effluent Management Plan is prepared and implemented, and records in written and/or map form:
- (a) a plan of how effluent will be managed when soils are at or above field capacity and/or during adverse weather conditions;
  - (b) a maintenance schedule for effluent disposal infrastructure (maintenance or irrigators, checking anti-siphon/switch-off systems, desludging the pond etc);
  - (c) identification of drains, surface waterways, sub-surface drainage and critical source areas in the effluent disposal areas so that the risk of effluent entering water can be avoided; and
  - (d) a plan of how effluent application rates will be monitored to ensure any consent requirements are being met.
- If there is an existing Effluent Management Plan that covers Part B.6(a)-(d), Part B.6 – Effluent Management Plan does not need to be repeated in the Farm Environmental Management Plan.<sup>335</sup>
- (a) The animal effluent disposal system application separation distances, depth, uniformity and intensity are self-checked annually in accordance with Section 4 “Land Application” in the guideline “A Farmer’s Guide to Managing Farm Dairy Effluent – A Good Practice Guide for Land Application Systems” [2013].
  - (b) Records of the application, separation distances, depth, uniformity and intensity of dairy effluent disposal, in accordance with (c)(ii) above, are kept and provided to the Southland Regional Council.
  - (c) The application of collected agricultural effluent is avoided when the soil temperature is less than 5°C.
407. Irrigation Management (applies to farming activities that irrigate):
- (a) New irrigation systems are designed and installed and operated in accordance with industry best practice codes of practice and standards
  - (b) Existing irrigation systems have an annual performance assessment and are maintained so as they apply irrigation at their optimal efficiency.
  - (c) All applications of irrigation are justified through soil moisture monitoring or soil water budgets
  - (d) The timing and depth of irrigation applied takes account of crop requirements and soil plant available water.
  - (e) Staff are trained in the operation, maintenance and use of irrigation systems.
  - (f) Records of (a) – (e) are kept and provided to the Southland Regional Council upon request.<sup>336</sup>
- (a) All irrigation systems installed or replaced after 1 October 2015 meet the Irrigation New Zealand Piped Irrigation Systems Design Code of Practice 2013, Irrigation New Zealand Piped Irrigation Systems Design Standards 2013 and the Irrigation New Zealand Piped Irrigation Systems Installation Code of Practice 2013.
  - (b) The irrigation system application depth and uniformity are self-checked annually in accordance with the relevant Irrigation NZ Pre Season Checklist<sup>28</sup> and IRRIG8Quick Irrigation Quick tests<sup>29</sup> for any irrigation system operating on the property.
  - (c) Irrigation applications are undertaken in accordance with property specific soil moisture monitoring, or a soil water budget, or an irrigation scheduling calculator. Soil monitoring means monitoring soil moisture using either volumetric or tension based methodology.
  - (d) Records of irrigation system application depth and uniformity checklists, irrigation applications, soil moisture monitoring or soil water budget or irrigation scheduling

<sup>335</sup> 247.32 Environment Southland

<sup>336</sup> 414.13 INZ

~~calculator results and rainfall are kept and provided to the Southland Regional Council upon request.~~

## Dairy farming

7.534 The dairy industry in Southland has undergone significant growth and intensification in the past 20 years, with stock unit numbers going from around 400,000 in 1992 to around 5.5 million by 2014.<sup>337</sup> This growth and intensification has made a significant positive contribution to Southland's economy, with growth also seen in rural service industries. This intensification has also resulted in increased contaminant losses, particularly nutrients, as a by-product of dairy production systems.

## Provisions

7.535 Under the pSWLP, the use of land by existing dairy farms can continue without resource consent under Rule 21, provided they have a current agricultural effluent discharge consent, they do not exceed the maximum number of cows specified in that consent; and they prepare and implement a FEMP or are members of an IASM. Under Rule 22, new (including expanded) dairy farming of cows is classified as prohibited in the Alpine physiographic zone, a non-complying activity in the Old Maitaura and Peat Wetlands physiographic zones, and discretionary in all other physiographic zones. As dairy farm effluent consents are inherent to the activity status for existing farms, their activity status is matched, through the rules discussed in section 7.3 of this report.

## Submissions and analysis

7.536 A large number of submissions were received on provisions relating to dairy farming, including B+LNZ, Federated Farmers, DairyNZ, DOC, and Forest and Bird. The submission points summarised and analysed in the following sections relate to Rules 21 – Existing dairy farming of cows and 22 – New or expanded dairy farming of cows. While Policy 16, Policy 39, Rule 32, Rule 35 and the dairy farm effluent section of Appendix N are relevant to dairy farming, submissions on these provisions are discussed elsewhere in this report.

7.537 Rule 21 received 200 submissions (106 in opposition and 60 in support, with the remaining unspecified). Rule 22 received 274 submissions (201 in opposition and 32 in support, with the remaining unspecified).

7.538 In addition to general comments relating to the provisions, there were several recurring issues raised in submissions on dairy farming:

- sensitive waterbodies and existing water quality;
- existing dairy farming activities;
- new dairy farming in the Old Maitaura and Peat Wetlands physiographic zones;
- new dairy farming in other physiographic zones;
- notification of resource consent applications; and

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<sup>337</sup> Environment Southland, *Proposed Southland Land and Water Plan Section 32 Report*, page 82.

- other matters, including Independently Audited Self Management (IASM) and the Southland Dairy Hub

## General

### Submissions

- 7.539 A number of submissions on dairy farming address the general approach to regulating dairy farming at a high level, and are not specific to Rules 21 and 22. While there are many from individuals, DairyNZ, Federated Farmers, DOC and Fish and Game traverse the issues thoroughly.
- 7.540 DairyNZ considers that the pSWLP will have disproportionate impacts on the dairy industry compared with other land based industries with a similar footprint (although the submitter has not identified what those other industries might be). Several submitters believe that there has been no consideration of the impact the changes will have on individual farms or on the Southland Region as a whole. Conversely, some submitters, including Fish and Game, are concerned that the Section 32 Evaluation Report evaluates economic considerations, namely land values, above environmental considerations, on the basis they will be dealt with through catchment limit setting.
- 7.541 DairyNZ submits that “Rule 22 places a moratorium on further dairy intensification across Southland”, and that the impacts on existing dairy farmers have not been considered. This sentiment is echoed in a number of submissions. However, Fish and Game point out that even a non-complying activity status (the toughest activity status in Rule 22, with the exception of the Alpine zone where new dairy farming is prohibited) does not constitute a moratorium.
- 7.542 A number of submitters, including DairyNZ and Federated Farmers, are uncertain about the link between the pSWLP and the catchment limit setting process, and consider the pSWLP has pre-determined limit setting, particularly the setting of freshwater objectives and limits and the community values.
- 7.543 Some submitters, including DairyNZ, request that the progress made by dairy farmers as a result of the pSWLP be accounted for as part of limit setting. In addition, Federated Farmers submit that the implementation of GMPs will stop declining trends in identified nutrient hotspots ahead of limit setting, and that the short lag times in Southland will allow success of implementation to be assessed before the catchment limit setting process.
- 7.544 DOC contends that Rule 22 is inconsistent with Part 2 and section 69(3) of the RMA and fails to give effect to Objectives A1 and A2 of the NPSFM, “and Appendix 2”, and the NZCPS. It is not clear what the “Appendix 2” is referring to, but may be the attribute states in the NPSFM. The submitter may wish to clarify this in evidence. Fish and Game submit that, with the exception of the Alpine zone, key contaminant transport pathways are not considered in Rule 22.

## Analysis

- 7.545 The provisions which relate to dairy farming of cows are assessed in Section 6.3 of the section 32 Report. Both the environmental and economic factors pertaining to dairy farming, including the impact on new and existing dairy farmers, have been assessed in the section 32 Report. In my opinion, the science and policy behind focussing on what are the greatest contributors to diffuse nutrient contamination of Southland's water – dairy farming and intensive winter grazing – is sound. This is backed up by a range of both national level and Southland-specific analysis.<sup>338</sup>
- 7.546 A moratorium is a temporary prohibition of an activity. Contrary to DairyNZ's submission, the pSWLP prohibits new and expanded dairy farming only in the Alpine physiographic zone. The Alpine zone includes all land above 800 metres elevation, and is characterised by steep slopes with thin soils or bare bedrock. Its high elevation results in high snowfall and rainfall, which provides large volumes of pristine water to downstream physiographic zones. Prohibition is considered appropriate in this zone, given its pristine nature and high risk for overland flow. This activity classification was supported by a number of submitters, including Ngāi Tahu and DOC.
- 7.547 In all other physiographic zones, both new and expanded dairy farming of cows is classified as either discretionary or non-complying, which as Fish and Game observed in its submission, does not constitute a moratorium. The appropriate activity status of activities in the various physiographic zones have been addressed earlier in this section of the report.
- 7.548 A number of submitters question the link between the dairy farming rules and catchment limit setting. The provisions of the pSWLP do not pre-empt the catchment limit setting process, rather, they provide an interim measure to maintain or improve water quality<sup>339</sup> prior to the development of catchment specific provisions.
- 7.549 The decisions that come out of the catchment limit setting process will apply only within the relevant FMU, whereas the pSWLP applies across the region in the absence of FMU specific provisions. The relationship between the pSWLP and catchment limit setting is outlined in Policies 44-47 in the pSWLP, and is explained in more detail in section 6 of this report.
- 7.550 Ahead of the catchment limit setting process, farmers are required to implement GMPs (as recorded in each FEMP). Due to the relatively short lag times, Environment Southland's ongoing water quality monitoring is likely to reveal the impact that GMP will have on water quality, which will inform the FMU processes. I consider that changes in trends would be an inevitable influence on FMU processes. For example, any progress made towards maintaining and/or improving water quality in the interim is likely to reduce the cost of other actions, indeed if any other actions are required, to achieve the freshwater objectives set through the limit setting process. I also note that in some instances, changes beyond GMP may be required to see improvements in water quality. Overall, I do not recommend the submission from Federated Farmers be adopted – it may be that GMPs are adequate, but I do not consider there is sufficient certainty around this to include the statement in the Plan.

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<sup>338</sup> For example, the various Parliamentary Commissioner for the Environment reports.

<sup>339</sup> Objective A2 of the NPSFM



7.551 Some submitters, including DOC, contend that Rule 22 is inconsistent with Part 2 and section 69(3) of the RMA and fails to give effect to Objectives A1 and A2 of the NPSFM. Under Schedule 4 of the RMA, a resource consent application under Rule 22 would need to include an assessment of the activity against the relevant Objectives and Policies of the pSWLP. This would include:

- Objective 6 – “There is no reduction in the quality of freshwater, and water in estuaries and coastal lagoons...”;
- Objective 13 – which enables “the use and development of land and soils, provided...significant or cumulative effects on human health are avoided; and adverse effects on ecosystems (including diversity and integrity of habitats), amenity values, cultural values and historic values are avoided, remedied or mitigated”;<sup>340</sup> and
- Policy 16 – Farming activities that affect water quality, which explicitly references new dairy farming of cows, strongly discourages new dairy farming in close proximity to sensitive water bodies, and where water quality is already degraded to the point of being over-allocated.

7.552 Objective 6 and Policy 16 are, in my opinion, consistent with Objective A2 of the NPSFM and section 69(3) of the RMA. Objective 13 is consistent with Part 2 of the RMA, and Objective A1 of the NPSFM. Given this, consideration of resource consent applications under Rule 22 will also be consistent with the provisions of higher order documents, including Part 2 and section 69(3) of the RMA and Objectives A1 and A2 of the NPSFM. On this basis, I do not agree with those submissions.

## **Sensitive waterbodies and existing water quality**

### **Submissions**

7.553 Some submitters, including Fish and Game, and DOC, submit that Rule 22 does not consider the sensitivity of receiving waterbodies and their existing water quality, and will result in further reduction of existing water quality in some areas. DOC requests that new or expanded dairy farming be prohibited where the underlying aquifers exceed Objective 8 of the pSWLP or the water quality in the receiving water body breaches the national bottom lines in the NPSFM. The submitters also request that dairy farming be prohibited within natural wetlands on the basis that Rule 22 is inconsistent with Policies 32 and 33.

### **Analysis**

7.554 Objective 6(b) requires water quality in waterbodies, estuaries and coastal lagoons to be improved where they have been degraded by human activities, Objective 8(b) sets the same requirement for aquifers, and Policy 16 explicitly considers both sensitive waterbodies and existing water quality, both in the sensitive water bodies, and in water bodies more generally. Policy 16(1)(a) strongly discourages new dairy farming in close proximity to sensitive waterbodies and Policy 16(1)(b) strongly discourages new or further intensification of dairy farming where water quality is already degraded to the point of being over-allocated.

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<sup>340</sup> This objective is recommended to be modified in section 5 of this report.

- 7.555 Given that a resource consent application for new or expanded dairy farming would need to assess the activity against Objective 6 and 8, and Policy 16, I consider that the sensitivity of the receiving waterbodies and their existing water quality is considered in Rule 22. Further, given this assessment, I do not recommend prohibiting dairy farming where underlying aquifers exceed Objective 8 of the pSWLP or the water quality in the receiving water body breaches the national bottom lines in the NPSFM. Analysis and discussion in the drafting of the pSWLP identified that there could be situations where dairying is a net improvement, such as a conversion from a significant intensive winter grazing operation. I consider it would be inappropriate to ‘close the door’ on a potentially beneficial change in land use by making it a prohibited activity.
- 7.556 Dairy farming in natural wetlands is a non-complying activity, regardless of which physiographic zone, under Rule 70 (Stock exclusion). It is these rules, rather than Rule 22, which give effect to Policy 32, which requires protection of significant indigenous vegetation and habitat, and Policy 33, which deals with the reduction in area, function and quality of wetlands. As such, I do not consider it necessary to prohibit dairy farming in natural wetlands through Rule 22. Rules 70 and 74 are discussed further in sections 10 and 11 respectively.

## **Existing dairy farming**

### **Submissions**

- 7.557 Sixty submitters support Rule 21 (Existing dairy farming of cows) in full or in part, including DairyNZ and Fonterra. One hundred and six submitters oppose the rule in full or in part. Of the 106 submissions in opposition, 21 are not specifically related to Rule 21, but request deletion of all farming restrictions based on physiographic zones. The use of physiographic zones in the pSWLP is addressed earlier in this section of the report and is not repeated here. In addition, some submitters, including O Gunn, A Mann and Springlands Group, have requested longer timeframes for existing dairy farmers to prepare FEMPs, as provided for in Rule 23 for intensive winter grazing.
- 7.558 Fonterra points out that there are a small number of dairy farms whose farm dairy effluent disposal is a permitted activity under Rule 50 of the RWP and Rule 35(1) of the pSWLP. As these farms do not have a discharge consent for agricultural effluent that specifies a maximum number of cows, they would not be a permitted activity under Rule 21 and would require resource consent. Fonterra also requests that a date be added to Rule 21(a) to ensure the rule is not affected by future discharge consents.
- 7.559 A number of submitters also consider that if an existing dairy farm is increasing its land area but not its cow numbers then consent should not be required under Rule 22, but should be a permitted activity under Rule 21 on the basis that spreading the same number of cows over a larger area effectively reduces the stocking rate, and should result in reduced environmental effects, or at least no additional effects. That said, there is risk that such an expansion of area, if undertaken poorly, could create an opportunity for further intensification. In my opinion, the Council needs to know about this kind of expansion and ensure that appropriate GMPs are undertaken.

## **Analysis**

- 7.560 A number of submitters request longer timeframes for existing dairy farmers to prepare an FEMP. Under section 20A of the RMA, existing dairy farms will have six months to provide an FEMP, once Rule 21 becomes operative. This provision effectively provides the transition period some submitters request for existing dairy farmers to prepare and implement their FEMP, so I do not consider it necessary to amend Rule 21 to provide a longer timeframe.
- 7.561 As highlighted by Fonterra, the discharge of effluent from dairy farms with less than 20 cows is permitted under Rule 50 of the operative RWP and Rule 35 of the pSWLP, and as such, these operators would require resource consent under Rule 22. I understand that there is only a small number of such farms in Southland. I recommend that Rules 21 and 22 be amended to ensure dairy farms with 20 cows or less do not require resource consent for dairy farming. This change would avoid inadvertently capturing a few small operations in a consent process and improve consistency between Rules 21 and 22, and Rule 35.
- 7.562 The notified wording of Rule 21 could be interpreted to mean that provided a farm has a current 'farm dairy effluent' (FDE) permit and was an existing dairy farm at 30 May 2016, then it is a permitted activity. Fonterra submit that this makes compliance with Rule 21 conditional on getting future discharge consents. While this is not the intended interpretation, I acknowledge that Rule 21 could be interpreted this way. As such, I see value in altering the wording to make it clear that the discharge permit referred to in rule is the one current at 30 May 2016, and that the maximum cow number allowed as a permitted activity also relates to the FDE permit that was current at 30 May 2016.
- 7.563 A number of submitters, including DairyNZ and Federated Farmers, request that if cow numbers remain the same but the land area increases, the use of the additional land for dairy farming should be a permitted activity under Rule 21. I agree that effectively reducing the stocking rate on a dairy farm by spreading the same number of cows over a larger land area should be enabled. I recommend that this be specifically provided for in Rules 21 and 22, provided a date is added to Rule 21(a) to make it clear that the number of cows allowed as a permitted activity is the maximum specified in the FDE permit at 30 May 2016.

## **New dairy farming**

### **Submissions**

- 7.564 A large number of submitters, including B+LNZ and Federated Farmers, raise issues with respect to new dairy farming and the activity status being dependent on which physiographic zone the proposal is located in. These issues have been analysed fully earlier, with respect to the physiographic zone analysis, and are not repeated here.

## Notification of resource consent applications

### Submissions

7.565 Some submitters request that resource consents for new or expanding dairy farming be processed non-notified. Federated Farmers suggested this would stop “a few interested parties holding applicants to ransom” and including “random conditions in consents”.

### Analysis

7.566 Council has discretion, on a case by case basis, to process an application with or without public notification, or with limited notification under section 95A, 95B and 95C of the RMA. I recommend that this discretion be retained in Rule 22. I note that under section 95A of the RMA, a consent authority must publicly notify a consent application if the activity will have or is likely to have adverse effects on the environment that are more than minor, unless a rule in a plan or NES precludes public notification of the application. There does not appear to be any agreed criteria for precluding public notification in case law or best practice guidelines.

7.567 Given the potential for adverse effects of new dairy farming, particularly in more sensitive physiographic zones, and the wide public interest in this issue, I consider that a general provision stating that new or expanding dairy farming be processed on a non-notified basis is not the most appropriate way of implementing the objectives of the pSWLP.

### Other matters

#### Submissions

7.568 Many submitters, including Black Family Trust, and J Moore, seek the restricted discretionary activity status proposed for the Southland Dairy Hub<sup>341</sup> in Rule 22(g) apply to other properties.

7.569 A number of requests were made for alterations to definitions, or new definitions pertaining to intensification of dairy farming. These included a number of requests for a definition of dairy farming and dairy platform.

7.570 Fonterra suggested dairy farming be defined as farming of milking cows on the dairy platform and that dairy platform be defined as the area of land devoted to feeding milking cows on a daily basis during the milking season. There were two other suggestions to define dairy farming:

- the grazing of land for the purpose of producing milk/or by lactating animals;
- activities on a dairy platform related solely to lactating cows. The term should not indirectly relate to the grazing of calves, rising 2 year olds or breeding bulls on support land for a dairy farm.

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<sup>341</sup> The Southland Dairy Hub is a demonstration/research farm – see <http://www.southerndairyhub.co.nz/> for more information.

## Analysis

- 7.571 The land intended to be subject to the Southland Dairy Hub research activity is provided with an alternative consenting pathway compared to other conversions in Rule 22(g). I agree that this provides preferential treatment to this land. I understand the activity has already obtained resource consent for the conversion under Rule 22, so the merit of the rule is now rather academic. I therefore recommend removing this provision.
- 7.572 I consider that the requested definitions are unnecessary in light of the recommended changes to Rules 21 and 22. In my opinion, the definitions suggested by submitters narrow the scope of what would be considered in an application for dairy farming of cows, reducing the effectiveness and efficiency of Rule 22 in giving effect to the objectives of the pSWLP. However, if the Hearing Panel does wish to consider including a definition of ‘dairy farming of cows’ and ‘dairy platform’, the following (which is adapted from Fonterra’s submission) may provide a starting point, although I hold some residual concerns about unintended consequences of the second part of the dairy farming definition below.

*Dairy farming of cows means farming activities undertaken on a dairy platform but excludes activities that require resource consent under other Rules.*

*Dairy platform means the land that is used to graze cows in milk during the milking season. For the avoidance of doubt, this land remains a dairy platform outside the milking season.*

## Intensive winter grazing

- 7.573 Due to low pasture growth during winter months and large areas of poorly drained soils, intensive winter grazing forms an integral part of pasture based livestock systems in Southland. Intensive winter grazing is defined in the pSWLP as *grazing of stock between May and September (inclusive) on forage crops*. In 2014, approximately 68,000 ha of land was used for intensive winter grazing in Southland.<sup>342</sup> Intensive winter grazing is characterised by relatively high stocking rates and either significant or total devegetation of the paddock where the grazing is taking place. These characteristics mean that intensive winter grazing contributes significant amounts of contaminants to waterways, river systems and eventually, estuaries. Increases in stock numbers across Southland, on average between 30,000 and 40,000 stock units per year between 1992 and 2015<sup>343</sup>, have driven an increase in land used for intensive winter grazing.

## Provisions

- 7.574 Under the notified pSWLP, until 30 May 2018, intensive winter grazing is a permitted activity. After this date, intensive winter grazing remains a permitted activity provided the criteria in Rule 23(b) are met. These criteria relate to adopting GMPs, having and implementing a FEMP or being a member of an IASM, keeping records of the areas grazed, and a maximum land area used for intensive winter grazing. In the Old Maitauro and Peat Wetlands physiographic zones, 20 ha of land can be intensively winter grazed before resource consent is required, and up to 50 ha total on a landholding not in these physiographic zones. For example, an intensive winter grazing area could be made up of

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<sup>342</sup> Spatial analysis of winter forage cropping in Southland and the implications for water quality management, Environment Southland Technical Report, SRC Publication No 2016-13, November 2016.

<sup>343</sup> pSWLP Section 32 Report

20 ha on Peat Wetlands and an additional 30 ha on other physiographic zones (except Old Mataura).

- 7.575 For intensive winter grazing, which exceeds these land area thresholds, resource consent is required. Existing intensive winter grazing operations become a restricted discretionary activity, and new intensive winter grazing a discretionary or non-complying activity depending on the physiographic zone. Intensive winter grazing is prohibited in the Alpine physiographic zone.
- 7.576 There are also specific elements relating to GMPs for intensive winter grazing in Appendix N, for inclusion in FEMPs.

### **Submissions and analysis**

- 7.577 Approximately 670 submissions were received on Rule 23 – Intensive winter grazing (approximately 455 in opposition, 31 in support, and the rest not stated). While both Policy 16 and the intensive winter grazing section of Appendix N are relevant to intensive winter grazing, submissions on these provisions have been discussed earlier.
- 7.578 There are several recurring issues raised by a large number of submitters in submissions on intensive winter grazing and these are each addressed in the following sections:
- the definition of intensive winter grazing
  - permitted activity thresholds - 20 and 50 Ha
  - use of physiographic zones
  - requirement to obtain resource consent
  - setbacks from waterbodies.

### **Definition of intensive winter grazing**

#### **Submissions**

- 7.579 Several submitters, including Glen Echo Station Partnership, St Patricks Farm and S Wilson, raise concern that the definition of intensive winter grazing in the pSWLP is not sufficiently clear. Submitters are in general agreement that the definition needs to clearly state whether pasture and cereal crops are included in the definition or not. A number of submitters, including B+LNZ, consider that pasture and cereal crops should be excluded from intensive winter grazing, on the basis that grazing these crops does not result in complete de-vegetation. Consistent use of the terms ‘forage’ and ‘fodder’ is also requested. Other suggestions for inclusion in the definition include:
- the relative contribution of different forage crop species and management techniques to nutrient loss;
  - specifically excluding sheep from the definition;
  - reducing the intensive winter grazing season of May to September to June to August.

## Analysis

- 7.580 As requested by a number of submitters, including B+LNZ, I agree that the definition of intensive winter grazing in the pSWLP should be amended to exclude pasture and cereal crops. A forage crop paddock is generally completely devegetated after grazing and this is not typically the case for cereal crops and pasture. The residual vegetation left with cereal crops and pasture generally reduces the potential for contaminant loss. Additionally, the analysis of different permitted activity thresholds relies on spectral differences between pasture and forage crops to identify areas of intensive winter grazing. If pasture and cereal crops are included in the definition of intensive winter grazing it would be difficult to assess the implications of Rule 23, as this analysis could no longer be used.
- 7.581 However, explicitly excluding cereal crops and pasture from the definition of intensive winter grazing would mean that sheep being break fed on cereal crops and pasture over winter would be allowed to access waterways under Rule 70 of the pSWLP, as would cattle, deer and other stock until specified dates. Even after these dates, stock other than sheep would have to be excluded from waterways, but there would be no requirement to have a vegetated setback. The RWP requires a setback of 3 m for all stock being intensively winter grazed, including on pasture.
- 7.582 This means that explicitly excluding cereal crops and pasture from the definition of intensive winter grazing in the pSWLP would make the pSWLP more lenient than the RWP when it comes to break feeding on pasture. This is unlikely to maintain water quality, as required by Objective 6 of the pSWLP, the pRPS, and the NPSFM. Therefore, I recommend that in conjunction with explicitly excluding cereal crops and pasture from the definition of intensive winter grazing, an additional permitted activity standard be added to Rule 70 to require a 3 m setback from waterways where break feeding/strip grazing of pasture or cereal crops is being undertaken between May and September inclusive.
- 7.583 I agree that consistent use of the word “forage” or “fodder” throughout the Plan would be useful. I recommend the term forage crops be used. Forage crops are described by the Lincoln University Farm Technical Manual as annual or biennial crops which are grown to be utilized by grazing or harvesting as a whole crop.
- 7.584 I disagree that the timeframe in the definition of intensive winter grazing should be reduced and sheep excluded from the definition. Both these changes would make the pSWLP more lenient than the RWP in relation to intensive winter grazing, which, as described above, is unlikely to (at least) maintain water quality.
- 7.585 B+LNZ requests that the definition of intensive winter grazing include information about the relative contribution of different forage crop species and management techniques to nutrient loss. However, given the definition is used in permitted activity standards within Rule 23, its meaning must be clear enough to avoid multiple interpretations. To broaden the definition to this extent would complicate the definition and introduce further uncertainty into the rule, and on this basis, I recommend that this submission be rejected.

## Requirement to obtain resource consent

### Submissions

7.586 A large number of submitters, including Hugh-Crowley Company, Kaikaha Farms and L Morris, oppose having to obtain resource consent for intensive winter grazing, and do not want Environment Southland to have discretion to decline consents for existing intensive winter grazing on forage crops above the permitted activity threshold. Some request that the FEMP be used instead of a consent for all intensive winter grazing, and that the FEMP be approved by the Land Sustainability Team of Environment Southland, or by the Council in lieu of a consent. There is concern that Rule 23 does not reflect the practical reality that stock need to be fed all year, and cannot be fed extensively over winter. Some submit that the economic cost to farmers of Rule 23 has not been evaluated.

### Analysis

7.587 A large number of submitters oppose the requirement to obtain a resource consent for intensive winter grazing, and a number of alternative approval methods for the FEMP are suggested. For those who comply with the permitted activity conditions, including the maximum land areas, the FEMP does not have any formal approval process by Environment Southland. This means there is no regulatory opportunity for Environment Southland to influence the quality of FEMPs and their implementation, beyond listing the requirements in Appendix N. I consider this level of permitted activity to be appropriate. The 2014 forage assessment undertaken<sup>344</sup> identified over 3,000 properties undertaking intensive winter grazing. Environment Southland typically processes less than 1,000 consent applications per year, so a resource consent process for all of the FEMPs required for intensive winter grazing (assuming a number similar to the 3000 properties identified in 2014) would represent a dramatic increase in workload, with an associated increase in cost, without necessarily having a commensurate increase in environmental benefits.

7.588 If there is no approval process for FEMPs for intensive winter grazing undertaken at a greater scale, the FEMP alone, in my opinion, does not provide sufficient certainty to support the objectives of the pSWLP and the NPSFM. Requiring resource consent for larger intensive winter grazing operations enables Environment Southland to set appropriate, site-specific, measurable conditions, and assess the quality and content of the FEMP. This is considered appropriate given the potential for significant contaminant losses from larger intensive winter grazing operations.

7.589 For existing intensive winter grazing operations above the permitted activity threshold, resource consent is required from the winter of 2018 onwards to continue at current levels. This consent will typically be processed non-notified, and Environment Southland's discretion is limited to the matters listed in Rule 23(c). The more permissive approach to existing wintering operations compared to new ones is reasonable, so that the viability of existing operations is not jeopardised, at least until limits are set under the FMU process and certainty is afforded by those decisions. However, as a restricted discretionary activity, Environment Southland has discretion to decline resource consent for larger existing wintering operations where the activity is not considered appropriate

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<sup>344</sup> Spatial analysis of winter forage cropping in Southland and the implications for water quality management, Environment Southland Technical Report, SRC Publication No 2016-13, November 2016..



or suitable mitigations are not proposed by the applicant. I consider this discretion appropriate, as it requires larger operators to manage the effects of their wintering activities if they wish to continue wintering, and will ensure GMPs are in place.

7.590 Some submitters are concerned that Rule 23 does not reflect the practical reality that stock need to be fed all year, and cannot be fed extensively over winter. However, Rule 23 makes intensive winter grazing a permitted activity for over 90% of properties who undertake wintering (based on the 2014 forage analysis) and requires larger intensive winter grazing operations to obtain resource consent. Rule 23 does not require stock to be fed extensively over winter, and in my opinion, makes substantial provision for intensive winter grazing to occur across the region.

## **Permitted activity threshold – 20 and 50 hectares**

### **Submissions**

7.591 Several submitters request clarification on how the permitted activity thresholds of 20 and 50 ha in Rule 23(b)(iii), (iv) and 23(c) are designed to work. Possible interpretations highlighted by submitters include:

- if a farmer has any Old Matura or Peat Wetlands on his or her property, he or she can only intensively winter graze 20 ha on their entire landholding, regardless of whether he or she has any other physiographic zones on his or her property;
- if a farmer has either Old Matura or Peat Wetlands, and another physiographic zone, he or she can intensively winter graze a total of 70 ha;
- if a farmer has Old Matura or Peat Wetlands she or he can intensively winter graze 20 ha on those physiographic zones, and graze up to 50 ha total on her or his property, for example an extra 30 ha on Gleyed.

7.592 A large number of submitters, including B+LNZ and the Lower Aparima CG, oppose the permitted activity threshold of 50 ha per landholding and 20 ha within the Old Matura and Peat Wetlands physiographic zones on the basis that it:

- is unfair to larger landholdings;
- implies large operators are less sustainable than small ones;
- is not based on effects, but on administrative requirements of Environment Southland;
- would put people out of business;
- impedes land rights (refer Section 2 for a discussion on property rights and RMA obligations);
- would mean some farmers may not be able to winter their own stock within these limits.

7.593 Submitters, including DairyNZ and Federated Farmers, also raise concern that the proposed thresholds would result in perverse outcomes, such as:

- the use of ‘sacrifice paddocks’ where stock are kept all winter and feed is cut and carried into them;
- the use of higher yield crops (fodder beet rather than kale);

- an increase in cropped area for 2017 to increase the three year average;
- poor environmental practices;
- planting forage in sub-optimal areas;
- an increase in supplement fed on cropping areas;
- increased wintering on pastures with uncertain impacts on heavier soils;
- negative impacts on animal welfare, such as growing out young stock, calving and lambing mortality.

7.594 There are a large number of alternative thresholds proposed in submissions. A large number of submitters suggested changing the threshold to 15% of a landholding, as proposed in the Working Draft Water and Land, July 2015. Other suggestions included:

- 20% of landholding;
- a percentage of effective farm area;
- the greater of 50 ha (or 20 within Old Matura and Peat Wetlands) or 10% of a landholding (some suggested 15%) whichever is greater;
- budgeted total tonnage of winter feed;
- stock units;
- nitrogen limits.

7.595 DOC submits that 50 ha is too high a permitted activity threshold for small landholdings because there is no opportunity for waters from other parts of the property to dilute contaminants entering groundwater or flowing overland to surface water. DOC requests a permitted activity threshold of 50 ha (20 ha in Old Matura and Peat Wetlands) or 10% of a landholding, whichever is less.

## Analysis

### Opposition to the notified permitted activity threshold

7.596 A large number of submitters oppose the permitted activity threshold of 50 ha per landholding and 20 ha within the Old Matura and Peat Wetlands physiographic zones. Given the science available that identified the adverse effects resulting from intensive winter grazing, unless all 3,000 properties undertaking intensive winter grazing obtain consent, there needs to be a permitted activity threshold.

7.597 In the notified Plan, there was an emphasis on higher risk physiographic zones, where nutrient losses from intensive winter grazing are exacerbated when they occur on parts of the landscape that are relatively more susceptible to either nitrogen or phosphorus loss. Larger-scale wintering operations were also a focus because comparatively, each such operation represents a larger contribution to contaminant losses from intensive winter grazing as a whole.

7.598 A large number of submitters consider the notified 50 ha and 20 ha consent thresholds are inequitable and that 15% of a landholding (the threshold proposed in the Working Draft Water and Land) would be more appropriate. Arguably, a 50 ha threshold advantages smaller farms (less than 333 ha, as 15% of 333 ha is 50 ha), and a 15% threshold advantages farms larger than 333 ha. While a percentage threshold potentially has some advantages, no matter what threshold is chosen, it is my experience that there will be some 'winners' and some 'losers'. The more important discussion is fixing on a

threshold that is efficient and effective, minimises unnecessary consenting and achieves the outcomes sought by the higher-level planning documents.

- 7.599 Some submitters point out that Rule 23 would require some larger farms to obtain resource consent to winter their own stock. This is likely to be the case. However, the ownership of stock does not affect the contaminant loss from an intensive winter grazing operation, so I see little value in regulating on this basis. I consider it appropriate that larger wintering operations where the stock are owned by the landowner receive the same treatment in Rule 23 as those where the stock belong to another party.
- 7.600 Some submitters contend that Rule 23 will put people out of business. Based on the 2014 forage assessment, only around 300 properties (of over 3,000 which intensively winter graze) would require resource consent to continue their existing grazing operation at their existing scale. As described in the section 32 report, Environment Southland made a conscious decision to make existing intensive winter grazing above the permitted activity threshold a restricted discretionary activity and process the applications non-notified, with the specific intention of providing certainty for the approximately 300 people requiring consent. Given the modest cost of resource consent fees compared to the cost of establishing a crop (approximately \$800 to \$3,000/ha<sup>345</sup>) I consider that the consent fees for existing operators will not put those operators out of business. It is also likely that most people will seek consent for a 5 – 10 year period, rather than on an annual basis. The costs of implementing GMPs and other mitigations will carry additional costs. However, given the acknowledged high contaminant losses from intensive winter grazing, GMPs and mitigations are an important element to help achieve the outcomes sought in the objectives, the RPS and pRPS and NPSFM.

### Alternative permitted activity thresholds

- 7.601 A range of alternative permitted activity thresholds are suggested by submitters. A number of these are assessed in the table below, using a comparison of the number of consents which would be generated, and the percentage of total intensive winter grazing that would have Council oversight through the consent process. This assessment has been completed using the 2014 Forage Crop data that was used for the notified scenario. Some options suggested are too uncertain to assess in this way so have not been included. For example, a nitrogen limit, a percentage of effective land area, and stock units.

Table 7.1: Comparison of different permitted activity thresholds proposed by submitters.<sup>346</sup>

Threshold above which consent is required	Percentage of total intensive winter grazing area with Council oversight	Number of consents generated
Notified Rule 23 – 20 ha in Peat Wetlands and Old Maitua, 50 ha total on a landholding	46%	308
Lesser of 50/20 ha or 10% of a landholding	66%	1030
Lesser of 50 ha or 10% of a landholding	66%	1021
Lesser of 50/20 ha or 15% of a landholding	56%	658

<sup>345</sup> Enquiries to Cropmark and farmers indicate a range of establishment costs from \$800/ha for kale to \$3000/ ha for fodder beet.

<sup>346</sup> Analysis based on 2014 forage analysis, Environment Southland, 2016.

<b>Threshold above which consent is required</b>	<b>Percentage of total intensive winter grazing area with Council oversight</b>	<b>Number of consents generated</b>
Lesser of 50 ha or 15% of a landholding	56%	643
Notified Rule 23 & Bedrock/Hill Country 20 ha	54%	470
Notified Rule 23 & Oxidising & Riverine 20 ha	53%	445
50 ha of a landholding	45%	285
15% of a landholding	26%	473
Greater of 50 ha or 10% of a landholding	24%	185
Greater of notified Rule 23 or 15% of a landholding	23%	173
20% of a landholding	17%	284
Greater of notified Rule 23 or 10% of a landholding	15%	122
Greater of 50 ha or 15% of a landholding	15%	115

- 7.602 Table 7.1 above provides a comparison of the different permitted activity thresholds proposed in submissions compared with the notified thresholds. In my opinion, an efficient and effective threshold would involve a comparatively high number in the percentage column, paired with a low number in the ‘consents generated’ column.
- 7.603 Figure 7.1 below shows the average land area covered per consent to give a sense of the consenting efficiency for each of the thresholds. The more land that is covered, the greater the consenting efficiency per ha. The notified threshold of 20 ha within the Old Maitara and Peat Wetlands physiographic zones and 50 ha total on a landholding is highlighted in orange. The permitted activity threshold with the greatest consenting efficiency is 50 ha per landholding, followed by the notified Rule 23. In my opinion, the lowest consenting efficiency is a threshold of 15% of a landholding.

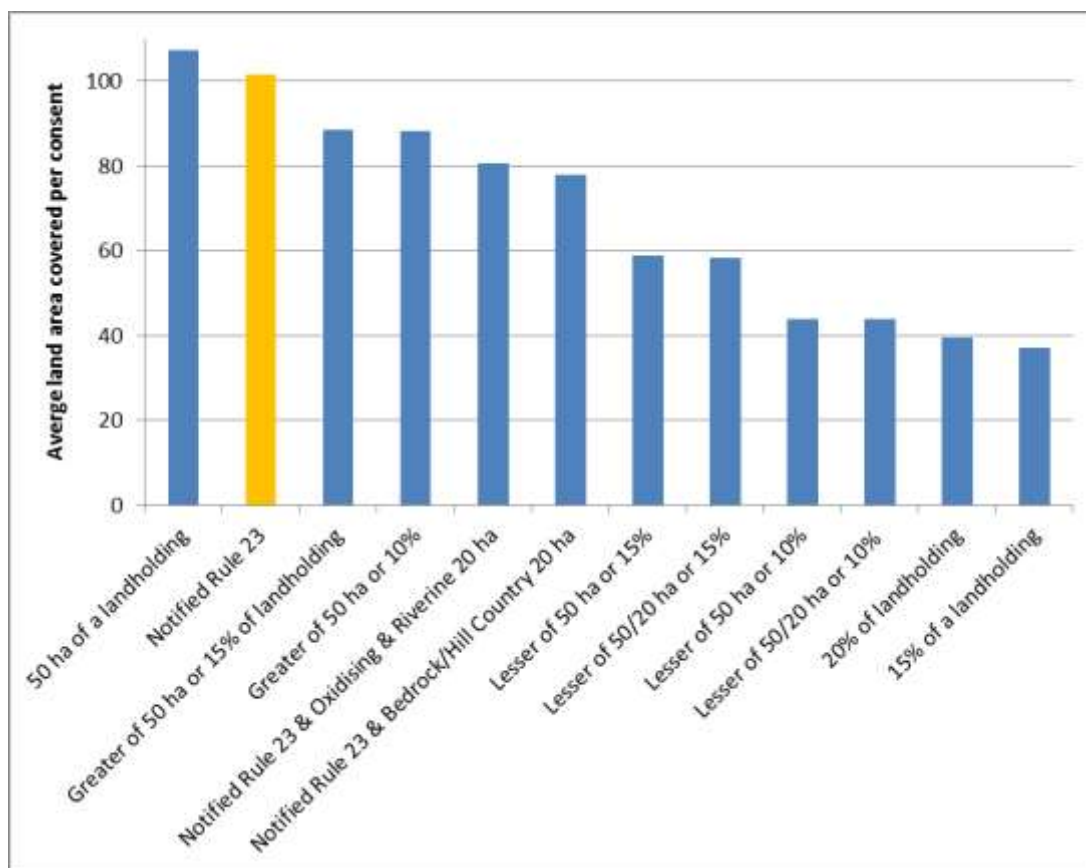


Figure 7.1: Average land area covered by consent for intensive winter grazing under different permitted activity thresholds.

- 7.604 Based on the above analysis, I recommend that a permitted activity threshold of 50 ha per landholding replace the notified thresholds in Rules 23(b) and (c). This would be simpler to implement and understand, will reduce complications if a property contains more than one physiographic zone, and would make little difference to the amount of intensive winter grazing land over which Environment Southland would have oversight through the consent process. It is also marginally more efficient than the notified version. This change could however remove the existing disincentive to intensively winter graze in higher risk physiographic zones. As such, I recommend that new intensive winter grazing above the permitted activity threshold in the Old Matura and Peat Wetlands physiographic zones remains non-complying to encourage new intensive winter grazing in areas less susceptible to contaminant loss.

### Perverse outcomes

- 7.605 Some submitters, including Federated Farmers, are concerned that controls on intensive winter grazing will cause a range of unintended consequences. In my opinion, farmers and other resource users will respond to increased controls. I would hope that this results in an improvement in environmental outcomes, rather than the suggested actions being undertaken. Whether these actions are undertaken will, in my experience, depend on financial considerations. Overall, I doubt whether the level of control suggested in the recommendations will lead to the kinds of risks and costs of the actions listed by submitters. In any event, if there are unintended outcomes, the FMU processes provide an avenue where these outcomes can be reviewed and controls adjusted if needed. Further, every person has a duty in accordance with s17 of the RMA to avoid, remedy, or

mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of the person, whether or not the activity is permitted, or authorised by a resource consent (amongst other things).

## Setbacks

### Introduction

7.606 The setbacks set out in Rule 23(b)(vii) require the maintenance of a vegetated strip between, and the exclusion of stock from, specified distances from the outer bed of various water bodies. These distances are relative to the slope of the land. Rule 25(a)(i) similarly restricts cultivation within the same setbacks. Because the setbacks (both the distance and degree of slope) in Rule 23(b)(vii) and Rule 25(a)(i) are essentially the same, and given that the rationale for the control is the same in both rules, it is my view that it is appropriate for any amendment to the setbacks and slope controls to be consistent across both rules. In addition, the submissions received on these conditions in relation to both rules were the same or similar. As such, the analysis of the submissions on these conditions in the following sections has been undertaken with respect to both winter grazing and to cultivation.

### Submissions

7.607 Submissions on setbacks fall into two main categories- those in support of variable width setbacks, with or without alteration from those notified, or those against the setbacks entirely.

7.608 Submitters who support the use of variable setback widths within a permitted activity rule generally request alteration to the width of setbacks, on the basis that the notified setbacks are either too great or too small. Numerically, far more submissions have requested reductions than expansions. There are a wide range of alternative setback distances sought by submitters (either on one or both rules) including:

- 3 m setback for slopes less than 10 degrees, 10 m for slopes of 10-20 degrees, 15 m for slopes of 20-30 degrees;<sup>347</sup>
- 3 m setback for slopes less than 10 degrees, 5 m for slopes of 10-20 degrees, 10 m for slopes of 20-30 degrees;<sup>348</sup>
- 1.5 m setback for slopes less than 4 degrees, 5 m for slopes between 4-20 degrees and 10 m for slopes greater than 20 degrees;<sup>349</sup>
- Minimum of 3 m setback, with an additional 1 m setback per degree, i.e. 4 degree slope has a 4 m setback, 7 degree slope has a 7 m setback;<sup>350</sup>
- 3 m setback for slopes up to 16 degrees, 5 m setback above 16 degrees, accompanied by a temporary sediment retention system in critical source areas until pasture is re-established and suitable for grazing;<sup>351</sup>
- 3 m setback up to slopes of 8 degrees, above 8 degrees, setback calculated as the slope minus 5, i.e. 14 degree slope would have a 9 m setback;<sup>352</sup>

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<sup>347</sup> For example, M Frew.

<sup>348</sup> For example, Arkley Farm.

<sup>349</sup> For example, Braemore Farms.

<sup>350</sup> For example, Burwood Station; Riverfield Farms.

<sup>351</sup> For example, DairyNZ.

- 5 m minimum setback for slopes less than 4 degrees, or 10 m when measured from the outer bed of a natural wetland or watercourse with trout and/or inanga spawning habitat;<sup>353</sup>
- 3 metre setback for slopes up to 8 degrees; 5 metre setback for slopes up to 16 degrees and 10 metre setback for slopes over 16 degrees;<sup>354</sup>
- 3 metre setback for slopes up to 8 degrees; 10 metre setback for slopes 9-20 degrees and 20 metre setback for slopes 21-30 degrees;<sup>355</sup>
- 3 metre setback for slopes up to 16 degrees; 10 metre setback for slopes 16-30 degrees and 20 metre setback for slopes above 30 degrees.<sup>356</sup>

7.609 Other submitters do not consider the setback widths are large enough, with Fish and Game submitting that research indicates buffers of at least five metres from each bank are required to achieve instream fine sediment cover below 20% in downstream reaches. The submitter considers that the rationale for a three metre setback is unclear.

7.610 Several submitters, including Martyn Farming and S Macdonald & R Halder, question the scientific rationale behind the specific setbacks proposed. Federated Farmers question whether sediment would travel such distances over well-established pastures, and request minimal setbacks for re-establishing grass due to the short duration of bare ground. Fonterra consider that the large jump in setbacks between slope categories suggests the scale of mitigations are not relative to the size of the potential effect.

7.611 Some submitters are not in support of variable setbacks. DairyNZ, for example, contend that there is no strong scientific or economic justification for the setbacks. Some submitters suggest that there should either be no setback in some instances, or that linear setbacks should be replaced with permitted activity rules specifying setbacks from critical source areas. Submissions also raise concern about the reduction in the area available for winter grazing and cultivation as a result of setbacks.

7.612 Some submitters also raise concern about the large number of resource consents they consider would be generated as a result of the notified setbacks, and question Council's ability to process these consents. Many submit that the setbacks would be impractical to implement on farm, either because they consider them too restrictive, or difficult to remember and measure, and request greater simplicity. Additionally, a number of submissions question the practicality of measuring slope on farm and request clarification on how to do this.

## Analysis

7.613 In relation to submissions that query the rationale for relating setbacks to slopes, I note that in simple terms, the risk of sediment loss increases with slope. It is on this basis that the permitted activity conditions require increased setbacks with increasing slope. The slope groupings used in the conditions are based on recognised slope classes, given that slope classes are widely understood in the rural sector. The use of specific slope classes is also discussed further below.

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<sup>352</sup> For example, Federated Farmers.

<sup>353</sup> For example, Forest and Bird.

<sup>354</sup> For example, C Affleck.

<sup>355</sup> For example, B Eade.

<sup>356</sup> For example, Glenlapa Station.

- 7.614 Whether the notified setback widths are the most appropriate is questioned by numerous submitters. In terms of alternative setbacks, I note that while a number of alternative distances and slope angles were suggested by submitters, it is often unclear how these setbacks have been derived. Submitters seeking alternative setbacks may therefore wish to provide evidence to support their alternatives for consideration by the Hearing Panel. Some submitters, including Fish and Game, questioned the rationale for the 3 m setback for slopes up to 4 degrees. To provide some context for this, I note that three metres is currently the setback required under the RWP for intensive winter grazing and is widely known in the rural sector as the required setback. An increased minimum setback width of 5 m was proposed in the Working Draft Water and Land, and received considerable negative feedback. A reduction of the setback below 3 m (at least for intensive winter grazing) would represent a reduction from the current level of regulation, which in my view would not be consistent with the requirement to maintain water quality.
- 7.615 Advice has been sought from Council's science team as to the appropriate sizing of setback distances between water bodies and areas of cultivation and winter grazing.<sup>357</sup> The general advice received is that the most effective means of reducing sediment loss from cultivated and winter grazed areas requires a combination of risk assessment prior to the selection of land areas for cultivation and the implementation of GMPs, and needs to include "*careful and considered location, timing and method of cultivation and or grazing of fodder crops along with implementation of sediment runoff management which should include application of buffers between cultivated areas and streams.*" This advice is also that while there are a number of GMPs that can be used to mitigate non-point source loss of sediment from cultivation and winter grazing activities, these need to be tailored to the specific situation.
- 7.616 In my view, this indicates the difficulty with designing a permitted activity standard that is sufficiently robust to ensure the effects of cultivation and winter grazing are adequately managed. That being said, the use of vegetated buffers between cultivated areas and streams "*are a widely used and well-studied management practice for reducing non-point source pollution*" and "*studies consistently identify that wider buffers trap more sediment*". This suggests that a linear buffer requirement could be included as a permitted activity standard, subject to the buffer distance chosen being of sufficient size to trap sediment. However, it is acknowledged that linear buffer requirements can lack efficiency and effectiveness (to a degree) because such a buffer may be wider than optimal in some locations which receive a small runoff load, and not wide enough in other places where flow converges and greater runoff load is received. In my view, this indicates that if a permitted activity standard were able to be crafted to focus on the areas of greatest run-off load, i.e. critical source areas, this would provide a more efficient and effective approach than reliance on linear buffers.
- 7.617 The photograph below illustrates a range of pertinent issues – including the potential inefficiency of a linear buffer and the need for substantial vegetated buffer widths.

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<sup>357</sup> Memorandum from Roger Hudson to Clair Jordan, Re: Cultivation Set Back Distance, dated 19 December 2016.





- 7.618 DairyNZ, in particular, proposes a permitted activity standard relating to critical source areas as an alternative to linear setbacks. Its proposal is to require a grass filter strip be in place for the entire length of the critical source area, or a sediment retention system be installed and maintained to prevent sediment discharge before the critical source area enters a natural waterway, drain or leaves the property.
- 7.619 While the benefits of exclusion of stock from, and retention of vegetation within, critical source areas are well established<sup>358</sup>, currently, I have concerns about the ability to draft conditions of sufficient clarity and certainty to use in a permitted activity standard. The definition of critical source area in Appendix N of the pSWLP is:

*Areas of enriched nutrient or sediment sources and hydrological activity that occur in small parts of a catchment or farm, but contribute a disproportionately large amount of nutrient or sediment to the environment (e.g. steep hills, gullies or swales).*

- 7.620 In my view, this definition is not certain enough to ensure every person who interprets it would conclude the same thing when determining if an area is a critical source area. I also note that extensive discussion occurred during the development of the pSWLP on incorporating critical source areas into a permitted activity standard. However, the only real option to achieve sufficient certainty would be to map critical source areas throughout the region and link the permitted activity standard to the map. To do this in any meaningful way, particularly for lowland Southland, would require LiDAR, a high-resolution surveying technology which would provide a digital elevation model at a resolution of around 20 cm. The estimated cost to undertake this work for the Southland region is approximately \$3 million. While such work holds promise for the future, the timeframes for completing it are unlikely to align with this planning process. Therefore,

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<sup>358</sup> Cultivation Setback Distances Memorandum, Environment Southland, 2016.

while I am open to the possibility of a permitted activity rule focussed on management of critical source areas, my current view is that the general linear buffer approach is the most appropriate option currently available.

- 7.621 In terms of the specific buffers chosen, the advice received from the Science team is that a minimum 5 metre wide vegetated buffer, with stock exclusion, is required to achieve an instream fine sediment cover below 20%. Where sediment cover increases above this, there is “*a marked decline in the number of EPT taxa as a result of decreased habitat availability*” and a significant reduction in the survival of brown trout embryos. This indicates that a lesser buffer strip, in general, will not be sufficient to implement the pSWLP policies and achieve its objectives. The recommendation of science staff is therefore to require a minimum vegetated buffer strip between cultivated and winter grazed land and a waterway, where the slope angle is less than 9 degrees. They recommend that above 9 degrees, a 20m strip is required (for a permitted activity), but consider that a reduced buffer, down to 5m would be acceptable for steeper slopes, provided that adequate mitigation measures are undertaken such as the application of “*variable buffer width filter strips defined by GIS and terrain analysis*”, the use of sediment traps, and the exclusion of cultivation and grazing from swales and ephemeral water ways.
- 7.622 The choice of a 9 degree standard relates to evidence that the sediment removal efficiency for a slope of approximately 0.6 degrees is about the same as that at around 9 degrees. Sediment removal efficiency then starts to drop off at slopes over 9 degrees. In essence, sediment removal increased to an optimal point, and then starts declining again. Given that the sediment removal efficiency is about the same on a flat surface as it is at 9 degrees, I recommend that the permitted activity standards are amended to require a 5 metre setback for slopes of up to 9 degrees, and a 20 metre setback for slopes above 9 degrees. For slopes greater than 9 degrees and where the 20 metre setback is not achieved, but a minimum 5m setback is provided, I recommend a controlled activity status. This will provide certainty that consent will be granted for intensive winter grazing and cultivation within the lesser setback area, but allows Council to impose conditions, specific to a property, that ensure sufficient mitigation measures are put in place. This allows for a process where critical source areas must be identified and management of contaminant loss targeted to these areas, and provides an option to manage intensive winter grazing and cultivation in and around critical source areas without the difficulty of defining critical source areas to the level of certainty required for a permitted activity. This option would also reduce the complexity of the setbacks and slope categories, as requested by a number of submitters.
- 7.623 It is acknowledged that this recommendation increases the permitted buffer for some properties (i.e. an increase to 5m from 3m where slope is up to 4 degrees; and from 10m – 20m where the slope is between 9 and 16 degrees) but in my view the changes are appropriate, based on the advice received.
- 7.624 However, from an efficiency point of view, I recommend one exception the above buffers, which relates to properties that have already undertaken fencing at a distance of 3m from water bodies, in accordance with the current rule in the RWP which requires only a 3m setback for winter grazing. Applying the increased 5m setback to properties who have already established fencing would have the effect of requiring such fencing to be removed and then reinstated, and in my view the environmental benefits of increasing the buffer area are not sufficient to justify such costs. Where such fencing has been established, the effects of winter grazing occurring in closer proximity are not increased

from those which exist currently, and in my view it is more appropriate to provide a permitted activity for a 3m setback where such fencing existed at the time the Plan was notified. It is also important to note that overall, the rule package recommended increases the level of control from that in the RWP, by generally requiring a greater setback from waterbodies and introducing this requirement for cultivation as well as winter grazing. Together with a requirement for FEMPs to be implemented for farming activities, the rule package therefore should result in overall improvements in water quality.

- 7.625 I also acknowledge, in relation to the slope and setback combinations that I have recommended, that the Government has recently released a ‘Clean Water’ document, that sets out the further work they are undertaking and consulting on in relation to freshwater. As part of this document, stock exclusion is proposed that relates to slope, which is to be determined by the Land Resources Inventory slope dataset. This dataset is a “*national spatial dataset developed by Landcare Research that classifies land into slope classes 0-3°, 4-7°, 8-15°, 16-20°, 21-25° and over 25°.*”<sup>359</sup> There would obviously be an element of efficiency in aligning the rule framework in the pSWLP with these slope categories. However, the ranges in the dataset do not align with the 9 degrees level recommended in the science advice. An update to this advice, and the implications of aligning with the Landcare Research slope classes, could be available during the hearing process, if the Hearing Commissioners wanted this information, along with a suitably updated recommendation.
- 7.626 In relation to submissions questioning the practicality of measuring slope on farm and requesting clarification on how to do this, I agree that slope is difficult to assess accurately by eye, and guidance on methods to accurately assess slope would assist the implementation of Rule 25. As noted above, the government’s national spatial dataset, which includes an online mapping tool, could also be used in relation to Rule 25, as well as other tools such as inclinometers and downloadable apps for smartphones. Further guidance, if necessary, can be prepared by Council to sit outside the pSWLP.
- 7.627 With regards to Federated Farmers’ query over whether sediment can travel the width of the setback distances over established pasture, as I understand it from discussion with Environment Southland scientists, sediment can travel large distances over sloping ground, even over pasture buffers, particularly in critical source areas. By way of example, the following photograph, taken in Southland, show significant movement of sediment across a critical source area and several hundred metres across pasture into a roadside swale.

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<sup>359</sup> Ministry for the Environment, *Clean Water*, Publication Number ME 1293, February 2017, page 28.



- 7.628 Some submitters argue that the cost to businesses of setbacks has not been considered and may generate a large number of resource consent applications. Setbacks for intensive winter grazing specified in the RWP are 3 m, and the notified pSWLP requires different setbacks of up to 20 m, depending on the slope. It is acknowledged that there is a cost, through these setbacks not being able to be used for intensive winter grazing. However, in my view the setbacks are necessary to minimise direct discharges to waterbodies, especially of sediment, nutrients and faecal contaminants. In my opinion, a farmer could minimise the cost of these setbacks by implementing effective critical source area management. While this would incur a one-off resource consent fee, the ability to more effectively utilise land, while protecting the environment, is a positive outcome.
- 7.629 Several submitters including Hazeldean Downs, K Wilson and Wilkins Farming also raised, in a number of submissions, that condition (viii) of Rule 23(b) would potentially capture duck ponds, as the RMA definition of lake is ‘a body of fresh water which is entirely or nearly surrounded by land’. This was not the intention, and would result in a substantial additional area of Southland requiring resource consent for intensive winter grazing (refer Figure 7.2 below).



*Figure 7.2: red areas show where a 100 m setback would be required under the Rule 23(b)(viii) of the notified pSWLP. The insert illustrates what the setbacks look like at a farm scale.*

- 7.630 Federated Farmers and Environment Southland Staff request that this be altered to refer to the sensitive water bodies listed in Appendix Q. With the addition of coastal lake or lagoon and estuaries, this appears to be a pragmatic solution that will work towards achieving the objectives in the Plan and I therefore recommend this be adopted. This will also assist to provide some clarity for those submissions that asked for a definition of ‘close proximity’ referred to in Policy 16.

## **Other matters**

### **Submissions**

- 7.631 Submissions were also received on a number of other matters in relation to intensive winter grazing, including:
- higher order documents
  - timeframes
  - subsurface drains
  - restricted discretionary activity matters

- link to catchment limit setting
  - GMPs
  - definitions.
- 7.632 Several submitters have questioned whether Rule 23 gives effect to higher order planning documents, with some submitter concerned the rule goes too far, and others not far enough. Some submitters, including Fish and Game, do not consider Rule 23 gives effect to Part 2 of the RMA, including section 5 and section 70, nor the NPSFM, particularly Objective A1. Others, including DairyNZ, consider it goes beyond ‘holding the line’ (maintaining water quality) before limit setting, particularly given, as DairyNZ submit, “*Southland dairy farmers are already operating at or beyond best practice due to the adoption of voluntary industry initiatives*”. Federated Farmers submit that Rule 23 is not based on effects, and that instead, GMPs, particularly relating to overland flow, will be sufficient to improve water quality, and give effect to the RMA and the NPSFM. DOC on the other hand, submit that the restrictions in Rule 23 (with the exception of the Bedrock/Hill Country zone) are appropriate, and will result in a reduction in overland flow entering waterways, giving effect to both the RMA and the NPSFM.
- 7.633 Several submitters including B+LNZ and Rokenwai Farming request changes timeframes within Rule 23, including that the year the rule comes into force be extended to 2020, and the date that stock being intensively winter grazed have to be excluded from waterways be aligned with the stock exclusion requirements in Rule 70.
- 7.634 Many submitters including East Dome Farms, Kapuka Dairies and Mt Linton Station oppose the requirement to map all subsurface drains within intensive winter grazing paddocks, requesting that only known or new drains be mapped. There is also a request to remove the requirement to map mole drains within intensive winter grazing paddocks.
- 7.635 Some GMPs suggested for inclusion in Rule 23 include:
- setbacks from waterways;
  - break feeding stock, so that the area closest to the water body is the last to be fed – thereby maintaining a larger vegetated buffer for the longest time;
  - similarly, break feeding to ensure that vegetation stays on critical source areas and grass buffers for as long as possible;
  - using the intensive winter grazing map required by Appendix N.
- 7.636 Conversely, other submitters raise concern that Rule 23 already has too many conditions and areas of discretion within the rule, generating uncertainty and mistrust.
- 7.637 Forest and Bird request that the water quality standards, over-allocation of waterbodies, and timeframes to reduce over-allocation should be added to the list of matters to which discretion will be limited in Rule 23(c). Forest and Bird also request that Rule 23(b)(ix), which requires people to ensure that overland flow of run-off water does not cause a conspicuous discolouration or sedimentation of any adjacent waterbody, should be altered to align with the wording of section 70 of the RMA. Conversely, the Lower Aparima CG request that Rule 23(b)(ix) not apply in the case of adverse weather events.

- 7.638 DOC requests that intensive winter grazing should be prohibited in or on marginal strips, esplanade reserves or strips, or unformed roads where they are adjacent to a river or lake bed.
- 7.639 DairyNZ requests that the link between the definition of landholding in the glossary, and its use in Rule 23 be made more explicit, and the Lower Aparima CG that the word 'outer' be removed from 'outer edge of the bed' for clarity.

## Analysis

- 7.640 Objective A2 of the NPSFM, section 30(1)(c)(ii), 30 and 69(3) of the RMA, and the pSRPS all require at least maintenance of water quality. Despite a number of submissions to the contrary, and no evidence to support it, it is considered highly unlikely that GMPs alone will be sufficient to maintain water quality. There is also literature<sup>360</sup> that supports the assertion that more than GMP will be required to maintain water quality. If, as DairyNZ suggests, Southland dairy farmers are already operating at or beyond best practice as a result of voluntary industry initiatives, the current decline in water quality suggests GMPs are not sufficient to maintain water quality, let alone improve it, as some submitters contend. I therefore do not support adoption of those submissions that seek only (voluntary) GMP, with no control on increases in area of intensive winter grazing.
- 7.641 Fish and Game request that condition (ix) of Rule 23(b) be altered to align with the wording of section 70 of the RMA. I am not convinced that this is necessary to give effect to section 70(f), and Fish and Game may wish to address this further at the hearing to outline why the wording alteration is necessary.
- 7.642 Others request that this condition not apply in the case of adverse weather events. However, this would be inconsistent with section 70 of the RMA, which does not allow a regional council to permit a discharge (without resource consent) that causes conspicuous discolouration of a waterbody after reasonable mixing. Additionally, an adverse weather event would be difficult to define with sufficient certainty to include in a permitted activity standard. I therefore do not recommend adoption of those submissions.
- 7.643 Exclusion of stock from waterbodies during intensive winter grazing is a requirement under the RWP, and in light of the requirement to maintain water quality at a minimum, it would be inappropriate to allow stock being intensively winter grazed to enter waterways until 2018 or 2020, or in the case of sheep, indefinitely, as some submitters requested. I therefore do not support adoption of those submissions.
- 7.644 A number of submitters oppose the requirement to map all subsurface drains within intensive winter grazing paddocks, requesting that only known or new drains be mapped. I agree that this would be practically very difficult for some landowners who do not have any records, and I therefore recommend adoption of those submission points. There is also a request from five submitters to remove the requirement to map mole drains within intensive winter grazing paddocks. Mole drains provide a conduit for contaminant loss in the same manner as other sub-surface drains. However, I acknowledge that the exact location of each mole may be difficult to identify.

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<sup>360</sup> Monaghan et al 2011

- 7.645 Forest and Bird have requested additional matters to be added to the list of matters for discretion. Because Rule 23(c) will apply not only when the rule first comes into force, but also when a consented intensive winter grazing activity comes up for renewal, it will likely still be applicable to intensive winter grazing operations well after catchment limit setting has been completed. However, it will be necessary to adjust a number of provisions in the pSWLP to add additional matters to which Environment Southland will restrict the exercise of its discretion when limits are established under the FMU processes, including:
- any applicable freshwater limits;
  - whether the catchment the activity is within is under or over-allocated; and
  - where they are over-allocated, timeframes for reducing over-allocation.
- 7.646 Overall, I recommend that this submission be rejected, but acknowledge the change will be needed in the future.
- 7.647 While some submitters consider there are too many permitted activity standards in Rule 23, others suggest additional standards. Suggestions included feeding stock towards waterways, and feeding critical source areas and grass buffers last. It is understood these suggestions come from the Pastoral 21 Study<sup>361</sup>, which also recommended back fencing as an important tool to reduce contaminant loss from intensive winter grazing. Reference to critical source areas is unlikely to be sufficiently certain to include in Rule 23(b), but it is considered that grazing direction and back fencing could be usefully incorporated into Rule 23(b) regardless of how the consenting framework develops.
- 7.648 DOC requests that intensive winter grazing should be prohibited in or on marginal strips, esplanade reserves or strips, or unformed roads where they are adjacent to a river or lake bed. As is discussed earlier in this report, ownership of the land does not, in my opinion affect the environmental effects, and therefore I do not recommend a change to Rule 23 prohibit intensive winter grazing in these areas.
- 7.649 A number of alterations to the definitions that relate to Rule 23 are requested. DairyNZ requested that the link between the definition of landholding in the glossary, and its use in Rule 23 be made more explicit. It is considered that this link is as explicit as the use of any term in the pSWLP. Namely, it is contained in Rule 23, and defined in the Glossary. The term 'landholding' is also present in the existing RWP. As such, I do not consider further clarification necessary. The Lower Aparima CG requested that the word 'outer' be removed from 'outer edge of the bed' for clarity. Again, I consider the current wording is sufficiently clear, however, the submitter may wish to clarify its position through the hearing.

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<sup>361</sup> See <https://www.dairynz.co.nz/about-us/research/pastoral-21/>



## Recommendations

7.650 Amend the glossary as follows:

***Glossary:***

***Intensive winter grazing*** – *grazing of stock between May and September (inclusive) on forage crops, excluding pasture and cereal crops.*

7.651 Delete notified Rule 20 and replace with:

***Rule 20 – Farming***

- (a) The use of land for a farming activity on a landholding that is less than 20 hectares is a permitted activity.*
- (b) Until 1 May<sup>362</sup> 2019, the use of land for a farming activity in the Fiordland and the Islands FMU<sup>363</sup>, other than dairy farming of cows or intensive winter grazing, is a permitted activity.*
- (c) From 1 May 2019, the use of land for a farming activity in the Fiordland and the Islands FMU, other than dairy farming of cows or intensive winter grazing, is a permitted activity provided a Farm Environmental Management Plan is prepared and implemented and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.*
- (d) From 1 May 2019, the use of land for a farming activity in the Fiordland and the Islands FMU, other than dairy farming of cows or intensive winter grazing, that does not comply with the conditions of Rule 20(c) is a discretionary activity.*
- (e) Until 1 May 2020, the use of land for a farming activity in the Aparima or Maitara FMUs, other than dairy farming of cows or intensive winter grazing, is a permitted activity.*
- (f) From 1 May 2020, the use of land for a farming activity in the Aparima or Maitara FMUs, other than dairy farming of cows or intensive winter grazing, is a permitted activity provided a Farm Environmental Management Plan is prepared and implemented in accordance with Appendix N, and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.*
- (g) From 1 May 2020, the use of land for a farming activity in the Aparima or Maitara FMUs, other than dairy farming of cows or intensive winter grazing, that does not comply with the conditions of Rule 20(f) is a discretionary activity.*
- (h) Until 1 May 2021, the use of land for a farming activity in the Waiau or Oreti FMUs, other than dairy farming of cows or intensive winter grazing, is a permitted activity.*
- (i) From 1 May 2021, the use of land for a farming activity in the Waiau or Oreti FMUs, other than dairy farming of cows or intensive winter grazing, is a permitted activity provided a Farm Environmental Management Plan is prepared and implemented in accordance with Appendix N, and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.*
- (j) From 1 May 2021, the use of land for a farming activity in the Waiau or Oreti FMUs, other than dairy farming of cows or intensive winter grazing, that does not comply with the conditions of Rule 20(i) is a discretionary activity.*

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<sup>362</sup> 247.9 Environment Southland

<sup>363</sup> 402.9 A & B Hunt, 788.1 Switzer's Valley Transport, 884.1 A Winter, 832.81 R Van Gool, 802.25 254 Partnership & Gerken Family Trust and others

7.652 Combine Rules 21 and 22, and amend to read (noting no recommendation on activity status for new and expanded dairying):

*Rule 21: Existing Dairy<sup>364</sup> farming of cows*

*(a) ~~The use of land for dairy farming of cows where the dairy shed services a maximum of 20 cows is a permitted activity.~~<sup>365</sup>*

*(b) ~~The use of land for dairy farming of cows that existed as at 30 May 2016<sup>366</sup> is a permitted activity, provided the following conditions are met:~~*

*(a) ~~(i) the dairy platform had ~~has~~ a discharge consent for agricultural effluent at 1 May 2016 that specifies ~~specified~~<sup>367</sup> a maximum number of cows; and~~*

*(b) ~~(ii) there is no increase in the number of cows, beyond that specified in Rule 21(b)(i); and~~*

*(c) ~~(iii) the land area of the dairy platform is no greater than at 1 May 2016; and<sup>368</sup>~~*

*(d) ~~(iv) a Farm Environmental<sup>369</sup> Management Plan is prepared and implemented in accordance with Appendix N, including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants; and~~*

*(e) ~~(v) the activity does not occur in the Alpine physiographic zone.~~*

*Rule 22 ~~New or expanded dairy farming of cows<sup>370</sup>~~*

*(c) ~~The use of land for dairy farming of cows that does not comply with Rule 21(b)(iii) is a controlled activity, provided the following condition is met:~~*

*(i) ~~a Farm Environmental Management Plan is prepared and implemented in accordance with Appendix N and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.~~*

*~~Environment Southland will exercise control over the following matters:~~*

*1. ~~The quality of, compliance with and auditing of the Farm Environmental Management Plan.<sup>371</sup>~~*

*(d) ~~The use of land for dairy farming of cows that did not exist as at 30 May 2016 or<sup>372</sup> does not comply with Rule 21(a), 21(b)(i) or 21(b)(ii) in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones is a discretionary activity, provided the following condition is met:~~*

*(i) ~~a Farm Environmental<sup>373</sup> Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.~~*

<sup>364</sup>118.5 Carmyllie Farm,

<sup>365</sup> 277.45 Fonterra

<sup>366</sup> 712.29 Seaview Trust & Oraka Farms Ltd

<sup>367</sup> Consequential amendment

<sup>368</sup> 752.114 Fish and Game,

<sup>369</sup> Consequential amendment

<sup>370</sup> 666.15 Rimu Grasslands Ltd & Leicester Downs Ltd

<sup>371</sup> Consequential amendment

<sup>372</sup> 712.29 Seaview Trust & Oraka Farms Ltd

<sup>373</sup> 247.9 Environment Southland

- ~~(e)(b)~~ The use of land for dairy farming of cows that ~~did not exist as at 30 May 2016 or does not comply with Rule 21(a), 21(b)(i) or 21(b)(ii)~~<sup>374</sup> in the Old Mataura, or Peat Wetlands physiographic zones is a non-complying activity.
- ~~(f)(e)~~ The use of land for dairy farming of cows that does not comply with Rule 21~~(e)(b)(v)~~, Rule 21(c)(i) or Rule 21~~22(a)(i)~~ is a non-complying activity.
- ~~(e)(a)~~ The use of land for dairy farming of cows in the Alpine physiographic zone is a prohibited activity.
- ~~(b)~~ Despite Rule 21(e), the use of land for new or expanding dairy farming of cows where no more than 50 hectares of the land that is the subject of the resource consent application is in the Old Mataura, or Peat Wetlands physiographic zones, is a discretionary activity.<sup>375</sup>
- ~~(e)~~ Where new or expanded dairy farming of cows includes land in more than one physiographic zone, the rules for each physiographic zone shall apply to the land within that zone.
- ~~(f)~~ Despite Rule 22(e), where new or expanded dairy farming of cows includes land of less than 10 hectares in any one physiographic zone, the landholder may determine whether the physiographic zone for that area, or the prevalent physiographic zone for the landholding, applies to that area of the land.
- ~~(b)(g)~~ Despite Rule 22(ab) to (eg) the use of land for dairy farming of cows is a restricted discretionary activity, provided the following conditions are met:
- ~~(i)~~ the activity occurs on those parcels of land wholly contained within Computer Freehold Registers SL134/119, 307310, 307311, SL198/159, and SL151/191; and Lot 5 DP 376415 as contained in Computer Freehold Register 307305, and Lots 6 and 7 DP 376415 and Part Lot 8 DP 376415 as contained in Computer Freehold Register 307307;
  - ~~(ii)~~ the primary purpose of the activity is to contribute to publicly available research on the mitigation of environmental effects of dairy farming or wintering;
  - ~~(iii)~~ a Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland.
- ~~Environment Southland will restrict the exercise of its discretion to the following matters:~~
- ~~1.~~ the quality of and compliance with and auditing of the Management Plan;
  - ~~2.~~ the proposed research to be undertaken and associated environmental effects, including methods and timing of publication;
  - ~~3.~~ monitoring and reporting;
  - ~~4.~~ the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
  - ~~5.~~ the potential benefits of the activity to the community and the environment.<sup>376</sup>

7.653 Rule 23 be amended as follows (noted no recommendation made on activity status for additional winter grazing):

*Rule 23 – Intensive winter grazing*

- (a) Until ~~1~~ 30 May 2018,<sup>377</sup> the use of land for intensive winter grazing is a permitted activity.
- (b) From ~~1~~ 30 May 2018, the use of land for intensive winter grazing is a permitted activity, provided the following conditions are met:
- ~~(i)~~ a Management Plan is prepared and implemented in accordance with Appendix N, including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the

<sup>374</sup> Consequential amendment

<sup>375</sup> 759.12 Springlands Group, 522.5 McFarm Trust – Pahia, 700.2 Rural Solutions and others

<sup>376</sup> 24.88 Aratiatia Livestock

<sup>377</sup> 247.10 Environment Southland

~~Environment Southland Register of Independently Audited Self-Management Participants;~~

- ~~(ii) no intensive winter grazing is undertaken in the Alpine physiographic zone;~~
  - ~~(iii) not more than 20 hectares of intensive winter grazing is undertaken on a landholding within the Old Mataura, or Peat Wetlands physiographic zones;~~
  - ~~(iv) not more than 50 hectares of intensive winter grazing is undertaken on a landholding within the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones;<sup>378</sup>~~
  - ~~(v) the area of land used for intensive winter grazing is recorded for each year and provided to Environment Southland on request;~~
  - ~~(vi) the location of any sub-surface drains within the area of land used for intensive winter grazing, and their outlet position and relative depth, is mapped and provided to Environment Southland upon request;<sup>379</sup>~~
  - ~~(vii) a vegetated strip is maintained, and stock excluded from, the outer edge of the bed of any river, wetland, modified watercourse or artificial watercourse for a distance of:
    - ~~(1) 3-5 metres from the outer edge of the bed on land with a slope of less than or equal to 9.4-degrees, unless a permanent fence between the intensive winter grazing and the bed was established before 3 June 2016; in which case the distance from the outer edge of the bed is 3 metres on land with a slope of less than 9 degrees; and~~
    - ~~(2) 10 metres from the outer edge of the bed on land with a slope between 4 and 16 degrees; and~~
    - ~~(3) 20 metres from the outer edge of the bed on land with a slope of greater than 16.9 degrees;<sup>380</sup> and~~~~
  - ~~(viii) the winter grazing does not occur within 100 m of the outer edge of the bed of any Sensitive Waterbodies listed in Appendix Q, coastal lake or lagoon, estuary lake<sup>381</sup> or the Coastal Marine Area;~~
  - ~~(ix) overland flow of run-off water does not cause a conspicuous discolouration or sedimentation of any adjacent waterbody.~~
- ~~(b1) From 1 May 2018, the use of land for intensive winter grazing that does not meet condition (vii)(2) of Rule 23(b) is a controlled activity provided the following conditions are met:~~
- ~~(i) a vegetated strip is maintained, and stock excluded from, the outer edge of the bed of any river, wetland, modified watercourse or artificial watercourse for a distance of 5 metres from the outer edge of the bed;~~
  - ~~(ii) a Farm Environmental Management Plan has been prepared in accordance with Appendix N that identifies critical source areas on any land to be intensively winter grazed and that either:
    - ~~(1) a vegetated strip will be maintained, and stock excluded from, the crucial source areas~~
    - ~~(2) how sediment retention systems will be installed at the bottom of the critical source areas to treat overland flow.~~~~
- ~~Environment Southland will exercise control over the following matters:~~
- ~~1. The quality of, compliance with and auditing of the Farm Environmental Management Plan.<sup>382</sup>~~
- ~~(c) From 1 30 May 2018, the use of more than 20 hectares of a landholding for intensive winter grazing in the Old Mataura, or Peat Wetlands physiographic zones or 50 hectares in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains or Lignite-Marine Terraces~~

<sup>378</sup> 247.10 Environment Southland Staff

<sup>379</sup> 265.86 Federated Farmers

<sup>380</sup> 894.2 R Young, 864.6 Whyte Partnership, 792.25 M Tayler, 323.2 Glenshe Trust and others

<sup>381</sup> 752.116 Fish and Game

<sup>382</sup> Consequential amendment

*physiographic zone on a landholding is*<sup>383</sup> a restricted discretionary activity, provided the following conditions are met:

- (i) the area of land used on the landholding for intensive winter grazing has not increased beyond the area of land used, averaged over the previous three years;
- (ii) conditions (v) to (ix) of Rule 23(b) are met; and
- (iii) a Farm Environmental<sup>384</sup> Management Plan has been prepared in accordance with Appendix N;

Environment Southland will restrict the exercise of its discretion to the following matters:

1. the quality of, compliance with and auditing of the Farm Environmental Management Plan;
2. the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
3. the quantum of and timing of any reductions in the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
4. the potential benefits of the activity to the applicant, the community and the environment;
5. the potential effects of the land use on surface and groundwater quality and sources of drinking-water.

An application for resource consent under Rule 23(c) will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.

- (d) From ~~1 30~~ May 2018, the use of land for intensive winter grazing in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite Marine Terraces physiographic zones that does not meet condition (i), or ~~(iv) to (viii)~~<sup>385</sup> ~~(v) to (ix)~~ of Rule 23(b) or condition (i) to (iii) of Rule 23(c) is a discretionary activity.
- (e) From ~~1 30~~ May 2018, the use of land for intensive winter grazing in the Old Maitaura, or Peat Wetlands physiographic zones that does not meet conditions (i) to (iii) of Rule 23(c) is a non-complying activity.
- (f) From ~~1 30~~ May 2018 and despite any other rule, the use of land for intensive winter grazing within the Alpine physiographic zone is a prohibited activity.
- ~~(f1) Despite Rule 21(e), the use of land for new intensive winter grazing where no more than 50 hectares of the land that is the subject of the resource consent application is in the Central Plains, Old Maitaura, or Peat Wetlands physiographic zones, is a discretionary activity.~~<sup>386</sup>
- (g) ~~Despite Rule 23(a) to (f) the use of land for intensive winter grazing is a restricted discretionary activity, provided the following conditions are met:~~<sup>387</sup>
  - ~~(i) the activity occurs on those parcels of land wholly contained with Computer Freehold Registers SL134/119, 307310, 307311, SL198/159, and SL151/191; and Lot 5 DP 376415 as contained in Computer Freehold Register 307305, and Lots 6 and 7 DP 376415 and Part Lot 8 DP 376415 as contained in Computer Freehold Register 307307;~~
  - ~~(ii) the primary purpose of the activity is to contribute to publicly available research on the mitigation of environmental effects of dairy farming or wintering;~~
  - ~~(iii) a Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland.~~

Environment Southland will restrict the exercise of its discretion to the following matters:

1. ~~the quality of and compliance with and auditing of the Management Plan;~~

<sup>383</sup> 759.12 Springlands Group, 522.5 McFarm Trust – Pahia, 700.2 Rural Solutions and others

<sup>384</sup> 247.9 Environment Southland

<sup>385</sup> Consequential amendment

<sup>386</sup> 759.12 Springlands Group, 522.5 McFarm Trust – Pahia, 700.2 Rural Solutions and others

<sup>387</sup> 24.88 Aratiatia Livestock

- ~~2. the proposed research to be undertaken and associated environmental effects, including methods and timing of publication.~~
- ~~3. monitoring and reporting~~
- ~~4. the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;~~
- ~~5. the potential benefits of the activity to the community and the environment.~~

## Rule 24 - Incidental discharges from farming.

7.654 Rule 24 authorises, either as a permitted activity or as a non-complying activity, the diffuse discharges associated with farming activities that are addressed by the land use rules for farming activities.

### Submissions

7.655 Rule 24 received 28 submissions, with 15 submissions in support seeking that the rule is retained as notified.

7.656 D Harris states that the rule does not control discharges will not improve water quality, and subsequently requests that the rule is removed from the Plan. Mataura Butcher Shop and Newton Slink Skins seek that all incidental discharges are permitted activities. Three additional submitters oppose the rule on the basis that there are too many restrictions and seek that all farming activities should be permitted.

7.657 Federated Farmers submits that it is important that incidental discharges from farming is a permitted activity. However, it seeks the deletion Rule 24(b) on the basis that the drafting of the rule makes it uncertain and “circular” in effect regarding the activity status for different rules.

7.658 Pourakino CG and the Three Rivers CG support the rule. However, they submit that the rule should be amended to reflect that the activity could be permitted under a resource consent as well as the permitted rules listed.

7.659 Fish and Game seeks to amend Rule 24 to include permitted activity standards that control the actual and potential adverse effects on water that could arise from the activities that are permitted. Fish and Game submits that the amendments are required to ensure the discharge is not contrary to section 107(1)(c)-(g) of the RMA. In addition, the submitter notes that Rule 23(a) does not provide for compliance with the water quality standards set out for the relevant waterbody in Appendix E (Water Quality Standards). Fish and Game seeks:

- (a) *The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances where that may result in a contaminant entering water that would otherwise contravene Section 15(1) of the RMA is a permitted activity provide the following conditions are ~~is~~ met:*
  - (i) *The land use activity is associated with the discharge is authorised under Rules 20, 21, 22 or 23; and*
  - (ii) *The discharge does not reduce water quality below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the property boundary.*

- (b) *The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances where that may result in a contaminant entering water that would otherwise contravene Section 15(1) of the RMA and does not comply with Rules 20, 21, 22 or 23 or standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the property boundary is a non-complying activity.”*
- 7.660 Forest and Bird seeks the same amendments as Fish and Game, on the basis that the submitter does not consider the rule complies with section 70 of the RMA unless the council is satisfied that the associated land uses will not cause any of the effects referenced to in section 70. Forest and Bird also note that the rule may not meet NPS requirements. While the submitter does not specify which NPS it refers to (or the relevant provisions), it is assumed the submission is referring to the NPSFM.
- 7.661 M Tayler raises concerns that the rules may prohibit the aerial application of fertiliser, stating that current technology cannot ensure that no fertiliser will enter waterways. The submitter has raised similar concerns in relation to Rule 14 (Discharge of Fertiliser). To address these concerns M Tayler seeks an additional condition under Rule 24(a) as follows:
- discharge of nitrogen phosphorous or other fertilizers applied aerially onto land in circumstances that may result in a contaminant entering water is a permitted activity provided all practicable mitigation measures have been observed.*

## Analysis

- 7.662 The purpose of Rule 24 is to ensure that the discharge of contaminants to land that are incidental to activities that are authorised by Rules 20 -23 (inclusive) do not require separate resource consent. Rules 20-23 seek to manage the adverse effects of farming activities on water quality, where the controls imposed under those rules are considered sufficient to meet the requirements of sections 70 and 107 of the RMA. Particular concerns about compliance of Rule 23 with section 70 of the RMA are addressed under that rule and will not be repeated here. Accordingly, I do not consider that the amendments sought by Fish and Game and Forest and Bird necessary.
- 7.663 I also note that there may be instances where land use activities are not authorised under Rules 20-23 inclusive, where Rule 24(b) acts as a “catch all” rule where the discharge is classified as a non-complying activity. In my opinion, this is an appropriate status given this rule will apply to activities that have not been anticipated by Council when preparing the pSWLP. It is unclear from Federated Farmers submission why this rule is circular or uncertain. The submitter may wish to provide more information at the hearing.
- 7.664 Given the need to expressly control discharges under section 15 of the RMA, I do not consider it appropriate to permit all farming activities, including incidental discharges, without sufficient permitted activity conditions that appropriately avoid, remedy or mitigate the effects of those activities. I note that submitters seeking these activities be permitted have not provided criteria for the permitted activity rules in their submissions, or identified how the RPS, pRPS or NPSFM will be given effect to. As such, I do not recommend these submissions be adopted.
- 7.665 I note the wording of Rule 24 refers to activities being *authorised* by Rules 20-23 (inclusive), which includes authorisation by way of permitted activity or resource consent.

Given that the wording of the rule already provides for consented activities, I do not consider that the amendments sought by Pourakino CG and the Three Rivers CG are necessary.

- 7.666 The concerns raised by M Tayler have been addressed under Rule 14. For the reasons set out in that section of this report, I do not recommend the submission from M Tayler be accepted.

### **Recommendation**

- 7.667 Retain Rule 24 as notified.

### **Cultivation**

- 7.668 Cultivation is a vital agricultural tool for renewal and improvement of pastures and crops. Because cultivation disturbs the existing vegetation and exposes soil to the surface, it has the potential to result in sediment, and other contaminants, being lost from the paddock into waterways, reducing water quality and degrading the soil resource. The risk of soil erosion increases with increasing slope<sup>388</sup>, and varies with the method of cultivation.
- 7.669 The highest risk for soil erosion is from mechanical cultivation, where the soil is turned over and exposed. Non-mechanical methods of cultivation, such as direct drilling - where the existing sward is sprayed and new seed is sown into rows cut through soil, and spray and pray, where the sward is sprayed, livestock are stocked at high stocking rates and used to break up the thatch and tread the surface, and then the seed is sown aerially, are considered to carry less risk of erosion. Oversowing, where the sward is sprayed and the seed sown aerially, has little risk of soil erosion.

### **Provisions**

- 7.670 Rule 25 manages cultivation on sloping ground. By definition, cultivation refers to preparing land for growing pasture or a crop, by mechanical tillage or spraying, but excludes spot spraying. The rule provides for cultivation to be undertaken as a permitted activity, provided that it is not undertaken within, or within a specified setback from, a waterbody. These setback distances increase with increasing slope.
- 7.671 Cultivation that is for the purpose of renewing or establishing pasture within the specified waterbody setbacks, but not closer than 3 m to the waterbody, can be undertaken as a permitted activity, subject to it occurring only once every 5 years.
- 7.672 Where the permitted activity conditions are not met; as well as any cultivation above an altitude of 700 m; or any mechanical cultivation on slopes over 20 degrees, consent is required as a restricted discretionary activity. Any cultivation in the Alpine physiographic zone is a non-complying activity.
- 7.673 In addition to the above, Appendix N (Management Plan requirements) includes the requirement for a cultivation map that shows: proximity to waterbody; buffer strips from those waterbodies; land where cultivation is planned and any proposed GMPs for cultivation.

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<sup>388</sup> Land Use Capability Survey Handbook 3<sup>rd</sup> Edition, Lynn et al, 2009, page 76.



## Submissions and analysis

7.674 509 submission points were received on Rule 25. This included submissions from groups such as B+LNZ, Federated Farmers, DairyNZ, DOC, and Forest and Bird and also included a large proportion of submissions from individuals. The submission received predominantly oppose the rule, and can be categorised into the following areas:

- those seeking deletion of the rule entirely, with some not proposing an alternate method for managing the effects of cultivation on waterways and soil, while others seek that this is managed through FEMP without the requirement for consents to be obtained;
- those seeking more lenient provisions for allowing renewal of existing cultivation, including allowing for its occurrence more than once every five years;
- those seeking more leniency in the requirements, including reducing setback distances and increasing the angle of the applicable slope limits;
- those questioning the rationale and necessity for the rule, or aspects of it (for example, why particular slope angles or setback distances have been chosen); and
- those seeking to clarify aspects of the application of the rule.

7.675 Because of the volume of submission on this rule, the submissions are discussed below in a topic basis, and submissions are not generally identified individually.

7.676 As detailed in the intensive winter grazing analysis above, the setbacks (both the distance and degree of slope) in Rule 25(a) are the same as those in Rule 23(b)(vii) relating to intensive winter grazing. Analysis of the submissions relating to these setbacks and the recommendations pertaining to both the winter grazing and cultivation rule conditions is as set out in that section and is not repeated again here.

## General Approach

### Submissions & Analysis

7.677 Several submitters seek that cultivation activities be managed without requirement for a resource consent to be obtained. While some submitters do not propose an alternate methodology to address the effects of this activity on water quality and the soil resource, other submitters seek that the effects of cultivation be managed through the FEMP. This is generally on the basis of the costs associated with the consenting requirements, and the concern that the rules do not allow for consideration of the most appropriate management approach on a case-by-case basis.

7.678 In my opinion, the science relating to the risks of cultivation and consequential sedimentation of Southland waterways and estuaries is clear, and is summarised further below. I note that the proposed FEMP requirements, include (as set out previously), a requirement to include details on cultivation. However, because the FEMP approach is part of a permitted activity, there would be no ability for the Council to be involved in the process, and ultimately to ensure that the mitigation measures proposed in a FEMP, where cultivation is proposed within the buffers, or above 700m in altitude or 20 degrees in angle would be sufficient. While the consenting process does have costs associated with it, in addition to costs associated with a FEMP, I consider that overall, a resource

consent framework is more appropriate for higher-risk cultivation, in order to ensure that sediment run-off risk from cultivation is actively managed, and to provide a regulatory pathway for requiring setbacks from waterbodies, riparian planting, and limits on areas or duration of exposed soils (Policy 16). This is necessary to ensure that cultivation activities operate at GMP or better to optimise efficient resource use and protect the region's land, soils, and water from quality and quantity degradation (Objective 18), as well as ensuring that the quality of freshwater is not reduced (Objective 6) and that the quantity, quality and structure of soil resources are not irreversibly degraded through cultivation (Objective 13).

- 7.679 A number of submitters also seek, in relation to this rule and a range of other provisions within this Plan, that all restrictions on farming based on physiographic zones be deleted. While the approach to the use of physiographic zones is discussed elsewhere in this report, the only aspect of Rule 25 relating to physiographic zones is clause (d), which specifies that any cultivation within the Alpine physiographic zone is a non-complying activity. I consider the potential effects of cultivation within this zone justifies this management approach.

## **Slope-based control of cultivation**

### **Submissions**

- 7.680 The requirement to obtain resource consent for mechanical cultivation on slopes over 20 degrees in Rule 25(a)(ii) attracted opposition from a large number of submitters. Some question the scientific rationale behind it, others suggest resource consent should only be required if a slope over 20 degrees is within a certain distance of a waterway and there is no flat land to act as a buffer in between. Some request an increase to 25 degrees, others 30 degrees, and some to 45 degrees, arguing that 20 degrees does not provide sufficient flexibility for paddocks that have small steep areas.
- 7.681 Many submitters identify that land is often undulating, and seldom has an even slope – this leads to difficulties, where a small part of a paddock to be cultivated, which is well separated from waterbodies, exceeds the 20 degree slope limit. The submitters often seek a proportion of a paddock that can exceed the slope criteria.
- 7.682 Submissions were also received in opposition to the requirement to obtain resource consent for cultivation above 700 m. Some submissions request more information on the rationale for 700 m. Some request this be increased to 800 m. Conversely, some submitters request that cultivation be prohibited above 800 m (i.e. the Alpine physiographic zone). Forest and Bird also requested that cultivation be prohibited in the Coastal Marine Area.

### **Analysis**

- 7.683 The increased risk of soil erosion under mechanical cultivation with increasing slope is well established. The Soil Conservation Technical Handbook<sup>389</sup> (the Handbook) states that 59% of Southland's agricultural land is susceptible to surface erosion processes, compared to 6-9 % in regions such as Taranaki, East Coast and Gisborne. The

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<sup>389</sup> The Soil Conservation Technical Handbook, Ministry for the Environment, 2001.

Handbook goes on to list a number of factors which can initiate and accelerate soil erosion, including cultivating slopes over 20 degrees, and recommends maintaining a surface layer of living or decomposing vegetative material, i.e. not mechanical cultivation. For mechanical cultivation over 20 degrees site specific GMPs, such as strip cultivation, erosion and sediment control measures, contour ploughing, and Land Use Capability management, are required. It is my view that site specific measures cannot be adequately captured for their use in a permitted activity standard. As such, they are more appropriately considered and enforced through conditions on a resource consent, which can be tailored to the individual activity.

7.684 In addition to protecting water quality, Rule 25 is intended to assist in achieving Objective 13(a), which enables the use and development of land and soils, provided the quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land. Some submitters suggested that resource consent should not be required if there a specified width of flat land between the slope and waterways is present. However, this would not reduce the loss of soil from the exposed slopes, and would not contribute to soil conservation aims of Objective 13.

7.685 Similarly, increasing the slope that can be cultivated as a permitted activity to 25 or 30 degrees, as suggested by some submitters, would increase the likelihood that the use and development of land and soils would irreversibly degrade the quantity, quality, and structure of soil resources. The following excerpt from the Land Use Capability Survey Handbook<sup>390</sup> provides a clear picture of the challenges of mechanical cultivation over 20 degrees:

*Slope has a marked effect on farming and forestry operations, soil erosion and slope stability...Over 11° additional front weights may be necessary to compensate for drag and steering difficulties for standard two wheel drive tractors...*

*Slopes greater than 15° are not suitable for normal crop rotations, remain in grass for long periods, and cultivation costs can be high. Slopes greater than 20 degrees are difficult to plough and topdress, and even if these dangers are accepted costs are high and normal crop rotations are limited. Slopes between 20° and 25° are occasionally cultivated for pasture improvement. Above 25 degrees some soil movement and formation of stock tracks across the slope are common.*

7.686 The Handbook also lists 18 to 20 degrees as the typical maximum limit for rubber-tyred skidders, and 26 degrees as the typical maximum limit for tracked skidders.<sup>391</sup> Submitters have generally not provided evidence to support steeper cultivation as a permitted activity, in terms of sediment run-off risk, and based on the above, I therefore recommended that the maximum slope which can be mechanically cultivated as a permitted activity remains at 20 degrees, while recognising that non-mechanical cultivation or direct drilling may be appropriate as a permitted activity up to 25 degrees.

7.687 In coming to this recommendation, I have also considered where there are limited small steep areas within a paddock that would exceed 20 degrees, such as a small knoll or pinch at the top of a terrace. Such areas are often avoidable when cultivating, and if avoided, would not trigger the need for resource consent. However, I recommend that additional flexibility is provided for small areas of steeper slope, by enabling cultivation of small

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<sup>390</sup> Land Use Capability Survey Handbook 3<sup>rd</sup> Edition, Lynn et al, 2009, Appendix 1, page 137.

<sup>391</sup> Land Use Capability Survey Handbook 3<sup>rd</sup> Edition, Lynn et al, 2009, Appendix 1, Table 26, page 138.

areas (up to 5% of a cultivation area, when more than 20m from a waterbody) that can be over 20 degrees before resource consent is required.

- 7.688 As noted above, while I consider that there is difficulty in devising a permitted activity to ensure that appropriate site specific measures are undertaken, I do consider that a controlled activity status for mechanical cultivation on slopes between 20 and 25 degrees is appropriate and non-mechanical cultivation or direct drilling up to 25 degrees. This provides certainty that consent will be granted, but allows for the imposition of conditions to ensure that the effects of cultivation are sufficiently mitigated.
- 7.689 In relation to the controls requiring consent for cultivation at 700m above sea level, I note that the controls (in clause (a)(ii) and b(iv)) essentially only relate to land between 700 and 800m in altitude, because land above 800m in altitude is within the Alpine physiographic zone, and cultivation in that zone is expressly non-complying under clause (d). Cultivation between 700 and 800m is proposed to be a restricted discretionary activity. In Southland, land 700 m above sea level is within the sub-alpine zone. The land slope and climatic conditions combine to create a generally harsh environment above 700 m, with fine textured soils that are prone to erosion, and poorly suited to pasture and crop growth.
- 7.690 Overall, I note that land above 700m is at a higher risk of creating significant sediment loads, particularly given the soil types, growing conditions and weather events, and accordingly recommend that cultivation above this height continue to be managed through a restricted discretionary activity status. For completeness, I note that if the Panel were minded to agree to submissions seeking an increase to an 800m altitude limit, then clause (b)(iv) could be deleted in its entirety along with the first half of clause (a)(ii), as land above 800m is already covered in clause (d).
- 7.691 In relation to requests that cultivation above 800 m be prohibited, I note that for many species, 800 m is beyond their limit of survival. However, there may be some instances where a forestry crop, for example, might extend beyond 800 m above sea level. In my experience, the test for a prohibited activity status is high, and in this case, I do not consider that prohibition of this activity is sufficiently justified.
- 7.692 As this Plan does not manage activities within the CMA, I do not agree with Forest and Bird's submission to prohibit cultivation in this area.

### **Timeframes**

- 7.693 A number of submitters oppose the limitation within Rule 25(b), to allow for cultivation, as a permitted activity, where it is within the wider setbacks specified in Rule (a)(i) and where only for the purpose of renewing or establishing pasture, to only once in any five year period (clause (b)(ii)). Those seeking more lenient provisions for allowing renewal of existing cultivation, including allowing for its occurrence more than once every five years. For example, J Davie considers the 5-year restriction to be impractical and states that provided best practise is followed regarding slope, water bodies and drainage, then a shorter period is acceptable.
- 7.694 The purpose of the cultivation limitation is to maintain effective vegetation cover during cultivation, to reduce sediment and other contaminants load to waterbodies. The enabling of cultivation once every 5 years is to enable pasture renewal. The submitters

that have sought a relaxation of these provisions generally do not identify how, with more regular cultivation, there will continue to be a reduction of sediment load to waterbodies, and therefore I do not consider such a change is appropriate. That said, I note the recommended resource consent path to enable the reduction of set-backs with the undertaking of better site-specific mitigation, much in line with what J Davie seeks.

## **Other Matters**

### **Submissions & Analysis**

- 7.695 DOC requests that cultivation require resource consent in marginal strips, esplanade reserves or strips, and unformed roads, where these are adjacent to a river or lake bed. In my view, the legal status of the land in question does not alter the effects of the use of the land, and therefore it is appropriate to apply the same regime (i.e. slope and setback controls) to development of these areas as applies to other land.
- 7.696 Fish and Game seek that Rule 25 is amended to extend the setback and slope requirements for cultivation in relation to headwater seeps or springs, tarns and intermittent and ephemeral streams with an active bed. In relation to headwater seeps and springs, I note that these would fall within the definition of ‘wetlands’ but some may not fall within the definition of ‘natural wetland’. As such many, but not all of these areas would be subject to the slope and setback controls in the proposed rules. Because of the potential effects on water quality associated with cultivation near headwater seeps and springs, my view is that the setback requirements should be amended to apply to all wetlands, rather than natural wetlands only. In relation to tarns, my view is that no changes are required to specifically list these water bodies as they are already captured under the definition of lakes and as such the proposed rule regime would already apply in proximity to tarns. In addition, many are likely to be above 700m in altitude where consent for cultivation is already required. In relation to intermittent/ephemeral streams with an active bed, this is discussed below in relation to definitions.

## **Definitions**

### **Submissions & Analysis**

- 7.697 A number of submitters including Upper Aparima CG, Tremaine Farming Partnership and Ryan Farms 2006 opposed the definition of cultivation in the Glossary, with many seeking the removal of spraying from the definition, with others also, variously, seeking removal of spray and pray, broad spraying, oversowing and direct drilling. These amendments are sought on the basis that they are lower risk for soil erosion. Eight submitters also sought that a definition be provided for ‘mechanical cultivation’ and three that ‘minimum tillage’ be defined. Other submitters expressly note that spraying, and ‘spray and pray’ should be exempt.
- 7.698 Experience in Southland has shown the risks with “spray and pray” cultivation techniques on steeper land. Spray and pray typically involves herbicide spraying, heavy stocking to break up the thatch, sowing and topdressing. Sometimes a winter feed crop is introduced as part of the cycle. When on steeper land, the breakdown of the vegetative layer often leads to increased sediment run-off and, at times, slope failure in

rain events. In my opinion, the relevant definitions that expressly capture wide-spread spraying should be retained, and the words “mechanical cultivation” should be clarified through a definition, so that it does not capture spraying or direct drilling.

- 7.699 A number of submitters request that clearer direction is required of where the outer edge of the bed is to be measured from. I note that “*bed*” is already defined in the RMA, in relation to rivers and lakes, and consider that it is sufficient to rely on this definition in order to determine what constitutes the “*outer edge*” of the bed. I note that it is recommended in section 10 of this report that definitions be included within the pSWLP for the “bed of a modified or artificial watercourse” and the “bed of a wetland” and consider that these definitions will also provide clarity about the application of the rule, without further changes being necessary.
- 7.700 Some submitters request clarity around whether a waterbody includes ephemeral streams and swales, suggesting that the Dairy Accord definition (1 m wide, 30 cm deep, runs 6 months of the year) be adopted as an alternative. River is defined in the RMA as “*a continually or intermittently flowing body of fresh water, and includes a stream and modified watercourse; but does not include any artificial watercourse...*” Swale is not defined in the Glossary of the pSWLP, but both intermittent waterbodies and ephemeral waterbodies are. Intermittent waterbodies are those containing flowing and/or standing water for a majority of the year, whereas ephemeral waterbodies typically only contain flowing and/or standing water following significant rainfall events or extended periods of above average rainfall. I consider that the potential effects on water quality associated with intermittent waterbodies justifies their inclusion in the setback provisions of Rule 25 (as sought by Fish and Game), but not ephemeral waterbodies. I also agree with submitters that request greater clarity on these definitions and I therefore recommend that intermittent waterbodies be added to Rule 25, and the definition amended to provide greater clarity. This would also clarify that a swale is not considered an intermittent waterbody and as such will not be captured by Rule 25.

## **Matters of Discretion**

### **Provisions**

- 7.701 Where cultivation is proposed which does not meet the standards for a permitted activity (and excluding cultivation in the Alpine physiographic zone), the activity is restricted discretionary, with discretion limited to the following matters:
1. *the management of sediment and other contaminants from critical source areas;*
  2. *risks to biodiversity and water quality and mitigation measures for addressing those risks;*  
*and*
  3. *monitoring, inspection and audit requirements.*

## Submissions

7.702 Fish and Game seeks that matters 1 & 2 are deleted and replaced with the following, to better align them with the objectives and policies of the pSWLP:

- 1) *The management of sediment and other management practices, including the area and timing of cultivation, to avoid, remedy or mitigate the discharge of sediment and other contaminants to surface or ground water from critical source areas;*
- 2) *Risks to the following matters and measures to avoid, remedy or mitigate those risks:*
  - i) *Biodiversity, including aquatic habitat and areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
  - ii) *Preservation of the natural character of wetlands, lakes, rivers and their margins; and*
  - iii) *The potential effects of cultivation on surface and groundwater quality and sources of drinking water.*

7.703 Forest and Bird seeks that matter 2 is deleted and replaced with:

- *Risks to biodiversity and water quality and measures to avoid, remedy or mitigate those risks*
- *Risks to areas of significant indigenous vegetation and habitats and measures to avoid those risks*
- *Risks to the preservation of the natural character of wetlands, lakes, rivers and their margins*

## Analysis

7.704 In my view, the wording sought by both submitters is not more appropriate than the notified wording. This is largely because in my view it confuses the role of matters of discretion, which narrow what matters the Council can consider, with the outcomes sought, which are set out at the objective and policy level within the pSWLP. When considering a matter specified, regard would ultimately be had to the direction given in the Plan's policies and the outcome sought at the objective level in relation to that matter, without the need to re-state these within the matter of discretion itself.

## Recommendation(s)

7.705 Amend Rule 25 as follows:

- (a) *The use of land for cultivation is a permitted activity provided the following conditions are met:*
  - (i) *cultivation does not take place within the bed of a lake, river, natural wetland, modified watercourse or artificial watercourse and within a distance of:*
    - (1) ~~35~~<sup>392</sup> *metres from the outer edge of the bed on land with a slope<sup>4</sup> of less than 24 degrees (~~flat~~); and*
    - (2) ~~10 metres from the outer edge of the bed on land with a slope between 4 and 16 degrees (~~rolling~~); and~~
    - (3) *20 metres from the outer edge of the bed on land with a slope of greater than 24*~~6~~<sup>393</sup> *degrees (~~strongly rolling~~); and*
  - (ii) *cultivation does not occur above 700 metres above mean sea level; ~~or~~ and*<sup>393</sup>

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<sup>392</sup> 752.118 Fish and Game

<sup>393</sup> Consequential change due to splitting this rule into two parts

- ~~(iii) mechanical cultivation does not occur<sup>394</sup> on land with a slope greater than 20 degrees (moderately steep)<sup>5</sup> or other cultivation on land with a slope greater than 25 degrees<sup>395</sup>;~~
- (b) *The use of land for cultivation, that does not meet the setback distances of Rule 25(a)(i), is a permitted activity provided the following conditions are met:*
- (i) *cultivation does not take place within the bed of a lake, river, natural wetland, modified watercourse or artificial watercourse and a distance of 3 metres from the outer edge of the bed; and*
- (ii) *cultivation does not take place more than once in any five year period; and*
- (iii) *cultivation is for the purpose of renewing or establishing pasture; ~~and~~*
- ~~(iv) cultivation does not occur above 700 metres above mean sea level.~~
- (c) *The use of land for cultivation, that does not meet Rule 25(a)(i)(3) or Rule 25(a)(iii) is a controlled activity, provided the following conditions are met:*
- ~~(i) cultivation does not occur on land with a slope greater than 25 degrees, or~~
- ~~(ii) cultivation does not take place within the bed of a lake, river, wetland, intermittent waterbody, modified watercourse or artificial watercourse and within a distance of 5 metres from the outer edge of the bed on land with a slope of greater than 9 degrees; and~~
- ~~(iii) A Farm Environment Management Plan, or a separate written plan for managing critical source areas is developed.~~
- Environment Southland will exercise its control over the following matters:*
- 1. The adequacy and implementation of the plan, including whether it has been developed in conjunction with Environment Southland's Land Sustainability Team;*
  - 2. the management of sediment and other contaminants from critical source areas;*
  - 3. monitoring, inspection and audit requirements.<sup>396</sup>*
- ~~(d) The use of land for cultivation, which does not meet one or more of the conditions of Rule 25(a) or Rule 25(b) is a restricted discretionary activity.~~
- Environment Southland will restrict the exercise of its discretion to the following matters:*
- 1. the management of sediment and other contaminants from critical source areas;*
  - 2. risks to biodiversity and water quality and mitigation measures for addressing those risks; and*
  - 3. monitoring, inspection and audit requirements.*
- ~~(e) Despite any other rule, the use of land for cultivation in the Alpine physiographic zone, is a non-complying activity.~~

<sup>4</sup> *Slope in Rule 25(a)(i)(1)-(3) is the average slope from the outer edge of the bed to a point 20 metres from the outer edge of the bed.*

<sup>5</sup> *Slope in Rule 25(a)(iii) and Rule 25(c)(i) is the average slope over any 20 metre distance, except that up to 5% of the cultivation area may exceed the average slope.<sup>397</sup>*

## **Glossary**

### *Cultivation*

*Preparing land for growing pasture or a crop by mechanical tillage or spraying (excluding spot spraying).*

### *Ephemeral waterbodies*

*Waterbodies which typically only contain flowing and/or standing water following significant rainfall events or extended periods of above average rainfall.*

<sup>394</sup> 265.88 Federated Farmers/consequential to splitting the rule into two parts

<sup>395</sup> 265.88 Federated Farmers

<sup>396</sup> 265.88 Federated Farmers

<sup>397</sup> 265.88 Federated Farmers



*Intermittent waterbodies*

Waterbodies with a bed which does not contain flowing and/or standing water permanently and where the bed is predominantly un-vegetated and comprises sand, gravel, boulders or similar material, which contain flowing and/or standing water for a majority of the year but which may occasionally dry out due to natural interaction with surrounding groundwater resources.<sup>398</sup>

*Mechanical cultivation*

Preparing land for growing pasture or a crop by mechanical tillage, including conventional cultivation and minimum tillage (but excludes spraying, oversowing, and direct drilling).<sup>399</sup>

*Bed of a wetland*

The land within a wetland boundary.

*Bed of an artificial watercourse*

The space of land which the waters of the watercourse cover at its fullest flow without overtopping its banks.<sup>400</sup>

## Miscellaneous Definitions

### Landholding

7.706 The definition of “Landholding” states:

- (a) For land subject to the Land Transfer Act 1952, land in:
  - (i) a single certificate of title; or
  - (ii) two or more adjoining certificates of title, with a common occupier.
- (b) For land not subject to the Land Transfer Act 1952, all contiguous land last acquired under one instrument of conveyance and occupied by a common occupier.

### Submissions

7.707 The definition of “Landholding” received 41 submissions with the majority of the submissions seeking that the definition be amended to provide greater clarification on how it is intended to apply, particularly for adjoining properties with common occupiers but separate farming operations. A number of submitters believe the definition is inequitable for landholders with contiguous landholdings as they believe it penalises those who have all of their land in one continuous block, compared to those who have numerous blocks that are separated (either farmed separately or as one entity). The majority of submitters have not suggested amendments to address their concerns, however three submitters request that (a)(ii) be removed from the definition.

7.708 The concerns raised by the submitters are well noted and understood, in that there may be separate operating units (with common occupiers) where the proposed definition of landholding means that a number of the farming rules would place restrictions across adjoining titles, as opposed to each operating unit. In lieu of any suggestions from the submitters, I suggest that the definition is amended include the requirement that a landholding is also a “single operating unit”.

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<sup>398</sup> 865.10 S G Whyte, Linhope Trust, Berry Farm Trust & Berry, 752.118 Fish and Game,

<sup>399</sup> 638.12 Pinnacle Farming Company, 775.14 Stoney Creek Station, and 840.14 W & B Clarke & Son

<sup>400</sup> 247.43 Environment Southland

7.709 Despite this recommendation, I have concerns that the reference to “*single operating unit*” could be taken advantage of by owners of larger holdings, in that larger properties could be divided into separate operating units to maximise the area of winter grazing permitted under Rule 23 (this is of particular concern for the Old Matuara and Peat Wetlands zone, where officers recommend that the permitted threshold for winter grazing is increased to 50 hectares). This would be counter to the direction set out in the Plan and, in particular, less likely to achieve Objective 7. As such, I recommend that an advisory note is included to provide assistance in determining what constitutes a “*single operating unit*”. In my view, these amendments would enable the reference to “*two or more adjoining certificates of title*” to be removed, so that the definition of “landholding” also applies to separate blocks that are farmed collectively as one unit.

7.710 The 254 Partnership & Gerken Family Trust submit that “landholding” be replaced with the term “title”, noting that this is how they pay rates. I note that some properties consist of multiple titles and therefore would not assist in the application of the farming rules that refer to “landholding”. However, with respect to urban areas, and for issues such as on-site waste water systems, I do recommend this submission is accepted, which would also align with the way district plans tend to treat “site” definitions.

7.711 Fonterra is concerned that a single milking platform with part of the platform on one side of the road, and another part on the other side of the road would be treated as two separate landholdings due to the term “adjoining”. Consequently, they seek that the following clause is added to (a):

*iii) two or more certificates of title with a common occupier operated as a single milking platform*

7.712 I agree with the submission from Fonterra that the definition is problematic for properties with two or more certificates of title that are separated by a road (or a river), as the ordinary meaning of “adjoining” would not apply. However, I consider that the recommended deletion of “*two or more adjoining certificates of titles*” and reference instead be given to “*single operating unit*” would address these concerns.

7.713 Fonterra also seeks the addition of a new definition for “common occupier” that ensures that properties with the same legal owner/occupier are not regarded as a single landholding when they are operated as separate business enterprises. “Common occupier” is only used twice in the pSWLP, both times occurring in the definition of “landholding”. I note that the recommended amendments to the definition of “landholding” removes reference to “common occupier” and therefore, I do not recommend that a definition of this term is included in the pSWLP

## Recommendation

7.714 That the definition of “Landholding” be amended to read:

- (a) *For land subject to the Land Transfer Act 1952, land in: that does not have a residential, commercial, industrial or recreation zoning in the relevant district plan means*  
~~(i) —a single certificate of title; or an aggregation of land parcels held in single or multiple ownership that constitutes a single operating unit<sup>401</sup>.~~

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<sup>401</sup> 583.29 R Moseby, 894.5 R Young

- (ii) ~~two or more adjoining certificates of title, with a common occupier.~~
- (b) ~~For land not subject to the Land Transfer Act 1952, all contiguous land last acquired under one instrument of conveyance and occupied by a common occupier with a residential, commercial, industrial or recreation zoning in the relevant district plan means any area of land comprised wholly of one Certificate of Title or any Allotment as defined by Section 218 of the RMA<sup>402</sup>.~~

**Advice note:** *for the purposes of this definition, a “single operating unit” may be include, but is not limited by, the following features:*

- (a) The land parcels have effective control by the same group of people (for example, land that is controlled by a Family Trust or members of that family trust, or a related group of companies, would be considered as the “same group of people”);
- (b) The land is operated as a single business entity; or
- (c) Commodities (including stock, feed and equipment) are transferred between land parcels without payment.

## Stock

7.715 The definition of “Stock” states:

*Farm animals kept for use or profit such as horses, dairy cows, cattle, deer, pigs, goats and sheep*

## Submissions and analysis

7.716 The definition of “Stock” received four submissions, with Fish and Game submitting in support seeking that the definition be retained. Beef and Lamb seeks that the definition be amended to remove reference to animals being kept for “use” but does not provide any reasons in their submission for the requested amendments. It is unclear why the amendments are sought, and I therefore do not recommend accepting the submission from Beef and Lamb.

7.717 G Fordyce seeks a better definition of “stock class” in relation to Rule 23 (intensive winter grazing), however I note that the rule does not reference stock class. The submitter may wish to clarify their request at the hearing.

7.718 I note that a submission from Timpany Investments seeks that a better definition of “stocking rate” be included in the plan in relation to Rule 21 (existing dairy farming of cows). This submission is analysed under that rule.

## Recommendation

7.719 Retain the definition of “Stock” as notified.

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<sup>402</sup> Consequential amendments

## Wastewater, Effluent and Sludge

### Introduction

7.720 This section discusses provisions relating to discharges of wastewater, effluent and sludge to land. Discharges can have adverse effects on the environment if not appropriately managed. The provisions covered in this section are:

- Policy 17 – Effluent management;
- Rule 26 – Discharges from on-site wastewater systems;
- Rule 27 - Discharges from pit toilets;
- Rule 28 – Discharges of liquid from waterless composting toilet systems;
- Rule 29 – Discharges of aerobically composted human excreta;
- Rule 30 – Discharges from mobile toilets;
- Rule 31 – Dump stations;
- Rule 32 – Effluent Storage;
- Rule 33 – Community sewerage schemes;
- Rule 34 – Industrial and trade processes;
- Rule 35 – Discharge of agricultural effluent to land;
- Rule 36 – Horticulture wash-water;
- Rule 37 – Agricultural dips;
- Rule 38 – Animal and vegetative waste;
- Rule 39 – Other agricultural effluent disposal;
- Rule 40 – Silage;
- Rule 41 – Silage leachate; and
- Definitions relating to the above.

### Policy context

7.721 The RMA contains specific direction (section 70) with respect to regional rules for discharges. The regional council cannot permit a discharge unless it is satisfied that none of the following effects are likely to arise, in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

- (c) *the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
- (d) *any conspicuous change in the colour or visual clarity;*
- (e) *any emission of objectionable odour;*
- (f) *the rendering of fresh water unsuitable for consumption by farm animals;*
- (g) *any significant adverse effects on aquatic life.*

7.722 Under section 70(2), if a regional council proposes a rule in a regional plan requiring the adoption of the best practicable option to prevent or minimise adverse effects on the environment from a discharge, the council must be satisfied the inclusion of the rule is the most efficient and effective means of preventing or minimising those effects.

- 7.723 The RPS contains a number of provisions which are relevant to water quality. There are four water quality objectives in the RPS. The objectives seek to:
- sustain the quality of the region’s water resources to meet the needs of the region now and in the foreseeable future and safeguard the life supporting capacity of water and related ecosystems;
  - maintain and wherever practicable enhance water quality;
  - ensure that water quality standards established for the region are not compromised by resource use; and
  - recognise the relationship of Maori with water.
- 7.724 Three of the RPS policies are directly relevant to discharges of wastewater, effluent and sludge. Policy 5.2 requires all point source discharges, after reasonable mixing, to comply with water quality standards. Policy 5.3 directs that regional plans are prepared for the management of water quality, in terms of both point and non-point source discharges. Policy 5.4 requires the utilisation of land treatment for liquid wastes where this can be undertaken in a sustainable manner and without significant adverse environmental effects. Policy 5.5 requires the assessment of the effects of land use and development on ground water and surface water quality and provides for the associated adverse effects to be avoided, remedied or mitigated when making resource management decisions, and Policy 5.8 requires the recognition and provision for Maori values in water quality management.
- 7.725 Three chapters of the pSRPS are relevant to the pSWLP provisions discussed in this section: Chapter 4 – Water Quality; Chapter 5 – Rural; and Chapter 16 – Infrastructure/Transport.
- 7.726 Objective WQUAL.1 seeks water quality that: safeguards the life-supporting capacity of water and related ecosystems, and the health of people and communities; maintains good, and improves degraded, water quality in accordance with the NPS-FM; and meets the needs of a range of foreseeable needs. Objective WQUAL.2 (still subject to appeal) requires the halt of decline in, and enhancement of, water quality in a number of ecosystems in accordance with NPSFM freshwater objectives developed for Southland. Objective WQUAL.3 requires the maintenance of the quality of water where it is in its natural state.
- 7.727 The following four policies in the pSRPS are directly relevant to the activities considered in this section of the report. Policy WQUAL.7 prefers, where practical, the discharge to land over discharges to water, if the associated adverse effects are less. Policy WQUAL.8 states direct discharges of sewage, wastewater, industrial and trade waste and agricultural effluent to water shall be avoided unless these discharges have undergone treatment. Policy WQUAL.9 requires where practical, activities that result in point source discharges to land are sited and operated to ensure adverse effects on water quality are avoided, remedied or mitigated and Policy WQUAL.10 requires adverse effects on the sources of community water supplies, associated with land use and discharges are avoided, as far as practical, remedied or mitigated.
- 7.728 Chapter 5 Rural of the pSRPS is also relevant to this section, particularly with regard to onsite wastewater systems. Objective RURAL.1 aims for the sustainable use of

Southland's rural resource in respect of agriculture and primary sector activities and on-site wastewater systems and Policy RURAL.6 makes provision for use of on-site wastewater systems provided new systems are not located within a culturally sensitive area and adverse effects are avoided or mitigated.

- 7.729 Community sewerage schemes are considered infrastructure under the RMA. Chapter 16 - Infrastructure/Transport of the pSRPS is therefore directly relevant to proposed Rule 32 – Effluent storage with respect to community sewage storage, and proposed Rule 33 – Community sewerage schemes. Objective INF.1 aims for the security, and efficient operation, of Southland's critical infrastructure and its integration with land use and the environment. There are two relevant policies - Policy INF.1 recognises the benefits from, and provides for, the development and maintenance, upgrade and ongoing operation of critical infrastructure and associated activities and Policy INF.2 requires where practical, adverse effects of infrastructure on the environment to be avoided, remedied or mitigated.
- 7.730 Te Tangi a Tauira was developed by the four Runanga Papatipu o Murhiku to provide iwi direction on resource management in Murihiku (Southland). Of relevance to this topic, the document provides direction on farm effluent management (section 3.5.1), wastewater disposal (section 3.5.2), industry (section 3.5.4) and water quality (section 3.5.10). The policies encourage and require best practice, including the avoidance of direct discharges to water, use of storage, robust monitoring, use of buffers, establishment of vegetation to filter contaminants and development of management plans.
- 7.731 There are a number of relevant objectives and policies in the pSWLP which the following rules are designed to achieve. These objectives include, but are not limited to Objective 6 which seeks to maintain water quality where it is not degraded and improve it where it has been degraded by human activities and Objective 8 which seeks to maintain water quality in aquifers where it meets New Zealand Drinking-water Standards 2005, (revised 2008) and any freshwater objectives set for the region and improve freshwater quality where it does not. Policy 17 of the pSWLP (discussed below) and the rule package discussed in this section is specifically relevant to achieving these outcomes.

## Policy 17

### Provision

7.732 Policy 17 reads:

1. *Avoid adverse effects on water quality, and avoid as far as practicable other adverse environmental effects of the operation of, and discharges from effluent management systems.*
2. *Manage effluent systems and discharges from them by:*
  - (a) *designing, constructing and locating systems appropriately and in accordance with standards;*
  - (b) *maintaining and operating effluent systems in accordance with best practice guidelines;*
  - (c) *avoiding any surface run-off/overland flow, ponding or contamination of water resulting from the application of agricultural effluent to pasture;*
  - (d) *avoiding the discharge of raw sewage and untreated agricultural effluent to water.*

## Submissions

7.733 Some submitters, including Aratiatia Livestock, support the policy and seek its retention. However, a number of submitters oppose or seek amendments to clause (1) of Policy 17, with Alliance requesting its deletion. Alliance considers the requirement to avoid adverse effects on water quality does not enable a balanced assessment of the merits of individual applications. Further, the use of other environmental adverse effects is also opposed due to vagueness. Submitters also request variations and alternatives to the use of the word avoid, including D Ditchfield requesting the use of ‘prohibiting’ a R and S Miller requesting ‘manage’. Other submitters request additions to avoid including ‘as far as practicable’, or ‘significant’ or ‘remedy and mitigate’ adverse effects on water quality. Federated Farmers request:

1. *Avoid significant adverse effects on water quality, and avoid, remedy, or mitigate as far as practicable other adverse environmental effects on the environment or water quality of from the operation of, and discharges from effluent management systems.*
2. *Manage effluent systems and discharges from them by:*
  - (a) *designing, constructing and locating systems appropriately and in accordance with standards;*
  - (b) *maintaining and operating effluent systems in accordance with ~~best~~ good practice guidelines;*
  - (c) *avoiding any surface run-off/overland flow, ponding or contamination of water resulting from the application of agricultural effluent to pasture;*
  - (d) *avoiding the discharge of ~~raw sewage and untreated~~ agricultural effluent to water.*

7.734 B and S Blakely, Dillion Ag and others request the policy is amended to read “*no discharge of raw sewage and untreated agricultural effluent to water*”.

7.735 The use of standards and best practice guidelines is the subject of a few submissions. The submission from Environment Southland staff seek that the standards referred to in Policy 17(2)(a) be replaced with best practice guidelines, which the submitter considers more accurately reflects the type of guidance available, for example IPENZ Practice Note 21. A Wilson requests the pSWLP define what standards are being referred to in Policy 17(2)(a). DHL request the best practice guidelines referred to in Policy 17(2)(b) are detailed in the Plan.

7.736 Fish and Game and DOC request the flow of effluent into sub-surface drains is included in Policy 17(2)(c).

7.737 Other submitters seek inclusion or recognition of the following additional matters:

- the high intrinsic value of effluent to those using it;
- a requirement for effluent ponds to use or ‘flare-off’ methane;
- a requirement for the use of recycled water for wash down;
- a requirement for the covering of dairy yards and a holding tanks under grading system.

## Analysis

- 7.738 I acknowledge the use of avoid in Policy 17(1) is directive. However, in accordance with its functions under section 30 of the RMA, and in order to give effect to the NPSFM, SRPS and the pSRPS Council has an obligation to provide clear policy direction with respect to the maintenance or improvement of water quality. I consider the use of avoid in Policy 17(1) with respect to adverse effects on water quality is appropriate in order to give effect to these higher order planning documents and the objectives of the pSWLP. With respect to the second component of Policy 17(1), it is acknowledged that ‘other adverse environmental effects’ covers a range of adverse effects which may appear ‘vague’ as Alliance submit. However, there are a range of adverse effects which may arise from discharges of effluent and therefore the reference to ‘other adverse environmental effects’ is appropriate. I do however agree that some of these other adverse effects may be able to be remedied or mitigated, rather than the higher requirement of avoiding as far as practicable and therefore, I recommend that the submissions of Federated Farmers and Fish and Game relating to this are accepted.
- 7.739 It is agreed the use of ‘standards’ in Policy 17(2)(a) lacks certainty for Plan users. The submission from Environment Southland staff requests ‘standards’ is replaced with ‘best practice guidelines’. I support the adoption of this part of the submission as those documents traditionally used are more accurately described as guidelines.
- 7.740 DHL have requested the ‘best practice guidelines’ referred to in Policy 17(2)(b) are defined in the Plan. It is important to note best practice is always evolving and as such it is difficult to refer to specific practices and standards as they may change during the life of the Plan. Whilst the ‘best practice guidelines’ can be referred to for agricultural effluent, being IPENZ Practice Notes 21-Farm Dairy Effluent Pond Design and Construction and 27 – Dairy Farm Infrastructure, currently there is no such direction for other systems, for example community sewage systems. It is therefore considered appropriate to provide examples of the best practice guidelines currently used to assist Plan users. This can be achieved by providing a note to this clause (Policy 17(2)(b)) of the policy to provide examples of the types of guidelines intended. However, it is not considered appropriate to exclude any new best practice guidelines that may be developed during the life of the Plan. Submitters may wish to expand upon this or provide examples of other standards or best practice guidelines to be included at the hearing. Federated Farmers request ‘best practice’ is replaced with ‘good practice’ however no reasons are provided for this. The submitter may wish to provide reasons for this at the hearing but in the absence of any information, I do not support the change from best practice to good practice.
- 7.741 Both Fish and Game and DOC request flow of effluent through sub-surface drainage is included in Policy 17(2)(c) which seeks to avoid surface run-off/overland flow, ponding or contamination of water resulting from the application of agricultural effluent to pasture. I acknowledge contaminants from agricultural effluent can flow through sub-surface drainage and into surface waterbodies if it is not appropriately applied. Further, sub-surface drainage is also referred to in Rule 35 which manages the discharge of agricultural effluent to land which may enter water. I consider amending Policy 17(2)(c) to make it explicit the policy includes water contamination via sub-surface drainage will assist in the consideration of resource consent applications. I therefore recommend the adoption of the submissions by Fish and Game and DOC in that regard.



- 7.742 I prefer the current wording of Policy 17(2)(d) over the variations proposed in submissions. In my opinion the use of the word avoid is the most appropriate way to achieve the objectives of the pSWLP and give effect to the NPSFM, RPS and pSRPS. Further, the definition of effluent captures effluent from on-site wastewater systems and mobile toilets, community sewerage schemes, agricultural activities, an industrial or trade process, but excludes solid waste, therefore it would not be appropriate to refer to only agricultural effluent.
- 7.743 There are a number of other matters which submitters have identified for recognition and inclusion in resource consents. These matters may be adopted by applicants, depending on their circumstances. However, it is not considered appropriate to specifically refer to these in Policy 17.
- 7.744 Later in this section of the report, there is a recommendation to include specific reference to community sewage storage within Policy 17(2)(a) and (b), to make it explicit that community sewage storage is required to be designed, constructed, located, maintained and operated in accordance with best practice.

## Recommendation

7.745 Amend Policy 17 as follows:

1. *Avoid adverse effects on water quality, and avoid, remedy, or mitigate ~~as far as practicable~~<sup>403</sup> other adverse environmental effects of the operation of, and discharges from effluent management systems.*
2. *Manage effluent systems and discharges from them by:*
  - (a) *designing, constructing and locating systems, including community sewage storage,<sup>404</sup> appropriately and in accordance with best practice standards<sup>405</sup>;*
  - (b) *maintaining and operating effluent systems, including community sewage storage,<sup>406</sup> in accordance with best practice guidelines;*
  - (c) *avoiding any surface run-off/overland flow, ponding or contamination of water including via sub-surface drainage,<sup>407</sup> resulting from the application of agricultural effluent to pasture;*
  - (d) *avoiding the discharge of raw sewage and untreated agricultural effluent to water.*

*Note: Examples of best practice referred to in 17(2)(a) include IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction and IPENZ Practice Note 27: Dairy Farm Infrastructure.*<sup>408</sup>

*Note: Examples of best practice guidelines referred to in 17(2)(b) include DairyNZ's guidelines A Farmer's Guide to Managing Farm Dairy Effluent – A Good Practice Guide for Land Application Systems, 2015 and A Staff Guide to Operating Your Effluent Irrigation System, 2013.*<sup>409</sup>

<sup>403</sup> 265.48 Federated Farmers; 752.61 Fish and Game

<sup>404</sup> 330.15 GDC, ICC and SDC; 411.31 ICC

<sup>405</sup> 247.4 Environment Southland

<sup>406</sup> 330.15 GDC, ICC and SDC; 411.31 Invercargill City Council

<sup>407</sup> 752.61 Fish and Game; 210.56 DOC

<sup>408</sup> 877.21 A Wilson

<sup>409</sup> 189.14 DHL

## **On-site Wastewater Systems**

### **Introduction**

- 7.746 Southland presents many challenges for on-site wastewater disposal. These challenges include high rainfall, soil moisture at or above field capacity for much of the year (April to November), low evapotranspiration rates and ambient temperatures during winter, slow draining soils, limiting horizons in the soil, high groundwater tables and highly permeable soils. Encouraging improvement in the performance of on-site wastewater systems by promoting good practice will assist in overcoming the challenges for on-site wastewater disposal in Southland. This will in turn minimise adverse effects on the environment (including public health, and surface water and groundwater quality).
- 7.747 Anecdotal evidence suggests that many on-site wastewater systems in Southland are not performing adequately. A lack of on-going servicing and regular maintenance can contribute to system failure. The reasons for this are varied, but often it is simply that the property owner or occupier does not know how to manage and maintain their system. Some failures are due to poor installation, or the siting of systems in inappropriate locations (for example areas with high groundwater). Some systems may have simply reached the end of their effective life span and need replacing. However, there are significant financial costs associated with replacing or upgrading poorly performing on-site systems.

### **Provisions and Applicable Definitions**

- 7.748 Rule 26(a) provides for the discharge of treated domestic wastewater from an existing on-site wastewater system, as a permitted activity, subject to a range of conditions being met. These include a requirement that the system was in operation prior to 1 June 2016 and a limit on the discharge to 1,250 litres per day. Other conditions limit what the discharge can contain and where it can occur.
- 7.749 Rule 26(b) provides for new on-site wastewater systems, or the replacement of an existing system, as a permitted activity, subject to a range of conditions being met. These include requirements for the system to meet relevant New Zealand Standards, and limits on what the discharge can contain and where it can occur. Discharges that do not meet the permitted activity conditions are discretionary, except that where it involves the discharge of untreated domestic wastewater, raw sewage, or effluent from mobile toilets, into surface or groundwater, is specifically listed as a prohibited activity under Rule 26(f).
- 7.750 Rule 26(d) provides for the discharge of septage onto or into land, and associated discharges to air from on-site wastewater systems as a permitted activity, subject to a range of conditions being met. These predominantly relate to where the discharge can occur, limitations on what it can contain and the manner in which the discharge can occur. Discharges that do not meet the permitted activity conditions are discretionary, unless the discharge is expressly prohibited under Rule 26(f).

- 7.751 There are a number of definitions in the pSWLP that are also relevant to Rule 26. Of those that are most relevant, submissions seeking changes relate to the definitions of “*Domestic Wastewater*” and “*On-site Wastewater System*”, which read:

***Domestic Wastewater***

*For the purposes of this rule, domestic wastewater is limited to effluent derived from dwellings, business buildings, institutions and the like, and consisting of toilet wastes and wash waters from kitchens, bathrooms and laundries, but excluding commercial laundry and commercial kitchen wastes.*

***On-site Wastewater System***

*The collection, treatment and disposal/reuse of wastewater from an individual home or commercial facility on the same property as it is generated. For the purposes of this definition, wastewater is limited to toilet wastes and wash water from kitchens, bathrooms and laundries.*

**Submissions**

- 7.752 There are 23 submissions on Rule 26. Ten submitters support the rule with seven of those submitters seeking that the rule be retained, and the other three seeking that the rule be retained with amendments.
- 7.753 Clover Bell support the rule but seek that Clause (b)(vi)(5) is amended so that the discharge is limited from being within “*20 metres of any permeable drain*” instead of 20 metres of any tile drain.
- 7.754 Fish and Game request that the rule is retained, but seek that all references to tile drains are amended to refer to “*sub-surface drainage systems*”; and that all reference to distances from any surface water body are amended to “*metres of any surface waterbody, including wetland and ephemeral or intermittently flowing streams, or artificial watercourse...*”.
- 7.755 Forest and Bird support the rule but seek that reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams is inserted in the rule.
- 7.756 Ngāi Tahu support the rule in part but seek that Clause (g) of Rule 26 is amended to:
- (g) *the discharge does not take place into water within natural state waters, into water subject to a water conservation order or mātaaitai reserve or taiāpure.*
- 7.757 There are five submissions opposing Rule 26 with two of those submitters, Matura Butcher Shop and Newton Slink Skins, opposing the rule because of its impact on rural communities and businesses. The submitters seek that the activities be permitted.
- 7.758 P T & S B Dale Trust opposes Rule 26 as systems are already managed when they are installed, i.e. as per instructions and sign off. It submits that current regulations should ensure or prevent failures and there is no need to double up on other regulators.
- 7.759 Federated Farmers’ submission opposes Rule 26 and seeks that Clauses (a)(viii), (b)(vi)(4) and (d)(viii)(6), which limit the distance that the discharge can be from drinking water supply sites, is amended to exclude discharges that were lawfully established prior to the establishment of the drinking water site.

- 7.760 The submission from N J & R H Hamilton & Manapouri Station opposes Rule 26 and request that Environment Southland have a plan for solving the problem before making rules that aren't achievable.
- 7.761 W Devine's submission on Rule 26 requests that a common sense approach is required to comply with the intent of the rule and states the Clauses (vi), (presumably in Clause (a)), will not be possible in extreme wet weather events and should be modified to take account of adverse weather events. Mr Devine's submission also requests that Environment Southland encourage local councils to allow and provide for pumped grey water disposal to sewerage systems, especially in semi-built up areas. The submission is neutral because the rule is not retrospective and seems sensible to the submitter, apart from Clause (vi) which is opposed.
- 7.762 P Tayler requests that the rule be amended because he believes Environment Southland has not adequately accounted for the potential increase and impact from tourism. Mr Tayler requests a targeted tourist rate to pay for tourism infrastructure/waste disposal.
- 7.763 G and R Cockburn's submission is that there needs to be tougher rules on existing systems that are below par and any system that is having a more than minor negative effect on water quality should be upgraded within an appropriate timeframe (3 to 5 years).
- 7.764 R Hamilton submits that the Council should systematically insist on checks and upgrades to be done on all on-site wastewater systems as there could be 3147 systems (on lifestyle blocks) discharging their wastewater directly into creeks and waterways. Ms Hamilton also submits that Environment Southland has taken the easy option on saying it cannot monitor the sales of dwellings and there needs to be a rule and timeframe for the solution, which is to systematically make everyone meet the NZ standards.
- 7.765 Growplan's submission asks for Environment Southland to consider making it easier to install composting systems as they have no impact on natural systems as they have no ground emissions.
- 7.766 Ralph Moir & Associates request that "or any replacement standard" is added to Clauses (b)(i) and (ii) of Rule 26, which refers to New Zealand Standard AS/NZS 1547:2012 – On-site Domestic Wastewater Management. The submission also notes that with respect to Clause (b)(iv) the pSWLP does not define hazardous substance and seeks that the term be defined in the glossary or the wording should be amended to read "contains only domestic wastewater." The submission states that there is no need for Clause (b)(vi)(5) which requires that the discharge is not within 20 metres of any tile drain. The submission also questions why there is no discharge limit and notes that in the administration of domestic wastewater systems by Territorial Authorities, their experience has been that grey areas in the rules results in unsatisfactory outcomes.
- 7.767 SDC's submission requests the following amendments be made to Rule 26:

*Clause (b)(vi)(3) 50 metres of any bore or well ~~used for potable or stock water supply;~~*

*Clause (b)(vi)(5) 20 metres of any ~~tile drain subsurface drainage system.~~*

*Clause (f) ... the discharge of untreated domestic wastewater, raw sewage from on-site wastewater systems, or effluent from mobile toilets, into surface or groundwater is a prohibited activity.*

and

the following additions to Clause (b)

(vii) The discharge does not exceed 14,000 litres per week; and

(viii) the system is designed so that:

(1) the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and

(2) the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.

7.768 A submission from the three Territorial Authorities in Southland, GDC, ICC and SDC seeks the following amendments to Rule 26:

~~Clause (a) The discharge of treated domestic wastewater, ...~~

~~Clause (a)(iii) the discharge to the system is consistent consists only of contaminants normally associated with domestic wastewater;~~

~~Clause (a)(vi) there is no discharge above the soil surface, or direct discharge to groundwater, ...~~

~~Clause (b) The discharge of treated domestic wastewater, ...~~

~~Clause (b)(iii) the discharge does not result in wastewater ponding being visible on the ground surface; and~~

~~Clause (b)~~

~~(viii) the discharge does not exceed 14,000 litres a week;~~

~~(ix) the discharge to the system is consistent with domestic wastewater;~~

~~(x) the system is designed so that:~~

~~(1) the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and~~

~~(2) the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.~~

~~Clause (c) The discharge of treated domestic wastewater, ...~~

~~Clause (d)(xi) the discharge does not occur on a site less than 100 hectares in area and is limited to a total area of XXX in any year.~~

~~Clause (d)~~

~~(xii) the application is managed to reduce the risk of vector attraction.~~

7.769 The submission from the three Territorial Authorities in Southland, GDC, ICC and SDC request that the definition of ‘domestic wastewater’ be deleted, and the definition of ‘On-site Wastewater System’ be amended as follows:

***On-site Wastewater System***

~~*The collection, treatment and disposal/reuse of wastewater from an individual homes or commercial facilities on the same landholding property as it is generated. For the purposes of this definition, wastewater is limited to toilet wastes and wash water from kitchens, bathrooms and laundries.*~~

7.770 Ralph Moir & Associates and SDC request that the definition of domestic wastewater be amended by removing the specific exclusion of wastewater from commercial kitchens. The effect of this would be that domestic wastewater would include commercial kitchen wastes.

7.771 Fish and Game’s submission requests that the definition for on-site wastewater system be retained.

## Analysis

- 7.772 In my view, replacing the reference to tile drains in Clauses (a)(vi), (b)(vi)(5) and (d)(ix) of Rule 26 with “*sub-surface drainage systems*” has merit as there are many types of subsurface drains which perform the same function as a tile drain.
- 7.773 Elsewhere in this report, it has been recommended that the definition of “*surface waterbody*” is deleted and wherever the term occurs in the text of the pSWLP it is replaced with “*a lake, river, natural wetland, artificial watercourse or modified watercourse*” or whatever combination is appropriate for a particular rule.
- 7.774 Fish and Game’s submission that all reference to distances from any surface water body are amended to “*metres of any surface waterbody, including wetland and ephemeral or intermittently flowing streams, or artificial watercourse...*” is unnecessary as the definition of river (see below) in the RMA includes an intermittently flowing body of fresh water. Similarly, specific reference to ephemeral streams is unnecessary.

*river means a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal)*

- 7.775 The Coastal Marine Area is referenced in Clauses (a)(vi), (b)(vi)(2), (d)(viii)(2) and (d)(ix) of Rule 26. Specifying lagoons and estuaries as a subset of the Coastal Marine Area (CMA) is unnecessary because the CMA is a defined area.
- 7.776 I consider SDC’s submission on Clause (b)(vi)(3), which would require the discharge to be set back 50 metres of any bore or well, and not only those used for potable or stock water supply, is entirely appropriate, as it is consistent with Objective 8 of the pSWLP. Water from a bore used for purposes other than potable water or stock supply has the potential to spread pathogens and there is also the risk of bore water being used for purposes other than that originally intended.
- 7.777 SDC’s submission on Clause (f) (“... *the discharge of untreated domestic wastewater, raw sewage from on-site wastewater systems, or effluent from mobile toilets ...*”) is unnecessary as untreated domestic wastewater is raw effluent from an on-site wastewater system, whereas raw sewage is untreated effluent from a community’s reticulated wastewater system. In any event, Clause (f) is inconsistent with Rules 6 and 15 which provide for the discharge of raw sewage/sewage to a surface water body as a non-complying activity. I therefore recommend that the concerns of the submitter are addressed by amending Clause (f) as follows:

*(f) Despite Rule 26(a) to (e), the discharge of untreated domestic wastewater, ~~raw sewage~~, or effluent from mobile toilets, into surface or groundwater is a prohibited activity.*

- 7.778 In my view, adding the condition “*The discharge does not exceed 14,000 litres per week*” to Rule 26(b) as sought by SDC, the three Territorial Authorities in Southland, GDC, ICC and SDC has merit.
- 7.779 The systems covered by AS/NZS 1547:2012 are normally designed for domestic wastewater flows up to 14,000 litres per week, from a population equivalent of up to

10 persons. This flow limit represents an average daily flow for design purposes of 2,000 litres from up to 10 persons in a single residence, or an institutional or commercial facility which may have a varying seven day or five day operation averaged out over a full week. Larger systems often require additional features in light of the need for more centralised operation, maintenance and monitoring. Where the principles and practices outlined in the standard are applied to systems exceeding this limit the design shall be the responsibility of a suitably qualified and experienced person. To minimise potential adverse effects on the environment (including public health, and surface water and groundwater quality) it is appropriate that on-site wastewater systems with design volumes greater than 14,000 litres are assessed and regulated through a resource consent process.

7.780 The following statement from Ralph Moir & Associates submission supports this approach.

*It is notable that rule 26(b) has not set a daily or monthly discharge limit as opposed to RELAP which sets a daily limit on a monthly average of 1250L per day. The draft rules circulated prior to the advertisement of the plan did make provision for a limit of 2000L per day. I am somewhat at a loss to understand why this limit was omitted. On one hand I am an advocate for rule reduction and certainly the 1250L limit has proved to be overly restrictive but my concern is that the absence of a specific rule will lead to uncertainty. Regrettably, in the administration of domestic wastewater systems by Territorial Authorities, my experience has been that grey areas in the rules result in unsatisfactory outcomes. In addressing the issue of system size , 1547 is not very specific. 1.2.1.2 System Size reads as follows;*

*"The systems covered in this Standard are normally designed for domestic flows up to 14 000L/week.... Where the principles and practices outlined in this Standard are applied to systems exceeding this limit, the design shall be the responsibility of a suitably qualified and experienced person." On one hand I would like to think of myself as a suitable qualified and experienced person so that by my interpretation I would be unbound by the current rules as to the size of system I might design. On the other hand I suspect that I might well be challenged to prove my credentials in a situation where I was designing a particularly large system. In any case there remains confusion if no limit is specified in the Plan. It is worth considering also that there is currently no mechanism whereby domestic wastewater systems are monitored on an ongoing basis. Once a Territorial Authority issues a Code Compliance certificate that is the end of any external monitoring. With smaller systems based on modern technology that isn't much of an issue but if larger systems are not adequately monitored and maintained they have the potential to cause some serious harm. The only way such monitoring and maintenance can be enforced is through the resource consent process by the use of appropriate conditions of consent. For the removal of doubt I would like to see a clause added to rule 26(b) that sets a daily discharge limit on a monthly average of 2000L.*

7.781 SDC, and the three Territorial Authorities in Southland, GDC, ICC and SDC also seeks the following addition to Clause (b):

(viii) the system is designed so that:

- (1) the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and
- (2) the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.

- 7.782 Building Consents staff from the region's Territorial Authorities and local design practitioners have both identified high groundwater tables, limiting horizons in the soil and perched water as the source of recurring issues with on-site wastewater systems in Southland. The criteria set out above is intended by the submitters to address those issues. Those criteria were included in the draft rules prepared for public consultation in July 2015, but for reasons unknown were omitted from the pSWLP. Similar provisions remain in Rule 28. For the reasons identified above, I recommend that the criteria set out above is added to Clause (b).
- 7.783 Federated Farmers' seek that Clauses (a)(viii), (b)(vi)(5) and (d)(viii)(6) are amended to exclude discharges that were lawfully established prior to the establishment of the drinking water site. In my view, such an amendment is inappropriate, as even if the discharge was lawfully established prior to the establishment of the drinking water site, the discharge is still a potential source of contamination to the drinking water site and should be appropriately managed. The August 2016 water contamination event in Havelock North is an example of the significant implications of a contaminated drinking water site. Also, while the discharge may have been legally established, the system may no longer be functioning correctly due to lack of maintenance or it may have simply reached the end of its operational lifespan. Older systems may also not operate as effectively as a modern system and have a lower standard of treatment. I therefore recommend that Clauses (a)(viii), (b)(vi)(5) and (d)(viii)(6) are retained.
- 7.784 Ngāi Tahu seek Clause (g) of Rule 26 is amended to:
- (g) *the discharge does not take place into water within natural state waters, into water subject to a water conservation order or mātaaitai reserve or taiāpure.*
- 7.785 It appears that Ngāi Tahu's submission relates to Rule 9 as Rule 26 does not include a Clause (g) and while natural state waters are referenced in Clauses (b)(vi)(2) and (d)(viii)(2) of Rule 26 it does not reference water subject to a water conservation order. The request by Ngāi Tahu that consideration is made for discharges to any mātaaitai reserve or taiāpure may be more relevant to other rules in the pSWLP. The submitter may wish to clarify their request for Rule 26.
- 7.786 With respect to submissions from Matura Butcher shop and Newton Slink Skins that the activities managed in Rule 26 be permitted, I note that Rule 26 does provides for discharges as a permitted activity, where they are within specified parameters. Once those parameters are breached it is appropriate that the activity is managed via a resource consent.
- 7.787 With respect to P Tayler's submission, the pSWLP is not the appropriate mechanism for a targeted tourist rate to pay for tourism infrastructure/waste disposal as a regional plan does not set rates.
- 7.788 P T & S B Dale Trust's submission in opposition to Rule 26 is that on-site wastewater system are adequately managed by Territorial Authorities as the design and installation is managed by a building consent. It is clear that the building consent process alone does not adequately manage on-site wastewater systems in Southland. Given the many on-site wastewater disposal challenges, Rule 26 contains design criteria which are more stringent than AS/NZS 1547:2012, which I consider are necessary to avoid potential adverse effects on the environment (including public health, and surface water and groundwater



quality). Also, it is entirely appropriate that on-site wastewater systems with design volumes or particular site constraints that are not compatible with permitted activity conditions are assessed and regulated by a resource consent process.

- 7.789 The submission from N J & R H Hamilton & Manapouri Station opposes Rule 26 and requests that Environment Southland has a plan for solving the problem before making rules that aren't achievable. However, in the absence of a suggested plan, I do not recommend any changes to the rule to address this submission.
- 7.790 W Devine's submission on Rule 26 requests that a common sense approach is required to comply with the intent of the rule and states that Clauses (vi), presumably in Rule 26(a), will not be possible in extreme wet weather events and should be modified to take account of adverse weather events. Mr Devine's submission also requests that Environment Southland encourage local councils to allow and provide for pumped grey water disposal to networked sewerage systems especially in semi built up areas. I note Mr Devine's submission but do not recommend any changes in relation to it.
- 7.791 G and R Cockburn and R Hamilton's submissions both suggest that there needs to be tougher rules on existing systems and that there needs to be a timeframe for upgrading systems that are having adverse effects on water quality. The approach taken by Rule 26 towards existing systems is rather lenient and the approach taken towards new systems is intended to reduce problems going forward. It may be appropriate to strengthen the pSWLP by requiring checks for existing systems, perhaps as a point of sale requirement for property sales, or checks on existing systems as a component of Farm Management Plans.
- 7.792 Growplan's submission asked for Environment Southland to consider making it easier to install composting systems as they have no impact on natural systems as they have no ground emissions. Rules 28 and 29 provides for composting toilet systems as permitted activities subject to meeting the conditions specified. In my view, this appropriately balances encouraging the installation of composting systems while ensuring their adverse effects are appropriately managed, and no change is required to address this submission.
- 7.793 Ralph Moir & Associates submission requests that "or any replacement standard" added to Clauses (b)(i) and (ii) of Rule 26. Clause 31 of Schedule 1 of the RMA requires that there has to be a variation or plan change for an amendment to an externally referenced document to have effect through the Plan.
- 7.794 The submission also notes that with respect to Clause (b)(iv) of Rule 26 the pSWLP does not define hazardous substance and that the term should be defined in the glossary or the wording should be amended to read "contains only domestic wastewater."
- 7.795 While the term "hazardous substance" is not defined in the Glossary, it is defined in the RMA. I note that the glossary does not included definitions that are already defined in Section 2 of the RMA.
- 7.796 The definition of "hazardous substance" in the RMA is as follows:

***hazardous substance** includes, but is not limited to, any substance defined in section 2 of the Hazardous Substances and New Organisms Act 1996 as a hazardous substance*

7.797 The definition of “hazardous substance” from the Hazardous Substances and New Organisms Act 1996 is as follows:

***hazardous substance** means, unless expressly provided otherwise by regulations, any substance—*

- (a) with 1 or more of the following intrinsic properties:*
  - (i) explosiveness;*
  - (ii) flammability;*
  - (iii) a capacity to oxidise;*
  - (iv) corrosiveness;*
  - (v) toxicity (including chronic toxicity);*
  - (vi) ecotoxicity, with or without bioaccumulation; or*
- (b) which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any 1 or more of the properties specified in paragraph (a).*

7.798 Rather than debate whether or not domestic wastewater is a hazardous substance it is recommended that Clause (b)(iv) of Rule 26 is amended as follows:

- (iv) ~~the discharge does not contain any hazardous substance~~ consists only of contaminants normally associated with domestic wastewater;*

7.799 The amendment is also consistent with the wording in Clauses (a)(iii) and (d)(ii) in Rule 26, Clause (ii) in Rule 27, Clause (iii) in Rule 28, Clause (ii) in Rule 29.

7.800 Ralph Moir & Associates submission states that there is no need for Clause (b)(vi)(5) of Rule 26 which requires that the discharge is not within 20 metres of any tile drain. The submission states:

*“One of the single greatest causes of system failure in Southland is ground water levels and their impact on system performance. The issue is routinely addressed by way of sub soil drainage that is constructed in conjunction with THE wastewater system with the specific aim of controlling ground water level. In many cases this will involve the construction of new field tile drains or the use of existing field tile drains. I see no need for the rule as in my experience the presence of existing field tile drains has never been an issue of concern. The rule could be modified to exclude those cases where the drain is specifically related to the wastewater system but I see this as a complicated solution to a problem that does not exist.”*

7.801 Groundwater can move both vertically and laterally. Subsurface drainage systems on the downstream side of an on-site wastewater system’s land application system are a potential conduit for contaminants from the discharge. However, subsurface drainage systems on the upstream side of land application system may benefit the on-site wastewater system by removing groundwater which may saturate the soils within the land application system. The following amendment to Clause (b)(vi)(5) is recommended:

- (5) ~~20 metres of any tile drain~~ subsurface drainage system, excluding subsurface drainage systems which benefit the on-site wastewater system.*

7.802 The following is analysis of the submission points on Rule 26 raised by the three Territorial Authorities in Southland, GDC, ICC and SDC.

- 7.803 In relation to referring to “treated wastewater” rather than to “treated domestic wastewater” in Clauses (a), (b) and (c), I note that “Domestic Wastewater” is defined in the Glossary. The intent of the defined term is to exclude wastewater from industrial or trade processes from Rule 26. In my view the submitters’ requested amendment will not achieve that intent.
- 7.804 In relation to amending Clause (a)(iii) as follows: “*the discharge to the system is consistent consists only of contaminants normally associated with domestic wastewater*” and adding this as a new sub-clause to (b). My view is that the amendments will create a grey area in the interpretation of the rule and also undermine the intent of the defined term “domestic wastewater”.
- 7.805 The submitters also seek the following change to Clause (a)(vi) “*there is no discharge above the soil surface, or direct discharge to groundwater, ...*” AS/NZS 1547:2012 provides for subsurface irrigation, covered surface drip irrigation (where effluent is applied directly to the surface of the soil under a cover layer of mulch or other approved cover material), and above ground spray or drip irrigation. The risk of disease and effluent run off during wet conditions are greater for covered surface and above ground spray or drip irrigation than subsurface irrigation. Subsurface irrigation systems are less likely to be affected by freezing than covered surface and above ground irrigation systems. The intent of Clause (a)(vi) is therefore to discourage covered surface and above ground irrigation of effluent and therefore I do not support the change sought by the submitters.
- 7.806 The submitters seek that Clause (b)(iii) is amended as follows: “*the discharge does not result in wastewater ponding being visible on the ground surface*”. As noted above, the intent of Clause (b)(iii) is to discourage surface and above ground irrigation of effluent. For consistency with Clause (a)(vi) I recommend that Clause (b)(iii) be amended to read “*there is no discharge above the soil surface*”
- 7.807 The following analysis relates to the addition sought to Clause (d)(xi), which seeks that as well as the discharge being limited to occurring on a site less than 100 Ha in area, it is also “*limited to a total area of XXX in any year*”, and a further clause is adding requiring that “*the application is managed to reduce the risk of vector attraction.*” A typical septage pumpout from a household’s septic tank would have a volume of 2,000 to 4,000 litres and be done every three to five years. Clause (d)(i) requires that the discharge occurs on the same landholding as the on-site wastewater system is located. Even with multiple dwellings on the same landholding the minimum site area of 100 Ha and the other criteria of Clause (d) adequately manages the activity without limiting the discharge area in any single year. However, there is merit in the suggested addition (xii) to Rule 26(d) to minimise the risk of vectors spreading disease.
- 7.808 In relation to the submission from the three Territorial Authorities in Southland, GDC, ICC and SDC to delete the definition of ‘domestic wastewater’ from the definitions in the Glossary and amend the definition of ‘On-site Wastewater System’, as noted earlier, the intent of the defined term ‘domestic wastewater’ is to exclude wastewater from industrial or trade processes from Rule 26. The deletion of the definition domestic wastewater or the deletion of the second sentence in the definition for on-site wastewater system will not achieve that intent. In my view, the suggested amendment to change an individual home or commercial facility from the singular to the plural is unnecessary.

7.809 Ralph Moir & Associates and SDC's have both requested that the definition of 'domestic wastewater' be amended by removing the reference to commercial kitchens. If the permitted activity criteria specified in Rule 26(b) includes an appropriate maximum discharge volume, then I can support the suggested deletion along with the corresponding deletion of reference to commercial laundries.

## Recommendation

7.810 Amend Rule 26 as follows:

- (a) *The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from an existing on-site wastewater system is a permitted activity provided the following conditions are met:*
- (i) *the on-site wastewater system had been installed and was operational prior to 1 June 2016;*
  - (ii) *the discharge does not exceed 1,250 litres per day, averaged over a period of one month;*
  - (iii) *the discharge consists only of contaminants normally associated with domestic wastewater;*
  - (iv) *the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;*
  - (v) *there is no faecal contamination of any take of water for human consumption as a result of the discharge;*
  - (vi) *there is no discharge above the soil surface, or direct discharge to groundwater, ~~surface water, an artificial watercourse~~ a lake, river, natural wetland, artificial watercourse, modified watercourse<sup>410</sup> or the coastal marine area, including discharge via ~~tile drains subsurface drainage systems~~,<sup>411</sup> stormwater drains, artificial free draining areas such as soak holes and overland flow;*
  - (vii) *the inflow or infiltration of stormwater, other surface water and groundwater to the system is minimised;*
  - (viii) *the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J.*
- (b) *The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from a new on-site wastewater system or a replacement of an existing system is a permitted activity provided the following conditions are met:*
- (i) *the discharge does not exceed 14,000 litres per week;<sup>412</sup>*
  - (ii) *the treatment and disposal system is designed and installed in accordance with Sections 5 and 6 of New Zealand Standard AS/NZS 1547:2012 – On-site Domestic Wastewater Management; ~~and~~<sup>413</sup>*
  - (iii) *the treatment and disposal system is operated and maintained in accordance with the system's design specification for maintenance or, if there is no design specification for maintenance, Section 6.3 of New Zealand Standard AS/NZS 1547:2012 – On-site Domestic Wastewater Management; ~~and~~<sup>414</sup>*
  - (iv) *the discharge does not result in wastewater being visible on the ground there is no discharge above the soil surface;<sup>415</sup> ~~and~~<sup>416</sup>*
  - (v) *the discharge does not contain any hazardous substance; consists only of contaminants normally associated with domestic wastewater;<sup>417</sup>*

<sup>410</sup> 247.41 Environment Southland

<sup>411</sup> 152.16 Clover Bell; 752.119 Fish and Game; and 750.15 SDC

<sup>412</sup> 330.14 GDC, ICC and SDC; 658.1 Ralph Moir & Associates; and 750.15 SDC

<sup>413</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>414</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>415</sup> 330.14 GDC, ICC and SDC

<sup>416</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

- (~~vi~~) *the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;*
- (~~vii~~) *the discharge is not within:*
- (1) *20 metres of any ~~surface waterbody or artificial watercourse~~ a lake, river, natural wetland, artificial watercourse, modified watercourse,<sup>418</sup> excluding interception drains which benefit the on-site wastewater system;*
  - (2) *50 metres of the coastal marine area or any natural state waters;*<sup>419</sup>
  - (3) *50 metres of any bore or well ~~used for potable or stock water supply;~~<sup>420</sup> or<sup>421</sup>*
  - (4) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; or*
  - (5) *20 metres of any ~~tile drain subsurface drainage system,~~ excluding subsurface drainage systems which benefit the on-site wastewater system.<sup>422</sup>*
- (viii) *for any land application system:*
- (1) *the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and*
  - (2) *the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.<sup>423</sup>*
- (c) *The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from an on-site wastewater system that does not meet the conditions of Rule 26(a) or (b), is a discretionary activity.*
- (d) *The discharge of septage onto or into land, in circumstances where a contaminant may enter water, and any associated discharge to air ~~from an on site wastewater system~~<sup>424</sup> is a permitted activity provided the following conditions are met:*
- (i) *the discharge occurs on the same landholding as the on-site wastewater system is located;*
  - (ii) *the discharge consists only of contaminants normally associated with domestic wastewater.*
  - (iii) *the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;*
  - (iv) *there is no faecal contamination of any take of water for human consumption as a result of the discharge;*
  - (v) *the maximum depth of septage application is 7 mm;*
  - (vi) *no other effluent is discharged to the septage application area for 28 days before and 28 days after the septage application;*
  - (vii) *the discharge onto or into land does not occur at a location where overland flow will result in contaminants reaching ~~surface water~~ a lake, river, natural wetland, artificial watercourse, modified watercourse or the coastal marine area,<sup>425</sup>*
  - (viii) *the discharge is not within:*
- (1) *20 metres of any ~~surface waterbody or artificial watercourse~~ a lake, river, natural wetland, artificial watercourse or modified watercourse,<sup>426</sup>*
  - (2) *50 metres of the coastal marine area or any natural state waters; or*
  - (3) *100 metres of any bore or well ~~used for potable or stock water supply;~~<sup>427</sup>*
  - (4) *100 metres of any landholding boundary;*

<sup>417</sup> 658.1 Ralph Moir & Associates

<sup>418</sup> 247.41 Environment Southland

<sup>419</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>420</sup> 750.15 SDC

<sup>421</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>422</sup> 658.1 Ralph Moir & Associates

<sup>423</sup> 330.14 GDC, ICC and SDC; and 750.15 SDC

<sup>424</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>425</sup> 247.41 Environment Southland

<sup>426</sup> 247.41 Environment Southland

<sup>427</sup> 750.15 SDC

- (5) 200 metres of any school, marae, or residential dwelling other than residential dwellings on the landholding;
- (6) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
- (ix) there is no direct discharge to groundwater, ~~surface water, an artificial watercourse a lake, river, natural wetland, artificial watercourse, modified watercourse~~<sup>428</sup> or the coastal marine area, including discharge via ~~tile drains subsurface drainage system,~~<sup>429</sup> stormwater drains, artificial free draining areas such as soak holes, and overland flow;
- (x) the discharge does not result in any emission of odour that is offensive or objectionable at or beyond the boundary of the landholding<sup>430</sup>;
- (xi) the discharge does not occur on a site less than 100 hectares in area;
- (xii) the application is managed to reduce the risk of vector attraction.<sup>431</sup>
- (e) The discharge of septage into or onto land from an on-site wastewater system, that does not meet the conditions of Rule 26(d), is a discretionary activity.
- (f) Despite Rule 26(a) to (e), the discharge of untreated domestic wastewater, ~~raw sewage,~~<sup>432</sup> or effluent from mobile toilets, into ~~surface a lake, river, natural wetland, artificial watercourse, modified watercourse the coastal marine area~~<sup>433</sup> or groundwater is a prohibited activity.

7.811 Amend the definition of ‘Domestic Wastewater’ as follows:

*For the purposes of this rule, domestic wastewater is limited to effluent derived from dwellings, business buildings, institutions and the like, and consisting of toilet wastes and wash waters from kitchens, bathrooms and laundries, but excluding commercial laundry and commercial kitchen wastes.*<sup>434</sup>

7.812 Amend the definition of ‘On-site Wastewater System’ as follows:

*The collection, treatment and disposal/reuse of wastewater from an individual home or commercial facility on the same ~~property landholding~~<sup>435</sup> as it is generated. For the purposes of this definition, wastewater is limited to toilet wastes and wash water from kitchens, bathrooms and laundries.*

7.813 Amend the definition of ‘Subsurface drainage systems’ as follows:

*An artificial permeable subsurface conduit constructed for the purposes of draining agricultural soil water/moisture. An installed subsurface drainage system includes tile, mole, concrete and clay drains, wooden box drains and plastic subsurface drainage pipes. Stormwater systems, drainage by use of sumps, and ~~foul water drainage systems~~ on-site wastewater systems<sup>436</sup> are not included in this definition.*

<sup>428</sup> 247.41 Environment Southland

<sup>429</sup> 152.16 Clover Bell; 752.119 Fish and Game; and 750.15 SDC

<sup>430</sup> Clause 16(2) Amendment

<sup>431</sup> 330.14 GDC, ICC and SDC

<sup>432</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

<sup>433</sup> 247.41 Environment Southland

<sup>434</sup> 658.2 Ralph Moir & Associates; and 750.25 SDC

<sup>435</sup> 330.20 GDC, ICC and SDC

<sup>436</sup> 247.3 Environment Southland; or Clause 16(2) Amendment

## Pit Toilets

### Provision

- 7.814 Rule 27 allows the discharge of human excreta into land via a pit toilet (also known as a pit latrine, long-drop or privy) as a permitted activity, provided specified conditions can be met. These toilet systems are commonly used in remote locations where on-site wastewater systems are not viable and their level of usage is low, including but not limited to backcountry huts. They may also be appropriate as temporary facilities where connection to a community sewage scheme is not possible. Rule 27 does not exempt pit toilets from compliance with provisions in a District Plan, or requirements imposed under the Building Act 2004 or the Health Act 1956. This rule specifies an upper limit on the volume of discharge which is equivalent to the amount of human excreta produced by approximately 20 people.
- 7.815 The use of pit toilets has the potential to adversely affect public health, and surface water and groundwater quality. However, the use of pit toilets is appropriate when potential adverse effects are adequately avoided, remedied or mitigated. As water is the main transport mechanism for contaminants in a pit toilet the permitted activity conditions specify conservative separation distances to water bodies including groundwater, bores and wells. Similarly, the ingress of stormwater, surface water or grey water is to be avoided as this may accelerate the transport of contaminants through the soil or via direct overland flow.

### Submissions

- 7.816 There are 10 submissions on Rule 27. Five submitters support the rule with one of those submitters seeking that the rule be retained, and the other four seeking that the rule be retained with amendments.
- 7.817 Fish and Game request that the rule is retained, but seek that all references to tile drains are amended to refer to “*sub-surface drainage systems*”; and that all reference to distances from any surface water body are amended to “*metres of any surface waterbody, including wetland and ephemeral or intermittently flowing streams, or artificial watercourse...*”.
- 7.818 Forest and Bird support the rule but seek that reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams is inserted in the rule.
- 7.819 Ngāi Tahu support the rule in part but seek that Clause (g) of Rule 27 is amended to:
- (g) *the discharge does not take place into water within natural state waters, into water subject to a water conservation order or mātaimitai reserve or taiāpure.*
- 7.820 Ngāi Tahu’s submission also supports Rule 27(f) because the discharge of raw sewage into water is offensive to Ngāi Tahu and compromises both water quality and mahinga kai. The submission requests that Clause (f) of Rule 27 is retained as worded.
- 7.821 SDC request that Clause (a)(v)(3) of Rule 27 is amended to “*50 metres of any bore or well ~~used for potable or stock water supply~~*”.

- 7.822 There were three submissions opposing the rule, with one of those submitters, M Strang, opposing the permitted activity discharge volume threshold of 320 litres per week in Clause (a)(i). Mr Strang assumes that this volume will not be metered, and if it is, questions whether Environment Southland will be covering the monitoring costs.
- 7.823 Mataura Butcher Shop and Newton Slink Skins oppose the rule because of its impact on the rural communities and businesses. They seek that the activities be permitted.
- 7.824 P Tayler requests that the rule be amended because he believes Environment Southland has not adequately accounted for the potential increase and impact from tourism. Mr Tayler requests a targeted tourist rate to pay for tourism infrastructure/waste disposal.

### Analysis

- 7.825 Many of these submission points are identical to those discussed in relation to on-site wastewater systems. With respect to the following submissions, the analysis and conclusions are not repeated, as they also apply in this instance: Fish and Game, Forest and Bird, SDC, Mataura Butcher Shop, Newton Slink Skins and P Tayler.
- 7.826 Ngāi Tahu support the rule in part but requests that Clause (g) of Rule 27 is amended to:
- (g) *the discharge does not take place into water within natural state waters, into water subject to a water conservation order or mātaimai reserve or taiāpure.*
- 7.827 It appears that Ngāi Tahu's submission on Clause (g) relates to Rule 9. Natural state waters are referenced in Clause (a)(v)(2) of Rule 27, but this is no reference to water subject to a water conservation order. The request by Ngāi Tahu that consideration is made for discharges to any mātaimai reserve or taiāpure may be more relevant to other rules in the pSWLP. Ngāi Tahu's submission also supports Clause (f) of Rule 27, but there is no Clause (f). It is assumed that (f) relates to (a)(vi). The submitter may wish to clarify their request for Rule 27.
- 7.828 In relation to Mr Strang's submission regarding the permitted activity discharge volume threshold of 320 litres per week in Clause (a)(i), whether this volume will be metered, and if so, who will be covering the monitoring costs, I note that Rule 27 specifies an upper limit on the volume of discharge which is equivalent to the amount of human excreta produced by approximately 20 people. In my view, this is a generous volume in the context of remote locations or temporary facilities so it is appropriate that when the volume exceeds the upper limit the discharge is controlled by a resource consent process. At a practical level I doubt that the metering of discharges to pit toilets would be considered. In the unlikely event that metering is required, it would not be required for a permitted activity.

### Recommendations

- 7.829 Amend Rule 27 as follows:
- (a) *Notwithstanding Rule 26 the discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from a pit toilet is a permitted activity provided the following conditions are met:*
- (i) *the discharge does not exceed 320 litres per week;*



- (ii) *the discharge comprises only contaminants normally associated with human excreta;*
  - (iii) *the pit toilet is not used for the disposal of wastewater from chemical toilets;*
  - (iv) *there is no faecal contamination of any take of water for human consumption as a result of the discharge;*
  - (v) *the discharge is not within:*
    - (1) *20 metres of any ~~surface waterbody~~ a lake, river, natural wetland, artificial watercourse, modified watercourse<sup>437</sup> or artificial watercourse, excluding interception drains which benefit the pit toilet;*
    - (2) *50 metres of the coastal marine area or any natural state waters; or*
    - (3) *50 metres of any bore or well ~~used for potable or stock water supply;~~<sup>438</sup>*
    - (4) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
    - (5) *a site that is zoned for residential, commercial or industrial purposes in any district plan;*
  - (vi) *there is no direct discharge above the soil surface, or to groundwater, ~~surface water, an artificial watercourse~~ a lake, river, natural wetland, artificial watercourse, modified watercourse<sup>439</sup> or the coastal marine area, including discharge via ~~tile drains~~ subsurface drainage system,<sup>440</sup> stormwater drains, artificial free draining areas such as soak holes, and overland flow;*
  - (vii) *the soil type does not comprise gravels, coarse/medium sands, fissured rock, or other such materials likely to permit free travel of contaminants away from the pit;*
  - (viii) *stormwater or other surface water is prevented from entering the pit toilet;*
  - (ix) *the discharge shall not accumulate within 500 millimetres of the land surface;*
  - (x) *for any new pit toilet that has been installed and was operational on 1 ~~January~~ June<sup>441</sup> 2016 or later, the bottom of the pit is not less than 900 millimetres above the mean seasonal high groundwater table;*
- (b) *The discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from a pit toilet that does not meet the conditions of Rule 27(a) is a discretionary activity.*

## Composting Toilets

### Provisions

- 7.830 Rule 28 allows discharges of liquid from a waterless composting toilet onto or into soil as a permitted activity, subject to conditions being met. The volume of discharge permitted is sufficiently small that, combined with good practice, no more than minor adverse effects would be anticipated from allowing it without resource consent.
- 7.831 This rule does not exempt waterless composting toilet systems from compliance with provisions in a District Plan, or requirements imposed under the Building Act 2004 or the Health Act 1956. Where the conditions cannot be met, a resource consent will be required in accordance with Rule 28(b) as a discretionary activity.

<sup>437</sup> 247.41 Environment Southland

<sup>438</sup> 750.16 SDC

<sup>439</sup> 247.41 Environment Southland

<sup>440</sup> 752.120 Fish and Game

<sup>441</sup> 247.3 Environment Southland

7.832 Similarly, Rule 29 allows discharges of aerobically composted human excreta onto or into soil as a permitted activity. Where the permitted activity conditions cannot be met, a resource consent will be required as a discretionary activity under Rule 29(b).

7.833 The definition of ‘effluent’ is also relevant to the analysis of submissions on these provisions and reads:

*“A liquid that may include solid components discharged as a waste that originates from:*

- (a) on-site wastewater systems and mobile toilets;*
- (b) community sewerage schemes;*
- (c) agricultural activities;*
- (d) an industrial or trade process;*
- (e) but excludes solid waste.”*

### **Submissions**

7.834 There are 11 submissions on Rule 28. Four submitters support the rule with R Van Gool and Aratiatia Livestock seeking that the rule be retained, and Ngāi Tahu and Fish and Game seeking that the rule be retained with amendments.

7.835 There are 12 submissions on Rule 29. Four submitters support the rule with two of those submitters seeking that the rule be retained, and the other two seeking that the rule be retained with amendments.

7.836 Fish and Game request that Rules 28 and 29 are retained, but seek that all references to tile drains are amended to refer to “*sub-surface drainage systems*”; and that all reference to distances from any surface water body are amended to “*metres of any surface waterbody, including wetland and ephemeral or intermittently flowing streams, or artificial watercourse...*”.

7.837 Forest and Bird support the rules but seek that reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams are inserted in the rules.

7.838 Ngāi Tahu support the rules in part but seek that “Clause (g)” of the rules are amended to:

- (g) the discharge does not take place into water within natural state waters, into water subject to a water conservation order or mātaihai reserve or taiāpure.*

7.839 SDC request that Clause (a)(v)(1) of Rule 28, and Clause (a)(ix)(3) of Rule 29 is amended to “*50 metres of any bore or well-used for potable or stock water supply;*”.

7.840 There were three submissions opposing both rules, with one of those submitters, Federated Farmers, seeking that Clause (a)(v)(4) of Rule 28 and Clause (a)(x)(5) of Rule 29 is amended to exclude discharges that were lawfully established prior to the establishment of the drinking water site.

7.841 Matura Butcher Shop and Newton Slink Skins oppose both rules because of their impact on the rural communities and businesses. They seek that the activities be permitted.

- 7.842 P Tayler requests that the rules be amended because he believes Environment Southland has not adequately accounted for the potential increase and impact from tourism. Mr Tayler requests a targeted tourist rate to pay for tourism infrastructure/waste disposal.
- 7.843 In relation to Rule 28, Growplan request that Council consider making it easier to install composting systems as they have no impact on natural systems as they have no ground emissions. The submission also states that urine separation is now possible with these systems and needs to be taken into account.
- 7.844 Environment Southland staff submission requests the following amendment to the definition of effluent:
- A liquid that may include solid components discharged as a waste that originates from:*
- (a) on-site wastewater systems, composting toilet system, and mobile toilets;*
  - (b) community sewerage schemes;*
  - (c) agricultural activities;*
  - (d) an industrial or trade process;*
  - (e) but excludes solid waste.*
- 7.845 Fish and Game's submission requests that the definition of effluent be retained.
- 7.846 The submission from N J & R H Hamilton & Manapouri Station does not include reference to Rule 29 so the corresponding reference in the SODR for Rule 29 should be disregarded.

## Analysis

- 7.847 Many of these submission points are identical to those discussed in relation to on-site wastewater systems. With respect to the following submissions, the analysis and conclusions are not repeated, as they also apply in this instance: Fish and Game, Federated Farmers, Forest and Bird, SDC, Matura Butcher Shop, Newton Slink Skins and P Tayler.
- 7.848 In relation to Growplan's request to make installing composting systems easier, I note that Rules 28 and 29 already provide for composting toilet systems as a permitted activity, with Rule 28 dealing with the urine separation component of those systems. As such, I do not consider changes are necessary to Rules 28 and 29 to address anything raised in this submission.
- 7.849 In relation to the changes sought by Ngāi Tahu to "Clause (g)", it appears that Ngāi Tahu's submission on Clause (g) relates to Rule 9. Natural state waters are referenced in Clause (a)(v)(2) of Rule 28 and Clause (a)(ix)(2) of Rule 29, but neither reference water subject to a water conservation order. The request by Ngāi Tahu that consideration is made for discharges to any mātaītai reserve or taiāpure may be more relevant to other rules in the pSWLP. The submitter may wish to clarify their request for Rules 28 and 29.
- 7.850 Environment Southland staff's request to include reference to composting toilet systems in the definition for effluent has merit because it is an obvious omission in the definition.

## Recommendations

7.851 Amend Rule 28 as follows:

- (a) *Notwithstanding Rule 26 the discharge of liquid from a waterless composting toilet system onto or into land, in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:*
- (i) *the discharge occurs on the same landholding as the waterless composting toilet is located;*
  - (ii) *the volume of the discharge does not exceed 105 litres per week;*
  - (iii) *the discharge comprises only contaminants normally associated with human excreta;*
  - (iv) *there is no faecal contamination of any take of water for human consumption as a result of the discharge;*
  - (v) *the discharge is not within:*
    - (1) *20 metres of any ~~surface waterbody or artificial watercourse~~ a lake, river, natural wetland, artificial watercourse or modified watercourse;<sup>442</sup>*
    - (2) *50 metres of the coastal marine area or any natural state waters; or*
    - (3) *50 metres of any bore or well ~~used for potable or stock water supply;~~<sup>443</sup>*
    - (4) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
  - (vi) *there is no discharge above the soil surface, or direct discharge to groundwater, ~~surface water, an artificial watercourse~~ a lake, river, natural wetland, artificial watercourse, modified watercourse<sup>444</sup> or the coastal marine area, including discharge via ~~the drains~~ subsurface drainage systems,<sup>445</sup> stormwater drains, artificial free draining areas such as soak holes and overland flow;*
  - (vii) *no stormwater, other surface water or groundwater shall infiltrate the wastewater treatment unit; and*
  - (viii) *stormwater, other surface water or groundwater shall be directed away from the land application system area;*
  - (ix) *for any land application system that has been installed and was operational on 1 ~~January~~ June<sup>446</sup> 2016 or later ~~the system is designed so that:~~*
    - (1) *the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and*
    - (2) *the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.*
- (b) *The discharge of liquid from a waterless composting toilet system onto or into land, in circumstances where a contaminant may enter water that does meet one or more of the conditions of Rule 28(a) is a discretionary activity.*

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<sup>442</sup> 247.41 Environment Southland

<sup>443</sup> 750.17 SDC

<sup>444</sup> 247.41 Environment Southland

<sup>445</sup> 752.121 Fish and Game

<sup>446</sup> 247.3 Environment Southland; or Clause 16(2) Amendment - Consistency with Rule 26(a)(1)

7.852 Amend Rule 29 as follows:

- (a) *The discharge of aerobically composted human excreta onto or into land, in circumstances where a contaminant may enter water, and any associated discharge to air from a waterless composting toilet system is a permitted activity provided the following conditions are met:*
- (i) *the discharge occurs on the same landholding as a waterless composting toilet system is located;*
  - (ii) *the discharge comprises only contaminants normally associated with human excreta;*
  - (iii) *the waterless composting toilet system is not used for the disposal of wastewater from chemical toilets;*
  - (iv) *there is no contamination of any take of water for human consumption as a result of the discharge;*
  - (v) *the material has been subject to aerobic composting decomposition for at least 12 months from the last addition of raw human excreta and is worked into the soil immediately following the discharge;*
  - (vi) *the material is not applied to any food crop for animal or human consumption unless the material has been subject to aerobic composting decomposition and storage for at least 24 months from the last addition of raw human excreta and is worked into the soil immediately following the discharge;*
  - (vii) *the discharge onto or into land does not occur at a location where overland flow will result in contaminants reaching surface water a lake, river, natural wetland, artificial watercourse, modified watercourse or the coastal marine area.<sup>447</sup>*
  - (viii) *the working of the compost into the soil does not encounter any groundwater or perched water;*
  - (ix) *the discharge is not within:*
    - (1) *20 metres of any ~~surface waterbody or artificial watercourse~~ a lake, river, natural wetland, artificial watercourse or modified watercourse.<sup>448</sup>*
    - (2) *50 metres of the coastal marine area or any natural state waters;*
    - (3) *50 metres of any bore or well ~~used for potable or stock water supply~~.<sup>449</sup>*
    - (4) *10 metres of a landholding boundary;*
    - (5) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
  - (x) *the discharge does not result in any emission of odour that is offensive or objectionable at or beyond the boundary of the landholding;*
- (b) *The discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from aerobically composted human excreta that does not meet the one or more of the conditions of Rule 29(a) is a discretionary activity.*

### ***Effluent***<sup>450</sup>

Amend as follows:

*A liquid that may include solid components discharged as a waste that originates from:*

- (a) *on-site wastewater systems, composting toilet systems<sup>451</sup> and mobile toilets;*

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<sup>447</sup> 247.41 Environment Southland

<sup>448</sup> 247.41 Environment Southland

<sup>449</sup> 750.18 SDC

<sup>450</sup> See also amendments recommended in relation to agricultural effluent discussion.

<sup>451</sup> 247.39 Environment Southland

- (b) *community sewerage schemes;*
- (c) *agricultural activities;*
- (d) *an industrial or trade process;*
- (e) *but excludes solid waste.*

## **Mobile Toilets**

### **Provision**

7.853 The discharge of effluent from mobile toilets onto roadsides, picnic areas and pastoral land or into waterways is offensive and objectionable; and can have adverse effects on public health, and surface water and groundwater quality. Dump stations that are specifically designed to receive effluent from mobile toilets are located throughout Southland. It is therefore proposed that discharge of effluent from a mobile toilet into or onto land, or into water, is a prohibited activity under Rule 30.

### **Submissions**

- 7.854 There are nine submissions on Rule 30. Five submitters support the rule with four of those submitters seeking that the rule be retained.
- 7.855 Forest and Bird support the rule but seek that reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams be inserted in the rule.
- 7.856 Ngāi Tahu support the rule because the discharge of human waste to ground untreated is not only unsanitary but offensive to Ngāi Tahu.
- 7.857 B Hamilton requests the rule be amended as without nominating a place to empty a mobile toilet the rule is nonsense. P Tayler requests that the rule be amended because he believes Environment Southland has not adequately accounted for the potential increase and impact from tourism. Mr Tayler requests a targeted tourist rate to pay for tourism infrastructure/waste disposal. Mataura Butcher Shop and Newton Slink Skins oppose the rule because of its impact on rural communities and businesses. They seek that the activity be permitted.

### **Analysis**

- 7.858 With respect to the submission from Fish and Game relating to the CMA and ephemeral streams, this has been assessed earlier in relation to Rule 26, and the analysis and conclusions are equally applicable in relation to Rule 30, and are therefore not repeated here.
- 7.859 With regards to B Hamilton's concerns, I note that dump stations that are specifically designed to receive wastewater from mobile toilets are widely dispersed across Southland. The location of those dump stations is available through many sources and at a local scale they are well signposted. The rule does not need to specify where mobile toilets should be emptied, because it only controls discharges from mobile toilets that are direct to land or water.

- 7.860 In relation to P Tayler’s submission, I note that the pSWLP is not the appropriate mechanism for a targeted tourist rate to pay for tourism infrastructure/waste disposal.
- 7.861 In relation to the request from Mataura Butcher Shop and Newton Slink Skins that the activity be permitted, it is my view, given the offensive and objectionable nature of the discharge, particularly to Maori, and the potential adverse effects on public health and water quality, that it is appropriate that the activity is prohibited. The benefits of disposing wastewater from mobile toilets in an appropriate manner far outweigh the adverse effects of permitting the inappropriate discharge of that wastewater. Rule 30 will have no more impact on rural communities and businesses than urban communities and tourists. All residents and visitors should make the effort to act responsibly on this issue rather than act irresponsibly for the sake of convenience.
- 7.862 For a regional rule the RMA definition of land does not include the bed of a lake or river and part of the bed may be dewatered for a considerable part of the year. Therefore, the notified wording of Rule 30 contains a gap as the references to land and water do not cover the dewatered bed of a lake or river. I recommend an amendment to address this.

### **Recommendation**

- 7.863 Amend Rule 30 as follows:

*The discharge of effluent from a mobile toilet into or onto land, into or onto the bed of a lake or river.<sup>452</sup> or into water is a prohibited activity.*

### **Dump Stations**

#### **Provision and Applicable Definitions**

- 7.864 Rule 31 reads:

*The discharge of effluent into or onto land from an on-site wastewater system that receives wastewater from a dump station is a non-complying activity.*

The definition of ‘Dump Station’ is also relevant to this rule, and reads:

*A dump station is a facility designed to receive wastewater from mobile toilets.*

### **Submissions**

- 7.865 There are seven submissions on Rule 31. Three submitters support the rule with two of those submitters seeking that the rule be retained. Forest and Bird support the rule but seek that reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams be inserted in the rule.
- 7.866 P Tayler requests that the rule be amended because he believes Environment Southland has not adequately accounted for the potential increase and impact from tourism. Mr Tayler requests a targeted tourist rate to pay for tourism infrastructure/waste disposal.

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<sup>452</sup> Clause 16(2) Amendment

Mataura Butcher Shop and Newton Slink Skins oppose the rule because of its impact on rural communities and businesses. They seek that the activity be permitted.

7.867 Strathfair Farms submit that more stock truck dump stations are needed.

7.868 Fish and Game's submission requests that the definition for dump station be retained.

### Analysis

7.869 Rule 31 makes the discharge of wastewater from dump stations to land a non-complying activity. This approach has been adopted because the additives commonly used to suppress odour in the holding tanks of mobile toilets contain chemicals which severely disrupt the beneficial bacteria in on-site wastewater systems. This inevitably leads to system failure and adverse environmental effects. A local example of the failure of an on-site wastewater system as a result of effluent from mobile toilets being discharged to the system via a dump station, is at Gunn's Camp in the Hollyford Valley. When the charitable trust that runs the camp became aware of the failure they closed the dump station and now only use it for washing out their wheelie bins.

7.870 The best practice option for the management of wastewater from dump stations that accept chemical toilet waste is containment and transfer to a community sewage scheme capable of appropriately processing the chemical toilet waste. However, provided the applicant can prove that alternative technology or other mitigating factors, such as sufficient dilution by other effluent, will ensure the proper functioning of the on-site wastewater system and treatment of the chemical toilet waste, then resource consent for the discharge to land may be able to be granted. Given the technical difficulties in managing this type of discharge, classifying it as a permitted activity would, in my view, be inappropriate.

7.871 The submissions from Forest and Bird and P Tayler are identical to those discussed above in relation to Rule 30. Therefore, the analysis and conclusions are not repeated, as they also apply in this instance.

7.872 With respect to Strathfair Farms submission, the definition of Dump Station does not include stock truck dump stations and therefore the rule does not apply to these.

### Recommendation

7.873 Amend Rule 31 as follows:

*The discharge of effluent into or onto land from an on-site wastewater system that receives ~~wastewater~~ effluent<sup>453</sup> from a dump station is a non-complying activity.*

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<sup>453</sup> 247.3 Environment Southland or Clause 16(2) Amendment



## Definitions

### *Dump Station*

Amend as follows:

*A dump station is a facility designed to receive ~~wastewater~~ effluent<sup>454</sup> from mobile toilets.*

## Effluent Storage

### Provision

7.874 Rule 32 reads:

- (a) *The use of land for the construction of any effluent storage, including of waste-water, sludge or effluent from an industrial or trade processes or agricultural effluent, is a restricted discretionary activity provided the following conditions are met:*
- (i) *for agricultural effluent storage the design, and build process, is certified by a Chartered Professional Engineer as being in accordance with IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction (2013); and*
  - (ii) *the effluent storage is not within 50 metres of any surface waterbody, artificial watercourse or coastal marine area;*
  - (iii) *the effluent storage is not within 200 metres of any dwelling not on the same landholding, or 50 metres of the boundary of any other landholding; and*
  - (iv) *the effluent storage is not within 100 metres of any water abstraction point;*

#### ***Environment Southland will restrict its discretion to the following matters:***

- 1. *the design and construction of the storage and ancillary structures;*
  - 2. *methods to be used to protect its embankments from damage by stock and machinery;*
  - 3. *the adverse effects of the effluent storage on: surface waterbodies, artificial watercourses, installed subsurface drains, groundwater, bores, registered drinking- water supplies, the coastal marine area, trees, stop banks, residential dwellings, places of assembly, urban areas, landholding boundaries and historic heritage;*
  - 4. *the height of the embankments and placement and orientation of the effluent storage relative to flood flows and stormwater run-off;*
  - 5. *the storage capacity of the effluent storage in relation to the volume and nature of the liquid that will enter;*
  - 6. *the quality of, and compliance with, an operational management plan, including operational procedures, emergency response, monitoring and reporting requirements, and installation of monitoring devices; and*
  - 7. *adoption and implementation of an Accidental Discovery Protocol.*
- (b) *The use of land for the construction of any effluent storage that does not meet the conditions in Rule 32(a) is a non-complying activity.*

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<sup>454</sup> 247.3 Environment Southland or Clause 16(2) Amendment

## Submissions and analysis

### Scope of rule

#### Submissions

- 7.875 63 submissions were received on Rule 32. Many submitters are concerned that the proposed rule is too broad. In particular, that the rule now captures multiple storage devices including tanks, sumps/stonetrap, drying pads, on-site wastewater, composting toilets, mobile toilets or stock truck effluent disposal sites. Further, submitters identify that some of these activities, for example precast effluent tanks, require building consent, which incorporates compliance with IPENZ Practice Note 21 and therefore the proposed rule would create a “*double consent burden*”. DairyNZ, Kapuka Dairies and others request an approach similar to the existing rule in the RWP, by limiting the scope of the rule to storage facilities over a certain volume, for example Seaview Trust and Oraka Farms state “... *there needs to be a minimum size requirement for storage facilities as per the previous plan*”.
- 7.876 In contrast to the above, IPENZ seek the retention of farm dairy effluent infrastructure systems in proposed Rule 32. A couple of submitters, including DairyNZ and Aratiatia Livestock request certification of compliance with IPENZ Practice Note 27 – Dairy Farm Infrastructure. IPENZ supports the reference in Rule 32 (Effluent Storage) to IPENZ Practice Note 21 Farm Dairy Effluent Pond Design and Construction<sup>455</sup>.

#### Analysis

- 7.877 The management of on-site wastewater systems and pit, composting, and mobile pit toilets are covered under Rules 26, 27 and 28. Therefore, I recommend they are excluded from Rule 32. However, there is no specific rule for the construction of stock truck effluent storage which poses the same risk to the environment as other agricultural effluent storage, albeit generally on a smaller scale. It is therefore appropriate for stock truck effluent disposal sites to meet performance standards consistent with the treatment of other effluent storage. There is however an existing provision, within Rule 35(a)(i)(5), for the discharge of effluent from holding tanks on stock trucks to land as a permitted activity, provided conditions can be met.
- 7.878 Smaller effluent treatment or storage components, for example stone traps, typically do not hold effluent for a long duration and therefore pose a smaller risk to the environment than larger effluent storage facilities. I consider that a permitted activity status with performance standards including: the sealing of ancillary structures; proximity to sub-surface drainage; and setbacks from surface water, coastal marine area, boundaries and dwellings is an appropriate way to address submitters concerns and give effect to the objectives and policies of the pSWLP, RPS, pSRPS and NPSFM.
- 7.879 The RWP currently uses a threshold of 22.5 cubic metres to trigger the need for resource consent. Currently there is no volume threshold in the pSWLP and as such all effluent storage requires resource consent a matter traversed in a number of submissions. Some submitters have also sought a permitted volume increase to 30 or 35 cubic metres.

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<sup>455</sup> IPENZ Practice Note 21 Farm Dairy Effluent Pond Design and Construction was developed by civil, geotechnical, agricultural and environmental engineering professionals. It provides a good practice industry standard for designing and constructing agricultural effluent ponds by taking into account environmental factors as well as relevant legislation for example the Building Act 2014.

Section 32 of Schedule 1 to the Building Act, entitled – *Building work for which building consent is not required*, enables building work without a building permit associated with tanks up to 35 cubic metres if they are located on the ground.<sup>456</sup> Further, as Civil Tech submit the Schedule also permits smaller dams.<sup>457</sup> Large dams are defined as a dam that had a height of 4 or more metres and holds 20,000 cubic metres volume of water or other fluid.<sup>458</sup>

- 7.880 While management of environmental adverse effects is not the role of the Building Act, the purpose of that Act, as outlined in Section 3, provides for sustainable development, the safety of people and promotes accountability of owners, designers and construction workers. I therefore recommended a permitted activity volume, based on the Building Act volumes, is included in the pSWLP. I recommend this is a total volume which covers all ancillary effluent storage structures and therefore the greater of the two volumes, being 35 cubic metres, is preferred. A 35 cubic metre threshold will require resource consent for large storage systems, for example some sludge beds with weeping walls<sup>459</sup> and effluent ponds, but will enable smaller systems designed to hold effluent for a shorter duration to be constructed as a permitted activity, provided the performance standards can be met. I therefore support the adoption of submissions requesting the inclusion of a permitted activity volume, being up to a total of 35 cubic metres, for effluent storage. This approach will sometimes<sup>460</sup> result in two approvals (territorial building consent and regional council resource consent) being sought. However, as discussed above, building consent compliance does not account for adverse effects on the environment and therefore is not sufficient to ensure freshwater quality is maintained or improved. The objectives and policies of the pSRPS, RPS and the NPSFM will not be given effect to if management is solely through the building consent process. I therefore do not support the adoption of submissions on this matter.
- 7.881 A couple of submitters have identified that IPENZ have a separate Practice Note (27) for Dairy Farm Infrastructure. Practice Note 27 provides industry guidance on good practice in the design and construction of key farm dairy effluent infrastructure. I believe it is appropriate when other agricultural effluent infrastructure storage is being constructed, it is designed and constructed in accordance with Practice Note 27 to avoid adverse effects on water quality. I therefore support the adoption of the submission points from DairyNZ and Aratiatia Livestock on this matter.

## Activity status

### Submissions

- 7.882 A few submitters, including Hynds Pipe Systems and Knockinon Farm Trust, question whether restricted discretionary (Rule 32(a)) and non-complying (Rule 32(b)) activity status' are appropriate. A number of submitters, including Hynds Pipe Systems, NZTA

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<sup>456</sup> If tanks are above the ground different thresholds apply, typically the higher the tank the less the volume.

<sup>457</sup> A dam is defined in section 7 of the Building Act as meaning:

a) an artificial barrier, and its appurtenant structures, that:

(i) is constructed to hold back water or other fluid under constant pressure so as to form a reservoir; and

(ii) is used for the storage, control, or diversion of water or other fluid

(b) includes a flood control dam, a natural feature that has been significantly modified to function as a dam and a canal but does not include a stopbank designed to control floodwaters.

<sup>458</sup> (2004) - Building Act, Section 7

<sup>459</sup> A sludge bed with a weeping wall is a common method of passive solid separation. The sludge bed is where effluent solids are contained while liquids pass through a slatted wall which acts as a passive filter (IPENZ Practice Note 27 – Dairy Farm Infrastructure, 2013).

<sup>460</sup> Note, effluent storage does not always require building consent.

and the Pourakino CG, consider that the pSWLP requires a higher test to pass (certification from a CPEng) than in the RWP and therefore the activity status should be controlled rather than restricted discretionary. Submitters also question whether a non-complying activity status is appropriate for those activities that cannot meet the requirements of Rule 32(a), with Knockinnon Farm Trust seeking changes “*from non-complying to discretionary to allow farmers to take up any opportunities that advances in science and technology might allow*”. Four submitters request permitted activity status for effluent storage. Hynds Pipe Systems requests permitted activity status if the structure has a building consent.

## Analysis

- 7.883 A permitted activity for smaller effluent storage is recommended above. Further, the relationship between building consent and resource consent is also discussed above. These matters will not be traversed again in this section.
- 7.884 Rule 32 requires a restricted discretionary activity resource consent for all types of effluent storage, with a higher test to be met with respect to the design and build of agricultural effluent storage facilities. The requirement for CPEng certification should reduce the risk of agricultural effluent storage infrastructure failing or leaking. Agricultural effluent storage is a mitigation measure to enable the discharge of agricultural effluent to land at appropriate times, generally managed under a discharge permit.
- 7.885 Rule 35 – Discharge of agricultural effluent to land restricts Council’s discretion to, amongst other things, the consideration of storage, including its volume. This typically results in a condition on the discharge permit specifying the required volume of storage. The only instance where Council may wish to decline an agricultural effluent storage consent is if there was insufficient storage proposed or it could not meet the setbacks outlined in proposed Rule 32. As mentioned above, storage volume is a mitigation measure associated with discharge permits and therefore insufficient storage could be addressed through a condition on a discharge permit. Further, if setbacks could not be met, non-complying activity status would apply under Rule 32. A controlled activity status is therefore recommended for agricultural effluent storage certified as in accordance with IPENZ Practice Note 21 or 27, where setbacks can be achieved.
- 7.886 With respect to other types of effluent or wastewater storage, I consider the retention of the proposed restricted discretionary status is appropriate. This storage is generally on a bigger scale, located near residential settlements and can contain a range of contaminants in addition to those generally categorised for agricultural effluent. Further, as discussed below there is no good practice standard which takes into account environmental effects for other types of effluent and wastewater storage. Therefore I consider it appropriate for the Council to retain the ability to decline consents where the effects cannot be appropriately managed, and in my view this is necessary to implement Policy 17.
- 7.887 I consider that a non-complying activity status is appropriate for those applications that cannot meet the setbacks in Rule 32 or are not certified as being in accordance with IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction (2013). If an effluent storage system was to leak or fail, this could have significant adverse effects, particularly if the storage system is located within the setbacks to surface water, artificial watercourses, the coastal marine area and water abstraction points. It is

appropriate that activities of this nature go through the RMA non-complying gateway test and demonstrate they are either: not contrary to the relevant objectives and policies or that the adverse effects of the activity will be minor. In my opinion a lower activity status will not achieve the objectives and policies of the pSWLP. Therefore I do not support the adoption of submissions, including Knockinnion Farm Trust and Pourakino CG, requesting amendments to the non-complying activity clause of Rule 32.

## Other matters

### Submissions

- 7.888 Submitters are concerned about the implications of Rule 32 on existing storage. The requirement to have agricultural storage certified by a Chartered Professional Engineer (CPEng) received many submissions. These submissions were both for and against the proposal, with some requesting the CPEng is replaced with suitably qualified person, for example Civil Tech said “*Continue with the existing list of SQP’s and with all future SQP’s Environment Southland can decide on a case by case basis*”. RDAgritech requests that non agricultural effluent storage should also be required to be certified. Further, RDAgritech seek a drop test be undertaken on clay lined ponds once they are installed, to check they have achieved the required hydraulic conductivity, and therefore will comply with the maximum seepage rate.
- 7.889 Fish and Game request a 50 metre setback be included for sub-surface drains, and the specific inclusion of wetlands and ephemeral or intermittently flowing streams, stating: “*(ii) The effluent storage is not within 50 metres of any sub-surface drain, surface waterbody, including wetland and ephemeral or intermittently flowing streams, artificial watercourse or coastal marine area*”. Environment Southland request the inclusion of a setback of 50 metres from any road.
- 7.890 Some submitters question the appropriateness of the matters over which Council has restricted its discretion to, for example subsurface drainage, pond operation plans and monitoring devices. Others supported the rule, for example IAL. IAL also request “*matters of discretion should ensure that adverse effects on the activities and operations of adjacent landholdings can be sufficiently considered*”.

### Analysis

- 7.891 As Rule 32 is for the construction of effluent storage there is no requirement for existing storage structures to obtain resource consent. Testing of existing effluent storage is undertaken when the associated discharge permit is renewed under Rules 33, 34 and 35.
- 7.892 The requirement to have certification from a CPEng for agricultural effluent storage is considered appropriate. A CPEng<sup>461</sup> deals with complex engineering problems and activities, and they must have an accredited qualification or be able to demonstrate equivalent knowledge and demonstrate their competence against IPENZ competence standards. Certification from a CPEng increases environmental protection as it requires the design and construction of storage in accordance with best practice, which will likely lessen the risk of integrity issues arising over time, including leaking.

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<sup>461</sup> More information on CPEng can be sourced here: <https://www.ipenz.nz/home/development-registration/registration/chartered-professional-engineer>

- 7.893 I agree with RDAgritech, that certification should apply to not only agricultural effluent storage but all effluent storage infrastructure. However, there is no equivalent IPENZ practice note for the design and construction of other types of effluent and wastewater storage. In the absence of a good practice standard for other types of effluent and wastewater storage, it is recommended a clause requiring other new effluent storage to be certified as being structurally sound is included in the rule. Whilst this will not necessarily ensure leakage requirements are complied with, it will reduce the risk of a storage failure and any adverse environment effects arising from such an event. Further, it is sensible to incorporate an avenue to require a Pond Drop Test (PDT) once new clay lined effluent storage has been constructed, as requested by RDAgritech. There is a greater risk of clay lined storage leaking compared to synthetically lined storage which has a more rigorous testing procedure. Early pond drop testing will identify any construction issues from the outset. It is acknowledged that a PDT is required for renewal/granting of a discharge permit under Rules 33, 34 and 35. However, there may be instances where storage is constructed independent of a discharge permit. In these cases, a PDT would not currently be required. This means leakage issues following construction may not be identified until the related discharge permit is renewed, at which time a PDT would be required. With that in mind, I support the adoption of the submission by RDAgritech on this matter.
- 7.894 A 50 metre setback from surface water, artificial watercourses and the coastal marine area is included in this Rule to minimise potential adverse effects of water quality primarily from a storage failure or overland flow of contaminants. The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway. It is not necessary to refer to intermittently flowing streams as this is included in the definition of river in the RMA. With respect to the 50 metre setback from sub-surface drains, I acknowledge, as with any structure, there is a risk of failure and consequently the flow of contaminants through the soil profile into sub-surface drainage. However, I do not consider a blanket setback distance from sub-surface drains is necessary. Rather I prefer the notified approach of Council retaining discretion over the ability to apply resource consent conditions regarding sub-surface drainage on a case-by-case basis. Therefore, I do not support the adoption of Fish and Game's submission requesting a 50 metre setback from sub-surface drainage. Council will be able to consider, on a case-by-case basis, appropriate setbacks from sub-surface drainage to manage adverse effects.
- 7.895 With respect to the permitted activity recommended above, smaller effluent storage structures typically do not hold effluent for prolonged periods therefore the risk of leakage occurring is less. However, it would be prudent to ensure smaller storage is not located above sub-surface drainage, to lessen the risk of contamination of surface waterbodies, artificial waterbodies and the coastal marine area. If contamination was to occur, Rule 13 deals with discharges from sub-surface drainage and any discharge of effluent from a storage structure through a sub-surface drain could be managed under that rule.
- 7.896 With respect to the inclusion of a setback of 50 metres from any road, as currently worded, Rule 32(a) requires a setback of 50 metres from the boundary of any other landholding. I consider Plan clarity would be improved if a 50 metre setback from road boundaries was included in the rule. This will manage adverse effects such as odour on road corridors. I therefore support the adoption of the submission by Environment Southland staff.

7.897 Council has restricted discretion, amongst other things, to operational management plans and installation of monitoring devices. The integrity of effluent storage can degrade over time and with improper management. It is appropriate to retain these matters to enable Council to include conditions of consent if there is inadequate management of the storage or insufficient monitoring proposed.

## Recommendation

7.898 Amend Rule 32 as follows:

- (a) The use of land for the construction of effluent storage including ancillary structures, other than onsite wastewater system, composting toilet system or mobile toilet, but including waste-water, sludge or effluent from an industrial or trade processes or agricultural effluent, is a permitted activity provided the following conditions are met:
- (i) the total capacity of all effluent storage on a landholding, excluding storage authorised by a resource consent, does not exceed 35 cubic metres;
  - (ii) the effluent storage is constructed using an impermeable lining so there is no overflow or leakage of effluent to land, surface water or groundwater;
  - (iii) effluent storage is not within 50 metres of any lake, river, modified watercourse, artificial watercourse, natural wetland or coastal marine area;
  - (iv) effluent storage is not within 200 metres of any dwelling not on the same landholding, or 50 metres of the boundary of any other landholding or road<sup>462</sup>;
  - (v) effluent storage is not within 100 metres of any water abstraction point;
  - (vi) effluent storage is not located above sub-surface drainage.<sup>463</sup>
- (b) The use of land for the construction of agricultural effluent storage, which does not meet the conditions in Rule 32(a), is a controlled activity provided the following conditions are met<sup>464</sup>:
- (i) the design, and build process, is certified by a Chartered Professional Engineer as being in accordance with IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction (2013) or IPENZ Practice Note 27: Dairy Farm Infrastructure (2013)<sup>465</sup>; and
  - (ii) clay lined effluent storage is certified as meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P within 12 months of its completion<sup>466</sup>:

<u>Maximum Depth of Pond (m) excluding freeboard</u>	<u>Maximum Allowable Pond Level Drop (mm per 24 hours)</u>
<u>&lt;0.5</u>	<u>1.2</u>
<u>0.5 to 1.0</u>	<u>1.4</u>
<u>1.0 to 1.5</u>	<u>1.6</u>
<u>1.5 to 2.0</u>	<u>1.8</u>
<u>&gt;2.0</u>	<u>2.0</u>

<sup>462</sup> 247.11 Environment Southland

<sup>463</sup> 752.125 Fish and Game

<sup>464</sup> 712.31 Seaview Trust & Oraka Farms; 666.19 Rimu Grasslands & Leicester Downs; and others.

<sup>465</sup> 412.1 IPENZ

<sup>466</sup> 663.2 RD Agritech

(iii) the effluent storage is not within 50 metres of any lake, river, modified watercourse, artificial watercourse, natural wetland or coastal marine area;

(iv) the effluent storage is not within 200 metres of any dwelling not on the same landholding, or 50 metres of the boundary of any other landholding or road; and

(v) the effluent storage is not within 100 metres of any water abstraction point;

Environment Southland will exercise its control over the following matters:

1. the design and construction of the storage and ancillary structures, including capacity of storage and nature of effluent that will enter;

2. methods to be used to protect any embankments from damage by stock and machinery;

4. the adverse effects of the effluent storage on: lakes, rivers, artificial watercourses, installed subsurface drains, groundwater, bores, registered drinking- water supplies, the coastal marine area, trees, stop banks, residential dwellings, places of assembly, urban areas, landholding boundaries and historic heritage;

5. the height of the embankments and placement and orientation of the effluent storage relative to flood flows and stormwater run-off;

6. the quality of, and compliance with, an operational management plan, including operational procedures, emergency response, monitoring and reporting requirements, and installation of monitoring devices; and

7. adoption and implementation of an Accidental Discovery Protocol.<sup>467</sup>

(a)(c) The use of land for the construction of any effluent storage, other than onsite wastewater system, composting toilet system, mobile toilet<sup>468</sup> or agricultural effluent, but<sup>469</sup> including of waste-water, sludge or effluent from an industrial or trade processes or agricultural effluent, is a restricted discretionary activity provided the following conditions are met:

(i) the storage is certified as being structurally sound by a Chartered Professional Engineer<sup>470</sup> for agricultural effluent storage the design, and build process, is certified by a Chartered Professional Engineer as being in accordance with IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction (2013)<sup>471</sup>; and

(ii) the effluent storage is not within 50 metres of any ~~lake, river, modified watercourse, natural wetland surface waterbody,~~<sup>472</sup> artificial watercourse or coastal marine area;

(iii) the effluent storage is not within 200 metres of any dwelling not on the same landholding, or 50 metres of the boundary of any other landholding or road<sup>473</sup>; and

(iv) the effluent storage is not within 100 metres of any water abstraction point;

Environment Southland will restrict its discretion to the following matters:

1. the design and construction of the storage and ancillary structures;

2. methods to be used to protect its embankments from damage by stock and machinery;

3. the adverse effects of the effluent storage on: ~~surface waterbodies~~ lake, river, modified watercourse, natural wetland<sup>474</sup>, artificial watercourses, installed subsurface drains, groundwater, bores, registered drinking- water supplies, the coastal marine area, trees, stop banks, residential dwellings, places of assembly, urban areas, landholding boundaries and historic heritage;

4. the height of the embankments and placement and orientation of the effluent storage relative to flood flows and stormwater run-off;

<sup>467</sup> 152.17 Clover Bell; 408.2 Hynds Pip Systems; 614.20 NZTA; and 810.39 Three Rivers CG.

<sup>468</sup> 247.11 Environment Southland

<sup>469</sup> Consequential amendment: 152.17 Clover Bell; 408.2 Hynds Pip Systems; 614.20 NZTA; and 810.39 Three Rivers CG.

<sup>470</sup> 663.2 RD Agritech

<sup>471</sup> 152 Consequential amendment: 152.17 Clover Bell; 408.2 Hynds Pip Systems; 614.20 NZTA; and 810.39 Three Rivers CG.

<sup>472</sup> 247.11 Environment Southland.

<sup>473</sup> 247.11 Environment Southland.

<sup>474</sup> 247.11 Environment Southland.



5. *the storage capacity of the effluent storage in relation to the volume and nature of the liquid that will enter;*
  6. *the quality of, and compliance with, an operational management plan, including operational procedures, emergency response, monitoring and reporting requirements, and installation of monitoring devices; and*
  7. *adoption and implementation of an Accidental Discovery Protocol.*
- (b)(d) The use of land for the construction of any effluent storage, other than onsite wastewater system, composting toilet system, mobile toilet<sup>475</sup> or agricultural effluent<sup>476</sup>, but including of waste-water, sludge or effluent from an industrial or trade processes,<sup>477</sup> that does not meet the conditions in Rule 32(a), (b) or (c)<sup>478</sup> is a non-complying activity.*

## Community Sewerage Schemes

### Provision

7.899 Rule 33 proposes that the discharge of effluent or bio-solids from a community sewerage scheme, into or onto land, is a discretionary activity, subject to the following conditions:

- (i) *any pond, tank or structure used to store the effluent or bio-solids prior to discharge is certified by a Chartered Professional Engineer as:*
  - (1) *being structurally sound;*
  - (2) *meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P.*

<b>Maximum Depth of Pond (m) excluding freeboard</b>	<b>Maximum Allowable Pond Level Drop (mm per 24 hours)</b>
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

- (b) *The discharge of effluent or bio-solids onto or into land, in circumstances where contaminants may enter water, from a community sewerage scheme that does not meet the condition of Rule 33(a) is a non-complying activity.*

7.900 Similarly, under Rule 34, the discharge onto or into land of wastewater, sludge or effluent from industrial and trade processes, other than agricultural effluent, is a discretionary activity, subject to the same conditions as set out above.

7.901 Where these conditions are not met, the discharge is a non-complying activity.

### Submissions - General and other matters

7.902 Fourteen and 15 submissions have been received on Rule 33 – Community sewerage schemes and Rule 34 – Industrial and trade processes respectively. J Topham and Fish and Game support Rule 33 and seek its retention. Silver Fern Farms support Rule 34 and

<sup>475</sup> 247.11 Environment Southland.

<sup>476</sup> Consequential amendment: 152.17 Clover Bell; 408.2 Hynds Pip Systems; 614.20 NZTA; and 810.39 Three Rivers CG.

<sup>477</sup> Consequential amendment: 247.11 Environment Southland.

<sup>478</sup> Consequential amendment: 152.17 Clover Bell; 408.2 Hynds Pip Systems; 614.20 NZTA; and 810.39 Three Rivers CG.

seeks its retention. Newton Slink Skins and Maitaha Butcher Shop oppose both rules and request they are deleted. A Flett has concerns regarding Rule 33 and the equity between rules for the rural community and councils.

- 7.903 With respect to Rule 33, SDC, GDC and ICC request the inclusion of discharges of waste water to surface waterbodies to provide a single rule to deal with all community sewerage schemes. ICC submit *“Wastewater infrastructure is generally considered to be critical infrastructure across the country and it is not abnormal to have specific discharge rules for wastewater infrastructure which provides a more enabling framework for network overflows.”* The further submissions of DairyNZ, DOC, Fish and Game and Ngāi Tahu oppose the submission of the Territorial Authorities. DairyNZ consider they are unnecessary and inappropriate. Ngāi Tahu state *“Do not agree with the proposed amendments as the provisions should enable discharges to land in the first instance”*. Fish and Game state *“Does not support the maintenance and enhancement of the quality of freshwater environments. The discharge of raw sewerage from a community sewerage scheme into or onto land in circumstances where it may enter way water or into water should be assessed as a non-complying activity. Discretionary activity status is inappropriate.”*
- 7.904 A number of other matters have also been raised by submitters. Strathfair Farms request the inclusion of setbacks of ponds of 50 metres from surface waterbodies and 200 metres from dwellings, consistent with Rule 32 – Effluent Storage. Forest and Bird seek the inclusion of setbacks from the CMA and ephemeral streams in both Rule 33 and 34.
- 7.905 Real Journeys request the Plan provides for discharges related to intermediate scale activities, for example in remote locations. Bathurst consider the inclusion of mining related activities, for example pumping of water to holding ponds and cleaning out of sumps *“imposes unnecessary costs and that there is no real justification for the imposition of these additional requirements in the context of a mining operation”*. The submitter also thinks the non-complying activities status for activities that cannot meet conditions of Rule 34(a) is excessive.

### **Analysis – General and other matters**

- 7.906 ICC submit that community sewage schemes are critical infrastructure and therefore a more enabling framework is appropriate. Critical infrastructure is defined in the pSRPS as *“infrastructure that provides services which, if interrupted, would have significant effect on the wellbeing and health and safety of people and communities and would require reinstatement, and includes all strategic facilities”*. It is accepted community sewage schemes are critical infrastructure. The pSRPS provides direction on the management of the region’s infrastructure, which includes community sewage schemes. Objective INF.1 – Southland’s infrastructure seeks critical infrastructure is secure, operates efficiently, and is appropriately integrated with land use activities and the environment. Policy INF.1 directs that the benefits of infrastructure be recognised and provision be made for its development, maintenance, upgrading and ongoing operation. Further, Policy INF. 2 states that where practicable, adverse effects of infrastructure on the environment should be avoided, remedied or mitigated. A number of matters are provided to assist in determining practicability, including: adoption of good practice, offsetting or compensation of adverse environmental effects. However, the NPSFM provides clear direction that freshwater quality within the region must be maintained or improved. To enable, as a discretionary activity, the discharge of raw sewage, for example in overflow, from community sewage scheme to land where it may enter water, or to surface water would not give effect to the NPSFM. On balance, I consider it is appropriate that this activity is considered as a non-

complying activity. Further, the conditions of Rule 33(d) proposed by the submitter introduce ambiguity into the rule framework. With respect to the inclusion of discharges from community sewage schemes to water within Rule 33 it is acknowledged that a number of community sewage schemes in the region discharge to water. However, Rules 5 and 6 of the pSWLP adequately manage discharges of this nature therefore no change is recommended.

7.907 As raised by Strathfair Farms there are no setbacks of storage from surface water or dwellings included within Rule 33. However, Rule 33 is referring to the discharge of effluent and bio-solids to land which may enter water rather than the construction of storage which is captured by Rule 32. Notwithstanding the above, it is appropriate for setbacks to be included within Rule 33 in line with Forest and Bird's submission and the submission of A Flett seeking equality between rural and urban rules. It is recommended the setbacks from Rule 35(c) (Discharge of agricultural effluent to land – discretionary activity), incorporating those matters raised by Forest and Bird, are included in Rule 33. This will assist in managing the adverse effects associated with discharging effluent and bio-solids from community sewage schemes. In my opinion discharges of effluent and bio-solids within the recommended setbacks as a discretionary activity will not achieve the objectives and policies of the pSWLP including Objectives 6 and 18, and Policy 17. I note if the recommendation to include setbacks in Rule 33 is adopted, Rule 34 will be inconsistent with the approach taken in Rules 33 and 35. For the reasons identified above I consider that setbacks should be included in Rule 34, however, I do not consider there is sufficient scope.

7.908 Intermediate scale activities in remote locations may still adversely affect freshwater quality and therefore it is appropriate they are considered under the same framework as other larger scale discharges. I do not consider it appropriate to exclude discharges from mining from Rule 34. Discharges of wastewater, sludge or effluent from mining activities may contain contaminants that could impact on freshwater quality. It is therefore appropriate that the adverse effects of these discharges are considered through the resource consent process.

### **Submissions – Pond drop tests**

7.909 A number of submissions were received on the PDT, these were generally in opposition. T Smalley opposes use of the PDT. Premier Dairies question the shift to CPEng and questions what issues have been found to suggest that there is a need for the PDT. GDC, SDC and ICC also have concerns regarding Rule 33, in particular the PDT requirement and structural soundness certification, including:

- ability and feasibility to undertake test on community wastewater ponds, including large outdoor oxidation ponds;
- uncertainty regarding the frequency of testing;
- lack of understanding regarding normal leakage from ponds;
- threshold for passing the test should not be based just on the level of drop but also the surface area of the pond;
- practicalities of having a fixed volume of wastewater;
- ability for a CPEng to certify a pond is structurally sound;
- questioning whether wetlands used for storage/treatment would require a PDT.

- 7.910 The further submissions of DairyNZ, DOC, Fish and Game and Ngāi Tahu oppose the submission of the Territorial Authorities. DairyNZ consider they are unnecessary and inappropriate. DOC state *“Ponds should be designed to retain these wastes as the discharge of poorly treated or untreated effluents from the bottom of ponds has a strong potential to adversely affect water quality”*.
- 7.911 RD Agritech request that storage that is subject to an unexplained increase in level is considered as not meeting the relevant pond drop test requirements. Further, they request amendments to require the CPEng to be a “Council approved supplier of certification” which would require CPEng to undertake an “approved supplier of certification” assessment by Council.
- 7.912 HWRG and Alliance oppose the requirement for a CPEng certification of structural soundness and consider that compliance with the PDT drop levels is arbitrary and not likely to reflect real risk or effects associated with the discharge of such material to land. The submitter requests the deletion of Rule 34 (a)(i) – CPEng certification and Rule 34(b) – Non-complying activity.

### **Analysis – Pond drop tests**

- 7.913 The PDT has been incorporated into the Plan to identify integrity issues, in particular leakage, with effluent and wastewater storage. The ability and feasibility of undertaking the PDT on community sewage schemes and industrial or trade storage has been questioned by some submitters, including the territorial authorities. I have been advised the ability to undertake a PDT on a community sewage pond is challenging because the constant inflow and outflow of wastewater, sludge and effluent obscures data required to obtain an accurate result.<sup>479</sup> However, the PDT will be able to be undertaken on some storage where there is the ability to isolate the pond from inflows and outflows. With this in mind, I consider it more appropriate for leakage rates of storage to be considered on a case-by-case basis through the resource consent process for community sewage schemes under Rule 33(a), rather than requiring a PDT test without which, an application would become non-complying. This will allow the upgrading of storage which is adversely affecting freshwater quality as a condition of resource consent under section 108 (2)(e) of the RMA.
- 7.914 With respect to the inclusion of the PDT in Rule 34, it is acknowledged there is some opposition to its inclusion. However, generally it is not because of practicalities to undertake PDT rather, Alliance and HWRG consider the requirement is arbitrary and not likely to reflect real risk or effects. Failing storage can significantly affect freshwater quality. Therefore, I currently do not support the deletion of the PDT from Rule 34. However, I note the further submissions of Alliance and Fonterra which support the submission of the Territorial Authorities to remove the PDT requirement from Rule 34. Fonterra state *“that the amendments sought improve the workability and interpretation of Rule 34, including the removal of the non-complying activity status”*. DOC, Fish and Game and Ngāi Tahu oppose the submission and Federated Farmers oppose in part. Submitters may wish to provide evidence at the hearing on the ability to undertake PDTs on industrial and trade process storage.

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<sup>479</sup> Personal communications – Andrew Johnson, Senior Environmental Engineer, Opus (January 2017).

- 7.915 The territorial councils have questioned whether a CPEng is able to certify structural soundness, this has also been raised in submissions on Rule 35. As discussed under Rule 35, advice<sup>480</sup> received is it would be unreasonable to seek a CPEng certification after the event as they would want to be involved in both the design and construction. The ‘structural soundness’ test is to reduce the risk of catastrophic failure of effluent storage. It is recommended that this is amended to state that there are no visible cracks or defects that would allow effluent to leak or show risk of failure.
- 7.916 If storage is subject to infiltration, for example from ground water, the volume could increase. If this occurs the integrity of the pond has been compromised and may be adversely affecting freshwater quality. To increase clarity for Plan users it is recommended a clause is included in Rule 34(a)(i)(2) to state that there is to be no unaccounted increase in pond level, as RD Agritech request. With respect to the request for Council to have an approved CPEng supplier list, I do not consider this to be necessary. CPEng are professionals who have successfully completed a competence assessment and are bound by a Code of Ethical Conduct, so further assessment by Council is not required.
- 7.917 Wetlands are typically used to polish wastewater or effluent during secondary or tertiary treatment. The PDT requirement refers to storage of effluent and bio solids, therefore I consider wetlands would not be captured by the PDT requirement and no amendment is necessary.

## Recommendation

7.918 Amend Rule 33 as follows:

- (a) *The discharge of effluent or bio-solids onto or into land, in circumstances where contaminants may enter water, from a community sewerage scheme is a discretionary activity, provided the following conditions ~~is~~ are met:*
- (i) *any pond, tank or structure used to store the effluent or bio-solids prior to discharge is certified by a Chartered Professional Engineer as ~~having no visible cracks or defects that would allow effluent or bio-solids to leak from the storage.~~*
- (1) ~~being structurally sound;~~<sup>481</sup>*
- (2) ~~meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P.~~<sup>482</sup>*

<b>Maximum Depth of Pond (m) excluding freeboard</b>	<b>Maximum Allowable Pond Level Drop (mm per 24 hours)</b>
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

- (ii) the discharge is not within 20 metres of any river, lake, natural wetland, artificial watercourse or the coastal marine area;*

<sup>480</sup> Corlett, R. (2016). Farm Dairy Effluent Storage Memorandum. Refer to Appendix C2.

<sup>481</sup> 330.15 GDC, ICC and SDC; 411.31 ICC

<sup>482</sup> 330.15 GDC, ICC and SDC; 411.31 ICC

- (iii) the discharge is not within 200 metres of any place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding;*  
*(iv) the discharge is not within 100 metres of any water abstraction point.<sup>483</sup>*

*(b) The discharge of effluent or bio-solids onto or into land, in circumstances where contaminants may enter water, from a community sewerage scheme that does not meet the condition of Rule 33(a) is a non-complying activity.*

7.919 Amend Rule 34 as follows:

- (a) The discharge onto or into land, in circumstances where contaminants may enter water, of wastewater, sludge or effluent from industrial and trade processes, other than agricultural effluent, is a discretionary activity provided the following condition is met:*
- (i) any pond, tank or structure used to store the waste-water, sludge or effluent prior to discharge is certified by a Chartered Professional Engineer as:*
- (1) ~~being structurally sound; having no visible cracks or defects that would allow effluent or bio-solids to leak from the storage.~~<sup>484</sup>*
  - (2) meeting the relevant pond drop level outlined below and there is no unaccounted increase in volume level,<sup>485</sup> when tested in accordance with the methodology in Appendix P.*

<b>Maximum Depth of Pond (m) excluding freeboard</b>	<b>Maximum Allowable Pond Level Drop (mm per 24 hours)</b>
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

*(b) The discharge onto or into land, in circumstances where contaminants may enter water, of wastewater, sludge or effluent from industrial and trade processes, other than agricultural effluent, that does not meet the condition of Rule 34(a) is a non-complying activity.*

## Provision

7.920 The definition of ‘Community Sewerage Scheme’ reads as follows.

*A scheme that collects and treats sewage from more than three sites which are predominantly residential housing, but may include a component of industrial and trade process effluent.*

## Submissions

7.921 Three submissions have been made on the definition of ‘Community Sewerage Scheme’. Fish and Game support the definition and seek its retention. Southland’s Territorial Authorities seek the following amendments:

<sup>483</sup> 279.79 Forest and Bird; 780.6 Strathfair Farms; and 275.4 A Flett

<sup>484</sup> 330.15 GDC, ICC and SDC; 411.31 ICC

<sup>485</sup> 663.5 RD Agritech

*A scheme that collects and treats sewage from more than one landholding ~~three sites which are~~ is predominantly from residential housing, but may include a component of industrial and trade process effluent. It includes both Council operated and privately operated schemes.*

- 7.922 They consider there is a gap between this definition and the definition for on-site wastewater system, as the definition for on-site wastewater system refers to an individual property and community sewerage scheme refers to more than three properties. They also consider clarification is needed that it includes both Council and privately operated schemes.

### Analysis

- 7.923 I agree with the submission of the Territorial Authorities with respect to the gap between the definition of 'On-site wastewater system' and 'Community sewerage schemes'. I therefore support the adoption of their submission on this matter. However, I do not consider it necessary to outline that it includes both Council operated and privately operated schemes, as the definition as currently worded captures both Council and privately operated schemes.

### Recommendation

- 7.924 Amend the definition of 'Community Sewerage Scheme' as follows:

*A scheme that collects and treats sewage from more than one landholding ~~three sites which are~~ is predominantly from<sup>486</sup> residential housing, but may include a component of industrial and trade process effluent.*

### Rule 35 - Discharge of agricultural effluent to land

#### Provision

- 7.925 Rule 35(a) provides for the discharge of agricultural effluent or water containing agricultural effluent onto or into land, as a permitted activity, subject to a number of conditions. These include limitations on; the number of livestock the discharge relates to; the location of the discharge; and the frequency of the discharge.
- 7.926 Rule 35(b) provides for the replacement of a discharge consent for the above activity, as a restricted discretionary activity, subject to various conditions being met, including that the existing consent specifies a maximum number of animals from which the effluent is collected and that number is not increasing, and that the structure used to store effluent prior to discharge is certified by a CPEng, including a PDT having been undertaken.
- 7.927 Rule 35(c) provides for discharges that do not meet the conditions in Rule 35(a), where they did not exist as at 1 May 2016 or where they seek to increase the number of stock and are located in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones, as a discretionary activity, subject to the discharge meeting specified setbacks.

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<sup>486</sup> 330.18 GDC, ICC and SDC

- 7.928 Discharges that do not meet the requirement in either clause (b) or (c) are non-complying activities.
- 7.929 Under Rule 35(e), the discharge of untreated agricultural effluent into surface or groundwater is expressly listed as a prohibited activity.

## Feed lots and wintering pads

### Provision

- 7.930 Clause (a)(i)(3) of Rule 35 limits discharges that can occur as a permitted activity, where they are directly from feed lots and wintering pads, to discharges that:
- (a) *until 31 December 2017 service no more than 100 adult cattle or 250 adult deer; and*
  - (b) *from 1 January 2018 service no more than 100 adult cattle or 250 adult deer where the feed lot or wintering pad:*
    - (i) *is not less than 20 metres from the nearest sub-surface (tile) drain, surface waterbody or wetland; and*
    - (ii) *is the only feed lot or wintering pad on the landholding; or*
  - (c) *service no more than 10 adult cattle or 25 adult deer in any other circumstance; ...*
- 7.931 Such discharges would also need to meet the other permitted activity conditions in clause (a), in order to be permitted under the rule.

### Submissions

- 7.932 Numerous submissions oppose the limit of one feed lot or wintering pad per landholding, with some requesting the clause be deleted. The opposition is generally due to the use of feed lots and wintering pads as management tools to reduce soil pugging during wet periods and concerns over the loss of the ability to use multiple smaller feed lots or wintering pads instead of one larger one. J McRae said *“Section A, i, 3, b, ii. should be deleted. As long as the feed lot or wintering pad is compliant, it should not matter how many there are on the property. Some people may choose to have multiple smaller ones or enough to hold all of their stock, which in both cases can be a good result for the environment. The rest of the rule I support.”*
- 7.933 Those in opposition commonly request one of four approaches to address their concerns. The first is to allow one feed lot or wintering pad per X ha, for example, 40ha or 100ha. BD and HJ Clarke said *“allow for the use of more than one woodchip/sawdust pad (under 100 cows per pad), possibly one pad per 40ha farm size, as a permitted activity”*. The second alternative is to allow one feed lot or wintering pad per title. The third is to enable more than one feed lot or wintering pad, with a limit placed on the number of stock using the facility. MJ and SE Dillon said *“Increase the number of cows per wintering pad and make the number of pads unlimited so the stock numbers can be kept low”*. Along the same lines Firdale Farms request amendments to the rule *“...so that farmers can have more than one standoff/calving pad, with less than 100 cattle per pad, per farm as a permitted activity, providing good management practices are met”*. The use of stock units is another approach presented to limiting stock numbers of feed lots and wintering pads. The fourth option is to enable more than one feed lot or wintering pad where a management plan (in accordance with Appendix N) is in place.



- 7.934 Fonterra seek that where there is more than one feedlot or wintering pad these should be considered as restricted discretionary activities rather than non-complying.
- 7.935 The impact of the proposed rules on existing feed lots and wintering pads received a number of submissions, with a number of submitters seeking exemptions for existing feed lots. B Hamilton said “...*who pays when an existing investment is within 20 meters of a tile drain and is unable to be diverted. Solution allow an exemption for existing structures.*”
- 7.936 The submissions highlight the interchangeable nature of the terms stand-off facilities including feed pads, feed lots and wintering pads captured by Rule 35. This is evident by the reference to calving pads, feed pads, stand-off pads and sheep feed lots in a few submissions. Generally, submitters request these other types of feed lots and pads be excluded from the rule. However, K and D Hall said “*I would like ES to remove the 100 cow limit and perhaps put a few rules in place to capture the nutrients or drainage from calving pads*”.
- 7.937 A number of submitters request definitions be included in the pSWLP for feed lots, feed pads and wintering pads. However, no submitters propose specific wording for these definitions.

## Analysis

- 7.938 I acknowledge that feed lots and wintering pads are a GMP to reduce soil pugging during unfavourable (wet) soil conditions. However, feed lots and wintering pads, where animals congregate, can have significant adverse effects on the environment, specifically ground and surface water, if inappropriately situated or designed. This is through overland flow of nutrients and *E.coli* to surface waterbodies, transportation through artificial drainage and leaching of nutrients, specifically nitrogen to groundwater,<sup>487</sup> the latter of which is difficult to manage, particularly within the Oxidising, Riverine, Gleyed, Old Matura and Peat Wetlands physiographic zones, unless the feed lot or wintering pad is constructed out of an impermeable surface with effluent and leachate captured. The key transport pathway in the Bedrock/Hill Country and Lignite-Marine Terraces is through overland flow and artificial drainage. To enable an unlimited number of feed lots and wintering pads per landholding as a permitted activity will not give effect to the NPSFM, in particular the requirement to maintain or improve freshwater quality, or the RPS and pSRPS. Therefore, I recommend a limit on the number of feed lots and wintering pads is retained in the Plan.
- 7.939 A number of submitters request the limit be applied on a one feed lot or wintering pad per Ha basis, for example 40ha or 100ha, or one per title. I acknowledge, as currently proposed, the rule favours small properties rather than larger operations. However, as mentioned above, unsealed feed lots and wintering pads can contribute a significant contaminant load to fresh water systems and as such the cumulative effect of all feed lots and wintering pads needs consideration. Some submitters request the number of feed lots or wintering pads per landholding should not be restricted provided there is no more than 100 adult cattle in total on a landholding on feed lots or wintering pads. I consider there is merit in this approach, as it will enable landholders to develop an appropriate system for their operations within the permitted activity framework, for example two feed lots of 50 adult cattle each or four feed lots of 25 adult cattle. It should be noted in addition to the 100 adult cattle or 250 adult deer permitted under Rule 35(a)(i)(3)(a) and

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<sup>487</sup> *Pers comm.* J Dare, Environment Southland.

(b), discharges from smaller feed lots and wintering pads servicing no more than 10 adult cattle or 25 adult deer are permitted under Rule 35(a)(i)(3)(c). The proposed framework does not prohibit additional feed lots or wintering pads or existing feed lots and wintering pads that cannot meet the permitted activity conditions, as resource consent can be applied for discharges from them from 1 January 2018. This approach enables consideration of the adverse effects, including cumulative effects of additional feed lots and wintering pads, which I consider appropriate.

- 7.940 As submissions have raised, it is unclear in the pSWLP whether properties with more than one feed lot or wintering pad need to apply for a discretionary or non-complying resource consent, and this is also the case for other discharges permitted under Rule 35(a). It is recommended where the underlying physiographic zone is Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains or Lignite-Marine Terraces, discharges that cannot meet the conditions of Rule 35(a) should be considered as a discretionary activity consistent with proposed Rule 35(c). If the discharge is located in the Old Matura or Peat Wetlands physiographic zones it is recommended it is a non-complying activity. This approach is consistent with other rules in the Plan and reflects the risk of adverse effects on water quality occurring.
- 7.941 With respect to stock numbers, the current totals have been carried through from the RELAP. While I recognise these are arbitrary in nature, they have been the permitted standard for a number of years and therefore it is recommended they are retained, unless evidence can be provided to support a more appropriate alternative at the hearing.
- 7.942 A number of submitters request definitions of feed lots and wintering pads, and refer to other facilities in their submissions for example feed pads and stand-off pads. It appears from the submissions the terms feed lot, feed pad, wintering pad, stand-off pad and calving pads are used interchangeably, although currently the rule only refers to feed lots and wintering pads. As all these types of pads/lots have similar adverse effects it is considered appropriate to refer to them all in the rule. In addition, the inclusion of definitions will also assist Plan users. The RELAP contains the following definitions:
- *Feed lot<sup>488</sup> – Located on production land, and is a confined site predominantly used all year round for the purpose of intensive controlled feeding of stock for high weight gains or lactation with feed concentrates and supplements. Can be located either indoors or outdoors but excludes piggeries.*
  - *Wintering pad<sup>489</sup> – A purpose built area on production land for confining stock in order to avoid damage to pasture, and for feeding out supplements during periods when soils are saturated. It excludes self feeding from silage stacks when stock are not confined tightly to the area adjacent to the stack, but have the ability to graze on adjacent paddocks for most of the day.*
- 7.943 DairyNZ's website provides good examples of definitions for various types of stand-off/supplementary feeding systems. For example, DairyNZ define stand-off pads as: *a purpose built, drained loafing area where stock can be held for long periods when it is not suitable to have them on pasture*<sup>490</sup> and feed pads as: *used for regular supplementary feeding and loafing of cattle on*

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<sup>488</sup> RELAP Definitions - page 78.

<sup>489</sup> RELAP Definitions - page 82.

<sup>490</sup> <https://www.dairynz.co.nz/Search/Results?Term=stand-off+pad> sourced on 13 December 2016.

*an area of land that is either formed with a solid foundation and/or concreted to establish a permanent facility.*<sup>491</sup>

- 7.944 As mentioned above, it appears the terms are used interchangeably, and as such it is recommended the rule is amended to capture feed and stand-off lots and pads. It is not recommended to capture calving pads because of their transient nature. For feed pads/lots and stand-off pads the definitions from DairyNZ's website are the preferred starting point as it reflects current practice, more so than the more traditional RELAP definition. However, not all feed pads/lots or stand-off pads will be purpose built or have a solid and/or concrete foundation and therefore it is recommended this is not included in the definition. Further, in Southland, typically these systems are used to avoid damage to pasture when soils are wet and therefore I recommend that this is encapsulated in the definition.
- 7.945 I also recommend a definition is included in the Plan for wintering pads. The RELAP definition (as detailed above) is my preference as a starting point because of its holistic wording. However, a couple of issues are evident with this definition. Firstly, the reference to 'purpose built' implies there is some kind of structure in place. While this is true in some cases, there a number of instances where the wintering pad on a property is a designated area, for example a smaller paddock. Secondly, the reference to the exclusion of self feed silage stacks where stock are not "...*tightly confined to the area adjacent to the stack...*". In practice this definition has been difficult to implement because of its ambiguity. Stock congregating at self feed silage stacks can cause significant adverse effects through discharges of effluent and leachate particularly where there is ponding and significant de-vegetation of the land surrounding the stack. To increase clarity, I recommend the definition of wintering pad includes self feeding on silage stacks where there is significant de-vegetation of surrounding pasture. Lastly, the RELAP definition does not refer to pads being covered or uncovered. As the use of wintering barns in Southland is increasing it is important these are captured in the definition.

## Testing of agricultural effluent storage

### Submissions

- 7.946 Rule 35(b)(iii), which relates to the storage requirements for agricultural effluent for replacement discharge consents, received a number of submissions. Many of the submissions are similar in nature to those received on Rule 32 – Effluent Storage which is discussed earlier in this section of the report. Submission themes presented under Rule 32 being CPEng requirements, minimum storage size test requirements and building consent requirements - are not discussed further in this section.
- 7.947 A number of submitters are concerned about the introduction of the 'Pond Drop Test'<sup>492</sup> (PDT) in Rule 35. Submitters have concerns regarding the opportunity window to perform the PDT. For example, Smithhill said "*The effluent pond drop test is an unworkable test due to climatic conditions, and specific test requirements are not reasonably practicable. Why is drop testing being mentioned in Rule 35, instead of Rule 32? The drop test is only relevant when effluent is being stored so how is this relevant for the discharge of effluent to land.*" Some submitters, such as

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<sup>491</sup> <https://www.dairynz.co.nz/farm/off-paddock-facilities/permanent-feedpad/> sourced on 12 December 2016.

<sup>492</sup> The Pond Drop Test is a test which accurately measures changing FDE pond surface levels over time. No standardised test method has been developed in New Zealand.

RD Agritech question whether PDT is required if the storage has been constructed in the last three years. Further, RD Agritech highlight that ponds maybe subject to infiltration and therefore experience an increase in pond level and if this occurs they should be deemed as not meeting the relevant pond drop requirements.

7.948 Various exemptions from the PDT requirement are sought including:

- for synthetically-lined structures if they comply with IPENZ practice note, have a subsoil drainage and a leak detection system in place and a CPEng has certified the leak detection system will provide adequate leak detection;
- those with an inspection chamber;
- concrete-lined components of the effluent conveyance system if the structure has been visually inspected, there is no visible cracks or defects and a has CPEng certification;
- those that have been suitably designed and built by a suitably qualified person.

7.949 With respect to certification that the storage associated with the discharge is structurally sound (Rule 35(b)(iii)), a few submissions have been received. DairyNZ are concerned that a CPEng may be unwilling to certify existing structures where they have not been involved in its design and/or construction and therefore it will be a time consuming and costly process. Another submitter, R Van Gool, has raised there is no timeframe for the inspection and that it should be certification that it is “*structurally sound at the time of inspection*”. Progressive Engineering Southland seek that certification should be that either the storage is structurally sound or meets the requirements of the PDT, not both. Non-complying activity status of discharge consents that cannot meet the certification requirements of Rule 35(b) is opposed in part by Fonterra, which seeks discretionary activity status.

## Analysis

7.950 There have been a number of instances within the Southland region of effluent storage ponds leaking and/or failing and consequentially contaminating ground and surface water. The PDT has been included in the Plan to reduce the risk of these events occurring. It is therefore recommended the PDT is retained in the pSWLP. RDAgritech raised concerns regarding newly constructed storage and the requirement to undertake a PDT, specifically for storage constructed in accordance with Rule 32. It is not guaranteed that new storage, including that consented under Rule 32, would have undergone the PDT in accordance with Appendix P. Therefore, new storage should not be exempted specifically because of its age. However, there is potential in some instances for a duplication of testing. Therefore, it is recommended a timeframe of three years for clay lined storage and five years for synthetically lined storage is included to allow a ‘window’ for PDT to occur. Whilst the three and five year timeframes are largely arbitrary they have taken into account the review period of a discharge permit (typically granted for 10 years) to manage storage performance by requiring a test at least once every 15 years (maximum). This approach will also alleviate some of the concerns about the environmental conditions required to undertake the test as it allows a longer period for testing and therefore a bigger opportunity window to undertake the PDT.

7.951 A number of submitters question the ability to perform the test because of the environmental conditions required to undertake the PDT. Whilst it is recognised environmental factors, for example wind and rain, can impact on the results, generally

these will be able to be accounted for, and therefore should not impact the ability to undertake the test. As mentioned above, it is recommended there is either a three or five year period to perform the test depending on the construction materials which should enable sufficient time for the PDT to be undertaken.

- 7.952 Some submitters request exemptions to the PDT requirement. One of those exemptions is if the storage has inspection chambers or leak detection systems installed. While the use of inspection chambers is encouraged, they only identify leaks above the chambers which do not cover the entire surface of the storage. Therefore, I do not recommend an exemption is included for systems with leak detection systems.
- 7.953 An exemption for concrete lined components of the effluent conveyancing system has also been requested. As discussed under Rule 32, it is not the intention of the pSWLP to capture the ancillary structures to the main effluent storage and therefore they should be exempted from the requirement to undertake a PDT.
- 7.954 Lastly, exemptions are requested for those ponds that have been signed off by a suitably qualified person. As discussed under Rule 32, a CPEng is considered the appropriate standard for certification. In any case, it is recommended the requirement for a PDT is retained as part of the certification process, alongside the structurally sound test, as the PDT will identify leaks that may not be able to be identified by other testing methods, for example visual checks which focus on catastrophic failure. It should be noted that the PDT is only a requirement of the restricted discretionary activity rule. Therefore, if a PDT is not undertaken, a discharge permit can be applied for as non-complying activity.
- 7.955 I agree with RD Agritech that some ponds may be subject to infiltration, which may result in an unexplained increase in pond level during the test. I therefore recommend the adoption of RD Agritech's submission on this matter.
- 7.956 Proposed Rule 35(b) requires a CPEng to certify the structure is 'structurally sound', and some submitters have questioned whether a CPEng will be able to make this certification if they have not been involved in the design and construction of the storage. Advice<sup>493</sup> received by staff is that it would be unreasonable to seek a CPEng certification after a structure is constructed if they have not been involved in the design and construction. The intent of the 'structural soundness' test was to reduce the risk of catastrophic failure of effluent storage. It is recommended however, in light of the above, that this is amended to state a CPEng has certified that there is no visible cracks or defects that would allow effluent to leak or shows risk of failure.
- 7.957 I consider that it is appropriate that applications for discharge permits that cannot meet the storage requirements of Rule 35(b) are considered as a non-complying activity. As discussed elsewhere, effluent storage can have significant adverse effects of the environment if they are to fail or leak. Non-complying activity status will ensure appropriate assessment of the adverse effects and the policy direction is undertaken.

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<sup>493</sup> Corlett, R. (2016). Farm Dairy Effluent Storage Memorandum. Refer to Appendix C2.

## Setbacks and sub-surface drains

### Submissions

- 7.958 Some submissions request amendments to the setbacks proposed in Rule 35. RJ and SJ Miller Farm Trust request the setback of effluent discharge from dwellings or places of assembly (Clause (a)(v) and Clause (c)(ii)) is increased from 200m to 700m. Further, the submitter requests the addition of a clause “*that the discharge cannot occur during windy conditions, especially if the prevailing wind is in the direction of a neighbouring dwelling*”. Clover Bell questions the 100m setback from water abstraction points (Clause (a)(vi) and Clause (c)(iii)), requesting this be amended to 20 metres. Other submitters seek changes to the condition requiring a 20 metre setback from surface water bodies (Clause (a)(iv) and Clause (c)(i)), specifically for the setback to also apply to wetlands, ephemeral and intermittently flowing streams, and the coastal marine area.
- 7.959 A couple of submitters are concerned regarding the requirement to map sub-surface drains within the discharge area, which is required under Clause (a)(xii), as it may be impossible to locate all sub-surface drains as land as changed ownership and records have not necessarily been passed on. Landpro request the clause is amended to refer to only ‘known’ sub-surface drains. DairyNZ request the reference to sub-surface drains in matters which council will restrict discretion in Rule 35(b) is removed.

### Analysis

- 7.960 It is acknowledged that odour issues can arise when discharging agricultural effluent to land. However, there is not sufficient evidence provided by the submitter to support a change from a 200 metre buffer to 700 metre. The issue of odour is also managed under Section 7 of the Regional Air Quality Plan (1999). It is also considered impractical to prohibit the discharge of agricultural effluent when the prevailing wind is in the direction of a neighbouring dwelling. I consider the setback, coupled with the condition of no spray drift or offensive or objectionable odour beyond the landholding boundary (Rule 35(a)(ix)), will be sufficient to manage any adverse effects.
- 7.961 A 20 metre setback already applies to the coastal marine area, surface waterbodies, artificial watercourses and wetlands listed in Appendix A. The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway.
- 7.962 It is agreed that the location of sub-surface drains may not always be known. Therefore, it is recommended that the mapping requirement of the permitted activity rule (Rule 35(a)) is amended to take this into account. However, I do not consider it is appropriate to only refer to known sub-surface drainage in condition 35(a)(i)(3)(b)(i) as feed lots and wintering pads can generate large volumes of contaminants which, if not captured, can flow through sub-surface drainage to surface waterbodies. I therefore recommend that the 20 metre setback from sub-surface drainage for feedlots and wintering pads is retained. For activities that fall under Rule 35(b), which are required to obtain a restricted discretionary resource consent, I do not consider it is appropriate to refer to only ‘known’ sub-surface drains. In some instances, further investigation of sub-surface drains within the effluent disposal field may be required to ensure adverse effects are appropriately managed. Further, in light of the above I do not consider it is appropriate

to remove reference to sub-surface drainage from matters over which Council have restricted their discretion as requested by some submitters.

- 7.963 It is not necessary to change the wording of Rule 35 to enable discharge up to 20 metres from a sealed water abstraction point. If a water abstraction point has been sealed, water will no longer be abstracted and therefore the 100 metre setback will not be required.

## Submissions and analysis

### Other matters

- 7.964 NZTA requests stock truck effluent disposal sites are added to the listed of permitted effluent discharge sources.
- 7.965 Enfield submits that the discharge of effluent from a dairy servicing a maximum of 50 cows that is not supplying a dairy shed or 100 of any other animal should be a permitted activity. The reasons for this are they are usually milked for a short duration and often only once a day, for example for calf rearing purposes.
- 7.966 Effluent application rates and the 150kg nitrogen loading rate (Clause (a)(viii)) also received a few submissions. These relate to Clauses (a)(vii), a(a)(viii) and (a)(x) which require that:
- (vii) provided the soil moisture does not exceed field capacity, the maximum discharge depth of agricultural effluent or water containing agricultural effluent is 10 millimetres for each individual application;*
  - (viii) the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year from agricultural effluent or water containing agricultural effluent;*
  - (x) the minimum return period for discharging agricultural effluent or water containing agricultural effluent onto or into the site is 28 days.*
- 7.967 Ngāi Tahu consider the 150kg N/Ha/year is too high, stating “Amend rule to reflect the approach taken in the physiographic zones so that the permitted rate of nitrogen onto any land area from agricultural effluent or water containing agricultural effluent does not exceed the capacity of a specific physiographic zone to accommodate the nitrogen loss”.
- 7.968 Progressive Engineering seek the application rate to be changed from a maximum depth to an average depth. With respect to the requirement for a minimum return period of 28 days, M and D Hamill said “This does not allow for effluent systems with very low application rates. Needs to be a mm rate per day to allow for such systems”. Further J Adams requests the minimum return period is specific to the physiographic zones.
- 7.969 DairyNZ and Federated Farmers request the removal of physiographic zones from the matters which Council has restricted its discretion to. Further, PT and SB Dale Trust, Balfour, Wendonside and Waikaia Group and Springlands Group, request the Old Maitātaua Physiographic Zone is included in Rule 35(c) discretionary activity status. Federated Farmers and Environment Southland staff submits matter of discretion 4 incorrectly refers to Policy 1, when it should be Policy 47.

7.970 Some submitters, for example Hedgehope Grazing and Balfour, Wendonside and Waikaia Group, oppose the inclusion of consent duration and consideration of the outcomes of FMU processes (Rule 35(b) matter of discretion 4). One reason for the opposition is that consents can be reviewed at any time.

7.971 With respect to the scope of Rule 35(b), specifically condition (i) which refers to the discharge is a replacement of a lawfully established discharge, DHL seek the inclusion of consented discharges that have not yet been exercised. Further, the submitter seeks the specific exclusion of these (consented discharges which have not been exercised) from Rule 35(c).

### Analysis

7.972 I do not recommend that the discharge of effluent from stock truck effluent dump sites to land is included as a permitted activity. Current practice, for example at the Five Rivers site, is to discharge the effluent through a sewage and effluent treatment plant which would be permitted under the pSWLP, as it is to a treatment plant. The Five Rivers site can hold up to 20,000L of agricultural effluent and can be emptied multiple times. Figure 1 shows the amount of agricultural effluent disposed of at the Five Rivers site since it was constructed. I note the high use month of June in which over 70,000 litres was disposed of in 2015, and over 50,000 litres in 2016. Due to the potential volumes of agricultural effluent being discharged from these sites, I do not recommend discharges of agricultural effluent from stock truck disposal sites are provided for as permitted activities. The resource consent process will enable appropriate consideration of the adverse effects of this activity.

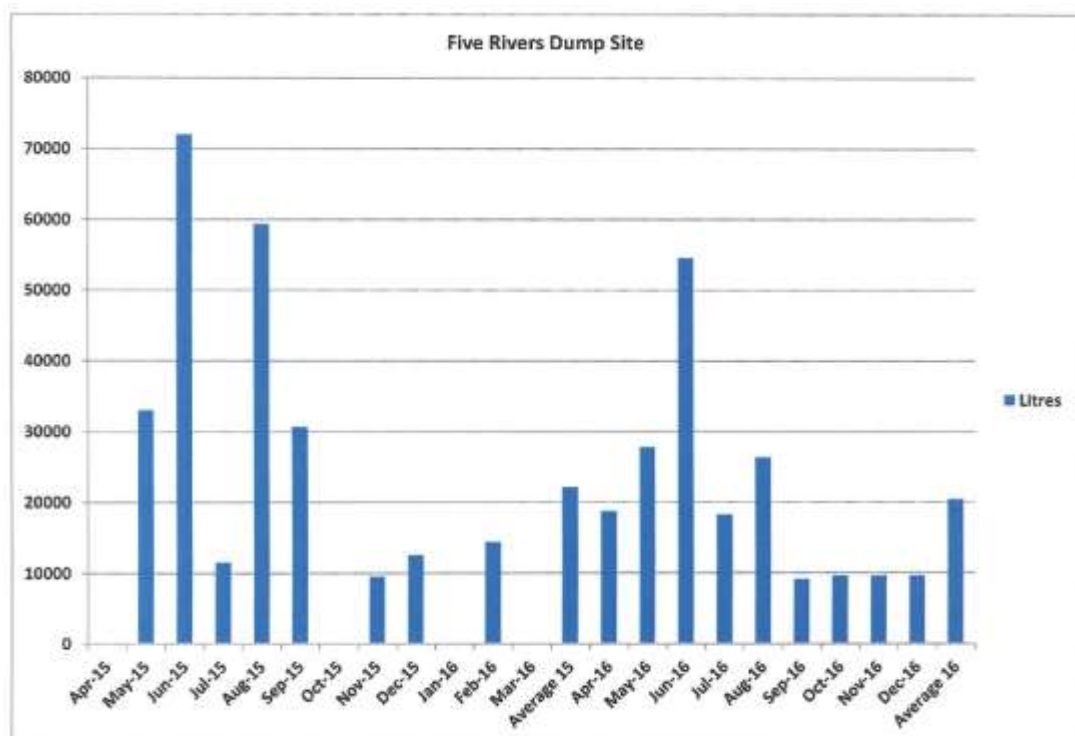


Figure 1: Litres of agricultural effluent removed from Five Rivers Dump Site from May 2015 to December 2016.



- 7.973 With respect to increasing the permitted discharge of effluent, subject to conditions, from 20 cows verse 50 cows I recommend the 20 cow limit is retained. The RWP when adopted in 2010 had a limit of 50 cows, however during a subsequent plan change this limit was reviewed and the 20 cow limit established. The driver for the reduction from 50 to 20 cows was to reflect the risk of adverse effects occurring on water quality and therefore compliance with section 70 of the RMA. Whilst I acknowledge the 20 cow limit is arbitrary, I do not consider the 50 cow limit proposed by Enfield will achieve the objectives of the pSWLP and therefore recommend the 20 cow limit is retained as notified.
- 7.974 With respect to submissions on the 150kg/N/ha condition in Rule 35(a), currently there is not sufficient evidence to enable the nitrogen loading rate to be tailored to the nitrogen capacity of specific physiographic zones. It is anticipated this will be developed when water quality values are identified and limits are developed in the future.
- 7.975 Rule 35(a)(vii) refers to a maximum discharge rate of 10mm for each application. Progressive Engineering request this is amended to refer to an average application depth of 10mm of each application. Difficulties arise in assessing compliance with an average depth across a paddock(s). This could also lead to perverse outcomes. For example, in a large paddock the discharge could occur in a specific location in large volumes resulting in ponding and run-off issues, however it could still comply on an average basis. A maximum depth is more certain and enforceable, and therefore no change is recommended.
- 7.976 With respect to the physiographic zones, I do not consider it appropriate to remove reference to the physiographic zones in this rule as they assist in understanding Southland's water and how it moves through across the landscape. Some submitters request the Old Mataura Physiographic Zone be included in the discretionary activity rule. The Old Mataura Physiographic Zone has high rates of nitrogen leaching to underlying aquifers and as such there is a higher risk of adverse effects occurring from the discharge of agricultural effluent. I therefore do not recommend the Old Mataura Physiographic Zone is included in Rule 35(c).
- 7.977 Section 128 of the RMA details when resource consent conditions can be reviewed. While I acknowledge section 128(1)(b) will enable the Council to review discharge permits, I consider it is more transparent to specifically refer to the timeframes of the FMU processes. Further, with respect to matters of discretion 4, as raised by Federated Farmers and Environment Southland staff, there is an error and it should refer to Policy 47 not Policy 1.
- 7.978 I agree the use of 'established' in Rule 35(b)(i) makes it unclear whether the rule captures all consented discharges, or only those that have been exercised. Because this clause only relates to the replacement of discharges under s124-124C of the RMA, I recommend that 'a lawfully established discharge' is replaced with 'an existing discharge consent' to increase clarity. However, it is not necessary to specifically exclude consented discharges from Rule 35(c).

## Recommendation

7.979 Amend Rule 35 as follows:

- (a) *The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided the following conditions are met:*
- (i) *the discharge is from;*
    - (1) *a dairy shed servicing a maximum of 20 cows or 100 of any other animal; or*
    - (2) *piggeries with a maximum of 70 x 50 kg pig equivalents; or*
    - (3) *directly from feed pads/lots, stand-off pads and wintering pads<sup>494</sup> that:*
      - (a) *until 31 December 2017 service no more than 100 adult cattle or 250 adult deer; and*
      - (b) *from 1 January 2018 service no more than 100 adult cattle or 250 adult deer per landholding<sup>495</sup> where the feed pad/lot, stand-off pad or wintering<sup>496</sup> pad:*
        - (i) *is not less than 20 metres from the nearest sub-surface (tile) drain, ~~surface waterbody~~ river, lake, or natural wetland and artificial watercourse<sup>497</sup>; and*
        - (ii) ~~*is the only feed lot or wintering pad on the landholding;*~~<sup>498</sup> or
      - (c) *service no more than 10 adult cattle or 25 adult deer in any other circumstance; or*
    - (4) *stock underpasses; or*
    - (5) *holding tanks on stock trucks;*
  - (ii) *there is no discharge of agricultural effluent or water containing agricultural effluent to any surface watercourse, either directly or by overland flow, run-off, or via a pipe;*
  - (iii) *there is no overland flow or ponding of effluent, or application to land when the soil moisture exceeds field capacity;*
  - (iv) *the discharge is not within 20 metres of any ~~surface waterbody~~ river, lake, artificial watercourse, natural wetlands, listed in Appendix A<sup>499</sup> or the coastal marine area;*
  - (v) *the discharge is not within 200 metres of any place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding;*
  - (vi) *the discharge is not within 100 metres of any water abstraction point;*
  - (vii) *provided the soil moisture does not exceed field capacity, the maximum discharge depth of agricultural effluent or water containing agricultural effluent is 10 millimetres for each individual application;*
  - (viii) *the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year from agricultural effluent or water containing agricultural effluent;*
  - (ix) *the discharge system is operated and maintained so that there is no spray drift or offensive or objectionable odour beyond the landholding boundary; and*
  - (x) *the minimum return period for discharging agricultural effluent or water containing agricultural effluent onto or into the site is 28 days; and*
  - (xi) *the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; and*

<sup>494</sup> 672.6 A Robertson; 346.1 K & D Hall; 270.3 Firdale Farms; and 220.16 Drylands Farming

<sup>495</sup> 79.5 P Blair

<sup>496</sup> 672.6 A Robertson; 346.1 K & D Hall; 270.3 Firdale Farms; and 220.16 Drylands Farming

<sup>497</sup> 247.11 Environment Southland

<sup>498</sup> 79.5 P Blair

<sup>499</sup> 247.11 Environment Southland.

- (xii) the location of any known<sup>500</sup> sub-surface drains within the discharge area, and their outlet position and relative depth, is mapped and provided to Environment Southland upon request.
- (b) The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water, is a restricted discretionary activity, provided the following conditions are met:
- (i) the discharge is the replacement of ~~a lawfully established~~ an existing discharge consent<sup>501</sup> pursuant to Sections 124-124C of the RMA,
- (ii) the existing discharge consent for agricultural effluent specifies a maximum number of animals from which the effluent is collected, and that number is not increasing; and
- (iii) any pond, tank or structure used to store agricultural effluent with capacity of more than 35,000 cubic metres<sup>502</sup> prior to discharge is certified by a Chartered Professional Engineer, within the last three years for clay lined storage and last five years for synthetically lined storage,<sup>503</sup> as:
- (1) having no visible cracks or defects that would allow effluent to leak from the storage being structurally sound<sup>504</sup>;
  - (2) meeting the relevant pond drop level outlined below and there is no unaccounted increase in volume level,<sup>505</sup> when tested in accordance with the methodology in Appendix P.

<b>Maximum Depth of Pond (m) excluding freeboard</b>	<b>Maximum Allowable Pond Level Drop (mm per 24 hours)</b>
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

Environment Southland will restrict the exercise of its discretion to the following matters:

1. application depth and/or rate, storage requirements, nutrient loading (in particular nitrogen) and size of the disposal area, timing, and contingency plans;
2. the separation distance (beyond that required under conditions (i), (ii) and (iii) above) of the discharge from rivers, lakes, natural wetlands, surface waterbodies,<sup>506</sup> artificial watercourses, subsurface drains, the coastal marine area, residential dwellings, places of assembly, urban areas, landholding boundaries, water abstraction points and registered drinking-water supplies;
3. other measures to avoid, remedy or mitigate adverse effects (including cumulative effects directly related to the discharge of farm dairy effluent) on water quality taking into account the nature and sensitivity of the receiving environment, including the physiographic zone that the discharge is located in;
4. the duration of the discharge permit to be issued, in order to implement the outcomes of any Freshwater Management Unit Process to be undertaken in accordance with Policy 47<sup>507</sup> 4;
5. the adequacy of information provided to demonstrate that any pond, tank or structure used to store agricultural effluent prior to discharge does not leak; and

<sup>500</sup> 759.15 Springlands Group

<sup>501</sup> 189.38 DHL

<sup>502</sup> 408.3 Hynds Pipe Systems

<sup>503</sup> 663.5 RD Agritech; 832.95 R Van Gool

<sup>504</sup> 190.17 DairyNZ

<sup>505</sup> 663.5 RD Agritech

<sup>506</sup> 752.128 Fish and Game

<sup>507</sup> 247.12 Environment Southland

6. *the structural integrity of any pond, tank or structure used to store agricultural effluent prior to it being discharged.*
- (c) *The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water ~~that did not exist as at 1 May 2016,~~ or seeks ~~to increase the number of stock provided for~~ in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones that does not meet one or more conditions of Rule 35(a), or Rule 35(b)(i) and (ii)<sup>508</sup> is a discretionary activity, provided the following conditions are met:*
- (i) *the discharge is not within 20 metres of any ~~surface waterbody~~ river, lake, natural wetland<sup>509</sup>, artificial watercourse or the coastal marine area;*
  - (ii) *the discharge is not within 200 metres of any place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding;*
  - (iii) *the discharge is not within 100 metres of any water abstraction point.*
- (d) *The discharge of agricultural effluent or water containing agricultural effluent to land, in circumstances where contaminants may enter water, that does not comply with Rule 35(b) or Rule 35(c) is a non-complying activity.*
- (e) *Despite any other rule, the discharge of untreated agricultural effluent into surface or groundwater is a prohibited activity.*

7.980 Add the following definitions:

**Feed pad/lot**

*A confined site located on production land used for feeding and/or loafing of cattle to avoid damage to pasture when soils are saturated, can be located either indoors or outdoors. Includes stand-off pads.<sup>510</sup>*

**Stand-off pad**

*Refer to feedpad/lot*

**Wintering pad**

*A designated area or confined site on production land for feeding out supplements during winter, includes self-feed silage stacks where there is significant de-vegetation of surrounding pasture. Can be located either indoors or outdoors.<sup>511</sup>*

## Appendix P

### Provision

7.981 Appendix P reads:

***Appendix P – Effluent Pond Drop Test methodology***

- *Testing is undertaken over a minimum period of 48 hours.*
- *Testing recording equipment is to be accurate to not more than 0.8 mm.*
- *Continuous readings are to be taken over the entire test period at not more than 10 second intervals.*
- *Data analysis is undertaken by a party independent of equipment installer.*

<sup>508</sup> 277.50 Fonterra

<sup>509</sup> 247.11 Environment Southland.

<sup>510</sup> 25.42 Ardel Dairies; 47.37 Balfour, Wedonside and Waikaia Group; and 828.10 Twin Farm

<sup>511</sup> 221.25 Drysdale Family Trust; and 208.13 M and S Dillon

- *Any change in pond fluid level over the test period needs to be accounted for.*
- *Ponds must be at or over 75% design depth before a test can be undertaken.*
- *The pond has been de-sludged in the 12 months prior to the test being undertaken and there shall be no sludge or crust on the pond surface during the test.*
- *The pond surface is not frozen during any part of the testing.*
- *An anemometer shall be installed for the duration of the test and at no time shall the wind speed exceed 10 metres per second during the test.*

## Submissions

- 7.982 26 submissions were lodged on Appendix P. One, from Fish and Game, is in support, while 14 are in part or full opposition to the methodology. Across the submissions there are a few common themes.
- 7.983 Firstly, opposition to the requirement to have the pond at least 75% full. Submitters are concerned that this conflicts with good practice of having the pond as empty as possible. They are also concerned that the test will need to be undertaken during winter.
- 7.984 Secondly, submitters are concerned with the below 10m/s wind requirement which they contend will be difficult to achieve in Southland. Ardel Dairies said *“Good luck trying to monitor all the ponds in southland with wind restrictions under 10m/s for 48 hrs?”*.
- 7.985 Thirdly, the 48 hour timeframe is opposed by a number of submitters. The reasons are generally because of the weather conditions required to undertake the test, the cost associated with completing the test, the availability of qualified testers and restriction of effluent entering the pond. Variations to the 48 hour timeframe have been proposed. Harvest Electronics said *“we submit that 12 hour overnight testing be permitted rather than requiring 48 hour test”*, while others such as Glendhu Dairies, seek 24 hour testing.
- 7.986 Some submitters raise concerns regarding the requirement for a party independent from the equipment installer, to undertake data analysis.
- 7.987 Lastly, a couple of submissions question the requirement to de-sludge effluent storage, specifically if their system does not require de-sludging, or how they de-sludge if the solids have not been separated.
- 7.988 There are a few other submissions, including RD Agritech, S Wilson and Environment Southland staff, seeking a range of amendments or reconsideration of the approach. These include:
- the development of an industry wide test;
  - yearly inspections and water testing from sub-surface drainage;
  - reducing or discontinuing the use of clay lined ponds;
  - one minute logging of data rather than the 10 second intervals;
  - amending bullet point two to *“0.8mm or less”* rather than *“not more than”*;
  - the use of alternative methodologies on a case-by-case basis, with a requirement to submit a drop test plan for approval, seven days prior to undertaking the test.

## Analysis

- 7.989 I acknowledge the requirement to have the pond at least 75% full to undertake a pond drop test (PDT) is in conflict with the GMP to keep pond levels as low as possible. However, in order for the test to be effective the normal wetted surface area of the pond needs to be covered at the time the test is undertaken. The 75% full requirement also provides a suitable amount of hydraulic head (pressure) during the test.
- 7.990 External factors, for example weather and effluent inputs, were the subject of a few submissions. It is not expected that PDTs will only be completed during winter when cows are dried off. Generally inputs to effluent storage will not be continuous over the 48 hour period. Further, meters can be installed to account for effluent inputs and in some instances alternatives to effluent pond use may be available, for example use of sump storage and irrigation.
- 7.991 The wind requirement under 10m/s has been opposed by a number of submitters. It is accepted as currently worded it may be difficult to get an acceptable test result as one reading over 10m/s will result in the test being invalid, which is not the intention. The aim is to have at least 24 hours of usable data, and therefore it is recommended the reference to wind over 10m/s at no time is amended to refer to 24 hours of data with wind below 10m/s. The ability to disregard spurious data is also the reason for the 48 hour time period, which some submitters oppose. As mentioned above, the 48 hour timeframe is required to obtain a minimum of 24 hours of usable data and therefore no changes are recommended.
- 7.992 The requirement to have an independent party to the testing equipment installer, analyse the data is to ensure integrity in the analysis. However, I consider it is redundant as the requirement in the relevant rules, for example Rule 35, is to have a CPEng certify the storage complies with the relevant 'drops'. As mentioned elsewhere in this report, a CPEng<sup>512</sup> deals with complex engineering problems and activities, and they must have an accredited qualification or be able to demonstrate equivalent knowledge and demonstrate their competence against IPENZ competence standard.
- 7.993 The desludging requirement is needed in order to obtain an accurate result by ensuring sludge is not impeding any leaks. I therefore do not recommend the adoption of submissions on this matter.
- 7.994 A 10 second data collection interval is preferred over a one minute interval, as it gives a good resolution so that real time fluctuations in the level of the pond can be detected. I do not consider it is appropriate to enable the use of alternative methodologies as RD Agritech submit, as this brings too much subjectivity into the testing process and could introduce a double standard. I believe the PDT is the most appropriate way to test pond leakage compared to those proposed in submissions for example, testing of sub-surface drainage or discontinuing the use of clay lined ponds. It is clearer to refer to "*0.8mm or less*" rather than "*not more than 0.8mm*" and therefore I recommend that the submission of Environment Southland is accepted.
- 7.995 It is expected the test will only be required once every ten to 15 years depending on the discharge consent term and therefore it is not considered an unreasonable cost.

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<sup>512</sup> More information on CPEng can be sourced here: <https://www.ipenz.nz/home/development-registration/registration/chartered-professional-engineer>

## Recommendation

7.996 Amend Appendix P as follows:

### ***Appendix P – Effluent Pond Drop Test methodology***

- *Testing is undertaken over a minimum period of 48 hours.*
- *Testing recording equipment is to be accurate to ~~not more than~~ 0.8 mm or less<sup>513</sup>.*
- *Continuous readings are to be taken over the entire test period at not more than 10 second intervals.*
- ~~*Data analysis is undertaken by a party independent of equipment installer.<sup>514</sup>*~~
- *Any change in pond fluid level over the test period needs to be accounted for.*
- *Ponds must be at or over 75% design depth before a test can be undertaken.*
- *The pond has been de-sludged in the 12 months prior to the test being undertaken and there shall be no sludge or crust on the pond surface during the test.*
- *The pond surface is not frozen during any part of the testing.*
- *An anemometer shall be installed for the duration of the test and ~~at no time shall the~~ wind speed shall be at ~~exceed~~ 10 metres per second or less for at least 24 hours during the test<sup>515</sup>.*

## Provisions

7.997 The definitions of ‘Agricultural effluent’ and ‘Agricultural effluent storage’ contained in the Glossary read:

### ***Agricultural effluent***

*Effluent that is derived from livestock farming, but excludes excreta from individual animals, fertiliser application and non-point source discharges from normal farming practices.*

### ***Agricultural effluent storage***

*A pond, tank or structure used from the containment, storage or treatment of agricultural effluent.*

## Submissions

7.998 Three submissions have been received on the definition for agricultural effluent. Ravensdown and FANZ seeks the definition is amended to ‘*Animal effluent*’ to be consistent with other regional plans. Fish and Game support the definition and seek its retention.

7.999 Six submissions have been made on the definition of agricultural effluent storage. Fish and Game support the definition and seek its retention. As with the definition for agricultural effluent Ravensdown and FANZ seek the definition is amended to ‘*Animal effluent storage*’. RD Agritech and Federated Farmers seek a minimum volume is included in the definition to exclude smaller storage from the requirement to obtain a resource consent under Rule 32. In their submission, Federated Farmers state “*The definition of agricultural effluent storage has no minimum size (this could capture sumps and stone traps). The*

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<sup>513</sup> 247.33 Environment Southland

<sup>514</sup> 191.15 JM and KB Dale

<sup>515</sup> 25.36 Ardel Dairies

*previous plan had 22.5 m<sup>3</sup>*". Rimu Grasslands and Leicester Downs consider the definition of effluent storage and the corresponding limits are too generic.

## **Analysis**

- 7.1000 I consider that as currently worded, the definitions of both agricultural effluent and agricultural effluent storage are wider than just effluent from animals. For example, it may contain other contaminants such as silage leachate. Therefore, I do not support the adoption of the submissions by Ravensdown and the Fertiliser Association of NZ.
- 7.1001 The submissions of RD Agritech, Federated Farmers and Rimu Grasslands and Leicester Downs have partly been addressed through changes recommended to Rule 32, where it is recommended that a permitted activity rule with associated performance standards is included for smaller storage.

## **Recommendation**

- 7.1002 Retain the definitions of '*Agricultural effluent*' and '*Agricultural effluent storage*' as notified.

## **Horticulture Waste Water**

### **Introduction**

- 7.1003 Horticultural waste water discharge, as a result of vegetable or bulb washing, is generally made up of water, and a high suspended solid content. The solids are generally made up of the soil that is washed off the vegetables, or bulbs, with a small amount of vegetative matter. The high suspended solid content of a discharge from a vegetable or bulb washing operation has the potential to smother aquatic ecosystems, and this rule is aimed at managing this potential effect.
- 7.1004 Rule 36 provides for the discharge of water containing contaminants from vegetable or bulb washing to land, as a permitted activity, subject to meeting conditions. These conditions limit the discharge to 20m<sup>3</sup> per day, and restrict the: rate of discharge; what it may contain; and the location of the discharge.

### **Submission**

- 7.1005 There were 15 submissions on Rule 36. The only consistent theme within these submissions was that five submitters seek that clause (b) is removed, which is a requirement that "*the rate of discharge does not result in any ponding of the contaminants or water containing contaminants*".
- 7.1006 Hort NZ supports this rule but request an amendment whereby to be a permitted activity, one could either meet the current conditions in Rule 36 or meet the requirements of a yet to be published code of practice for horticulture wash water.
- 7.1007 Fish and Game request a number of amendments to the rule. Firstly, it requests that the setback requirements in Clause (d) be extended to include sub-surface drainage and ephemeral waterways, and that reference to Appendix A be removed, so that the 20 metre setback applies to any water body or wetland, rather than only those listed in



Appendix A. Secondly, the submitter requests that there be extra controls to manage ponding, to prevent overland flow by limiting discharges when soil moisture exceeds field capacity. Thirdly, the submitter requests that there be no direct discharge of wash water to water, groundwater or the CMA. Forest and Bird also requested that setbacks from the CMA and ephemeral waterways be included.

## Analysis

- 7.1008 Some submitters, who include S Marshall, T Buckingham and Progress Valley Farms, are concerned about the ponding restriction. This may be due to the fact that at times, they use sediment traps to capture any sediment from the washing process, and the rule is more focussed around preventing ponding in a field. Ponding can result in overland flow, resulting in contaminants having a direct path to surface waterbodies. Ponding normally occurs when soil moisture exceeds field capacity. Therefore, I recommend that a restriction in regards to managing ponding of any wash water remain.
- 7.1009 I consider the issue raised by Fish and Game regarding that a discharge should not occur when soil moisture exceeds field capacity has merit, but instead of including it as a new clause, I think it would be more appropriate to replace clause (b) as this clause is aimed at managing the same thing. This change in wording will also make the rule consistent with the wording of a clause in Rule 35, which seeks to manage the effects that ponding can cause.
- 7.1010 In regards to the submission from Hort NZ, it is my view that including reference to an as yet unpublished code of practice is inappropriate, particularly in a permitted activity rule.
- 7.1011 The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway, and an ephemeral waterway is captured by the definition of a river in the RMA. I see merit in the request to include the CMA in the setback requirements and recommend the adoption of this requirement, given the potential for adverse effects of the direct discharge of horticultural waste could potentially have on the CMA.
- 7.1012 In regards to the request by Fish and Game to include sub-surface drainage in the setback requirements for a discharge, I acknowledge there is a risk of the flow of contaminants through the soil profile into sub-surface drainage, however as is discussed elsewhere in this Report, the location of sub-surface drainage networks is not well known in the region. In addition, as the primary contaminant is sediment, drainage through the soil profile is a suitable way to remove sediment, and the effects of discharges to the ground surface, in the vicinity of sub-surface drains, is expected to be negligible, given the volumes must not exceed 20 cubic meters a day and the discharge would only occur seasonally.
- 7.1013 Fish and Game also requests that the reference to Appendix A be removed. I consider this appropriate and it better aligns with Policy 33, which aims to prevent adverse effects on wetlands, rather than concentrating on the ones listed in Appendix A. However, I have a concern that requiring a discharge to be setback 20m from all wetlands could potentially mean that this rule would capture the sediment traps that some horticultural growers use, therefore I recommend that the setback only apply to natural wetlands. I also consider the request by Fish and Game that there is no direct discharge of wash

water to water is unnecessary, as there are already setbacks required for discharges from waterbodies within the rule.

## Recommendation

7.1014 Amend Rule 36 as follows:

*The discharge of water containing contaminants from vegetable or bulb washing to land, where contaminants may enter water, is a permitted activity, provided that the following conditions are met:*

- (a) the discharge does not exceed 20 cubic metres per day;*
- (b) ~~the rate of discharge does not result in any ponding of the contaminants or water containing contaminants; there is no overland flow or ponding of horticultural wash-water, or application of the water to land when soil moisture exceeds field capacity~~<sup>516</sup>*
- (c) the discharge only contains water and soil, and there are no measurable concentrations of chemical additives present in the discharge;*
- (d) the discharge is not within:*
  - (i) 20 metres of any lake, river, modified watercourse, artificial watercourse, ephemeral waterway, the coastal marine area,<sup>517</sup> or natural<sup>518</sup> wetland ~~listed in Appendix A~~<sup>4</sup>, but excluding groundwater; or*
  - (ii) 20 metres of any landholding boundary; or*
  - (iii) 100 metres of any residential dwelling; or*
  - (iv) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;<sup>519</sup>*

## Provisions

7.1015 Rule 37 provides for the discharge of sludge from stationary agricultural dips, mobile sheep dips and spray dips onto or into land as a permitted activity, subject to a number of conditions being met. These relate to matters including restrictions on the location of the discharge and the rate of discharge.

## Submissions

7.1016 Thirty-nine submissions were received on Rule 37 – Agricultural dips, of which 29 were in support and request the rule is retained.

7.1017 R Anderson opposes the requirement for the discharge not to occur within 20 metres of any landholding boundary, stating “*have a woolshed and yards within 20 metres of boundary so cannot contain spray dip run-off*”. M Strang also opposes the rule, in particular the 250m setback that is required from a well or bore. The Mataura Butcher Shop oppose the rule requesting it is made permitted. CFL Farms seek clarity with respect to organic dips, for example, Extinosad. Federated Farmers request condition (b) of the rule, which requires that “*the rate of discharge does not result in any ponding of the agricultural effluent*” is deleted, stating it is impractical as water can pond near the exit of conveyor showers, but it is not agricultural effluent.

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<sup>516</sup> 752.129 Fish and Game

<sup>517</sup> 279.82 Forest and Bird

<sup>518</sup> 247.11 Environment Southland

<sup>519</sup> Clause 16(2) Amendment

7.1018 Forest and Bird seek the inclusion of setbacks from the CMA, including lagoons and estuaries, and ephemeral streams, as requested across all rules in the pSWLP. In a similar theme, Fish and Game request the rule is amended to include setbacks from sub-surface drainage and ephemeral or intermittently flowing streams and all wetlands rather than only those wetlands listed in Appendix A. Further, the submitter seeks the following new condition “*there is not overland flow or ponding of agricultural dips, or application onto land when soil moisture exceeds field capacity*”.

## **Analysis**

7.1019 Many of these submission points are identical to those discussed in relation to Rule 36. With respect to the following submissions, the analysis and conclusions are not repeated, as they also apply in this instance: Fish and Game and Forest and Bird.

7.1020 With respect to submissions from Mataura Butcher Shop, I note that Rule 37 does provides for discharges as a permitted activity, where they are within specified parameters. Once those parameters are breached, I consider it is appropriate that the activity is managed via a resource consent.

7.1021 There is a general level of comfort with the proposed rule in submissions, with the majority of them in support.

7.1022 Some submitters raise concerns with the setbacks required in Rule 37, including from properties, bores and wells. I consider the 20 metre setback from the property boundary is appropriate. The sludge discharged contains agricultural dip and agricultural effluent, which can result in adverse effects for neighbouring properties. The rule does not require a 250 metre setback from all bores and wells in the region, only those identified in Appendix J. This setback is appropriate as these are generally community drinking water supplies. In addition, a 100 metre setback applies to existing potable water abstraction points in condition 37(c)(ii). C F L Farms questions whether the rule applies to organic dips. As above, the sludge discharged includes not only agricultural dip but also agricultural effluent which can impact on water quality and therefore it is recommended that all dips are captured by the rule.

7.1023 I do not support the changes proposed by Federated Farmers. While the water ponding may not contain agricultural effluent, it is likely it will contain other contaminants from the agricultural dip. Ponding can result in overland flow resulting in contaminants having a direct path to surface waterbodies. I note that ponding normally occurs when soil moisture exceeds field capacity, and I have recommended changes in relation to this as a result of Fish and Game’s submission.

7.1024 In regards to the request by Fish and Game to include sub-surface drainage in the setback requirements for a discharge, I acknowledge there is a risk of the flow of contaminants through the soil profile into sub-surface drainage. However, this activity occurs at a low frequency and is a small volume. Further, as discussed elsewhere in this report, the location of sub-surface drainage networks is not well known in the region. I therefore do not support the adoption of a setback from sub surface drainage.

## Recommendation

7.1025 Amend Rule 37 as follows:

*The discharge of sludge from stationary agricultural dips, mobile sheep dips and spray dips onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided that the following conditions are met:*

- (a) *there is no discharge of agricultural dip effluent directly to water, including groundwater, or the coastal marine area;*
- (b) *~~the rate of discharge does not result in any ponding of the agricultural effluent~~ there is no overland flow or ponding of agricultural dip effluent, or application onto land when soil moisture exceeds field capacity<sup>520</sup>;*
- (c) *the discharge is not within:*
  - (i) *20 metres of any ~~waterbody~~ river, lake, ~~or~~ natural wetlands or the coastal marine area listed in ~~Appendix A~~<sup>521</sup> excluding groundwater; or*
  - (ii) *100 metres from any existing potable water abstraction point; or*
  - (iii) *20 metres of any landholding boundary; or*
  - (iv) *100 metres from any residential dwelling other than residential dwellings on the landholding; and*
  - (v) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
- (d) *the discharge of agricultural effluent from stationary agricultural dips, mobile sheep dips and spray dips occurs on the landholding where the dipping has taken place; and*
- (e) *the discharge is in accordance with any Hazardous Substances and New Organisms Act 1996 approval for the substances being discharged; and*
- (f) *a written record of the nature of the chemicals, volume and location of the discharge is kept and provided to Environment Southland on request.*

## Rule 38 - Animal and vegetative waste

### Provision

7.1026 The discharge of animal and vegetative waste to land has the potential to have significant adverse effects, such as the contamination of soil and water. There is also potential for adverse effects on human and animal health, and as such, this rule seeks to manage the application of these wastes.

7.1027 Rule 38 reads:

*The discharge of solid animal waste (excluding any discharge directly from an animal to land), sludge or vegetative material containing animal excrement or vegetative material, including from a high intensity farming process, feed lot or wintering barn or industrial or trade process, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:*

- (a) *the material does not contain any hazardous substance or hazardous waste; and*
- (b) *the material does not include any waste from a human effluent treatment process;*

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<sup>520</sup> 752.130 Fish and Game

<sup>521</sup> 752.130 Fish and Game; and 279.83 Forest and Bird

- (c) *the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year; and*
- (d) *the material is not discharged:*
  - (i) *onto the same area of land more frequently than once every two months; or*
  - (ii) *onto land where solid animal waste, or vegetative material containing animal excrement or vegetative material from a previous application is still visible on the land surface; or*
  - (iii) *onto land when the soil moisture exceeds field capacity; or*
  - (iv) *from 1 May to 30 September in any year; or*
  - (iv) *within 20 metres of the landholding boundary, a bore used for water abstraction, the bed of a river, lake, or modified watercourse or the Coastal Marine Area; or*
  - (v) *with a depth of material of greater than 10 mm on the land surface.*

## Submissions

- 7.1028 There are approximately 100 submissions on Rule 38. The majority of the submitters are concerned about clause (d)(iv) that restricts the ability to discharge waste from 1 May to 30 September. A large number of the submitters consider that any restrictions should be in relation to soil moisture levels, as in some winter months it may be suitable to apply animal or vegetative waste without any significant adverse effects. A small number of submitters suggested that the restrictions mentioned above be shortened to between 1 June and 31 August.
- 7.1029 Some submissions seek that the times between repeat applications are shortened to one month. Smithill are opposed to the maximum loading rate of nitrogen of 150 Kg/Ha/Yr stating there is no scientific evidence to support this figure. Some other submitters request that the depth of application refer to an average depth. A Christey seeks clarification on the definition of a landholding.
- 7.1030 Forest and Bird seek the inclusion of the CMA, lagoons and estuaries and ephemeral streams in all rules. In a similar theme, Fish and Game request the rule is amended to include setbacks from sub-surface drainage, and ephemeral or intermittently flowing streams and all wetlands.
- 7.1031 Ngāi Tahu requests that Rule 38 be amended to reflect the approach taken in the physiographic zones, so that the permitted rate of nitrogen onto any land area from agricultural effluent, or water containing agricultural effluent does not exceed the capacity of a specific physiographic zone to accommodate the nitrogen loss.

## Analysis

- 7.1032 I consider that the concerns raised by a large number of submitters to Rule 38 regarding the restriction of applying animal and vegetative waste between 1 May to 30 September are valid. There are potentially times during this period where it is suitable to apply animal and vegetative waste without having any significant adverse environmental effects. I consider that the risk that solid waste may be applied in inappropriate conditions is currently managed by the clause that restricts the application of solid waste when soil moisture exceeds capacity. I therefore support those submissions requesting this clause (d)(iv) be deleted. However, if the Hearing Panel considers that further restrictions are necessary in order to decrease the risk that any waste is transported to waterways during this period, they may want to consider increasing the setback requirements for the

discharge of animal and solid waste in clause (d)(iv).<sup>522</sup> This is due to the potential for solid waste to remain on the surface where it is applied longer than when compared to liquid effluent, and therefore there is a higher risk that it can be mobilised by surface run-off or wind.

- 7.1033 In regards to the submissions that request a decrease in the period in which repeat applications can occur, I consider this is inappropriate. The reason is that this could result in a build-up of nutrients during times when the uptake of nutrients is limited, which could lead to significant nutrient loss given high levels of nutrients present in solid waste. The maximum loading rate of nitrogen of 150 kg loading per Ha is a well-established figure used throughout the country and there is a wealth of science<sup>523</sup> to back this up, therefore I consider it inappropriate to remove the figure, as requested by Smithill.
- 7.1034 As proposed, Rule 38(d)(v) refers to a maximum discharge rate of 10mm for each application. Some submitters request this is amended to refer to an average application depth of 10mm of each application. Difficulties arise in assessing compliance with an average depth across a paddock(s). This could also lead to perverse outcomes. For example, in a large paddock the deposition could occur in a specific location in large volumes, and still comply on an average basis. A maximum depth is more certain and therefore no change is recommended. The request for clarification on the definition of a landholding is addressed earlier in this section of the report.
- 7.1035 The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway, and both ephemeral waterways and the CMA are now included where appropriate. In regards to the request by Fish and Game to include sub-surface drainage in the setback requirements for a discharge, I acknowledge there is a risk of the flow of contaminants through the soil profile into sub-surface drainage, however, as is discussed elsewhere in this Report, the location of sub-surface drainage networks is not well known in the region, and the risks are considered low.
- 7.1036 The request by Ngāi Tahu is partly addressed by a recommendation elsewhere in this report that requires that the dispersal sites of solid waste are mapped as part of a management plan prepared under Appendix N. However, I consider the request by Ngāi Tahu that the rule have a requirement so that the permitted rate of nitrogen onto any land area from agricultural effluent or water containing agricultural effluent does not exceed the capacity of a specific physiographic zone to accommodate the nitrogen loss is inappropriate. While the concept has merit, until such time as the specific capacity of physiographic zones to accommodate nitrogen loss has been established, this data is simply not available.

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<sup>522</sup> It is noted that there are two clauses numbered (iv). This refers to the second. The numbering is corrected in the recommendations made on this rule.

<sup>523</sup> Determination of sustainable nitrogen loading rates for land treatment systems without adequate soil and ground water information: dairy farm effluent application onto grazed pasture in the Waikato region, N Selvarajah 1996  
<http://www.enviroknowledge.co.nz/assets/Uploads/Publications/Dairy-Pasture-Nitrogen-Loading-Rate-FLRC-paper-1996.pdf>  
A review of literature on the land treatment of farm-dairy effluent in New Zealand and its impact on water quality, D. J. Houlbrooke et al. 2004  
<http://www.tandfonline.com/doi/pdf/10.1080/00288233.2004.9513617?needAccess=true>

## Recommendation

7.1037 Amend Rule 38 as follows:

*The discharge of solid animal waste (excluding any discharge directly from an animal to land), sludge or vegetative material containing animal excrement or vegetative material, including from a high intensity farming process, feed lot or wintering barn or industrial or trade process, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:*

- (a) the material does not contain any hazardous substance or hazardous waste; and*
- (b) the material does not include any waste from a human effluent treatment process;*
- (c) the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year; and*
- (d) the material is not discharged:*
  - (i) onto the same area of land more frequently than once every two months; or*
  - (ii) onto land where solid animal waste, or vegetative material containing animal excrement or vegetative material from a previous application is still visible on the land surface; or*
  - (iii) onto land when the soil moisture exceeds field capacity; or*
  - ~~*(iv) from 1 May to 30 September in any year; or*~~<sup>524</sup>
  - (v) within 20 metres of the landholding boundary, a bore used for water abstraction, the bed of a river, lake, or modified watercourse or the Coastal Marine Area; or*
  - (vi) with a depth of material of greater than 10 mm on the land surface.*

## Other agricultural effluent disposal

### Provision

7.1038 Rule 39 is a 'catch-all' rule designed to manage any effluent disposal that is not provided for by Rules 32-38.

7.1039 Rule 39 reads:

*The discharge of agricultural effluent, water containing contaminants from vegetable or bulb washing sludge, stationary agricultural dips, mobile sheep dips and spray dips onto or into land, in circumstances where contaminants may enter water, other than as provided for in Rules 32 to 38 is discretionary activity.*

### Submission and Analysis

7.1040 There are 11 submissions to Rule 39 and the clear majority are supportive of the rule. There are two submissions from D Thompson Contracting and Forest and Bird on the rule that relate to the preceding rule. Thompson Contracting wants time restrictions removed for the dispersal of solid waste that is present in Rule 38, and this has been addressed in the analysis for Rule 38. Forest and Bird request a reference to the Coastal Marine Area including lagoons and estuaries, and ephemeral streams, in regards to setback requirements. However, I note that Rule 39 has no such set back requirements given it is a discretionary activity.

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<sup>524</sup> 759.17 Springlands Group; 482.17 Lower Aparima CG; 248.4 Erne Hill; and others

7.1041 W & T Holder request that the activity status for this rule be changed to non-complying. I consider that the current discretionary activity status is appropriate, as Rule 39 is a catch-all rule, drafted to ensure that any discharges of agricultural effluent, water containing contaminants from vegetable or bulb washing sludge, stationary agricultural dips, mobile sheep dips and spray dips, that are not otherwise managed in Rules 32-38, are able to be addressed by Council. In my opinion, specific discharges that should be considered as non-complying activities are already identified in the respective rules, and it is not necessary or appropriate that discharges other than those already identified in Rules 32-38, become non-complying.

7.1042 There is a request by Mataura Butcher Shop and Newton Slink Skins to make this rule permitted. I consider this would be inappropriate, given the potential adverse environmental effects of having the disposal of agricultural effluent that is not provided for in Rules 32-38 as a permitted activity.

### **Recommendation**

7.1043 Retain Rule 39 as notified.

### **Provision: Glossary**

7.1044 Sludge is defined in the Glossary as “*The solid residues from effluent*”

### **Submissions and Analysis**

7.1045 Three submissions have been received on the definition of sludge. Fish and Game support the definition and seek its retention. Drylands Farming and Drydale Family Trust request sludge is redefined as they consider it is not a solid as it still contains water.

7.1046 Related to this RD Agritech request a definition be included for ‘Solid’ in relation to effluent, or amendments be made to the definition of sludge to make it clearer.

7.1047 I accept that sludge still contains a component of water, as submitted by Drylands Farming and Drydale Family Trust. I therefore recommend the definition of sludge is amended to refer to a semi-liquid residue. As this makes the definition of sludge clearer, I do not consider it necessary to include a definition for ‘Solid’.

### **Recommendation**

7.1048 Amend the definition of ‘*Sludge*’ as follows:

~~*The solid residues from effluent.*~~ *The semi-liquid residues from effluent that settles to the bottom of pipes, ponds, tanks, structures and other effluent systems.*<sup>525</sup>

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<sup>525</sup> 220.22 Drylands Farming; 221.22 Drysdale Family



## Silage – Rule 40

### Provisions

7.1049 Rule 40(a) provides for the use of land as a silage storage facility, and any incidental air discharge, as a permitted activity, subject to a range of conditions being met. These predominantly relate to where the storage facility can be located. Where these conditions are not met, but the facility is not located within specified setbacks from: surface waterbodies; dwellings, places of assembly and other landholdings; and various water extraction points, consent is required as a restricted discretionary activity under Clause (b). Where the setbacks in Clause (b) are not met, the silage storage facility is a non-complying activity.

### Submissions

7.1050 Sixty-five submissions have been received on Rule 40. 17 of these are in support a further seven are in part support and 16 either oppose or oppose in part in the proposed rule. The remaining 58 are unspecified. Some submitters expressed concern about the impact of the rule on existing silage storage facilities, for example, Ardel Dairies said *“Once existing silage pads are made its hard to shift infrastructure, as long as effects are mitigated this should be allowed. With all new silage pits adhering to new rules.”*

### Permitted activity conditions

7.1051 Some submitters question the subjectivity of Condition (a)(i) referring to noxious, dangerous, offensive or objectionable odour beyond the boundary of the landholding. CFL Farms are concerned this condition is more relevant to properties near town boundaries. Clover Bell request this condition is amended to read *“all practical steps are taken to reduce noxious, dangerous etc...”*.

7.1052 Fonterra are concerned that this rule duplicates another regional rule as it also relates to incidental discharges to air, and as such it seeks references to discharges to air are removed from Rule 40.

7.1053 Cook Farming Co opposes the restriction to one silage storage facility.

7.1054 HNZ seek condition (a)(iv) which reads *“the activity does not modify, damage or destroy any recorded historic heritage site”* is amended to be consistent with other similar conditions in the Plan for example 57(a)(xi) which states *“there are no recorded historic heritage sites, at the site of the activity”*.

7.1055 Two submitters are concerned about the wording of condition (a)(vii) which requires that *“no part of the silage storage facility is located on land that is made permanently or intermittently wet by the presence of springs, seepage, high groundwater, ephemeral streams, or flows of stormwater”*. Bristol Grove Dairies say *“it is impossible to have silage stored on land that never gets wet. Please clarify”*. DHL are concerned that silage covers create flows of stormwater and that this should be excluded from condition (a)(vii).

7.1056 Condition (a)(iii) requires that *“there is no discharge of contaminants from the silage storage facility to any surface or groundwater or naturally occurring wetland.”* This received a number of

submissions. Submitters are generally concerned about the inclusion of ‘groundwater’ and in particular its use has been interpreted as requiring the sealing of all silage storage facilities. R Van Gool said *“The word ‘groundwater’ has been added to the clause in this new Plan (compared to previous rules). This will require all silage storage to be placed on a concrete pad. Yet Rule 41 makes no mention of groundwater. This is a contradiction as leachate is generally classed as a contaminate and it is prohibited to ground water in Rule 40, but allowed in Rule 41 which is silent on groundwater.”* Federated Farmers request the term ‘groundwater’ is deleted from condition (a)(iii). Other submitters, including BR and CM McLeod and E Rowe seek clarity around what is required and how it will be monitored. Fonterra consider the condition is unnecessary as Rule 41 manages discharges of silage leachate. Some submitters including Pinicale Farming and Firdale Farms seek the sealing of new silage storage facilities. Pinicale Farming request a period of five years before the sealing requirement is implemented to enable farmers to comply without suffering economic hardship. SMA Humphries Family Trust are concerned about the large catchment areas of some silage pads and consider *“If leachate was diluted with water to a suitable ratio it could be dispersed/ tricked onto a planted wetland area and the main solid contaminates were also captured”*.

- 7.1057 Condition (a)(vi) of the permitted activity rule requires that no part of the silage storage facility be on land classified as a HAIL site. This received a number of submissions. Submitters are concerned that there are a number of sites on farms that are considered HAIL sites and that this may result in a silage facility not being able to be located on the same landholding. Some submitters request the inclusion of a buffer from HAIL sites for example Landpro request the following *“no part of the silage storage facility is ~~on land~~ located within 50m of a classified ~~as a~~ HAIL site under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011”*.

## Analysis

- 7.1058 Condition (a)(i) requires silage storage facilities to not cause any discharge that results in a noxious, dangerous, offensive, or objectionable odour beyond the boundary of the landholding. This is not a duplication of other regional rules as Fonterra suggest, as whilst odour is addressed in section 7 of the Regional Air Plan 2016, it does not contain any specific rules relating to air discharges from silage storage facilities. Therefore, I recommend condition(a)(i) is retained in Rule 40. It is accepted that the condition is subjective. However, Environment Southland uses a standardised assessment to make an overall judgement on odour complaints. The FIDOL assessment takes into consideration the frequency, intensity, duration, offensiveness and location of the odour as well as weather conditions for example wind direction and speed. Further, information on assessing and managing odour including the FIDOL assessment is available in MfE’s *Good Practice Guide for Assessing and Managing Odour 2016*<sup>526</sup>. The request to introduce *“all practical steps are undertaken to reduce...”* introduces a second layer of subjectivity into the condition and therefore I do not recommend the condition is amended in this way. Lastly, it is acknowledged there is likely to be more odour complaints near population bases, however, the potential for odour effects is not restricted to towns. Therefore, I do not recommend the submission of CFL Farms is adopted.

- 7.1059 I note that there is no restriction on the number of silage storage facilities in Rule 40. Cook Farming Co may be referring to the restriction on wintering pads and feed lots in Rule 35(a). This has been discussed in relation to that rule.

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<sup>526</sup> Ministry for the Environment. 2016. Good Practice Guide for Assessing and Managing Odour. Wellington: Ministry for the Environment.

- 7.1060 The inclusion of groundwater in condition 40(a)(iii) received a number of submissions. This condition has been carried through from the RWP, however, it is acknowledged the previous version referred to 'water' rather than ground water and surface water. The definition of 'water' in the RMA includes groundwater, therefore the notified amendments have not changed the condition. Submitters are primarily concerned about whether the inclusion of groundwater requires the sealing of silage storage facilities. Silage storage facilities can generate significant volumes of silage leachate which is approximately a forty times stronger pollutant than dairy shed effluent.<sup>527</sup> Usually leachate is generated within 24 hours of construction and will continue for eight weeks.<sup>528</sup> If not appropriately designed and constructed leachate can contaminate groundwater and therefore I do not recommend reference to groundwater is removed from condition 40(a)(iii). To increase clarity, I recommend a condition is included to require silage storage facilities to be constructed using an impermeable surface to avoid the contamination of groundwater, as some submitters for example Firdale Farms have requested. However, I acknowledge that there will be a cost associated with this and therefore recommend a period of three years from the operative date of this Plan for this to occur. I note, as some submitters have raised, ground water is not referred to in Rule 41(a)(ii) – Silage leachate. This is because Rule 41(a)(ii) requires the spreading of leachate across land rather than a potential point source discharge. I therefore do not recommend any amendments to Rule 40.
- 7.1061 In relation to the request from HNZ to amend condition (a)(iv) relating to historic heritage sites, I accept that the wording of the condition – which refers to whether or not a recorded historic heritage site will be modified, damaged or destroyed – is not consistent with the wording of other permitted activity standards within the pSWLP. However, I note that in section 10 of this report, it is recommended that those permitted activity conditions are deleted, and instead an advice note inserted, relating to historic heritage. If the Hearings Panel consider that there is scope to align this across the Plan, I would recommend that condition (a)(iv) of this rule similarly be deleted. If there is not sufficient scope, I recommend the condition is retained as notified, as I consider the wording is clearer (refer to section 10 of this report) than the amendment sought by HNZ.
- 7.1062 For clarity I recommend that condition (a)(vi), which refers to HAIL sites, is amended and the submission of Landpro is accepted. This will ensure silage storage facilities are not located within 50 metres of any HAIL sites. It is appropriate to incorporate a setback as the extent of a HAIL site is not known until site specific analysis has been undertaken.
- 7.1063 With respect to condition (a)(vii) I do not consider it necessary to amend the condition. The condition identifies the sources of water for example, by springs, seepage, high groundwater, ephemeral streams or flows of stormwater. I do not consider it captures land wet for example by precipitation unless this converges into a flow of stormwater or an ephemeral stream. Further, in my opinion, flows of stormwater off the silage storage facility itself would not be captured by condition 40(a)(vii).

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<sup>527</sup> Ministry of Agriculture and Fisheries. 1990. Guidelines to Minimise Water Pollution from Farm Silage Stacks.

<sup>528</sup> Ministry of Agriculture and Fisheries. 1990. Guidelines to Minimise Water Pollution from Farm Silage Stacks.

## **Submissions - setbacks**

7.1064 Glendhu Dairies are concerned about the 50 metre setback from surface waterbodies for existing silage pits, seeking that it is amended to 25 metres provided there is no visible leachate entering the waterbody. Forest and Bird and Fish and Game seek the inclusion of other surface waterbodies including the coastal marine area, ephemeral and intermittently flowing waterbodies and wetlands. DHL and Federated Farmers request amendments on the conditions relating to drinking water supply sites (Appendix J), including decreasing the setback to 100 metres and excluding discharges which were lawfully established prior to the establishment of the drinking water supply site. J White questions the science behind setbacks from the coastal marine area in Rule 40(b)(ii) and requests the same setback as with other waterbodies.

## **Analysis – setbacks**

7.1065 The existing silage storage facility rule (Rule 51) in the RWP incorporates a 50 metre setback from surface waterbodies. When Rule 51 of the RWP was adopted in November 2011, it included a staged implementation condition to recognise existing silage storage facilities, which were required to comply by 17 July 2013 or when their discharge permits expired. Five years have since passed, and in my view, this is a sufficient adjustment period. As such, I recommend no change is made to the 50 metre setback from surface waterbodies requirement.

7.1066 The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway, and the CMA are now included where appropriate. Ephemeral waterways and discharges to them are addressed through conditions (a)(iii) and (vii) it is not considered necessary to include a 50 metre setback from them. There is no setback required from the coastal marine area in clause (b) of Rule 40, rather the rule requires the silage storage facility to be located outside of the CMA, which in my view is appropriate and no change is recommended. The 250 metre setback from microbial health protection zones and drinking water protection sites identified in Appendix J is appropriate. These zones and sites are predominantly used for community drinking water supplies and the 250 metre setback is to manage potential adverse effects on human health through contamination. This approach is consistent with the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007. Lastly, in my opinion it is not appropriate to exclude existing discharges as Federated Farmers request. If a silage storage facility is located within the setback it is appropriate that resource consent be required in order to ensure that adverse effects on human health are avoided or appropriately mitigated consistent with Policy 13. I therefore do not support the adoption of its submission on this matter.

## **Submissions - Restricted discretionary and non-complying activity clauses**

7.1067 Eight submitters have concerns regarding and/or request the deletion of Rule 40(b)(restricted discretionary activity) matter of discretion 4, which restricts Council's discretion to the physical dimensions and location of the silage storage facility. Submitters are concerned the Council will control the dimensions of stacks. P Blair said "*E.S should not have the right to dictate dimensions of stacks.*"

- 7.1068 Federated Farmers do not consider there are any circumstances that would warrant notification of a consent for silage storage and requests this is removed from Rule 40.
- 7.1069 The non-complying activity status, particularly of clause (c) of Rule 40 is opposed by some submitters. Eyre Creek and Wilkins Farming request this is changed to a controlled activity. Federated Farmers seek a discretionary activity status for silage storage facilities that cannot meet the conditions of Rule 40(b). Whiterig Dairy Farm seek clarification over the process to obtain non-complying consent.

### **Analysis - Restricted discretionary and non-complying activity clauses**

- 7.1070 In some instances, Council may need to review the physical dimensions of proposed silage storage facilities or proposed locations in order to reduce adverse effects. Therefore, I recommend that the matter of discretion of 4 in Rule 40(b) is retained.
- 7.1071 With respect to the ability to notify resource consents under Rule 40(b), I recommend that this is retained. Whilst, in my view, it is unlikely for resource consents for silage storage facilities to be notified, there may be instances where this is appropriate. I therefore do not consider it is appropriate to restrict Council's ability to notify a resource consent if required.
- 7.1072 It is appropriate for silage storage facilities that cannot meet the conditions of Rule 40(a) or (b) to go through the non-complying activity test. These facilities would be located within close proximity to surface waterbodies, dwellings, neighbouring properties, potable and community water supplies, places of assembly or the coastal marine area, and a non-complying activity resource consent will enable commensurate consideration of potential adverse effects.
- 7.1073 With respect to Whiterig Dairy Farm submission, the process to obtain a non-complying resource consent is the same as other activity status<sup>529</sup>. However, a more stringent test (under section 104D of the RMA) is applied during decision making, whereby in addition to the matters under section 104 consent cannot be granted unless the activity has either effects on the environment which are no more than minor or is not contrary to the objectives and policies of the Plan.

### **Recommendation**

7.1074 Amend Rule 40 as follows:

- (a) *The use of land as a silage storage facility, and any incidental air discharge, is a permitted activity provided the following conditions are met:*
- (i) *the activity does not cause any discharge that results in a noxious, dangerous, offensive, or objectionable odour beyond the boundary of the landholding on which silage is stored;*
  - (ii) *there is no overland flow of stormwater into the silage storage facility;*
  - (iii) *there is no discharge of contaminants from the silage storage facility to any ~~surface lake,~~ river, modified watercourse, artificial watercourse, natural wetland, ephemeral waterway<sup>529</sup> or groundwater or naturally occurring wetland;*
  - (iv) *the activity does not modify, damage or destroy any recorded historic heritage site;*
  - (v) *no part of the silage storage facility is within:*

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<sup>529</sup> 247.41 Environment Southland

- (1) 50 metres of any ~~surface waterbody~~ lake, river, modified watercourse or naturally occurring wetland<sup>530</sup>, or any potable water abstraction point.
  - (2) 100 metres of any dwelling or place of assembly, on another landholding constructed or in use prior to the silage storage facility being lawfully established.
  - (3) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (vi) no part of the silage storage facility is ~~on land~~ located within 50 metres of a classified ~~as~~<sup>531</sup> HAIL site under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011; and
  - (vii) no part of the silage storage facility is located on land that is made permanently or intermittently wet by the presence of springs, seepage, high groundwater, ephemeral streams, or flows of stormwater;
  - (viii) within three years of the operative date of this plan the base of the silage storage facility is constructed using an impermeable lining so there is no overflow or leakage of contaminants to surface water or ground water.<sup>532</sup>
- (b) The use of land as a silage storage facility that does not meet the conditions in Rule 40(a) is a restricted discretionary activity provided to the following conditions are met:
- (i) no part of the silage storage facility is within:
    - (1) 20 metres of a ~~surface waterbody~~ lake, river, natural wetland or modified watercourse<sup>533</sup>;
    - (2) 50 metres of a dwelling, potable water abstraction point, or place of assembly, on another landholding;
    - (3) 50 metres of the main stems of the Waiau, Aparima, Ōreti or Mataura rivers, or inside flood banks of the main stems of these rivers (if present); or
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (ii) no part of the silage storage facility is within the Coastal Marine Area.

## Provision - Glossary: Silage Storage Facility

7.1075 The definition of ‘Silage Storage Facility’ reads:

*Silage storage facility refers to land or structures on which silage is stored, processed or directly utilised. Bales of plant material completely encapsulated in plastic are not considered a “silage storage facility”.*

## Submissions and Analysis

7.1076 Three submissions have been received on the definition of silage storage facility. Fish and Game support the definition and seek its retention. S Wilson and A Wilson seek further clarification on the definition. It is unclear from the submissions of S Wilson and A Wilson what clarification is sought. In the absence of further information from the submitters, I do not recommend the submissions from S Wilson and A Wilson be accepted.

<sup>530</sup> 247.41 Environment Southland

<sup>531</sup> 464.22 Landpro

<sup>532</sup> 270.5 Firdale Farms; 638.9 Pinnacle Farming Company

<sup>533</sup> 247.41 Environment Southland

## Recommendation

7.1077 Retain the definition as notified.

## Silage leachate

### Provision

7.1078 The discharge of silage leachate to land has the potential to have significant adverse effects, including the contamination of soil and water. There is also potential for adverse effects on human and animal health, and as such, this rule seeks to manage the application of this waste.

7.1079 Rule 41(a) provides for the discharge of silage leachate onto or into land as a permitted activity, subject to a range of conditions, which include that the discharge is via an agricultural effluent discharge system authorised under Rule 35. The location of the discharge, and restrictions on when and how it may be applied, are also subject to conditions. Where these conditions are not met, the discharge is discretionary.

### Submissions

7.1080 There are 32 submissions on Rule 41. The clear majority of submissions are supportive of this rule with some of those in support requesting amendments.

7.1081 DairyNZ, Eyre Creek, Federated Farmers, Progressive Engineering Southland and Wilkins Farming all request that clause (a)(iv)(2) be amended so that the depth of application requirement be an average of 10mm, instead of the depth not being in excess of 10 millimetres for “*each individual application*”. Additionally, Federated Farmers request that existing use rights are protected in regards to set back requirements of any discharge from a drinking water supply site identified in Appendix J.

7.1082 DHL request that overland flow of silage leachate be permitted provided it does not enter water or does not result in significant ponding.

7.1083 Both Forest and Bird and Fish and Game seek that lagoons, estuaries, wetlands and ephemeral streams are included within the setback requirements for discharge for Rule 41.

7.1084 Seaview Trust & Oraka Farms request that Rule 41 is combined with Rule 40 and there be no rule required for the discharge of silage leachate and that it be managed as a GMP.

7.1085 Ngāi Tahu requests that Rule 41 is amended to reflect the approach taken in the physiographic zones so that the permitted rate of nitrogen onto any land area from agricultural effluent or water containing agricultural effluent does not exceed the capacity of a specific physiographic zone to accommodate the nitrogen loss. The submitter notes that recording silage leachate discharge in a management plan (in accordance with Appendix N) would assist Council to know how much N can be applied to the land from animal and vegetative waste. The submitter suggests the addition of a new clause to this effect. The submission from Ngāi Tahu also identifies a drafting error in clause (b).

## Analysis

- 7.1086 I consider that the amendments requesting that the application rate should be an average of 10mm are inappropriate as difficulties arise in assessing compliance with an average depth across a paddock(s). This could also lead to perverse outcomes, for example, in a large paddock the deposition could occur in a specific location in large volumes, and still comply on an average basis. A maximum depth is more certain and therefore no change is recommended.
- 7.1087 In regards to the submission by DHL, who requested that overland flow of silage leachate be permitted provided it does not enter water or does not result in significant ponding, I consider this is inappropriate, given that any overland flow or ponding would suggest that the area in question has reached field capacity. The presence of overland flow and ponding creates the risk that any ponded silage leachate could easily be transported in a rainfall event to the nearest waterway. Additionally, the request that the rule should only capture significant ponding is, in my view, not certain enough for a permitted activity.
- 7.1088 The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this Report to clarify what is considered a waterway, and both ephemeral waterways and the CMA are now included, where appropriate.
- 7.1089 I consider the request by Seaview Trust & Oraka Farms to combine both Rules 40 and 41 is inappropriate. I also consider the request that there be no rule for the discharge of silage leachate and that it be managed under GMP rather than a rule is inappropriate, due to the toxic nature of silage leachate and the significant risk it poses to waterways. Additionally, this approach would not implement Policy 17 nor will it help achieve Objective 6 of the pSWLP.
- 7.1090 The request by Ngāi Tahu is partly addressed by a recommendation elsewhere in this report that requires that the dispersal sites of silage leachate are mapped as part of a management plan prepared under Appendix N. However, I consider request by Ngāi Tahu that the rule have a requirement so that the permitted rate of nitrogen onto any land area from agricultural effluent or water containing agricultural effluent does not exceed the capacity of a specific physiographic zone to accommodate the nitrogen loss is inappropriate. This is due to the fact that the specific capacity of physiographic zones to accommodate nitrogen loss is still to be established, this is a process that will occur during the catchment limit setting process. As such I consider their request that the rule would then become not certain enough for a permitted activity.
- 7.1091 I agree with Ngāi Tahu's request to include *not* within clause (b) as they have identified a drafting error.

## Recommendation

7.1092 Amend Rule 41 as follows:

- (a) *The discharge of silage leachate onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided the following conditions are met:*
- (i) *the discharge is via an agricultural effluent discharge system authorised under Rule 35; or*



- (ii) *the discharge of silage leachate does not enter any surface water or a naturally occurring<sup>534</sup> wetland; and*
  - (iii) *any discharge is not within:*
    - (1) *20 metres of a surface waterbody, artificial watercourse or the coastal marine area;*
    - (2) *100 metres of a place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding; or*
    - (3) *100 metres of a water abstraction point; and*
    - (4) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
  - (iv) *any discharge does not result in:*
    - (1) *overland flow or ponding of silage leachate,*
    - (2) *depth of application in excess of 10 millimetres for each individual application;*
    - (3) *a loading rate of nitrogen from the discharge of silage leachate in excess of 150 kilograms of nitrogen per hectare per year.*
- (b) *The discharge of silage leachate to land that does not<sup>535</sup> meet the conditions in Rule 41(a) is a discretionary activity.*

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<sup>534</sup> Clause 16(2) Amendment.

<sup>535</sup> 797.49 Ngāi Tahu

## 8. Water Quantity

### General

#### Introduction

- 8.1 The pSWLP includes provisions for the management of water quantity that seek to give effect to the NPSFM, the RPS and pSRPS, and to achieve the pSWLP objectives. While the provisions are based on those contained within the existing RWP, the pSWLP seeks to ensure that the activity status of activities is commensurate with their anticipated effects, including increasing the threshold for permitted activities for small-scale abstractions and introducing a prohibited activity status for waterbodies that are considered to be over-allocated.
- 8.2 The analysis of the water quantity provisions is separated into three sections:
- General;
  - Groundwater; and
  - Surface Water.
- 8.3 The objectives related to water quantity are contained within the objectives section of this report. This general water quantity section contains the policies and definitions that apply to both groundwater and surface water and has been split into:
- Water Quantity;
  - Consideration of Resource Consent Applications (Water Quantity); and
  - Definitions.
- 8.4 I received technical advice from Mr Brydon Hughes of Liquid Earth Limited on a number of the submissions received in relation to the water quantity section of this report. The sections where I have included the views of Mr Hughes or relied upon his advice have been clearly identified.

#### Policy Constraints

- 8.5 The NPSFM has four objectives that apply to water quantity. Objective B1 requires the safeguarding of the fresh water environment, through the sustainable management of the taking, using, damming or diverting of fresh water. Objective B2 is to avoid any further over-allocation of fresh water and phase out existing over-allocation. Objective B3 seeks to improve and maximise the efficient allocation and efficient use of water. Objective B4 requires the protection of significant values of wetlands and of outstanding freshwater bodies.
- 8.6 Policies B1-B6 set out policy direction for how these four objectives are to be met. Policy B7 directs regional councils to ensure that regional plans contain a policy for considering certain consent applications until changes to regional plans that give effect to Policies B1, B2 and B6 are made operative.

- 8.7 The policies in this section direct regional councils to address the allocation and use of freshwater. Policy B1 requires Council to ensure that its plans establish freshwater objectives in accordance with Policies CA1-CA4, and set environmental flows/levels for water bodies to give effect to the objectives of the NPSFM.
- 8.8 Policy B2 directs regional councils to provide for efficient allocation of freshwater to activities, within the limits set to give effect to Policy B1.
- 8.9 Policy B3 requires plans to state criteria by which applications for approval of transfers of water take permits are to be decided.
- 8.10 Policy B4 requires regional councils to identify methods in regional plans to encourage the efficient use of water.
- 8.11 Policy B5 directs regional councils to avoid any further over-allocation of fresh water and phase out existing over-allocation.
- 8.12 There are two objectives within the operative RPS of particular relevance to water quantity. Objective 4.2 has the goal of managing the use and development of water and land resources so as to, wherever practicable, maintain and enhance flow regimes. Objective 4.3 seeks to ensure the taking, use, damming and diversion of water does not compromise environmental standards established for the region.
- 8.13 Policies 4.1-4.8 set out how Objectives 4.2 and 4.3 are to be achieved, and include policy direction on minor takes as permitted activities, managing effects of abstractions or transfers of permits, encouraging efficient allocation and use and assessing the effects of land use and development on the quantity and sustainability of water in water bodies when a council is making a decision and providing for any adverse effects.
- 8.14 The pSRPS has a number of provisions relating to water quantity. Objective WQUAN.1 seeks to ensure that all flow, level and allocation regimes are developed in accordance with the NPSFM. Objective WQUAN.2 addresses the efficient allocation and use of water, while making provision for the existing Manapouri and Monowai hydro-electric generation schemes in the Waiau catchment.
- 8.15 Policies WQUAN.1-WQUAN.7 set out how Objectives WQUAN.1 and WQUAN.2 are to be achieved, and include policy direction on:
- maintaining instream values of surface water to protect the waterway's character and ensure consistency with sections 6 and 7 of the RMA;
  - how to address over-allocation as a significant issue, to align with Part 2 of the RMA and the NPSFM;
  - requirements for identifying water management regimes (including the management of cumulative effects) and giving effect to Objectives WQUAN.1 and WQUAN.2,
  - managing water demand and abstraction, to protect in-stream values and prevent adverse effects;
  - ensuring the efficient use of water and recognising the social, economic and cultural benefits associated with the use, development or protection of water.

## Policy B7 of the National Policy Statement for Freshwater Management 2014

### Provision

8.16 Policy B7 reads:

1. *When considering any application the consent authority must have regard to the following matters:*
  - (a) *the extent to which the change would adversely affect safeguarding the life-supporting capacity of freshwater and of any associated ecosystem; and*
  - (b) *the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of freshwater and of any associated ecosystem resulting from the change would be avoided.*
2. *This policy applies to:*
  - (a) *any new activity; and*
  - (b) *any change in the character, intensity or scale of any established activity; that involves any taking, using, damming or diverting of freshwater or draining of any wetland, which is likely to result in any more than minor adverse change in the natural variability of flows or level of any freshwater, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).*
3. *This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.*

### Submissions

8.17 There are nine submissions on Policy B7 (taken directly from the NPSFM), with four submitters seeking to retain the proposed wording and Fonterra seeking to delete the policy as they state that the requirement to include such policies only applies in respect of operative plans. Fulton Hogan & Southern Aggregates also submits that it is unnecessary to repeat the NPSFM within the Plan, and as alternative, include reference to NPSFM in the statutory framework section of the Plan. The statutory framework section of the pSWLP contains reference to the NPSFM, so the submission from Fulton Hogan & Southern Aggregates is not considered further.

8.18 Real Journeys seeks that the policy is amended to make it clearer this policy is taken directly from the NPSFM.

8.19 B Hamilton seeks to amend the policy to include a requirement to consider the financial effects of water policies. W Devine suggests the implementation of a royalty regime.

### Analysis

8.20 I recommend the proposed wording of Policy B7 be retained. As set out in the legal section the policy is lifted directly from the NPSFM, and is required to be included in regional plans, and cannot be altered.

### Recommendation

8.21 Retain Policy B7 as notified.

## Policy 20 – Management of water resources

### Provision

8.22 Policy 20 states that water resources are to be managed so as to avoid, remedy or mitigate adverse effects on the values listed within the policy, including the quality and quantity of aquatic habitats, areas of significant indigenous vegetation and significant habitats of indigenous fauna and the rights of existing lawful users. The policy also aims to ensure water use is efficient and reasonable and the volume specified on water permits to take and use water are no more than reasonable for the intended use. It also recognises the positive effects resulting from the use and development of water resources.

### Submissions

8.23 Policy 20 received 26 submissions with 13 submitters seeking to retain the proposed wording. L & C Cowan seeks to delete the policy.

8.24 Fonterra seeks to amend Policy 20(1) so only ‘significant’ adverse effects are avoided, remedied or mitigated as Fonterra do not consider minor effects need to be avoided, remedied or mitigated.

8.25 Fish and Game considers that Policy 20 does not give effect to Objective B1, B3 and B4 of the NPSFM or matters set out in Part 2 of the RMA and seek to amend Policy 20(1) and (2) as follows:

*Manage the taking, abstraction, use, damming or diversion of surface water and groundwater by developing environmental flows and groundwater levels allocation regimes so as to:*

1. *Avoid, remedy or mitigate adverse effects from the use and development of surface water resources on:*

(a) *The quality and quantity of aquatic habitat, including protecting the life supporting capacity and ecosystem health and processes of waterbodies;*

(b) *Natural character values, natural features, and amenity, aesthetic and landscape values, which includes:*

*i Natural elements, processes and patterns;*

*ii Biophysical, ecological, geological, geomorphological and morphological aspects; and*

*iii The natural movement of water and sediment including hydrological and fluvial processes;*

...

2. *Avoid, ~~remedy or mitigate~~ significant adverse effects from the use and development of groundwater resources.*

...

(c) *surface water flows and levels, particularly in spring-fed streams, natural wetlands and lakes, to protect and aquatic ecosystems and habitats, including life supporting capacity and ecosystem health and processes of waterbodies, and their natural character; and*

8.26 The submitter also seeks that the following clauses are added to Policy 20.

*Maintain groundwater quality where it has not been degraded by land use and discharge activities.*

Where groundwater quality has been degraded by land use and discharge activities reduce nutrient losses to groundwater through management of irrigation.

In times of water shortage, takes are restricted to those that are essential to the health or safety of people, and communities, or for drinking water for animals and all other takes are ceased.

- 8.27 In relation to clause (3), the submitter seeks that the clause is amended to ensure that water takes and uses of water are first necessary, second reasonable for the intended end use, and where they are both necessary and reasonable are used efficiently.
- 8.28 Forest and Bird and Fish and Game seek that clause (4) is amended to refer to “adverse effects” as well as positive effects arising from the use and development of water resources. Forest and Bird also seek to split the list in Policy 20(1) so effects on some things are only to be avoided.
- 8.29 The submission from DOC contains points similar to some of Fish and Game’s submission points and seek amendments to the policy along similar lines. DOC also seeks an addition to Policy 20 to maintain groundwater quality where it has not been degraded, and where it has been degraded to reduce contaminant losses to groundwater through management of irrigation.
- 8.30 INZ seeks to amend Policy 20(1)(e) to remove reference to ‘spiritual’ and ‘beliefs’. Federated Farmers also seeks removal of ‘beliefs’ as a variable and subjective concept.
- 8.31 Hort NZ seeks to retain Policy 20(2)(b) and Policy 20(3), but seek amendments to Policy 20(1)(d) and (g) to read as follows:
- (d) *‘recreational ~~values~~ uses’*
  - (g) *the rights and reliability of supply for lawful existing users*
- 8.32 Fonterra seeks to clarify that the reference to avoiding, remedying or mitigating adverse effects on ‘water quality’ in Policy 20(2)(d) relates specifically to the relevant water quality policies within the pSWLP to prevent inconsistencies between policies.
- 8.33 DHL seeks to ensure the protection afforded to existing users includes those with existing but not yet implemented resource consents and takes in accordance with section 14(3)(b) of the RMA.
- 8.34 IAL seeks that all policies relating to abstraction and use of water should ensure that activities are not undertaken in such a way that compromises the safe operation and efficient use of existing physical resources and infrastructure. (This submission applies to Policy 20, 21, 22, 24 and 25 but will be discussed only once in the analysis below.)
- 8.35 R Kempthorne seeks removal of all spiritual references and that english translations should be available for all Maori words. Specifically, he seeks that Policy 20(1)(e) be deleted or amended and opposes Policy 20(1)(j), as there is no definition or explanation as to what all of the words mean.
- 8.36 KiwiRail seeks that Policy 20(1)(i) which refers to “historic heritage values” be deleted.

- 8.37 Landpro seeks a greater level of clarity around what level of effects are considered acceptable.
- 8.38 The Environment Southland staff submission seeks to clarify wording and include reference to Appendix O.
- 8.39 Federated Farmers considers the positive effects resulting from the use and development of water resources need to be recognised and provided for.
- 8.40 Fonterra seeks an additional clause that provides for consideration for non-consumptive water takes.

## **Analysis**

- 8.41 Fish and Game and DOC seek to more appropriately align Policy 20 with the NPSFM and RMA and to improve the environmental protection within the policy. I do not agree with the suggested amendment to the opening paragraph of the policy, as it unnecessarily constrains the policy to relate to developing environmental flow and allocation regimes. In my opinion, it is inappropriate to restrict the application of this policy to these specific processes, as it will also assist in consideration of individual resource consent applications. Also, in relation to 'groundwater levels', I have been advised by Mr Hughes that these are not typically used as a basis for managing groundwater allocation. Rather it is typically managed on a volumetric basis, although in some instances groundwater level cut-offs may be applied in a similar manner to surface water minimum flow cut-offs. The pSWLP specifies allocation volumes for all recognised groundwater management zones and specifies a methodology for managing allocation outside of these zones.
- 8.42 I do not support the submission from Fonterra to apply Policy 20(1) only to significant adverse effects, as a number of higher level directions require the management of all of the effects on surface water, in particular Objective 9 of the pSWLP.
- 8.43 In my opinion, amendment sought by DOC to Policy 20(1) to 'avoid effects on significant matters' goes beyond what is required by the policy, as there may be situations where mitigation or remediation may be an appropriate response to an adverse effect. The Forest and Bird submission to split the list in Policy 1(a) should not, in my view, be accepted for the same reason.
- 8.44 The suggested amendments by Fish and Game to Policy 20 (1)(a) and (2)(c) incorporate the wording of Objective B1 of the NPSFM and include protection of lakes in Policy 20(2)(c), which I recommend should be accepted in part. However, the addition of 'protecting' and 'to protect' would introduce an outcome into the policy, which in my view is more appropriately located within an objective and is not required here. The amendment sought by Fish and Game to Policy 20(1)(b), in my opinion, creates an overly prescriptive and complicated policy, which would require extensive assessment of a very wide range of attributes to implement. The policy suitably covers all waterways and does not specify specific values. I recommend the notified wording of Policy 20(1)(b) be retained.
- 8.45 I agree with Hort NZ's submission to extend Policy 20(1)(g) to refer to effects on the reliability of supply for lawful existing users, consistent with the wording of Policy 20(2)(b) for groundwater users, however I note that this is already a consideration

under Policy 20(1)(g), which refers to the “rights of lawful existing users”. I do not consider any amendments are necessary to give effect to the submission from Hort NZ on this matter.

- 8.46 In relation to Hort NZ’s request for the policy to refer to recreational “*uses*” rather than “*values*”, I note that the latter is consistent with the terminology used throughout this policy. In my view, it is the effects on the recreational value, rather than the use itself, that should be considered.
- 8.47 Water abstracted in accordance with section 14(3)(b) of the RMA is a fundamental right provided for by the RMA. I support the amendments sought by DHL to Policy 20(1)(g) and 20(2)(b), to include reference to abstractions taken under section 14(3)(b) of the RMA and to those holding consents that are not yet implemented. Consented abstractions are considered to be part of the existing consented environment, and in my view, it is appropriate that these consent holders maintain the same rights as “lawful existing users”. The policy, as currently worded, may be interpreted as only considering the rights of those who have given effect to resource consents.
- 8.48 The deletion of ‘remedy or mitigate’ from Policy 20(2) sought by DOC and Fish and Game will make the test for complying with the policy significantly stricter by only incorporating ‘avoid’. I do not agree with this submission as it restricts possible actions that can be taken to remedy or mitigate significant adverse effects, and may act as a prohibition on a range of activities where the effects can be appropriately remedied or mitigated. Additionally, there is no need to ‘avoid’ all effects from the use and development of groundwater resources to meet the objectives within the NPSFM. I recommend these submissions are not accepted.
- 8.49 Fish and Game seek to provide more structure to Policy 20(3) and introduce an initial test that water takes and uses are ‘necessary’ then ‘reasonable for their intended use’ before they are determined to be ‘efficient’. This amendment would have the effect of placing a value judgement on the assessment as to what is ‘necessary’ in any situation. Currently the RMA affords a first-in first-served principal that doesn’t require an applicant demonstrate that the consent they seek is ‘necessary’. This would also result in the policy containing a higher test than what is directed in Objective 11 or the RMA. In addition, ‘necessary’ can mean different things to different people, so the introduction of the term would create a very subjective test.
- 8.50 Following the analysis of Appendix L.4 in section 8.3 of this report, I recommend that Appendix L.4 be referenced within Policy 20(3).
- 8.51 I consider that the amendment to Policy 20(4) sought by Fish and Game, to refer to both positive and adverse effects is unnecessary. Policy 20(1) and 20(2) already provide specific direction in relation to adverse effects, and to refer again to adverse effects in 20(4) would add a level of duplication and potential inconsistency. In my view, it is more appropriate that 20(4) relates only to positive effects, with the policy, when read as a whole, requiring consideration of both positive and adverse effects. I do not support the submission from Federated Farmers to amend Policy 20(4) to provide for as well as recognise positive effects. It is unclear what effect this amendment is aiming to achieve, that the pSWLP does not already provide for.



- 8.52 In relation to the additional clauses sought by Fish and Game, while the first two clauses seek to align with requirements in the NPSFM, I note that maintaining and improving water quality are dealt with in Policy 15 of the pSWLP and it is not necessary or appropriate to repeat those provisions in this policy, which deals with water quantity. Additionally, in terms of the specific wording sought, I have been advised by Mr Hughes that it is not particularly accurate. For example, there are very few locations in Southland where groundwater quality has not been affected to some degree by land use activities over the past 100 years, and it is unclear what would be considered ‘degraded’. Similarly, the second clause implies irrigation is responsible for degradation of water quality. There is no current evidence to support this, rather land use intensification (which does not always accompany irrigation in the Southland context) is much more likely to be responsible for any declining trends in groundwater quality.
- 8.53 The third additional clause sought by Fish and Game is also not considered to be necessary as the priority to be given to takes when a water shortage direction is issued is set out in Policy 25.
- 8.54 In response to DOC’s submission to include a provision relating to groundwater quality, I have received advice from Mr Hughes that the use of irrigation (for pasture) in Southland differs from that occurring in many other parts of New Zealand. While irrigation is used in many parts of the country to enable intensification of land use, in Southland it is typically used as a tool to offset requirements for importation of feed supplements (so the overall intensity of land use does not change). Current information does not indicate that pasture irrigation in Southland is directly contributing to a reduction in groundwater quality (compared to equivalent dryland land use).
- 8.55 Additionally, Mr Hughes has advised that work for the Physiographics of Southland project shows that in many parts of the Southland environment contaminant losses are transport limited (i.e. contaminants are retained and accumulate in the soil zone until “flushed” by autumn rains). Pasture irrigation can potentially mitigate such losses by enabling nutrient recycling reducing the availability of nutrients that would otherwise have been lost from the soil zone under dryland conditions. In light of this advice, in my opinion, the amendment sought by DOC is not necessary.
- 8.56 It is unclear what exactly the submission from IAL is seeking to protect by including a provision to ensure protection of existing physical resources and infrastructure. Without further clarification, I do not recommend this submission is accepted.
- 8.57 In relation to R Kempthorne’s submission, I consider that the proposed wording of Policy 20(1)(e) and (j) take into account the requirements in section 6 and 7 of the RMA to ensure the relationship of Maori and their culture and traditions with their ancestral lands, water, sites of significance waahi tapu, and other taonga be recognised, along with the principles of the Treaty of Waitangi, which is a requirement of section 8 of the RMA. I recommend rejecting the submission of Mr Kempthorne and retaining the wording as proposed. I note in relation to the use of the terms “*mātaihai, taiāpure and nohoanga*” that nohoanga is already defined in the glossary in the pSWLP, and mātaihai and taiāpure are explained in the introduction section. As such, I do not consider further explanation is required to address the submitter’s concerns.
- 8.58 KiwiRail suggests that ‘historic heritage values’ should be taken out of this policy and left to be dealt with by the territorial authority due to the fact these values are generally

associated with things outside water or land resources, such as structures. I am of the view that some of these values are associated with water resources and the beds of lakes and rivers, particularly in relation to Ngāi Tahu heritage. As such I recommend that the wording be retained.

- 8.59 Landpro is concerned around the lack of definition of some of the assessment criteria. I consider that the proposed wording, in combination with other policies, is sufficient to guide the assessment of a consent application. These criteria may be further refined during the FMU process, where more specific criteria may be associated with specific catchments, depending on their values.
- 8.60 I support the Environment Southland staff submission as Appendix O needs to be referred to within the body of the pSWLP as noted in the analysis of the Appendix below.
- 8.61 In relation to Fonterra's request to include a provision to consider non-consumptive takes, I note that guidance on non-consumptive takes is provided in Policy 42 and in my view this is the more appropriate policy to provide direction on such takes. Policy 20 would then remain focussed on managing effects of takes on water resources, regardless of the nature of the take.

## Recommendation

- 8.62 Amend Policy 20 as follows:

*Manage the taking, abstraction, use, damming or diversion of surface water and groundwater so as to:*

1. *avoid, remedy or mitigate adverse effects from the use and development of surface water resources on:*
  - (a) *the quality and quantity of aquatic habitat, including the life supporting capacity and ecosystem health and processes of waterbodies<sup>536</sup>;*
  - (b) *natural character values, natural features, and amenity, aesthetic and landscape values;*
  - (c) *areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
  - (d) *recreational values;*
  - (e) *the spiritual and cultural values and beliefs of tangata whenua;*
  - (f) *water quality, including temperature and oxygen content;*
  - (g) *the rights of lawful existing users, including those with existing, but not yet implemented, resource consents<sup>537</sup>;*
  - (h) *groundwater quality and quantity;*
  - (i) *historic heritage values;*
  - (j) *mātaaitai, taiāpure and noboanga;*
2. *avoid, remedy or mitigate significant adverse effects from the use and development of groundwater resources on<sup>538</sup>:*
  - (a) *long-term aquifer storage volumes;*
  - (b) *the reliability of supply for existing groundwater users, including those with existing, but not yet implemented, resource consents<sup>539</sup>;*

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<sup>536</sup> 752.63 Fish and Game

<sup>537</sup> 189.16 DHL

<sup>538</sup> Cl 16.

<sup>539</sup> 189.16 DHL

- (c) *surface water flows and levels, particularly in spring-fed streams, natural wetlands and lakes, and aquatic ecosystems and habitats, including life supporting capacity and ecosystem health and processes of waterbodies, and their natural character<sup>540</sup>; and*
- (d) *water quality;*
- 3. *ensure water is used efficiently and reasonably by requiring that the rate and volume of abstraction ~~and abstraction volumes~~ specified on water permits to take and use water are no more than reasonable for the intended end use following the criteria established in Appendix O and Appendix L.4<sup>541</sup>;*
- 4. *recognise the positive effects resulting from the use and development of water resources.*

## Policy 21 – Allocation of water

### Provision

8.63 Policy 21 reads:

*Manage the allocation of surface water and groundwater by:*

- 1. *determining the primary allocation for confined aquifers not identified in Appendix L.5, following the methodology established in Appendix L.6;*
- 2. *determining that a waterbody is fully allocated when the total volume of water allocated through current resource consents and permitted activities is equal to either:*
  - (a) *the maximum amount that may be allocated under the rules of this Plan, or*
  - (b) *the provisions of any water conservation order;*
- 3. *enabling secondary allocation of surface water and groundwater subject to appropriate minimum groundwater level cutoffs and/or seasonal recovery triggers, to ensure:*
  - (a) *long-term aquifer storage volumes are maintained; and*
  - (b) *the reliability of supply for existing groundwater users is not adversely affected.*

### Submissions

- 8.64 Policy 21 received 19 submissions, with nine submitters seeking to retain the proposed wording and Federated Farmers seeking to delete the policy.
- 8.65 Brooklea Farm seeks to retain the previous cut off levels, with direct consideration relating to the Garvie aquifer. This consideration is analysed under Appendix L in section 8.3 of this report and will not be assessed further here.
- 8.66 Hort NZ seeks that the principle of efficient allocation is included within the policy framework of the pSWLP.
- 8.67 Fish and Game seeks to amend Policy 21 as follows:  
*Water from a surface water body will not be over allocated through the resource consent process. Manage the allocation of surface and groundwater by:*

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<sup>540</sup> 752.63 Fish and Game

<sup>541</sup> 247.5 Environment Southland

8.68 Fish and Game and DOC seek to amend Policy 21(3) as follows:

3. Enabling secondary allocation of surface water ~~and groundwater~~ subject to appropriate surface water environmental flow regimes, minimum lake and wetland water levels, minimum groundwater cut-offs and / or seasonal recovery triggers, to ensure:
  - (a) Long-term aquifer storage volumes are maintained; ~~and~~
  - (b) The reliability of supply for existing groundwater users is not adversely affected;
  - (c) The life supporting capacity of rivers, lakes and wetlands and their natural character are protected.

OR

- (c) the health of the surface water bodies are maintained and where degraded enhanced.

8.69 Fish and Game seeks to amend Policy 21(4) as follows:

4. Consent will not be granted if a waterbody is fully allocated, or to do so would result in a waterbody becoming over allocated or over allocation being increased. Over allocation of water shall be addressed during the FMU process or sooner during the resource consenting process.

8.70 The submitter also seeks that a schedule is included in the Plan, illustrating where:

1. water quantity over allocation exists;
2. potential water quantity over allocation exists; and
3. water quantity is constrained by existing allocation of surface water and groundwater.

8.71 Fonterra and the Oil Companies seek to include a provision that provides consideration for non-consumptive water takes.

8.72 DHL seeks the same amendments it made to Policy 20. T & W Holder seek amendments to take into account ceasing or reducing consents related to overallocated waterways.

## Analysis

8.73 In my view, the submission of Hort NZ seeking to introduce wording relating to efficient allocation, is not necessary, as efficiency is a matter dealt with in Policy 20(3). Policy 21 has a different purpose, which is to direct how primary and secondary allocations are to be calculated and to set out when a waterbody is to be considered fully allocated.

8.74 Avoidance of over-allocation is implemented through the policies and rules in the Plan which establish volumes/rate of allocation available from different waterbodies. Over-allocation can also be avoided by improvements to allocative efficiency. I therefore recommend that the amendment Fish and Game seek to the opening paragraph of Policy 21 is not accepted.

8.75 I do not agree with the amendment sought by Fish and Game and DOC to remove secondary allocation of groundwater from Policy 21(3). Secondary groundwater allocation is a tool to enable optimal use of the available groundwater resource within the framework of the Plan (including spring-fed streams). I have received advice from Mr Hughes that groundwater allocation volumes have been set conservatively and there may

well be situations where supplementary groundwater allocation can be authorised without resulting in adverse effects on the environment. Supplementary groundwater allocation can also be a useful tool to manage short-term or localised activities such as dewatering. The suggested addition (c) is not required as any application for supplementary allocation has to satisfy water quality considerations under Policy 20. The submission to include reference to surface water environmental flow regimes, minimum lake and wetland water levels is supported.

- 8.76 I recommend Fish and Game’s submission seeking additional clause (4) directing how over allocation is to be considered in consent processes is not accepted as this is already addressed in Policy 42. In my view the addition would duplicate the existing policy and confuse the purpose of Policy 21, which relates to how allocations are to be calculated, not how they are to be administered. I also consider that the submission from Fish and Game to include a schedule illustrating water allocation issues is inappropriate, as it is likely to be subject to change, particularly following FMU processes and/or as resource consents expire or are reviewed.
- 8.77 In response to the submissions from Fonterra and the Oil Companies, it should be noted that Rule 54 establishes non-consumptive takes (up to a nominal size/volume) as a permitted activity. Mr Hughes has advised that the submissions raise a valid point that such takes are not specifically excluded from calculation of allocation, which they should be. Therefore, in my opinion, this amendment should be accepted.
- 8.78 The submission from T & W Holder is partially covered within Policy 42. I do not recommend duplicating this in Policy 21.
- 8.79 In my view, the amendment sought by DHL to Policy 21, to ensure the policy applies to consents that have not yet been implemented, is unnecessary. The wording of the policy already provides for “*current resource consents*” which includes all consents granted but not yet implemented.
- 8.80 NZDF seek the inclusion of a policy providing for a level of permitted surface water abstraction, damming, diversion and use to ensure consistency between the policies and the permitted rules for these activities. In my view, it is not necessary to include a specific policy for permitted abstractions, as rule the regime set out in the pSWLP gives effect to the direction set out in Policies 20 and 21.

## **Recommendation**

- 8.81 Amend Policy 21 as follows:

*Manage the allocation of surface water and groundwater by:*

...

2. *determining that a waterbody is fully allocated when the total volume of water allocated through current resource consents and permitted activities is equal to either:*
  - (a) *the maximum amount that may be allocated under the rules of this Plan, or*
  - (b) *the provisions of any water conservation order;*

3. Enabling secondary allocation of surface water and groundwater subject to appropriate *surface water environmental flow regimes, minimum lake and wetland water levels,*<sup>542</sup> *minimum groundwater level cut-offs and/or seasonal recovery triggers, to ensure:*
  - (a) *long-term aquifer storage volumes are maintained; and*
  - (b) *the reliability of supply for existing groundwater users (including those with existing resource consents for groundwater take that have not yet been implemented)*<sup>543</sup> *is not adversely affected.*
4. When considering levels of abstraction, recognise the need to exclude takes for non-consumptive uses that return the same amount (or more) water to the same aquifer or a hydraulically connected surface waterbody.<sup>544</sup>

## Policy 22 – Management of the effects of groundwater and surface water use

### Provision

8.82 Policy 22 reads:

*Manage the effects of surface and groundwater abstractions by:*

1. *avoiding allocating water to the extent that the base flow of any waterway is depleted, in order to protect the mauri of that waterway and mahinga kai or taonga species;*
2. *ensuring interference effects are acceptable, in accordance with Appendix L.3;*
3. *utilising the methodology established in Appendix L.2 to:*
  - (a) *manage groundwater abstractions with a daily volume exceeding 86 cubic metres per day on surface waterbodies; and*
  - (b) *assess and manage the effects of groundwater abstractions with a daily volume exceeding 86 cubic metres per day in groundwater management zones other than those specified in Appendix L.5.*

### Submissions

- 8.83 Policy 22 received 17 submissions with nine seeking to retain the proposed wording. DOC seeks the deletion of Policy 22 if ‘long term base flow’ is less than the ‘Q95 flow’.
- 8.84 DHL seeks to clarify that the 86 cubic metre limit is exclusive of the take provided in section 14(3)(b) of the RMA.
- 8.85 Forest and Bird seeks to make it clear the purpose of the policy is to safeguard the life supporting capacity of the waterway.
- 8.86 Landpro and Fonterra both suggest the generally accepted view is that base flow is effectively the flow within a surface water body that is derived from groundwater. The submitters seek to have this policy amended to remove the requirement that there be no effect on baseflow.
- 8.87 Fish and Game seeks that if “base flow” means Q95, then retain Policy 22 as notified and amend Policy 22(1) to provide:

*... the mauri of that waterway, ~~and~~ mahinga kai or taonga species and trout and salmon.*

<sup>542</sup> 752.64 Fish and Game

<sup>543</sup> 189.17 DHL

<sup>544</sup> 277.28 Fonterra; 895.29 Oil Companies

## Analysis

- 8.88 The view of DHL is analysed under Rule 49 and is not discussed here further.
- 8.89 In my view, the amendments sought by Forest and Bird's submission is not required as the current wording of the clause directs how the pSWLP's objectives are to be achieved, including ensuring that the life supporting capacity of the waterway is protected, without the need to repeat the outcome again at a policy level.
- 8.90 Mr Hughes has advised that base flow is typically defined as the flow in a stream that is sustained by groundwater. Abstraction of groundwater with a Moderate or Low degree of hydraulic connection will potentially contribute to the depletion of the base flow in a surface waterway (the effects of which cannot be mitigated by pumping regulation). Current wording could be interpreted as requiring that there be no abstractions that have a Moderate or Low degree of hydraulic connection which is not the intent of the policy, nor is it necessary to achieve the Plan's objectives. Furthermore, some allocations of surface water may be able to occur from the base flow component of a surface waterway without causing adverse effects. Removal of reference to baseflow would avoid this issue. Therefore, I consider the amendment sought should be accepted.
- 8.91 I recommend the submission by Fish and Game to include *and trout and salmon* not be accepted as the current wording of the policy has the aim of protecting the waterway generally by protecting the mauri of that waterway, and protection of the mauri is considered sufficient to protect trout and salmon. The wording used in this policy is also consistent with that used in Objective 3 of the pSWLP, and in my view retaining that consistency is appropriate. I therefore recommend this submission is not accepted.

## Recommendation

- 8.92 Amend Policy 22 as follows:

*Manage the effects of surface and groundwater abstractions by:*

1. *avoiding allocating water to the extent that the effects on surface water flow would not safeguard base flow of any waterway is depleted, in order to protect<sup>545</sup> the mauri of that waterway and mahinga kai or taonga species;*

## Policy 24 – Water abstraction for community water supply

### Provision

- 8.93 Policy 24 aims to give appropriate recognition to the need for community water supply as a priority when allocating water, provided adverse effects are avoided, and if unable to be avoided are mitigated. Protection from adverse effects on a number of things are sought, including, for example, the quality and quantity of aquatic habitats, areas of significant indigenous vegetation and significant habitats of indigenous fauna and long-term aquifer storage volumes.

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<sup>545</sup> 277.29 Fonterra

8.94 This recognition is provisional on a water demand management strategy forming part of the application for a new or replacement water permit for a community water supply or an amendment to an existing water permit for a community water supply.

### Submissions

8.95 Policy 24 received 13 submissions with eight seeking to retain the proposed wording.

GDC, ICC and SDC seek the policy is amended to clarify how it will relate to community supply where the catchment is over allocated, and to clarify the ‘scale of activity’ and the expectations around the scale and detail of the water demand strategy document.

8.96 Real Journeys seeks the addition of a provision to provide for water abstraction for intermediate size activities. The submitter describes these as activities [of a size] between households and community water supplies.

8.97 Fish and Game seeks to retain Policy 24 as notified and amend Policy 24(1) to provide consistency with amendments sought to Policy 20, as follows:

1. *Provided that significant adverse effects on the following are avoided as first preference, and if unable to be avoided, are mitigated or remedied:*
  - (a) *The quality and quantity of aquatic habitat, including the life supporting capacity and ecosystem health and processes of waterbodies;*
  - (b) *Natural character values, natural features, and amenity, aesthetic and landscape values, which includes:*
    - i Natural elements, processes and patterns;*
    - ii Biophysical, ecological, geological, geomorphological and morphological aspects;*  
*and*
    - iii The natural movement of water and sediment including hydrological and fluvial processes;*

### Analysis

8.98 Policy 24 assists the Council decide how an application for water for community water supply will be dealt with. Determining the ‘scale of activity’ is an objective assessment and instead of including a prescriptive assessment in this Plan, this assessment can be undertaken at the time a consent application is made, and a demand management strategy can be tailored accordingly.

8.99 The submission from Real Journeys requesting a provision providing water abstraction for intermediate size activities is likely in reference to a few specific cases in Southland and I consider that, if this is the case, a Plan-wide amendment is unnecessary. Policy 24 provides specific direction for community takes due to their scale and importance. Intermediate takes are more appropriately dealt with through the other broader policies within the pSWLP.

8.100 I recommend that the Fish and Game amendment to Policy 24(1) adding “or remedied” be accepted as it keeps the wording throughout the Plan consistent. I also agree with the amendments sought to Policy 24(1)(a) for the same reasoning given for Policy 20. I also



recommend the amendments sought to Policy 24(1)(b) are not accepted, for the same reasoning given for the same amendment sought to Policy 20.

## Recommendation

8.101 Amend Policy 24 as follows:

1. *Provided that significant adverse effects on the following are avoided as a first preference, and if unable to be avoided, are mitigated or remedied<sup>546</sup>:*
  - (a) *the quality and quantity of aquatic habitat, including the life supporting capacity and ecosystem health and processes of waterbodies<sup>547</sup>;*

## Policy 25 – Priority takes

### Provision

8.102 Policy 25 reads:

*When issuing a water shortage direction, Environment Southland will give priority to water abstraction for the following uses:*

1. *reasonable domestic needs;*
2. *reasonable animal drinking needs;*
3. *fire-fighting purposes;*
4. *public health needs; or*
6. *animal welfare needs.*

### Submissions

8.103 Policy 25 received 27 submissions with 11 submissions seeking to retain the proposed wording.

8.104 Federated Farmers seeks for this policy to give priority to the listed takes whether or not there is a water shortage.

8.105 Alliance seeks to amend the policy to include a provision for water abstraction for animal welfare needs during stock processing as a priority take. DHL seeks to include water for dairy milking purposes.

8.106 GDC, ICC and SDC seek to amend Policy 25 to include community supply as a priority take, as a reasonable domestic need.

8.107 Hort NZ asks that it is clarified that ‘reasonable domestic needs’ will be specific in water demand management strategies and will be the basis of water allocation under water shortage directions.

8.108 INZ seeks to have “*public health needs*” and “*animal welfare needs*” deleted.

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<sup>546</sup> 752.67 Fish and Game

<sup>547</sup> 752.67 Fish and Game

- 8.109 Landpro seeks to have existing water takes included in the policy below the notified list, to ensure existing water takes are protected above future takes.
- 8.110 Fonterra seeks to introduce non-consumptive takes and takes for industries that process perishable foods for dairy processing purposes. SCB seeks to include the following:
- (6) supporting communities of significant indigenous biodiversity.
- 8.111 It is unclear what amendment the Forest and Bird submission seeks as the submission requests a ‘minor amendment to give effect to Objective B1 NPSFM’. Forest and Bird submits that it is not lawful or appropriate to prioritise community water supply over safeguarding aquatic habitat, water quality and quantity. However, the submitter does not provide an example of the amendment sought.
- 8.112 W & T Holder seek to rearrange the order of priority so human needs are above animal needs and introduce ‘business welfare needs’.

### **Analysis**

- 8.113 The purpose of Policy 25 is expressly to provide guidance during times of water shortage. Beyond this, it is difficult to ascertain what ‘priority’ Federated Farmers is seeking, as consents are considered on a first in first served basis under the RMA. To provide ‘priority’ to certain takes would require extensive changes to the approach taken in the pSWLP to water allocation, for example through allocating water to particular activities. In my view, there is not sufficient evidence to justify such a broad priority-based approach and therefore do not recommend the submission from Federated Farmers be accepted.
- 8.114 The amendment sought by Alliance aims to ensure that processing of animals continues throughout periods of water shortage. This will enable Alliance and similar processing companies to continue operations despite a water shortage direction. Abstraction of drinking water for livestock that have been transported to a processing plant will still be available. Alliance suggest the term ‘animal welfare needs’ may not cover animal processing. In my opinion, reasonable animal welfare needs are sufficiently covered by Rule 25(2) and (6). I am of the view that priority should not be given to ‘commercial’ activities, which could be the effect of the change sought by Alliance.
- 8.115 The district councils’ concern is with the lack of consistency between Policy 24 and 25, where Policy 24 gives priority to community water supplies, but this isn’t carried through to Policy 25. I see the merit of the proposal from the councils to insert reference to community water supplies into Policy 25(1). The management of these water supplies in times of a water shortage direction should be a component of water demand management strategies.
- 8.116 INZ consider that public health needs and animal welfare needs are not required as they are encapsulated within the other provisions. I do not agree with this, as water takes for a health facility would not generally be classed as “domestic need” but are necessary. Similar situations may arise regarding animal welfare. In my view, public health and animal welfare are important and appropriate to have listed as priority takes.

- 8.117 Allocation for existing water takes in a water shortage will be dealt with by the environmental flows and groundwater allocation regimes and it is not appropriate to incorporate these within this provision as sought by Landpro.
- 8.118 I note the amendments sought by Forest and Bird are unclear, without further clarification I am unable to support this submission.
- 8.119 I note there are provisions that support significant biodiversity throughout the pSWLP, discussed in section 11 of this report. I therefore do not recommend any amendments to the policy in response to the submission from SCB.
- 8.120 I do not recommend the submission from W & AT Holder to rearrange the order of the list be accepted on the basis the use of ‘or’ suggests that priority will be given to any of the matters listed, not one above another.

### **Recommendation**

8.121 Amend Policy 25 as follows:

1. *reasonable domestic needs, including for community supply<sup>548</sup>;*  
 ...  
~~56.~~<sup>549</sup> *animal welfare needs.*

### **Policy 42 – Consideration of water permit applications**

#### ***Provision***

8.122 Policy 42 provides a number of matters that will be considered by Council when determining a consent application for a water permit. These matters include whether or not a waterbody is fully allocated, the rate and volume of water authorised via a replacement consent in an over allocated waterbody, installation of water measuring devices and minimum level and/or flow cut-offs and seasonal recovery triggers.

#### **Submissions**

- 8.123 Policy 42 received 26 submissions with five seeking to retain the policy and L & C Cowan seeking to delete the policy.
- 8.124 Ravensdown seeks an amendment to clarify that Policy 42 does not apply to discharges.
- 8.125 The Oil Companies seek an exclusion to Policy 42 for short term construction dewatering activities as it considers the effect on water quantity from these activities do not justify the strict level of assessment.
- 8.126 Alliance seeks to have priority water takes taken into account when considering minimum flows/levels in consent applications for water permits as part of Policy 42(5). The submitter also seeks that reference to “*Appendix L*” is amended to read “*Appendix K*”.

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<sup>548</sup> 330.7 GDC, ICC, SDC

<sup>549</sup> Cl 16

8.127 GDC, ICC and SDC seek to include a provision for the social, cultural, economic and environmental wellbeing as well as health and safety as part of the consideration for resource consents which they consider is in accordance with section 5 of the RMA.

8.128 The submission from Fonterra on Policy 42(1) seeks to allow non-consumptive takes to be granted within overallocated waterways as Fonterra consider the takes have either a neutral or positive effect on the quantity of the water resource.

8.129 Ngāi Tahu seeks to amend Policy 42 to read:

*When considering resource consent applications for water permits:*

1. *a consent for a new water take will not be granted if a waterbody is fully allocated, or to do so would result in a waterbody becoming over allocated ~~or over allocation being increased;~~*
2. *consents replacing an expiring resource consent for an abstraction from an over-allocated waterbody or where it would result in over allocation of a waterbody if approved will only be granted at a reduced rate ~~may be granted with a lesser volume and rate or~~ the reduction being ~~take~~ proportional to the amount of over-allocation and previous use;*

8.130 The Fonterra submission on Policy 42(2) seeks that consideration be given to the use of water and value of investment associated with that use.

8.131 ICC submits that Policy 42(2) is reworded to read:

- 2 *Consents replacing an expiring resource consent for an abstraction from an over allocated waterbody may be granted with a lesser volume and rate or take proportional to the amount of over allocation and previous use subject to:*
  - (i) *Whether the original application was made before or after the threshold of over allocation was reached and then apply any necessary reduction to only those applications made after that threshold was exceeded.*
  - (ii) *Priority of use.*

8.132 DHL seeks to reference Appendix O within Policy 42(2).

8.133 Federated Farmers and T & W Holder seek to delete Policy 42(2) as they do not consider it appropriate to reduce the allocation of an existing permit in over allocated waterways.

8.134 Fonterra seeks to delete Policy 42(4) on the basis that it is not clear when or where the level, flow or cut-off will apply.

8.135 Landpro seeks an exemption from requiring water metering for all takes which do not need a resource consent or consented takes which are less than 5 litres per second or that are non-consumptive as monitoring is not required in the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010. T & W Holder seek measuring devices on all consents, not just new consents.

8.136 Fish and Game and Forest and Bird seek the following amendments to Policy 42(1), (4) and (5):

1. *consent will not be granted if a waterbody is over allocated, fully allocated, or to do so would result in a waterbody becoming over allocated or over allocation being increased and*

granting consent will not allow a target for the waterbody to be achieved within the defined time period;

...

4. ~~where appropriate~~ minimum level and / or flow cut-offs and seasonal recovery triggers on resource consents for groundwater abstraction will be imposed;

8.137 Fish and Game seeks to amend Policy 42(5) as follows:

5. conditions will be specified relating to a minimum flow / level or environmental flow or level regime or flow sharing regime, in accordance with Appendix L or Policy X [Insert number of new policy proposed by Fish and Game titled 'Instigate appropriate water conservation procedures'] to all new or replacement resource consents (except for water permits for community water supplies and waterbodies subject to minimum flow and level regimes established under any water conservation order) for: . .

8.138 K Clement seeks to introduce timeframes in the consent application process.

8.139 Eyre Creek and Wilkins Farming seek independent scientific proof for allocation levels and a regular review of the allocation status to reflect changing allocation.

8.140 Fulton Hogan raises concern that Policy 42(1) suggests that applications for water permits where the waterbody is fully allocated will be treated as prohibited, but that this is inconsistent with Policy 21(3) which enables the secondary allocation of surface water and groundwater.

8.141 M Tayler is concerned the first consent applicant with an expiring consent will be penalised by this policy and proposes measures of consultation and alignment of consents, to ensure it is fair to all parties.

## Analysis

8.142 I consider it is sufficiently clear that Policy 42 applies to water permits as it is clearly mentioned throughout the policy. There is no reference to discharge permits. I do not consider that any changes are necessary in relation to this matter and therefore do not recommend accepting the submission from Ravensdown.

8.143 I recommend that the notified wording of Policy 42(1) be retained as it currently has sufficient clarity. I support the intent behind the amendments Ngāi Tahu seek to Policy 42(2), as the use of the word 'may' does not go far enough to align with Objective B2 of the NPSFM which states 'avoid any further over-allocation of fresh water and phase out existing over-allocation'. In my opinion, directing that the replacement of consents 'may' be granted with a lesser volume where a catchment is over-allocated, does not give sufficient certainty as to how over-allocation is to be phased out. However, it is my view that directing, at a policy level, that replacement consents will only be granted at a proportionally-reduced rate goes beyond what is required in the NPSFM, and does not balance other important considerations. For example, the level of investment associated with the existing water take and in the case of the Manapouri Power Scheme, Objective 10 of the NPSREG also needs to be considered. I also note that the FMU process will more specifically consider how over-allocation will be phased out, including over what timeframe, in accordance with the NPSFM. At this stage, it is my view that a directive policy that dictates the approach to be taken in every instance is not appropriate. I

suggest the submission be partly accepted with the inclusion of the word ‘generally’ to indicate that consents will be proportionally reduced, except for exceptional circumstances. In my view this better aligns with the NPSFM direction, while allowing for consideration of alternate options.

- 8.144 In my view, it is appropriate to exclude non-consumptive takes from Policy 42(1), as the takes will not affect allocation limits. Excluding this from the policy would still be consistent with the NPSFM. I recommend accepting the submission from Fonterra on this matter.
- 8.145 The exclusion of temporary abstractions for construction activities, as sought by the Oil Companies, will not give effect to Objective B2 of the NPSFM and Objective 7 of the pSWLP which requires avoidance of further over allocation. The changes recommended to Policy 42(1) to provide for non-consumptive takes may go some way to achieving what the submitter seeks.
- 8.146 In my view, the submission from Alliance to exclude minimum flow/level condition requirements on applications for resource consents for “Priority Takes” is not appropriate, as while some abstractions are afforded priority there may still be a need for these abstractions to reduce and/or cease during times of low flow in order to give effect to Objective 9. I support changing the reference from Appendix L to Appendix K, as this is a typographical error.
- 8.147 I do not recommend the submission from GDC, SDC and ICC is adopted, as a general reference to sustainable management is unhelpful, in this otherwise specific policy. As the Plan is to be read together in its entirety, other provisions related to such matters will be considered when processing resource consent applications.
- 8.148 Both ICC and Ngāi Tahu seek changes to Policy 42 to increase certainty with respect to reducing overallocation. ICC seek “first in, last out” as a method of reducing overallocation. There are specific exclusions for community water supplies in the policy and rule framework, which should satisfy the ICC needs. Shifting to a “last in, first out” framework, instead of proportional reductions may have significant unforeseen consequences for some water permit holders, and is accordingly not supported.
- 8.149 I support the introduction of reference to Appendix O within the policy as its exclusion from the body of the pSWLP was an error.
- 8.150 I do not consider the submission from Fonterra to introduce additional considerations to Policy 42(2) is appropriate in this instance, as the policy relates to the consideration of consents taking into account issues of water quantity. Each consent will be assessed on a case by case basis and the use of the water and value of investment associated with that use will be taken in to consideration as part of that process.
- 8.151 I do not recommend adopting the submission from Federated Farmers to delete Policy 42(2), as the requirement to reduce over allocation is required by the NPSFM and Objective 7 of the Plan. Consents will be assessed on a case by case basis, but protection of individuals’ abstraction rights does not override the requirement to give effect to the NPSFM.

- 8.152 In relation to Fulton Hogan’s concerns to inconsistency between Policy 42(1) and Policy 21(3) it is my understanding that they are not inconsistent. Policy 21 allows for both primary and secondary allocation of water. Policy 21(2) then states that full allocation is reached when the volume specified within the pSWLP has been allocated, which includes both the primary and any secondary allocation. Policy 42(1) directs no water can be allocated beyond this. It appears that Fulton Hogan consider that full allocation would not include any secondary allocation referred to within Policy 21(3).
- 8.153 I do not support the deletion of Policy 42(4) sought by Fonterra for lack of certainty, as the minimum level and/or flow cut-offs and seasonal recovery triggers are referred to within Rule 54 by reference to Appendix L.6, which contains the relevant methodology.
- 8.154 I do not consider the submission from Landpro, to exclude certain takes from monitoring, is necessary as the Council wishes to retain discretion on requiring small takes or non-consumptive takes to measure water use.
- 8.155 I support the Fish and Game submissions to clarify when consent will not be granted in Policy 42(1). I recommend the submission to remove the words “where appropriate” from Policy 42(4) is not accepted. I have received advice from Mr Hughes that requirements for cut-offs or seasonal recovery triggers are not appropriate for all groundwater takes, only those with a Riparian, Direct or High hydraulic connection or in other situations (e.g. confined aquifers) where such restrictions are justified to manage effects on the environment. The analysis on the related new policy sought by Fish and Game (titled ‘Instigate appropriate water conservation procedures’) is in section 8.3 of this report. The wording requested to be added to Policy 42(5) is also accepted to align wording with other parts of the pSWLP, except for flow sharing as it is not a requirement of the pSWLP. Mr Hughes has also advised that experience with flow sharing provisions of the RWP have shown they are not practicable.
- 8.156 In response to the submission from M Tayler, all consent renewal applications in an over allocated waterbody will be assessed on a case by case basis taking into account all other consents within the relevant waterbody. The policy directs that consideration be given to proportional reductions which in my view ensures fairness to all consent holders in an over-allocated catchment.
- 8.157 In my view, it is more appropriate that the submissions from Eyre Creek and Wilkins Farming are addressed during the FMU process, where catchments will be specifically analysed and allocation levels and other specific assessments will be completed. The framework in the pSWLP is set up in the to accommodate the FMU process and in my opinion no amendments should be made to the pSWLP based on these submissions.

## Recommendations

8.158 Amend Policy 42 as follows:

1. *consent will not be granted if a waterbody is over allocated, fully allocated, or to do so would result in a waterbody becoming over allocated or over allocation being increased and granting consent will not allow a target for the waterbody to be achieved within the defined time period.<sup>550</sup>*

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<sup>550</sup> 752.82 Fish and Game; 279.48 Forest and Bird

2. *consents replacing an expiring resource consent for an abstraction from an over-allocated waterbody will generally only be granted at a reduced rate, ~~may be granted with a lesser volume and rate or the reduction being take~~<sup>551</sup> proportional to the amount of over-allocation and previous use, using the method set out in Appendix O,<sup>552</sup>*
3. *installation of water measuring devices will be required on all new permits to take and use water; and existing permits in accordance with the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010;*
- ...
5. *conditions will be specified relating to a minimum flow/ level or environmental flow or level regime or flow sharing regime<sup>553</sup>, in accordance with Appendix ~~E-K~~<sup>554</sup>, to all new or replacement resource consents (except for water permits for community water supplies and waterbodies subject to minimum flow and level regimes established under any water conservation order) for:*

## Policy 43 – Transfer of water permits

### Provision

8.159 Policy 43 reads:

1. *Enable the transfer of water permits to take and use water provided the transfer occurs in the same surface water and groundwater management zone or aquifer, any other abstractor is not adversely affected, and the transfer is consistent with the provisions of this Plan, including the minimum flow and allocation regime.*
2. *Provide for transfer of water permits for groundwater abstraction between groundwater zones or aquifers in the same surface water catchment, provided the transfer does not increase cumulative stream depletion effects and effects of the new abstraction are consistent with the provisions of this Plan.*

### Submissions

8.160 Policy 43 received 16 submissions with eight seeking to retain the proposed wording and three seeking to delete it entirely.

8.161 Fish and Game seek to amend Policy 43 to read:

#### *Transfer of water permits*

1. *Enable the transfer of water permits to take and use water provided:*
  - (a) *The transfer occurs in the same surface water and groundwater management zone or aquifer, any other abstractor is not adversely affected, and the transfer is consistent with the provisions of this Plan, including the minimum flow and allocation regime; and*
  - (b) *The transfer does not increase cumulative nutrient leaching effects, and the transfer is consistent with the provisions of this Plan, including ground and surface water quality provisions.*

<sup>551</sup> 797.28 Ngāi Tahu

<sup>552</sup> 189.24 DHL

<sup>553</sup> 752.82 Fish and Game

<sup>554</sup> 17.23 Alliance



2. *Provide for transfer of water permits for groundwater abstraction between groundwater zones or aquifers in the same surface water catchment, provided:*
  - (a) *The transfer does not increase cumulative stream depletion effects in the reach where the take is proposed or result in the minimum flow being breach and effects of the new abstraction are consistent with the provisions of this Plan; and*
  - (b) *The transfer does not increase cumulative nutrient leaching effects, and the transfer is consistent with the provisions of this Plan, including ground and surface water quality provisions.*

8.162 K Clement seeks to include a timeframe in the consent process.

8.163 W & T Holder seeks that if Council is unable to reassess all water permits, it should meter and charge a rate for the water used.

8.164 The SCB seeks to note that the Board is a statutory body which should be consulted on matters within its authority and jurisdiction.

### **Analysis**

8.165 In my opinion, the changes sought by Fish and Game are essentially included within the policy already, by its specific reference to consistency with the Plan provisions. Such provisions include management of nutrient leaching and other water quality considerations. In my view, the specific additions sought are therefore not necessary and there is a risk if they are included that they will introduce a level of inconsistency with the more specific water quality provisions in the Plan. Mr Hughes advises that in relation to the submitted amendment to Policy 43(2)(a) an increase in cumulative stream depletion effects in any particular reach should not limit the ability to transfer water permits provided effects resulting from the transfer do not exceed the relevant minimum flow and allocations for the relevant surface waterbody (both in terms of the reach where the water is taken and downstream cumulative effects). A transfer can increase stream depletion effects in a new reach provided effects are consistent with the policies and rules. I recommend the amendments Fish and Game seek to Policy 43(2), to increase certainty with respect to stream depletion effects are accepted, as it is an improvement to the notified policy.

8.166 The submission from K Clement to include a timeframe in consent process is analysed under Policy 42 above.

8.167 In relation to the submission by W&T Holder, I understand that the Council does not have the ability under the RMA to charge for water in the manner suggested.

### **Recommendations**

8.168 Amend Policy 43 as follows:

2. *Provide for transfer of water permits for groundwater abstraction between groundwater zones or aquifers in the same surface water catchment, provided the transfer does not increase cumulative stream depletion effects in the reach where the take is proposed or result*

*in the minimum flow being breach<sup>555</sup> and effects of the new abstraction are consistent with the provisions of this Plan.*

## Definitions

- 8.169 The definitions relevant to the general water quantity section are ‘Abstraction’, ‘Allocation’, ‘Community water supply’ and ‘Water demand management strategy’. There are submissions in support of these definitions, but none have sought changes so no changes are recommended.
- 8.170 Fish and Game and the Oil Companies seek to retain the definition of ‘Catchment’ whereas FANZ seeks that the definition be amended for clarity as follows: *The land area that contributes to the river’s or stream’s flow.*
- 8.171 I note that river and stream flow can be sourced from either land or groundwater and therefore consider that the amendment suggested by Fertiliser Association provides additional clarity. I recommend this submission be adopted.
- 8.172 Hort NZ seeks to insert a definition for ‘Efficient Allocation and Use’ that includes economic, technical and dynamic efficiency. In my opinion, this addition is not required as Appendix O sufficiently details how efficient allocation and use is to be determined. The inclusion of economic, technical and dynamic efficiency is not necessary as this assessment will be taken from the NPSFM regardless.
- 8.173 Fonterra seeks to include a definition for non-consumptive use. In my opinion a definition is not necessary as ‘non-consumptive use’ is clear from the words and does not require elaboration.

## Recommendation

- 8.174 That the definition of “Catchment” is amended as follows:

*The land area that contributes to<sup>556</sup> the river’s or stream’s flow.*

## Appendix O – Reasonable and Efficient Use of Water

### Provision

- 8.175 Appendix O – Reasonable and Efficient Use of Water contains standards for reasonable and efficient irrigation water use, group or community water supplies or general water use. It contains methodology designed to assist decision makers when they are assessing the reasonable and efficient use of water as part of a water permit consent application. Mr Hughes has provided detailed discussion points on reasonable and efficient use of water in the attached technical memorandum at Appendix C3 of this report. Appendix O is not referenced within the body of the pSWLP in error, but is designed to apply to Policy 20, Policy 42 and Rule 49 of the pSWLP.

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<sup>555</sup> 752.83 Fish and Game

<sup>556</sup> 803.47 FANZ

## Submissions

8.176 Appendix O received 15 submissions with Forest and Bird and Fish and Game seeking to retain the notified wording.

8.177 DHL seeks to include a method for calculating the rate or take for replacement resource consents from over-allocated waterbodies. Also, the submitter seeks to amend “Other uses” as follows:

*The rate and volume of abstraction for resource consent applications to take and use water for purposes other than irrigation, group or community water supply will be calculated in accordance with best management practices for efficient use of water in relation to that use; and for stock and dairy shed use will be calculated in accordance with Table Y.3 in Appendix L.4. Applications for replacement resource consents may also demonstrate by way of independent verification or audit that existing (and proposed) usage is in accordance with rates and volumes sought and does not result in wastage or inefficient use of water.*

8.178 H English seeks to amend allocation in water balance models to be based on 350 ml annum and nine in ten year reliability. Hort NZ, WaterForce, Irrigation and Landpro also seek an amendment to nine in ten year reliability.

8.179 Eyre Creek and Wilkins Farming oppose the 3000m<sup>3</sup>/ha/yr rate as unreasonably low and instead seek a rate more like 4500m<sup>3</sup>/ha/yr with potential to go up on a case by case basis which factors in all economic and environmental perspectives.

8.180 Flaxwood South seeks to ensure that historical data used is longer than four or five years.

8.181 INZ seeks to delete (b) and base replacement resource consent applications on field validated daily irrigation demand water, due to the variability in water use in Southland and unreliability of supply. It also seeks to amend (a) to read:

*(a)... by use of a field-validated daily time-step irrigation demand model to calculate the annual irrigation volume to achieve ~~80 percent (4 in 5 year)~~ 90 percent (9 in 10 year) reliability which takes account of:*

...

- *an irrigation application efficiency of 80%*

8.182 A number of submitters including Landpro and Springlands Group seek that reasonable irrigation volumes are assessed on a case by case basis to determine efficient use of irrigation. The RJ Miller Trust also seeks that capital investment in reliance on consents is considered.

8.183 WaterForce submit that if Appendix O is to stay in place a quantity of 4000m<sup>3</sup>/ha/year will be required to cover 9/10 seasons in most areas of Southland. As water abstraction for irrigation already requires consent, the submitter considers that Appendix O(a) should be implemented as a GMP.

8.184 A general submission from Fish and Game that requests numerical criteria for technical efficiency and for what is considered reasonable in relation to water quantity.

## Analysis

- 8.185 The submissions from Hamish English, Flaxwood South, Hort NZ, INZ and WaterForce have all been assessed by Mr Hughes and his responses are attached as a technical memorandum at Appendix C3. Mr Hughes supports the submissions by Hort NZ who seeks to amend the reliability criteria from 80% to 90% and include a reference to the 'farming'. Regarding the submissions from INZ, Mr Hughes supports including reference to daily time-step modelling and including specific criteria for minimum irrigation application efficiency. Mr Hughes does not support expanding the irrigation volumes above 300 mm/annum.
- 8.186 The submission from INZ to delete Appendix O(b) provides good reasoning relating to reliability of supply. Mr Hughes has advised that, while the suggestion to use a "the field validated daily irrigation demand model" is entirely appropriate, the one that is typically used (IrriCalc) significantly over estimates potential irrigation requirements in Southland. Clause (b) of Appendix O is intended to provide a means for Council to manage allocation in a way that matches actual water use, rather than a modelled volume well in excess of what has historically been used. This measure is intended to assist Council achieve 'allocative efficiency' i.e. water is allocated to users in a manner which reflects their actual water use (so there aren't large volumes of a limited resource which remain unused). As such, I do not recommend the deletion of Appendix O(b) as it is necessary to implement Policy 20(3).
- 8.187 The submissions from DHL seeking to insert a method for calculating replacement water take consents from over-allocated waterbodies is already considered within Policy 42, where ICC proposes to introduce a 'last in, first out' approach for over-allocated streams. It was determined in the analysis for Policy 42 that this approach was unnecessary as the concerns of ICC are addressed in the current wording of the pSWLP. I recommend DHL provide suggested amendments to the pSWLP to include a method for calculating replacement water take consents from over-allocated waterbodies. I agree with the submission to provide further direction on best management practices for the efficient use of water by including a reference to table Y.3 in Appendix L.4.
- 8.188 The submission from Eyre Creek and Wilkins Farming relating to an increased application rate is covered by the response to the submission of H English in the technical memorandum from Mr Hughes at Appendix C3.
- 8.189 Submissions requesting that reasonable irrigation volumes are assessed on a case by case basis should refer to the response to the Flaxwood South submission in the technical memorandum from Mr Hughes at Appendix C3. The current wording is not prescriptive, but provides a nominal figure for annual volumes based on 10 plus years of water use data. Applicants are able to apply for volumes in excess of the quoted figure but have to undertake technical assessment to support higher volumes. I have been advised by Mr Hughes that the standard methods used to estimate irrigation demand tend to significantly over-estimate irrigation water use in Southland (most likely due to typical irrigation management during the spring and early summer). This change is therefore supported.
- 8.190 It should be noted that section 104 of the RMA already requires Council to take into account the investment undertaken, in considering the replacement of expiring resource

consents. In my opinion, an amendment to Appendix O to reflect this is not necessary.

8.191 In my opinion, this appendix sufficiently addresses what Fish and Game is seeking.

## **Recommendation**

8.192 Amend Appendix O as follows:

### ***Irrigation***

- (a) *Seasonal allocation for new resource consents to take and use water for irrigation at a rate exceeding (the equivalent of) 3,000 m<sup>3</sup>/ha/year will be established by use of a field-validated daily time-step<sup>557</sup> irrigation demand model to calculate the annual irrigation volume to achieve ~~80 percent (4 in 5 year)~~ 20 percent (9 in 10 year)<sup>558</sup> reliability which takes account of:*
- *physical factors including crop and soil type;*
  - *climatic factors including rainfall variability and evapo-transpiration;*
  - *an irrigation application efficiency of 80%<sup>559</sup>.*
- (b) *Replacement resource consent applications to take and use water for irrigation will utilise records of historical water use to establish a seasonal allocation which takes into account:*
- *the volume of water utilised in previous irrigation seasons;*
  - *any proposed changes to the operation of the irrigation system or farming system<sup>560</sup>.*

### ***Group or Community Water Supplies***

*A water management plan shall be submitted with a resource consent application to take and use water for group or community water supplies that addresses:*

- *the estimated average and peak demand for water taking into account the number of connections, the nature of water use and projected future demand;*
- *the current effectiveness and efficiency of the distribution network as well as works proposed to improve the efficiency of water distribution and use;*
- *how water demand will be managed during periods of water shortage.*

### ***Other Uses***

- *The rate and volume of abstraction for resource consent applications to take and use water for purposes other than irrigation, group or community water supply will be calculated in accordance with best management practices for efficient use of water in relation to that use; and for stock and dairy shed use will be calculated in accordance with Table Y.3 in Appendix L.4<sup>561</sup>. Applications for replacement resource consents may also demonstrate by way of independent verification or audit that existing (and proposed) usage is in accordance with rates and volumes sought and does not result in wastage or inefficient use of water.*

## **General submissions**

8.193 Fish and Game seeks that the Plan is amended to ensure that the natural flow patterns of the region's rivers, lakes, and wetlands are provided for and protected. The submitter states that this includes minimum flows, core allocations, and hydrological variability. Fish and Game submits that minimum flows should not exceed 70% of the natural MALF; core allocations should not exceed 30% of the natural MALF and supplementary

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<sup>557</sup> 414.14 INZ

<sup>558</sup> 390.39 Hort NZ; 414.14 INZ

<sup>559</sup> 414.14 INZ

<sup>560</sup> 390.39 Hort NZ

<sup>561</sup> 189.51 DHL

takes shall not cause departure from the natural hydrological regime. I note this is a departure from the Q95 approach taken in the pSWLP, and without any clear evidence or reasons to depart from that methodology, I do not recommend the submission from Fish and Game on this matter be accepted.

## Surface Water

### Policy 26 – Renewable Energy

8.194 Policy 26 reads:

*Recognise and provide for the national and regional significance of renewable electricity generation activities (including the existing Manapōuri hydro-electric facilities in the Waiau catchment), and the national, regional and local benefits relevant to renewable electricity generation activities, when:*

- (1) allocating surface water for abstraction, damming, diversion and use; and*
- (2) considering all resource consent applications for surface water abstractions, damming, diversion and use.*

### Submissions

8.195 There are 16 submissions on Policy 26 with eight submitters seeking to retain the proposed wording. Federated Farmers seek to delete the policy in its entirety.

8.196 Aratiatia Livestock seeks to deal with adverse effects on the mauri of the river system, with particular emphasis on minimum flow provisions at the Mararoa Weir.

8.197 Meridian seeks to amend Policy 26 as follows:

*Recognise and provide for the national and regional significance of renewable electricity generation activities (including the existing Manapōuri hydro-electric facilities in the Waiau catchment), and the national, regional and local benefits relevant to renewable electricity generation activities, the need to locate the activity where the renewable energy resource is available and the practical constraints associated with its development, operation, maintenance and upgrading, when:*

- (1) allocating surface water for abstraction, damming, diversion and use; and*
- (2) considering all resource consent applications for surface water abstractions, damming, diversion and use; ~~and~~*
- (3) Considering uses of land, use of the beds of lakes and rivers and discharge of contaminants or water to water or land for, or which may impact on, renewable electricity generation activities.*

8.198 Some submitters seek to include a provision to encourage other methods of power generation such as small wind generators, solar or micro-hydro/small-scale electric power generators. Ernslaw One asks that hydro-electric generators are excluded from requiring abstraction or discharge consents.

- 8.199 Some submitters are concerned about the lack of provision for future surface water abstraction within the Waiau catchment.
- 8.200 In addition, Alliance supports Policy 26 but seeks a new policy recognising and providing for the use of water with industries and other infrastructure which are of regional significance.

### Analysis

- 8.201 The submission from Aratiatia Livestock seeks protection against further damage to the lower reaches of the Waiau catchment the submitter considers it is caused by the Manapouri Hydro Scheme, in particular, modifying the minimum flow provisions at the Mararoa Weir. The pSWLP includes levels of protection against adverse effects on the mauri of waterways that is replicated from higher order documents. The amendment sought by Aratiatia Livestock is specific to the Waiau catchment, but it will be applicable to how renewable energy resources are dealt with throughout Southland and may not be appropriate in certain circumstances. I also note that Policy 20 already provides for the protection from adverse effects caused by the use and development of surface water resources. In my opinion the amendment sought by Aratiatia Livestock is not appropriate for these reasons.
- 8.202 The pSWLP is required to give effect to the provisions contained in the RPS and pSRPS relating to renewable energy generation and the NPSREG. In its submission, Meridian notes that the amendments sought to Policy 26 will ensure that relevant matters are addressed as necessary to give effect to the RPS and pSRPS provisions relating to renewable electricity generation and the NPSREG. Meridian's proposed amendment to the first paragraph of Policy 26 incorporates similar wording to Policy C1(a) and C1(b) of the NPSREG. I recommend these amendments are adopted. The proposed addition of subclause (3) is intended to ensure renewable energy generation activities are considered when consents other than surface water use are being assessed. This is not a goal that is considered within the objectives of the pSWLP, therefore, I do not consider it appropriate that the activities that this amendment is seeking to protect against are also included.
- 8.203 Federated Farmers considers that neither the NPSREG nor the objectives and policies of the pSWLP expresses a preference for water allocation for renewable energy generation over other uses. However, I note that Policy A of the NPSREG requires councils to recognise and provide for the national significance of renewable electricity generation activities. Given that a regional plan must give effect to any national policy statement<sup>562</sup>, I do not consider it appropriate to delete Policy 26. The inclusion of Policy 26 is not about giving a preference to renewable electricity generation for water allocation, it is about providing specific policy direction in relation to this type of allocation and ensuring that the direction gives effect to the NPSREG. I do not recommend that the submission from Federated Farmers be accepted.
- 8.204 In relation to submissions seeking provision for small scale power generation methods, Policy F of the NPSREG expressly requires regional plans to incorporate provisions for small and community-scale renewable electricity generation activities. In my opinion, the

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<sup>562</sup> Section 67(3)(a) of the RMA.

policy is already broadly worded, to apply to renewable energy generation of all sizes, and a particular policy relating to small-scale generation is not required.

- 8.205 Ernslaw One seeks that hydro-electric generation should be excluded from requiring abstraction or discharge consent to incentivise use of these systems over fossil fuel based generation. Permitting abstraction and discharge without limit would result in adverse environmental effects, and as such would not achieve the Plan's objectives. Although this submission may result in lower fossil fuel use, the environmental effects of unregulated abstraction and discharge need to be considered alongside other matters, including other matters of national significance like section 6(a) of RMA. Ultimately, what this submission seeks would not assist in achievement of the objectives of the pSWLP, particularly Objectives 7, 9 and 11. In my opinion, this submission should not be accepted.
- 8.206 The submitters seeking consideration for alternative water uses within the Waiau catchment seek that the policy be amended to allow for water allocation for purposes other than the Manapouri Power Scheme. The submissions are requesting a more efficient and effective allocation of water in accordance with Objective 11 of the pSWLP. This issue has been considered in full against Objective 11 and is not repeated here. I note that the future FMU limit setting processes will likely include a review of the current allocation of water in the Waiau catchment and the community's aspirations for future uses. I do not consider that Policy 26 needs to be amended to provide for this.
- 8.207 I do not support the submission from Alliance to include in the policy framework further protection for 'regionally significant industries or infrastructure'. This is a significantly wide reference and it would be difficult to determine what industries or infrastructure would be covered by a policy of this nature. Reference to the Manapouri Power Scheme throughout the pSWLP framework reflects the national, not just regional, importance of the scheme.

## **Recommendation**

- 8.208 Amend Policy 26 as follows:

*Recognise and provide for the national and regional significance of renewable electricity generation activities (including the existing Manapouri hydro-electric facilities in the Waiau catchment), and the national, regional and local benefits relevant to renewable electricity generation activities, the need to locate the activity where the renewable energy resource is available and the practical constraints associated with its development, operation, maintenance and upgrading.<sup>563</sup> when:*

- (1) allocating surface water for abstraction, damming, diversion and use; and*
- (2) considering all resource consent applications for surface water abstractions, damming, diversion and use.*

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<sup>563</sup> 562.6 Meridian



## Rule 49 – Abstraction, diversion and use of surface water

### Provision

- 8.209 Rule 49(a) provides for the abstraction, diversion and use of surface water as a permitted activity, provided the take meets a number of conditions, including specified volume and rate limits, the exclusion of fish from the intake and the supply of information. Rule 49(b) provides for abstraction, diversion and use of the secondary allocation of surface water as a restricted discretionary activity, where the conditions of Rules 49(a), 50(a) and (b) and 51(a) and (b) are not met and the take is non-consumptive or is less than 70 cubic litres per day.
- 8.210 The take, diversion and use of surface water within the primary allocation that is not provided for by other rules<sup>564</sup> is classified as a discretionary activity. Where these rules<sup>565</sup> are unable to be complied with, the activity is classified as non-complying under Rule 49(d).
- 8.211 Rule 49(e) prohibits any take diversion or use from the Cromel Stream that isn't permitted by Rule 49(a) or an application for the replacement of an expiring water permit under section 124 of the RMA.

### Submissions

- 8.212 There are 65 submissions on Rule 49 with eight submitters seeking to retain the proposed wording of Rule 49. Civil Tech seeks to retain Rule 49(a) and D & B Carter seek to retain Rule 49(a)(ii). J Stringer supports the provision but requests an exclusion for contained catchments from roofs.
- 8.213 Scandrett Rural submits that section 14(3)(b) of the RMA was included in the operative RWP so it should also be included in the pSWLP. A number of submitters, including Landpro and DHL, seek that the permitted volume of surface water be in addition to water taken in accordance with section 14(3)(b). Other submitters seek no restrictions on water taken for stock water, a reduction in complexity of the rule or to provide a permitted take for all water for stock and cowsheds. G & R Cockburn request a basic clause be included in Rule 49 that states:

*'to allow sufficient surface water for stock drinking requirements'.*

- 8.214 Brunel Peaks seeks clarification that the water takes are sufficient for enabling current stock, domestic and other farming use. It is unclear from the submission whether or not this is reference to the permitted rates and volumes of water provided for in Rule 49(a). The submitter may wish to clarify its submission at the hearing.

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<sup>564</sup> Rules 49(a), 49(b), 50(a), 50(b), 51(a), 51(b) and 51(c)

<sup>565</sup> Rules 49(a), 49(b), 49(c), 50(a), 50(b), 51(a), 51(b) and 51(c)

8.215 In relation to the relationship between the permitted activity rule and water that may be taken under section 14(3)(b) of the RMA, Federated Farmers seek a new condition to be added to the end of Rule 49:

*This rule shall not prevent people taking water to meet the requirements for an individual's reasonable domestic needs or the reasonable needs of an individual's animals for drinking water, in accordance with s14(3)(b) of the RMA.*

8.216 The Environment Southland staff submission seeks to amend Rule 49(a)(ii) to clarify that the 86 cubic metre surface and ground water take limit is “*including any water taken pursuant to s14(3)(b) of the RMA*”, as the submitter notes that it is unclear that the water permitted by this rule is intended to include water taken under section 14(3)(b) of the RMA. It also seeks to include a new condition to Rule 49(a) to ensure that the abstraction is metered and the water take data is recorded. The submitter states that the volume of water able to be taken as a permitted activity has increased and metering and recording water takes is critical to ensure there are no adverse effects.

8.217 Several submitters suggest increasing the maximum permitted surface water take, with suggestions ranging from 60 to 86 cubic metres per day. A number of submitters seek to have the allocation set at 5% of the annual rainfall. Several submitters (including Rimu Grasslands & Leicester Downs and Nithdale Station) also seek to relate the maximum permitted take to landholding area.

8.218 The Environment Southland staff submission also seeks to insert a new provision to provide for renewal of consents as a discretionary activity. INZ and Alliance seeks the addition of a similar rule, albeit for a restricted discretionary activity.

8.219 DHL also seeks to remove the 40 cubic metre cap to allow for farms with a high number of stock.

8.220 A number of submitters including Rokenwai Farming and Rockytommy Farming request that reference to Appendix O be included in the rule.

8.221 P Callahan is opposed to the cost of this provision. The PT & SB Dale Trust consider that water takes should be on a case by case basis in conjunction with its purpose. Carmyllie Farm request that this provision be reviewed yearly.

8.222 Federated Farmers seeks to delete conditions 49(a)(vi)(1) and (2) on the basis that this information is unrelated to water quantity. The submitter also seeks to amend condition 49(a)(ii) so that the total volume of water taken per property (either groundwater or surface water, individually or combined) does not exceed 86 cubic metres.

8.223 Several submitters seek the addition of rules to provide for particular activities, including construction, fire-fighting and military activities (NZDF also seeks a new policy recognising the importance of water supply for temporary military training activities and NZDF facilities). Fulton Hogan & Southern Aggregates seek amendments to Rule 49 to provide for the take and use of water for construction activities (the submitter also seeks a new policy with similar wording). In particular, the submitter seeks that the inclusion of a new clause to Rule 49(a) as follows:

*(ii) the volume of take associated with construction activities of less than 6 months duration does not exceed 100 cubic metres per day*

8.224 NZFS seeks that the rule be amended to apply to diversions as well as takes, and for the take and use of surface water where required for fire-fighting or training activities to be permitted without meeting the other specified permitted activity conditions.

8.225 Fulton Hogan & Southern Aggregates also seeks to include a new controlled activity rule for temporary diversions of water for the purposes of construction. Meridian considers Rule 49 does not adequately cater for construction, maintenance or repair activities for infrastructure. The submitter proposes a new rule be added to the pSWLP to allow a permitted take, use, dam or diversion for infrastructure construction, maintenance and repair.

8.226 The Roding Company seeks to increase the daily allowed volume of water extraction from streams, lakes and rivers to 100 cubic metres at an allowable uptake rate of 5 litres per second for the purposes of road construction by reputable contractors. SDC seeks to remove the daily allowed volume cap altogether for the purpose of constructing roads. Several submitters including Fulton Hogan & Southern Aggregates and SDC seek to amend the allowable uptake rate to 5 litres per second in general.

8.227 Several submitters seek that the consent regime for water takes remains unchanged from the provisions contained in the RWP, with some raising concerns about the volume of water that will be allocated to existing resource consents. Progressive Engineering Southland seeks that water takes for dairy activities are a controlled activity.

8.228 Hort NZ seeks clarification on Rule 49(b)(iii) as it interprets the rule to mean consent is required for takes less than 70 m<sup>3</sup> per day.

8.229 Fish and Game and Forest and Bird seek to retain Rule 49 as notified and amend the matters of discretion of Rule 49(b) to ensure the council considers hydraulic connection to other surface waterbodies, and all natural wetlands rather than just regionally significant wetlands. Fish and Game also require recreational values to be considered. In addition, both seek to include a schedule entitled "Fish Screening Standards and Requirements" that matches the Fish Screen Standards and Guidelines set out in the Canterbury Land and Water Plan.

8.230 C Henderson supports identifying the Cromel Stream in Rule 49 as an over-allocated waterway, but requests clarification that current consents in over-allocated waterways can be re-consented. N Hamilton requests that Rule 49(e) be deleted so the Cromel Stream is dealt with the same as other waterways.

## Analysis

- 8.231 The provision set out in section 14(3)(b) of the RMA is not unfettered, as the taking or use cannot, or cannot be likely to, have an adverse effect on the environment. The 86 cubic metre limit set out in the pSWLP has been assessed by Council as the maximum level of take that can be permitted per landholding before adverse effects will occur, or are likely to occur, on the environment. Council has taken into account the provision within section 14(3)(b) when setting this limit, so if this provision was allowed in addition to the 86 cubic metre per day limit, this would likely cause adverse effects on the environment and be contrary to the RMA. For the purpose of clarity, I recommend that Rule 49 include a statement that section 14(3)(b) of the RMA has been taken into account and included as part of the 86 cubic metre per day limit for permitted takes.
- 8.232 For clarity, Rule 49 allows a permitted take of surface water up to 40 cubic metres and Rule 54 allows a permitted take of groundwater up to 86 cubic metres. A combined take of both groundwater and surface water is limited to 86 cubic metres in total. The first sentence of Rule 49(a)(ii) clarifies that the limit for surface water take is not added to the limit for groundwater take to make the total permitted level of take, as that is limited at 86 cubic metres. The permitted activity limit for surface water is 40 cubic metres per day as per Rule 49(a)(i). Consent would be required for a surface water take between 40 and 70 cubic metres as a restricted discretionary activity. As such, I do not recommend any amendments are made to provide for the submission from Hort NZ.
- 8.233 A general submission from Fish and Game seeks to ensure any abstraction from over allocated waterways made pursuant to section 14(3)(b) of the RMA do not have an adverse effect on the environment. In my opinion this is already part of the RMA and rule framework as discussed in my analysis above.
- 8.234 I note that the permitted volume of water applies to all uses and given the reasons above, I do not consider that specific amendments are necessary to include a permitted take for stock water and cowsheds.
- 8.235 In relation to the submission from J Stringer, I note that the rule relates to the take and use of surface water, which does not include any water captured from roofs.
- 8.236 Appendix O has been included as an appendix to the pSWLP, but has not been referenced anywhere else in the pSWLP. I consider that it should be referred to in Rule 49 as requested by a number of submitters to add context within the rule.
- 8.237 I do not agree with the submissions requesting a yearly review or assessment on a case by case basis. Yearly review of this provision would be a costly and time consuming exercise. Including a cap on permitted abstraction allows flexibility to limit the costs associated with a consenting process and dealing with abstractions on a case by case basis.
- 8.238 In my opinion, the addition of Rule 49(a)(vii) submitted by Environment Southland staff is appropriate. This rule has been amended from what is in the current RWP by increasing the permitted abstraction level. Monitoring the figures for more significant takes will ensure any risk of over-allocation or adverse effects are monitored by Council and identified early. To ensure alignment with the Resource Management (Measurement

and Reporting of Water Takes) Regulations 2010 I recommend reference is also made to the requirement to monitor water takes above 5L/s.

- 8.239 The submissions from Environment Southland staff, Alliance and INZ that request a provision for the replacement of existing resource consents are not required. When an application is made for the replacement of an existing consent it will be required to comply with the same conditions within Rule 49 as a new resource consent.
- 8.240 As suggested by Federated Farmers, some of the conditions in Rule 49(a)(vi) do not impact on water quantity. However, this information is important for Council to determine water use within the Southland region, consistent with the requirements set out in section CC of the NPSFM (Accounting for freshwater takes and contaminants). I do not recommend that the submission on this matter be accepted.
- 8.241 In regards to the amendments to the matters of discretion submitted by Forest and Bird and Fish and Game, it is my view that the adoption of an appendix to set out appropriate standards and requirements for fish screening will assist in making the requirements clearer and the consenting process easier. However, I note that the appendix sought by the submitters is specific to the Canterbury region and it is unclear from the submission whether or not the fish screening standards suggested by the submitters is appropriate for Southland. I suggest the submitter may wish to address this in evidence.
- 8.242 The submissions from SDC, Fulton Hogan & Southern Aggregates, NZDF, The Roding Company and NZDF seek that the permitted water take provisions should be amended to allow higher permitted water takes for specified activities and the effect of no daily cap imposed. Fulton Hogan & Southern Aggregates and Meridian seek new rules allowing higher takes or diversions for construction activities. These types of activities have been dealt with under the consenting process in the RWP and I have been advised that they are generally granted with little issue. For permitted activity status to be afforded to these activities, conditions would be required to ensure water use is accounted for (as required by the NPSFM), fish screening is provided, water is not taken from small streams at a rate that impacts instream ecology and which is consistent with the levels of habitat retention for streams in the Plan. The conditions would also need to include provisions for backflow prevention devices and to take other appropriate measures to ensure water and/or contaminants cannot return to the water source. I suggest the submitters provide evidence on how the effects of permitting an increased take, even for a short period of time, will align with the water abstraction policies within the pSWLP and address the matters set out in the above paragraph. This also applies to water takes proposed for fire-fighting training purposes. In relation to water required for fire-fighting purposes, I note that this is already provided for under section 14(3)(e) of the RMA and in my view including this in Rule 49 is therefore unnecessary and could cause confusion.
- 8.243 Any application to renew a consent within the Cromel Stream is considered under the analysis of Policy 42 and Appendix O within this report. The Cromel Stream has been specifically identified as an over-allocated water source, so a provision is required to prevent further over-allocation in accordance with higher order documents. I therefore recommend that Rule 49(e) be retained as notified.

## Recommendation

8.244 Amend Rule 49 as follows:

- (a) *The take and use of surface water is a permitted activity provided the following conditions are met:*
- (i) *the volume of take does not exceed 2000 litres per day, plus 250 litres per hectare per day, up to a maximum of 40 cubic metres per landholding per day, or per facility per day on public conservation land managed as such under the National Parks Act 1980, Conservation Act 1987, or the Reserves Act 1977;*
  - (ii) *the maximum volume of take allowed under this rule and Rule 54(a) is not added. A maximum of 86 cubic metres of groundwater and surface water combined per landholding per day inclusive of any water taken pursuant to s14(3)(b) of the RMA,<sup>566</sup> may be taken;*
  - (iii) *the volume of take does not exceed 30 percent of the naturalised instantaneous flow in the surface waterbody at the time of take;*
  - (iv) *the rate of take does not exceed 2 litres per second;*
  - (v) *fish are prevented from entering the reticulation system in accordance with Appendix [x],<sup>567</sup> and*
  - (vi) *the following details are supplied to Environment Southland upon request:*
    - (1) *farming type;*
    - (2) *stocking rate;*
    - (3) *point of abstraction;*
    - (4) *what the water was used for; and*
    - (5) *maximum rate of take.*
  - (vii) *where the volume of take exceeds 2000 litres per day or the rate of take exceeds 5L/s, a water meter capable of recording the rate of take, and maximum daily volume of take shall be installed. The water take data shall be recorded daily and that data shall be provided to the Southland Regional Council on request. The accuracy of the water meter shall be verified every 12 months.*<sup>568</sup>
- (b) *Except as provided for in Rules 49(a), 50(a), 50(b), 51(a) and 51(b), the taking, diversion and use of water from any of the following sources is a restricted discretionary activity:*
- (i) *any surface waterbody or artificial watercourse where the total surface water allocation is within the secondary allocation specified in Policy 21(3); and*
  - (ii) *any surface waterbody or artificial watercourse where the total volume of water taken or diverted is returned within 100 metres of the take or diversion point; or*
  - (iii) *any surface waterbody or artificial watercourse where the total volume of water taken is less than 70 cubic metres per day.*
- Environment Southland will restrict its discretion to the following matters:*
- 1. *the volume, rate, frequency and timing of water to be taken (including any water to be returned to the surface waterbody and the delay between the taking and returning of this water);*
  - 2. *any effects on river and stream flows (including effects on minimum flows, flow variability and duration of flows), wetland and lake water levels, aquatic ecosystems, aquifer storage volumes, the availability and reliability of supply for existing users and water quality;*
  - 3. *the location of the take or diversion;*
  - 4. *the efficiency of water use, in accordance with Appendix O<sup>569</sup>;*

<sup>566</sup> 247.14 Environment Southland

<sup>567</sup> 279.95 Forest and Bird; 752.142 Fish and Game

<sup>568</sup> 247.14 Environment Southland

<sup>569</sup> 47.21 Balfour, Wendonside & Waikaia Group; 259.17 F D Enterprise; 464.24 Landpro; and others

5. *the need for the installation of a water meter;*
  6. *monitoring requirements;*
  7. *methods to prevent fish from entering the reticulation system;*
  8. *minimum flow and level requirements;*
  9. *consistency with any water conservation order;*
  10. *the degree of hydraulic connection to groundwater;*
  11. *any effect on a regionally significant wetland;*
  12. *the proposed method of take and delivery of the water; and*
  13. *any water storage available for the water taken and its volume.*
- (c) *Except as provided for in Rules 49(a), 49(b), 50(a), 50(b), 51(a), 51(b), and 51(c), the taking, diversion and use of surface water where the total surface water allocation is within the primary allocation specified in Appendix K is a discretionary activity.*
- (d) *Except as provided for in Rules 49(a), 49(b), 49(c), 50(a), 50(b), 51(a), 51(b), and 51(c), the taking, diversion and use of water is a non-complying activity.*
- (e) *Despite Rules 49(b), 49(c), and 49(d) the taking, diversion and use of water from the Cromel Stream, unless the application is for the replacement of an expiring water permit pursuant to Section 124 of the Act, and the rate of take and volume is not increasing, and use of the water is not changing, is a prohibited activity.*

## **Rule 50 – Community water supply**

### **Provision**

8.245 Rule 50 provides for the replacement of an existing community water supply as a controlled activity provided the take, volume and use of an expiring consent is not changed, pursuant to section 124 of the RMA and a water demand management strategy is lodged as a part of the application. An application for a new community water supply take is a discretionary activity.

### **Submissions**

8.246 Rule 50 received eight submissions, with two in support seeking that the rule be retained as notified.

8.247 Real Journeys seeks a provision for water abstraction for intermediate size activities.

8.248 Several submitters seek to include additional matters of control to Rule 50. Hort NZ seeks the inclusion of an additional matter of control to provide for the management of water during water shortages. Fish and Game and Forest and Bird seek amendments to include control over fish screening, effects on natural wetlands and control over the location of the take or diversion. In addition, Fish and Game seeks that the rule includes the efficiency of water use and consideration of the effects on recreational values.

8.249 Alliance seeks to amend the rule so that it also provides for priority takes.

8.250 P H Bennett seeks a provision encouraging or requiring urban dwellings to have water tanks retaining water from roofs for household use and gardens.

## Analysis

- 8.251 Real Journeys suggests that the pSWLP largely overlooks the requirement for potable water supplies for use by under 25 people, especially in remote locations where municipal supply is not an option. This submission is assessed against Policy 24 in section 8.1 of this report.
- 8.252 The current matters of control include control over ‘the quality of and implementation of the water demand management strategy’ which includes the requirement to provide a drought management plan with a consent application. In my opinion, the management of water shortages is already controlled so the amendment that Hort NZ seeks is not necessary.
- 8.253 The additional levels of control that Fish and Game and Forest and Bird seek align with the discretion in Rule 49. However, Rule 50(a) relates to the replacement of an existing community water supply consent, so these effects would have been considered when the original consent was assessed. In my view, the additional levels of control go beyond the direction in Policy 24, and are not necessary in order to implement that policy, which relates specifically to community water supplies. I therefore do not consider that the amendments are appropriate.
- 8.254 Alliance has submitted that renewal of consents for priority takes should be treated the same as renewal of consents for community water supplies and also be classified as a controlled activity. Without this amendment, consents which are considered priority takes would have to apply for a consent renewal under the general water take and use rules. Policy 24 of the pSWLP recognises that community water supplies are an essential public service so the renewal of a consent for this activity as a controlled activity allows for effects to continue to be managed through the consent process, while ensuring a high level of continuity and certainty. This will also provide a degree of certainty about what a consenting process will involve and require. Priority takes cover a wide variety of different consents, with various conditions and requirements which, in my opinion, require a higher level of scrutiny and management than a controlled activity status allows. There are no policies or objectives that provide a similar level of importance to priority takes as to community water supplies, except Policy 25. However, this latter policy only relates to priority for takes when there is a water shortage and therefore does not, in my view, provide support for a controlled activity status.

## Recommendation

- 8.255 Retain Rule 50 as notified, with the addition of the following restriction of discretion:

...

*(9) Management of water shortages.*<sup>570</sup>

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<sup>570</sup> 390.33 Hort NZ



## Rule 51 – Minor diversions of water

### Provision

8.256 Rule 51(a) provides for minor diversions of water within a river or lake bed as a permitted activity, subject to conditions. Rule 51(b) permits the diversion of water for the purpose of land drainage, also subject to a number of conditions. Rule 51(c) provides for the diversion of water at specific drain points in the Tiwai Peninsula as permitted activities, subject to other separate conditions. Rule 51(d) provides a discretionary activity status if the permitted activity conditions are unable to be met.

### Submissions

8.257 There are 15 submitters on Rule 51, with most seeking amendments to the conditions. Five submitters seek to retain the proposed wording of the rule.

8.258 The Environment Southland staff submission seek to amend Rule 51(b)(i) and (b)(ii) by changing the word ‘*drainage*’ to ‘*diversion*’.

8.259 Forest and Bird seek inclusion of a provision that minor diversions of water from all natural wetlands and listed Regionally Significant Wetlands are prohibited. Fish and Game seeks that diversions from wetlands are non-complying activities.

8.260 Fulton Hogan & Southern Aggregates seeks to amend Rule 51 to extend the 1 month timeframe to 6 months and to add an additional clause addressing temporary diversion activities for construction purposes:

*(e) Unless controlled by any other rule in this Plan, the diversion of water for the purpose of construction activities that does not meet Rule 51(a) to (c) is a discretionary activity.*

8.261 KiwiRail seeks to delete Rule 51(a)(i)(7) in relation to historic heritage, whereas HNZ seeks to retain the same. In addition, HNZ seeks amendments to Rule 51 (c)(iii)(6) to ensure appropriate consideration and action is taken when activities occur in recorded archaeological sites, or if an accidental discovery is made.

8.262 Southland RLC and G McGregor seek to amend Rule 51(a)(iii) to exclude diversions associated with soil conservation and river control from the requirement to return water to its original course.

8.263 NZTA seeks to include an additional condition to ensure diversions “in the vicinity of a network utility” do not compromise that network utility.

8.264 J Bythell seeks to include an additional condition as follows:

*(11) there shall be no damage or destruction of significant indigenous vegetation.*

## Analysis

- 8.265 I agree with the amendment submitted by Environment Southland staff which is to improve consistency of wording by using ‘diversion’ rather than ‘drainage’.
- 8.266 I do not consider the amendments sought by Fish and Game and Forest and Bird are required as Rule 74(c) clearly provides that modification of wetlands through discharges is a non-complying activity. The inclusion of the wording in Rule 51(d) “Unless controlled by any other rule in this Plan” means that Rule 74, which controls activities to do with wetlands, will take precedence.
- 8.267 The one month limit on the duration of a diversion (as a permitted activity) has been determined by Council as the length of time a discharge may occur without causing adverse effects that are unacceptable or fail to achieve the pSWLP objectives. Any length of time over this will require a consent to allow assessment and mitigation of any potential adverse effects. I suggest Fulton Hogan & Southern Aggregates provides evidence or examples to show how an increase in the permitted duration of a diversion will not lead to adverse effects that are unacceptable or fail to achieve the pSWLP objectives. I agree with the submission to include construction as a discretionary activity (similar to how land drainage is currently dealt with) as it enables the Council to consider all potential adverse effects associated with that activity. I recommend construction is added to Rule 51(d) as follows:
- (d) Unless controlled by any other rule in this Plan, the diversion of water for the purpose of land drainage or construction activities that does not meet Rule 51(a) to (c) is a discretionary activity.*
- 8.268 In my view, the submissions to exclude diversions associated with soil conservation and river control from the requirement in Rule 51(a)(iii) is too broad in its approach. The wording suggested “soil conservation and river management” could include a number of activities which may not have been intended by the submitters to be covered by this amendment, that have a more than minor adverse effect on the environment. Additionally, it is unlikely, in my opinion, that a permanent diversion of a waterway will have a less than minor adverse effect on the environment. I therefore do not recommend the submissions on this matter be accepted as the requirement to obtain a consent is appropriate.
- 8.269 KiwiRail has concerns with Rule 51(a)(i)(7) relating to historic heritage as it considers this to be an issue that should be dealt with by the territorial authority rather than regional council. KiwiRail has suggested the deletion of reference to ‘historic heritage’ throughout the pSWLP or at the very least, amendment of the terms to ensure consistency. Analysis of the deletion of ‘historic heritage’ references through the pSWLP can be found within Section 10 of this report and following that analysis, it is my view that reference to historic heritage sites should be deleted from the permitted activity conditions set out in Rule 51.
- 8.270 HNZ submits that Rule 51(c)(iii)(6) relates to Tiwai Point which is an area that contains a large number of archaeological sites and there is a strong possibility that works permitted under this rule will not be able to proceed without an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014. I recommend the advice note

submitted by HNZ be included within the pSWLP so that it is made clear this situation might occur. The amendment to condition (6) should not be included within the pSWLP as the advice note does enough to make it clear that HNZ should be contacted in the instance of a historic heritage discovery or suspected discovery. An express requirement to do so is not required.

- 8.271 NZTA and J Bythell suggest additional conditions be added to Rule 51(a)(i). The condition suggested by NZTA is intended to protect network utilities from possible damage caused by water diversions which has significant public benefit. While I agree with the sentiment of this condition, I am concerned about the potential uncertainty of the amendment sought. I suggest NZTA consider wording that may be more certain, possibly through the use of distance thresholds, and advance these in evidence. The condition suggested by J Bythell is repeated throughout the submission and is considered in detail in section 10 of this report. In my view the analysis in that section is equally applicable to Rule 51 and for the same reasons as outlined there I recommend that this submission be rejected.

## Recommendation

- 8.272 Retain Rule 51(c).

- 8.273 Amend 51(a), (b) and (d) and include advice note as follows:

- (a) *Despite any other rule in this Plan, the diversion of water within a river or lake bed is a permitted activity provided the following conditions are met:*
- (i) *the diversion is for the purposes of undertaking a permitted activity under Rules 55 to 79 or for the purposes of habitat creation, restoration and enhancement, hydrologic research and is carried out in accordance with the following conditions:*
- (1) *fish passage shall not be impeded as a result of the activity;*
  - (2) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (3) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (4) *any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (5) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (6) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(7) *there are no recorded historic heritage sites, at the site of the activity;*~~<sup>571</sup>
  - (8) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (9) *all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and*

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<sup>571</sup> 449.23 KiwiRail

- (10) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.*
- (ii) *the diversion is carried out completely within a river or lake bed (i.e. no water is diverted outside of the river or lake bed);*
  - (iii) *the water is returned to its original course after completion of the activity, no later than one month after the diversion occurs;*
  - (iv) *the diversion does not compromise the ability of any other person to exercise a resource consent or undertake an activity permitted by this Plan; and*
  - (v) *the diversion does not result in a net loss of water from the catchment*
- (b) *Despite any other rule in this Plan, the diversion of water for the purpose of land drainage is a permitted activity provided the following conditions are met:*
- (i) *the drainage diversion<sup>572</sup> and associated discharge does not cause erosion or deposition;*
  - (ii) *the drainage diversion<sup>573</sup> shall not cause flooding of downstream or adjacent properties;*
  - (iii) *the diversion of water is not from a Regionally Significant Wetland identified in Appendix A or any naturally occurring wetland.*
- ...
- (d) *Unless controlled by any other rule in this Plan, the diversion of water for the purpose of land drainage or construction activities<sup>574</sup> that does not meet Rule 51(a) to (c) is a discretionary activity.*

*Advice note: Due to the high concentration of recorded archaeological sites in the vicinity of the above sites, it is possible that works will require an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014. No work (even if permitted under the rule or authorised by resource consent) should commence without first contacting Heritage New Zealand.*<sup>575</sup>

## **Rule 52 – Water abstraction, damming, diversion and use from the Waiau catchment**

### **Provision**

8.274 Any application for the replacement of an expiring water permit for the taking, damming, diversion or use of water within the Waiau catchment that is not authorised by section 14(3)(b) of the RMA or does not comply with Rules 49(a), 49(b), 49(c), 51(a), 51(b) and 51(c) is a discretionary activity, provided the rate of take or volume are not increasing and the use of water is not changing. Where the condition is not met, the activity is non-complying (under 52(b)).

### **Submissions**

8.275 Rule 52 contains specific reference to water takes from the Waiau catchment. This is required due to the presence of the Manapouri hydro-electric dam and the Manapouri - Te Anau Development Act 1963 that ensures sufficient allocation of water to the dam,

<sup>572</sup> 247.15 Environment Southland

<sup>573</sup> 247.15 Environment Southland

<sup>574</sup> 288.34 Fulton Hogan & Southern Aggregates

<sup>575</sup> 372.14 HNZ

and consequently limits allocation of water for other purposes from the Waiau catchment.<sup>576</sup>

- 8.276 There are 16 submissions on Rule 52. Three submitters seek to retain the proposed wording of the rule. The Environment Southland staff submission seeks to remove reference to Rule 51(c) from Rule 52(b), as the submitter states this reference is unnecessary.
- 8.277 Forest and Bird and Fish and Game both seek to remove Rule 52(a) as they consider that the rule does not give effect to Objective B2 of the NPSFM.
- 8.278 GDC, ICC and SDC seek to amend Rule 52 to also include reference to Rules 50(a) and (b), such that activities managed under those rules take precedence over this rule.
- 8.279 NZDF seeks to include a provision allowing short-term taking and using of surface water for temporary military training activities.
- 8.280 The RJ Miller Trust seeks reference to Appendix O within the Rule.
- 8.281 Meridian seeks to include New Rule 52A and 52B and include reference to these new Rules within Rule 52(a). It is noted that this submission has received a number of further submissions in opposition to these amendments. The suggested new Rules 52A and 52B are as follows:

*Rule 52A*

*Any take, damming, diversion and use of water and the discharge of contaminants or water into water or contaminant onto or into land in circumstances which may result in that contaminant entering water which is an activity that is part of the Manapouri Power Scheme, for which consent is held and is the subject of an application for a new consent of the same activity and:*

- (a) the use of water is for the generation of electricity from the Manapouri Power Scheme and includes the taking, damming, diverting or discharge of water; or*
- (b) the taking, diverting or discharge of water into the tailraces; or*
- (c) the taking, damming, diverting or discharge is to protect the structural integrity of control gates, tailraces and appurtenant structures or*
- (d) the discharge is of generation and spill water for generation and control structures is a controlled activity provided the following conditions are met:*
  - (i) in relation to any water permits the application is for the replacement of an expiring water permit pursuant to section 124 of the Act; and*
  - (ii) the rate of take and volume, and use of the water is the same as the maximum or minimum levels or flow or rate of use as set out in any relevant operative rules of this regional plan; and*
  - (iii) in relation to any discharge permits the discharge does not cause the relevant water quality standards to be exceeded as set out in any relevant operative rules of this regional plan,*

*The matters over which control is reserved are:*

- (a) any mitigation measures to address adverse effects, except for changes or alterations to*
  - (i) maximum or minimum levels or flow or rate of use as set out in any relevant operative rules of this regional plan*

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<sup>576</sup> <https://www.meridianenergy.co.nz/assets/Uploads/Discover-Manapouri-Nov-15.pdf>

- (ii) *the water quality standards as set out in any relevant operative rules of this regional plan*
  - (b) *Collection, recording, monitoring and provision of information concerning the exercise of consent, and*
  - (c) *lapse period, duration of consent and review requirements.*
  - (d) *Measures necessary to ensure any discharge is not the cause of any water quality standards being exceeded than otherwise provided for in the relevant operative regional plan.*
- Any application made under Rule 52A will be publicly notified.*

**Rule 52B**

*Any take, damming, diversion, use of water and the discharge of contaminants or water onto or into land in circumstances where contaminants may enter water, or into surface water, which is an activity that is part of the Manapouri Power Scheme, for which a consent is held and is the subject of an application for a new consent for the same activity that does not meet the condition of Rule 52A is a discretionary activity.*

- 8.282 H English seeks to make available an allocation that recognizes the national interest of Meridian's 550 cumecs take but also ongoing local development opportunities be it irrigation or any other use outside of limited stock water. He suggests an allocation of 11 cumecs and allowing the opportunity for water storage.
- 8.283 G and R Cockburn and M and T Willans seek a provision for a pathway for community involvement and discussion regarding a community allocation of a comparatively minor amount of surface water. C McDonald seeks a provision to allow water allocation for irrigation.
- 8.284 Landpro seek clarity of the rule, particularly regarding the stream depletion assessment.

**Analysis**

- 8.285 I support the submission from Environment Southland staff to remove reference to Rule 51(c) as it is not required. Rule 51(c) refers to Tiwai Point drains and Rule 52 is concerned with the Waiau catchment, which are not related.
- 8.286 In my analysis of Rule 49 I have supported the amendment making it clear that the takes authorised by section 14(3)(b) of the RMA make up part of the permitted volume of water abstraction. The express reference excluding section 14(3)(b) from Rule 52 as well as Rule 49(a) may confuse the effect of the section within the Plan. Provided the recommended amendment to Rule 49 (on this matter) is accepted, I suggest an amendment is included to Rule 52 to ensure that section 14(3)(b) is taken to be included within the rules of the pSWLP as opposed to a standalone provision.
- 8.287 The pSWLP is required to give effect to the NPSFM at Objective B2 by avoiding further over-allocation of fresh water and phasing out existing over-allocation. As it currently stands, the Waiau catchment is overallocated and Rule 52(a) provides for the re-application of a current consent as a discretionary activity. This section of the rule aligns with the NPSFM and as it has been discussed previously in this report, the allocation of the Waiau catchment will be assessed as part of the FMU process. Over-allocation will need to be assessed and managed as part of that process.

- 8.288 Alternative water uses within the Waiau catchment are discussed in the analysis of Policy 26 and considered in full against Objective 10 so is not repeated here. I note the future FMU limit setting processes will likely include a review of the current allocation of water in the Waiau catchment and the community's aspirations for future uses. I do not consider it appropriate for Rule 52 to be amended to provide for this prior to that process occurring.
- 8.289 The joint submission from the territorial authorities (in particular SDC) seek to exclude community water schemes from Rule 52 to prevent a proposed increase in take becoming a non-complying activity. The intention is to allow for additional water allocation to respond to predicted increased population within the Waiau catchment, particularly in Te Anau. Additional submissions from the territorial authorities amend the policy framework throughout the pSWLP to support this change. In my opinion, the benefit of moving this activity to a discretionary activity is not sufficiently justified. An application to increase the take is restricted by the NPSFM and at higher levels within this pSWLP, and in my view this aligns best with a non-complying activity status. The consent application will have to be assessed by Council regardless of the activity status, and will be required to balance the additional benefits with the environmental cost.
- 8.290 The submission from G and R Cockburn seeks to include a provision with the aim of achieving additional community water allocation which is covered by the above discussion.
- 8.291 The submissions from H English seeks that the minimum level cut-off 201.5 masl is a mistake and the range on this bore should be 245 - 250 masl. This is dealt with in the analysis of Appendix K, which recommends an increase to within this level.
- 8.292 The NZDF submission on Rule 52 proposes the amendment submitted for Rule 49 is extended to also apply within the Waiau catchment. However, allocation issues within the Waiau catchment mean that additional abstractions should go through the consenting process to ensure the take is sustainable. Alternative water uses within the Waiau catchment are discussed in the analysis of Policy 26 and considered in full against Objective 10 so is not repeated here.
- 8.293 In response to the submission from Landpro, Mr Hughes has advised adding additional wording to the rule to expressly cover groundwater takes with a low hydraulic connection, as follows:

*(ii) the application is for a groundwater take assessed as having a Low degree of hydraulic connection following the methodology specified in Appendix L.2.*

## **Recommendation**

- 8.294 Amend Rule 52 as follows:

*(a) Except as provided in Rules 49(a), 49(b), 49(c), 51(a), and 51(b) ~~and 51(c)~~<sup>577</sup> *(including and the takes authorised by Section 14(3) of the Act*<sup>578</sup>, any take, damming, diversion and use of*

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<sup>577</sup> 247.16 Environment Southland

<sup>578</sup> CI 16

*water from the Waiau catchment is a discretionary activity provided the following conditions are ~~is~~<sup>579</sup> met:*

- (i) the application is for the replacement of an expiring water permit pursuant to Section 124 of the Act, and the rate of take and volume is not increasing, and use of the water is not changing; or*
  - (ii) the application is for a groundwater take assessed as having a Low degree of hydraulic connection following the methodology specified in Appendix L.2.<sup>580</sup>*
- (b) Except as provided in Rules 49(a), 49(b), 49(c), 51(a), and 51(b) ~~and 51(e)~~<sup>581</sup> and the takes authorised by Section 14(3) of the Act, any take, damming, diversion and use of water from the Waiau catchment that does not meet the condition of Rule 52(a) is a non-complying activity.*

## Definitions

8.295 The following definitions are relevant to the surface water quantity section but none have sought changes so no changes are recommended:

- Damming
- Diversion
- Median flow
- Minimum flow
- Natural mean flow
- Total surface water allocation

8.296 The following definitions have submissions seeking change and are analysed below:

### ***Natural state (for water quantity purposes)***

*Water within conservation areas, reserves and national parks administered by, or on behalf of, the Department of Conservation for conservation purposes under the Conservation Act 1987, Reserves Act 1977 and National Parks Act 1980 with the exception of water within the Upper Waiau and Monowai Rivers and Lakes Te Anau, Manapouri and Monowai (these waterbodies are excluded due to their modified flow and level regimes resulting from the Manapouri and Monowai Power Schemes) and groundwater within the Timai groundwater zone (this groundwater zone is excluded due to its long term use for the supply of water for industrial purposes).*

### ***Natural state waters (for water quality purposes)***

*Waters within:*

- (a) areas defined as National Park managed under the National Parks Act 1980 (including land for the time being administered as if it was a national park pursuant to any statute or written agreement with the owners); and*
- (b) public conservation land managed under the Conservation Act 1987 and the Reserves Act 1977 as detailed in Table 1 “Natural State Waters outside National Parks” in Appendix I “Natural State Waters outside National Parks” of this Plan.*

### ***Q95***

*This is the flow that is exceeded 95% of the time during the year.*

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<sup>579</sup> CI 16

<sup>580</sup> 464.25 Landpro

<sup>581</sup> 247.16 Environment Southland



**Surface waterbody**

*Freshwater or geothermal water in a river, lake, stream, pond, or wetland or any part thereof that is not located within the coastal marine area but excludes water in an artificial watercourse.*

**Submissions**

8.297 There are two submissions on each of the definitions of Natural State. Fish and Game seeks to retain the definition but Real Journeys requests that a more meaningful definition be provided, particularly in respect to Appendix E i.e. include parameters. The submitter states that at present, it is impossible to know if a discharge into natural state waters is compliant.

8.298 There are two submissions on the definition of Q95. DOC and Fish and Game seek to amend the definition to provide:

*This is the naturalised flow that is exceeded 95% of the time during the year.*

8.299 There are six submissions on the definition of Surface Waterbody with Fish and Game seeking to retain the definition.

8.300 B+LNZ considers the definition of Surface Waterbody to broad and seeks the following amendments to align with the Dairying and Clean Stream's Accord definition:

*Freshwater or geothermal water in:*

- *a river, ~~or lake~~, stream, but excludes water in an artificial watercourse, that is deeper than 15 cm and wider than 1 metre; or*
- *A lake or pond that is X<sup>m</sup> [use an industry agreed size] or*
- *a wetland*

*or any part thereof that is not located within the coastal marine area ~~but excludes water in an artificial watercourse~~*

8.301 DHL seeks to remove man-made watercourses from the definition of Surface Waterbody by amending 'wetland' to 'natural wetland' and excluding 'modified watercourse'.

8.302 Environment Southland staff submission seeks to clarify what makes a surface waterbody and include artificial watercourse within that by deleting the definition of Surface Waterbody and wherever the term occurs in the text of the Plan, replace it with "a lake, river, natural wetland, artificial watercourse or modified watercourse", or whatever combination of these terms is appropriate for the particular rule.

8.303 Hort NZ seeks to add to the exclusion in the definition of Surface Waterbody' by adding

*'or subsurface drainage system.'*

8.304 Ngāi Tahu seeks the following amendments to the definition of Surface Waterbody:

*"Freshwater or geothermal water in a river, lake, stream, pond, or wetland or any part thereof that is not located within the coastal marine area ~~but excludes water in an artificial watercourse~~ and includes artificial watercourse where they are connected to any river, lake, stream, pond or wetland."*

## Analysis

- 8.305 Real Journeys seeks more meaningful definition of Natural State Waters to provide more clarity. In my opinion, the definitions of Natural State Waters and table in Appendix I provide sufficient information to determine whether water is Natural State. Appendix E makes it clear that water quality should not be altered and applicants can contact Council for information on testing methodologies.
- 8.306 The purpose of including the 'naturalised' flow within the definition of Q95 is that the measurement would incorporate the total volume of water allocated through current resource consents. This will raise the Q95 to a higher level than what the actual 5% low flow is. The Mean Annual Low Flow is the equivalent of the Q95 in the current Water Plan and is assessed using the "naturalised" level of flow. In my opinion I consider it appropriate to assess the Q95 using the naturalised level of flow.
- 8.307 I support the submission of Environment Southland staff to delete the definition of Surface Waterbody and replace the reference throughout the pSWLP to a lake, river, natural wetland, artificial watercourse or modified watercourse. This will remove uncertainty regarding what constitutes 'surface water' and provides improved clarity.

## Recommendation

- 8.308 Delete the definition of Surface Water and replace reference to it throughout the pSWLP with, as appropriate, the following:

*a lake, river, natural wetland, artificial watercourse or modified watercourse*<sup>582</sup>

- 8.309 Amend the definition of Q95 as follows:

*This is the naturalised<sup>583</sup> flow that is exceeded 95% of the time during the year.*

## Appendix K

- 8.310 Appendix K contains the methodology required to determine minimum flow and levels of allocation for surface waterbodies. This includes methodologies for determining allocation regimes, and assessments of environmental effects.

## Submissions

- 8.311 Appendix K received seven submissions.
- 8.312 DHL seeks to clarify the use of median flow vs. natural mean flow in calculating minimum flows and clarify the use of the Table in Method 1.
- 8.313 DOC seeks to amend the table under Method 2 to include "*Redfin/common bully, and Torrent Fish*" and to increase the significance ranking of these fish and Non-diadromous galaxiid to 1. DOC also seeks to increase habitat retention percentage to 100 for certain

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<sup>582</sup> 247.41 Environment Southland

<sup>583</sup> 210.102 DOC; 752.282 Fish and Game

fisheries. Forest and Bird seeks to amend Appendix K to set Habitat retention value at 100% for all native fish while Fish and Game seeks to amend table for all high quality fisheries to retain 100% of large adult trout habitat at Q95.

8.314 The Environment Southland staff submission seeks a number of amendments to Appendix K to improve clarity, consistency and to remove duplications within the Appendix and with notified Policy 20. This includes adding headings, removing a duplicated minimum flow section and removing text from a previous RWP policy that is now covered by Policy 20.

8.315 Fish and Game seeks the following amendments:

- Amend the table for Method 1 for streams with a Median flow between 300 – 750 L/s in the Lowland Surface Water Management Unit to read:  
*Trout spawning/juvenile rearing or ~~non-diadromous galaxiid~~ Redfin/common bully if trout excluded*
- Amend the table for Method 1 for streams with a Median flow between 300 – 750 L/s in the Hill/Mountain Surface Water Management Unit and 0.75 -2.5 m<sup>3</sup>/s in Hill2 Surface Water Management Unit to include:  
*Large adult trout*
- Amend Step 3:  
*For catchments with rivers with a median flow greater than 4.5 m<sup>3</sup>/s where large adult trout are identified as the critical value, Net Rate of Energy Intake modelling will be used to determine/revise allocation policy for that catchment.*
- Amend step 4:  
*The habitat maintenance level is based on retaining a percentage of the habitat at Q95. ~~or a proportion of the maximum habitat if it occurs at a flow less than the Q95~~*

8.316 Fish and Game also seeks replacement of Generalised Habitat Models and research “Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004” based on recent research which suggest that they are outdated.

8.317 INZ seeks to delete the ‘Assessment of environmental effects for surface water takes, diversion and use’ from Appendix K; or provide the current stepped process but without the tables that, in its view, contain value judgements.

8.318 Landpro seeks a higher percentage and/or justification for such a low surface water allocation (10%) under the secondary allocation regime determination. The submitter also seeks clarification of the wording ‘any downstream point determined by the Southland Regional Council’ throughout Appendix K.

## Analysis

8.319 During different months of the year, the tool used to determine minimum flows change from natural median flow to natural mean flow. It is my understanding that the purpose of using natural median flow during the months of April to November is that during these wetter months there are increased flood events that increase the flow levels for a short period. If the mean flow was used during this period, these flood events would skew the average minimum flow so that they would result in a flow level much higher than what is regular. Therefore, the median analysis is more appropriate. Conversely,

during the drier months of December to March the outliers are generally rarer and smaller so it is more appropriate to use the more statistically accurate mean analysis.

- 8.320 I agree with DHL and recommend a heading is adopted for the table under Method 1 to clarify how this information is to apply within Appendix K.
- 8.321 In my opinion, DOC, Forest and Bird and Fish and Game have not provided sufficient information to support the amendments they seek to the table under Method 2; and (in relation to Fish and Game only) to amend the table under Method 1, it may be useful if additional evidence on this matter is provided at the hearings.
- 8.322 In lieu of suggested replacements (and supporting information) to the Generalised Habitat Models and research “Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004, I do not recommend the submission from Fish and Game on this matter is accepted.
- 8.323 I support the amendments submitted by the Environment Southland staff to increase clarity, improve consistency and remove duplications. Reference to ‘naturalised’ should not be included, however, as I have suggested it be included within the definition of Q95.
- 8.324 INZ submits the value judgements about the indicator species in Method 1 and 2 under ‘Assessment of environmental effects for surface water takes, diversion and use’ is inappropriate. The submission suggesting a pathway be provided in the consenting process that allows an applicant to provide evidence regarding indicator species has merit. However, it is unclear from the submission what particular amendments are sought. In lieu of more specific information, I do not recommend the submission from INZ on this matter be accepted.
- 8.325 I recommend the submission from Landpro to replace ‘the most flow sensitive point downstream’ with ‘the nearest downstream environment Southland monitoring point’ should not be accepted based on the reasoning set out in section 8.2 of this report.
- 8.326 The limit for a secondary allocation regime is determined differently to the primary water allocation regime so as to maintain the reliability of supply for the existing primary users and ensure long-term aquifer storage volumes are maintained in accordance with Policy 21(3). In the absence of a revised surface water allocation that does not affect the reliability of supply or breach any of the other policies or rules within the pSWLP, I do not recommend the submission on this matter be accepted.
- 8.327 I agree with the submission from Landpro that the intention of the sentence used throughout Appendix K which contains ‘any downstream point determined by the Southland Regional Council’ is unclear. The sentence is not intended to set out that Council will determine the downstream point, but that Council will determine allocation percentage based on the methodology set out in Appendix K. I recommend the sentence is re-ordered as follows:

*percent of the Q95, ~~at any downstream point in the catchment~~ as determined by the Southland Regional Council following the methodology established above, at any downstream point in the catchment.*

## Recommendation

8.328 Amend Appendix K as follows:

### ***Methodology for establishing the point used to determine minimum flow and the level of allocation***

*The point used to determine the minimum flow and the level of allocation for the purposes of Policy 22 is as follows:*

- (i) the point of take; or*
- (ii) in the case of surface waterbodies where flow is lost to groundwater along the length of the surface waterbody, the most flow sensitive point downstream.*

*The Southland Regional Council will determine the location of the above. Minimum flows are to be developed through gauging of river flows correlated with Southland Regional Council approved water level monitoring sites, rated flow recording sites, or hydrologic modelling.*

### ***Minimum flows***<sup>584</sup>

*The minimum flow will be as follows:*

- (i) for takes from the primary allocation, the minimum flow will be Q95;*
- (ii) for takes from the secondary allocation, the minimum flow will be the natural<sup>585</sup> median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;*
- (iii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained in Method 2 of<sup>586</sup> Appendix K.*

*In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values.*

*In the absence of quality information, a precautionary approach will be adopted.*

### ***Primary and secondary allocation***<sup>587</sup>

*Primary allocation regimes will be determined by:*

- (i) for all surface waterbodies outside the Waiau catchment and not subject to a Water Conservation Order that specifies an alternative environmental flow and level regime, a primary allocation is available when the following criteria can be met:
  - (1) the total surface water allocation does not exceed a volume of 30 percent of the natural pre-allocation Q95, at any downstream point in the catchment as determined by the Southland Regional Council following the methodology established in Appendix K, at any downstream point in the catchment<sup>588</sup>; and*
  - (2) the flow at that location is at or above the natural Q95;**
- (ii) in the Waiau catchment, the primary allocation is that authorised through resource consents in force and operative with their terms;*
- (iii) for surface waterbodies subject to a Water Conservation Order that specifies an environmental flow and level regime, the primary allocation will be that specified in the Order;*
- (iv) in the absence of quality information, a precautionary approach will be adopted.*

*Secondary allocation regimes will be determined by:*

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<sup>584</sup> 247.28 Environment Southland

<sup>585</sup> 247.28 Environment Southland

<sup>586</sup> 247.28 Environment Southland

<sup>587</sup> 247.28 Environment Southland

<sup>588</sup> 464.31 Landpro

- (i) for all surface waterbodies outside the Waiau catchment and not subject to a Water Conservation Order that specifies an alternative environmental flow and level regime, a supplementary allocation is available when the following criteria can be met:
  - (1) the total surface water allocation does not exceed a volume of 10 percent of the relevant seasonal flow cut-off flow in the surface waterbody at the time of take; and
  - (2) the flow at that location is at or above the natural<sup>589</sup> median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;
- (ii) in the Waiau catchment and for surface waterbodies subject to a Water Conservation Order that specifies an environmental flow and level regime, the primary allocation encompasses any supplementary allocation;
- (iii) in the absence of quality information, a precautionary approach will be adopted.

### **Minimum flows**

*The minimum flow will be as follows:*

- ~~(i) for takes from the primary allocation the minimum flow will be Q95;~~
- ~~(ii) for takes from the secondary allocation the minimum flow will be the natural median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;~~
- ~~(iii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained within this Appendix.~~

~~In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values.~~

~~For all allocation regimes:~~

~~Except for surface waterbodies subject to an environmental flow and level regime established under any Water Conservation Order, establish environmental flow and level regimes for surface waterbodies taking into account the following matters where appropriate:~~

- ~~(i) mauri and healthy ecosystems of indigenous species, including mahinga kai species;~~
- ~~(ii) wahi tapu sites or areas, and wahi taonga;~~
- ~~(iii) natural character, landscape, and visual amenity;~~
- ~~(iv) indigenous vegetation within and adjacent to the waterbody;~~
- ~~(v) habitats including spanning and nesting areas for invertebrates, birds and fish;~~
- ~~(vi) fish passage, including facilitating the passage of native and salmonid fish where appropriate, and limiting the introduction of undesirable species and the spread of non native species into areas where they are not normally found;~~
- ~~(vii) undesirable periphyton and sediment accumulation;~~
- ~~(viii) maintenance of groundwater flows;~~
- ~~(ix) the potential for establishment of invading exotic vegetation;~~
- ~~(x) bedload and sediment transport processes;~~
- ~~(xi) shoreline or bank erosion;~~
- ~~(xii) functioning of the river mouth;~~
- ~~(xiii) recreation opportunities;~~
- ~~(xiv) accessibility to waterbodies and their margins;~~
- ~~(xv) existing flow and level regimes, physical resources and activities;~~
- ~~(xvi) the positive effects resulting from the use and development of the water resources; and<sup>590</sup>~~

### **Assessments of environmental effects for surface water takes, diversion and use**

- (i) In situations where the total volume of surface water allocation is between 10 and 30 percent of the Q95, at any downstream point in the catchment as determined by the Southland Regional Council

<sup>589</sup> 247.28 Environment Southland

<sup>590</sup> 247.28 Environment Southland

following the methodology established above, at any downstream point in the catchment,<sup>591</sup> an assessment of environment effects using Method 1 below will be required.

- (ii) In situations where the total volume of surface water allocation will breach 30 percent of the Q95, ~~at any downstream point in the catchment~~ as determined by the Southland Regional Council following the methodology established above, at any downstream point in the catchment,<sup>592</sup> an assessment of environment effects using Method 2 below will be required.

### **Method 1 – Assessment using Generalised Habitat Models**

The process for undertaking an assessment of environmental effects using generalised habitat models is as follows:

- **Step 1:** Determine the relevant surface water management unit and flow range using Environment Southland flow data.
- **Step 2:** Determine the appropriate critical value from the data obtained in Step 1 using following table which shows critical values by surface water management unit and flow range:

Median flow	Surface Water Management Unit		
	Lowland	Hill/Mountain n	Hill2 (Hokonui/Catlins)
0 – 300 L/s	Diadromous galaxiid	Non-diadromous galaxiid	Diadromous galaxiids (low elevation) and non-diadromous galaxiids at higher elevations
300 – 750 L/s	Redfin/common bully	Trout spawning/juvenile rearing or non-diadromous galaxiid if trout excluded	Trout spawning/juvenile rearing or non-diadromous galaxiid if trout excluded Large adult trout
0.75 – 2.5 m <sup>3</sup> /s	Trout spawning/juvenile rearing* Large adult trout	Trout spawning/juvenile rearing Large adult trout	Trout spawning/juvenile rearing
2.5 – 5 m <sup>3</sup> /s	Trout spawning/juvenile rearing* Large adult trout	Large adult trout	Large adult trout
> 5 m <sup>3</sup> /s	Large adult trout	Large adult trout	Large adult trout

- **Step 3:** Determine the level of habitat at the ~~Q95 mean annual low flow~~<sup>593</sup> using generalised habitat models for the critical value species (refer to Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004) and compare with the cumulative effect of the allocated and proposed water takes.

<sup>591</sup> 464.31 Landpro

<sup>592</sup> 464.31 Landpro

<sup>593</sup> 247.28 Environment Southland

### **Method 2 –Assessment using Instream Habitat Flow Incremental Methodology**

The process for undertaking an assessment of environmental effects using instream habitat analysis is the same as the process using generalised habitat models outlined in Steps 1 and 2 above. Steps 3 and 4 of this process are as follows:

- **Step 3:** Determine the level of habitat across the flow range~~at the Q95~~<sup>594</sup> using detailed instream habitat analysis for the critical value species (refer to Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004). For catchments with rivers with a median flow greater than 4.5 m<sup>3</sup>/s, Net Rate of Energy Intake modelling will be used to determine/ revise allocation policy for that catchment.
- **Step 4:** Determine the habitat maintenance level using the following table. The habitat maintenance level is based on retaining a percentage of the habitat across the flow range and~~at~~ Q95 or a proportion of the maximum habitat if it occurs at a flow less than the Q95. The flow that corresponds to this habitat maintenance level<sup>595</sup> will be used to determine the impact of the cumulative abstraction on the water body<sup>596</sup> and assist in determining if consent should be granted and if so, the appropriate minimum flow<sup>597</sup>.

Fishery quality will be assumed to be high unless agreed otherwise by key stakeholders such as the Department of Conservation, Fish and Game New Zealand and Te Ao Mārama. Similarly, the habitat maintenance~~retention~~<sup>598</sup> level could be adjusted depending on the perceived values of the out-of-stream use in consultation with key stakeholders.

<b>Critical value</b>	<b>Fishery quality</b>	<b>Significance ranking</b>	<b>% Habitat retention</b>
Large adult trout – perennial fishery	High	1	90
Diadromous galaxiid	High	1	90
Non-diadromous galaxiid	-	2	80
Trout spawning/ juvenile rearing	High	3	70
Large adult trout – perennial fishery	Low	3	70
Diadromous galaxiid	Low	3	70
Trout spawning/ juvenile rearing	Low	5	60
Redfin/ common bully	-	5	60

<sup>594</sup> 247.28 Environment Southland

<sup>595</sup> 247.28 Environment Southland

<sup>596</sup> Cl 16

<sup>597</sup> 247.28 Environment Southland

<sup>598</sup> 247.28 Environment Southland



## Groundwater

### Policy 23 – Stream depletion effects

#### Provision

8.329 Policy 23 reads:

*Manage stream depletion effects resulting from groundwater takes with a daily average rate of take exceeding 2 litres per second which are classified as having a Riparian, Direct, High or Moderate hydraulic connection, as set out in Appendix L2, to ensure the cumulative effect does not:*

- 1. exceed any relevant surface water allocation regime (including those established under any water conservation order);*
- 2. result in surface water flows or levels less than prescribed minimum flows or levels or long-term baseflow.*

#### Submissions

8.330 Policy 23 received 16 submissions with 10 seeking to retain the proposed wording and L & C Cowan seeking the deletion of the policy.

8.331 Fonterra seeks to reword Policy 23 as follows:

*Manage stream depletion effects resulting from groundwater takes with a daily average rate of take exceeding 2 litres per second based on their classification in Appendix L2, ~~which are classified as having a Riparian, Direct, High or Moderate hydraulic connection, as set out in Appendix L2,~~ to ensure the cumulative ~~effect take~~ does not:*

- 1. exceed any relevant surface water allocation regime (including those established under any water conservation order) for groundwater takes classified as Riparian, Direct, High or Moderate hydraulic connection;*
- 2. result in abstraction occurring during times when surface water flows or levels are less than prescribed minimum flows or levels or long-term baseflow for groundwater takes classified as Riparian, Direct or High hydraulic connection.*

8.332 IAL seeks that all policies relating to abstraction and use of water ensure that activities are not undertaken in such a way that compromises the safe operation and efficient use of existing physical resources and infrastructure.

8.333 Landpro supports a number of changes in Policy 23 from the current RWP provisions, however, Landpro seeks an amendment to the policy to define how groundwater takes with a moderate degree of hydraulic connection will be assessed against the Matura Water Conversation Order and existing users' reliability of supply.

8.334 Fish and Game seeks that if "base flow" does not mean Q95 then Policy 23(2) is amended to provide:

- 2. Results in surface water flows or levels less than the prescribed minimum flows ~~or levels or long-term base flows.~~*

## Analysis

- 8.335 The current wording of Policy 23 excludes takes below a nominal rate of 2 litres per second from consideration of stream depletion effects. For all other takes above this rate, stream depletion needs to be assessed. I have received advice from Mr Hughes that the amendments sought by Fonterra would seek to exclude any take with a calculated stream depletion effect less than 2 litres per second, meaning that stream depletion would have to be assessed for all takes, and those with a calculated rate less than 2 litres per second would be excluded from consideration of surface water allocation. This would result in significantly increased assessment requirements for small takes and exclude some larger takes from consideration in terms of surface water allocation. In my view, Fonterra's approach is therefore not more appropriate.
- 8.336 Mr Hughes has also advised that Fonterra's submitted modifications to clauses (1) and (2) would clarify that the stream depletion effects resulting from takes classified as having a Riparian, Direct, High or Moderate classification are included as part of the allocation for hydraulically connected surface waterways, and that takes classified as having a Riparian, Direct or High hydraulic connection are subject to relevant minimum flows. On that basis, I recommend these amendments be accepted.
- 8.337 IAL has made a consistent submission throughout the Water Quantity provisions and analysis of this is summarised under Policy 21 in section 8.1 of this report.
- 8.338 Landpro seeks that Policy 23(1) is extended to 'define how groundwater takes with a moderate degree of hydraulic connection will be assessed against the Mataura Conservation Order'. The policy makes it clear the cumulative effect does not exceed a surface water allocation regime such as that set out in the Mataura Conservation Order. Therefore, the limit will be the water allocation regime set out in the Conservation Order. How this policy will apply in relation to existing user's reliability of supply will primarily be dealt with as a part of consent renewal or in future as part of the FMU processes. This issue is also analysed by Mr Hughes of LWP in the attached Appendix C4.
- 8.339 Base flow does not have the same meaning as Q95. Base flow is commonly known as the level of flow derived from groundwater, whereas the definition for Q95 is the flow that is exceeded 95% of the time during the year. Following the analysis within section 8.1 on the same topic, removal of the term will reduce confusion as it is not defined and it would be impacted (to some degree) by unrestricted groundwater takes.

## Recommendation

- 8.340 Amend Policy 23 as follows:

*Manage stream depletion effects resulting from groundwater takes with a daily average rate of take exceeding 2 litres per second ~~which are classified as having a Riparian, Direct, High or Moderate hydraulic connection, as set out in~~ based on their classification in<sup>599</sup> Appendix L.2, to ensure the cumulative effect does not:*

- 1. exceed any relevant surface water allocation regime (including those established under any water conservation order) for groundwater takes classified as Riparian, Direct, High or Moderate hydraulic connection<sup>600</sup>;*

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<sup>599</sup> 277.30 Fonterra

<sup>600</sup> 277.30 Fonterra

2. *result in abstraction occurring when surface water flows or levels are less than prescribed minimum flows or levels ~~or long-term baseflow~~ for groundwater takes classified as Riparian, Direct or High hydraulic connection.*<sup>601</sup>

## **Policy 27 – Bore construction and management**

### **Provision**

8.341 Policy 27 reads:

*Require minimum standards for the construction, operation and maintenance of bores and wells.*

### **Submissions**

8.342 Policy 27 received nine submissions with all seeking to retain the proposed wording.

### **Analysis**

8.343 As no changes are sought, I do not recommend any amendments to Policy 27.

### **Recommendation**

8.344 Retain Policy 27 as notified.

## **New Policy**

### **Submission**

8.345 Fish and Game considers that the pSWLP does not set out a flow sharing regime as is the case in the operative RWP (Policy 17 of the operative RWP) but is implied in Policy 42(5) of the pSWLP. The submitter seeks to insert a new policy as follows:

#### ***Instigate appropriate water conservation measures***

*Instigate appropriate water conservation procedures at times of low flow, including:*

1. *Advise abstractors to conserve water and limit non-essential use of water as far as practicable;*
2. *Other than for the Waiau River at the Manapouri Lake Control Structure, implement a one-to-one flow sharing regime when flows reach the sum of the minimum flow or level and the total volume of water allocated through current resource consents<sup>1</sup> for the relevant surface water body. Methods to achieve this include, but are not limited to:*
  - (a) *rationing;*
  - (b) *rostering; and*
  - (c) *the use of water user groups;*
3. *Require consent holders to cease abstraction in accordance with the minimum flows/levels specified as conditions of their resource consents; and*
4. *In extreme situations, consider the need to issue a water shortage direction.*

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<sup>601</sup> 277.30 Fonterra

*<sup>1</sup>Including the stream depletion effect of each consented groundwater abstraction greater than 2 litres per second with a direct, high or moderate degree of hydraulic connection in accordance with Policy 23 "Stream Depletion Effects" set out in the pWLP.*

## **Analysis**

8.346 I have been advised by Mr Hughes, in relation to the request by Fish and Game, that the majority of existing consent holders have minimum flow or level cut-offs to manage effects during periods of low flow. Technical experience with the implementation of the RWP demonstrates that one to one flow sharing is not practicable for a majority of water users as most systems are established to run at a fixed rate and cannot be adjusted on an incremental basis. While Mr Hughes considers that water user groups are an option that could be given higher priority in the Plan as a tool to manage water during periods of low flow, any such arrangement would need to be cognisant of specific conditions on individual resource consents. In my opinion this new policy (as sought by Fish and Game) should not be accepted based on the advice received. In relation to water user groups, while I acknowledge Mr Hughes' comment, my view is that it would be difficult to draft a policy to provide sufficient guidance on this matter, given it would have to take into account existing consent conditions.

## **Rule 53 – Bores and wells**

### **Provision**

8.347 Rule 53(a) provides for the drilling of a bore or well as a controlled activity, provided the design and construction meets standards set out in the conditions of the rule. The use, maintenance or decommissioning of a bore or well is a permitted activity, provided the conditions in Rule 53(c) are met. Any drilling or construction of a bore or well where the permitted activity conditions in Rule 53(a) are not met or the use, maintenance or decommissioning of a bore or well does not meet where the permitted activity conditions in Rule 53(c), is a discretionary activity under Rule 53(b) or 53(d).

### **Submissions**

8.348 Rule 53 received 14 submissions with nine seeking to retain the proposed wording, two seeking to retain the wording, provided it has not changed from the current RWP and HNZ seeking to retain the wording in matter of discretion (1) specifically.

8.349 DOC seeks to delete the note regarding notification.

8.350 Landpro seeks the removal of Rule 53(a)(iii) and its replacement with "*something along the lines of recommending drinking water supply bores fully penetrate the source aquifer*".

8.351 The Oil Companies seek the inclusion of a rule to provide for monitoring and geotechnical bores as a permitted activity.

### **Analysis**

8.352 Rule 53 retains the same structure and wording as Rule 22 in the operative RWP, except for Rules 53(a)(ii) and (iii) being added. The two submissions supporting the wording in

the operative RWP do so because the rule provides for current good practice with respect to bores. Despite the two additions made to the rule in the pSWLP, the rule still retains these good practices, and therefore no changes are required in response to these submissions.

- 8.353 DOC requests the deletion of the note in Rule 53 on the basis that it believes the owner and lessee of the land where the consent application is lodged should be advised. A specific incident is alluded to in the submission, but not elaborated on. In general, my view is that this is largely a property matter rather than a resource management matter, and accordingly, I do not consider it appropriate to remove the presumption that resource consent applications for bores will be dealt with on a non-notified basis. However, I consider that the inclusion of the wording ‘or Environment Southland considers special circumstances exist that warrant notification of the application’ is sufficient to cover any instances where notification of owners or lessees might be justified in a particular circumstance.
- 8.354 Landpro considers that Rule 53(a)(iii) will not work in all parts of Southland and having a minimum nominal bore depth will negatively affect bore yields and the costs of drilling. Mr Hughes’ advice is that a bore which does not adequately penetrate the aquifer increases the potential for interference effects, and notes that the RWP requires bores to fully penetrate the source aquifer. However, he advises that practical problems have been experienced in determining the depth that bores are required to reach. Mr Hughes considers the suggested replacement wording would be a compromise to provide more certainty regarding ‘adequate’ bore construction. This consideration is further analysed by Mr Hughes of LWP Limited in the attached Appendix C5.
- 8.355 It is unclear how a permitted activity status for monitoring and geotechnical bores will provide environmental protection and ensure water quality will be maintained. I recommend this amendment is not accepted.

## Recommendation

- 8.356 Amend Rule 53 as follows:

*(iii) for bores to be used for the supply of water, the location of the top of the screened interval ~~is a~~ minimum of 10 metres below the mean water table depth fully penetrates the source aquifer<sup>602</sup> (unconfined aquifers).*

## Rule 54 – Abstraction and use of groundwater<sup>603</sup>

### Provision

- 8.357 Rule 54(a) provides for the permitted abstraction and use of groundwater, provided the take meets the rate and volume limits and information supply requirements set out in the conditions of the rule. Rule 49(b) provides for permitted non-consumptive take and use of groundwater with higher abstraction limits, compliance with Appendix L and specific

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<sup>602</sup> 464.26 Landpro

<sup>603</sup> **Advice note:** To determine the aquifer type and allocation volume for a proposed groundwater abstraction, Plan users should firstly refer to Map Series 3: Groundwater Management, to establish the relevant groundwater zone. Once the relevant groundwater zone has been established, Appendix L can be used to determine the aquifer type.

conditions on the return of the water. Rule 54(c) provides for the take, use and discharge of groundwater for hydraulic testing and bore development purposes, provided specific conditions are met. Rules 54(d) to (f) provide that, unless a take and use of groundwater aligns with Rule 54(a), it will be a discretionary activity if it is a:

- take from a groundwater management zone listed in Appendix L;
- take and use of groundwater from a confined aquifer;
- take and use of groundwater outside the groundwater management zones listed in Appendix L.5.

8.358 Rule 54(g) states that the take and use of groundwater that does not comply with Rules 54(b) to 54(f) is a non-complying activity.

### Submissions

8.359 Rule 54 received 70 submissions with 14 submitters seeking to retain the current wording and two seeking to retain the wording provided it hasn't changed from the operative RWP. Landpro seek to retain Rule 54 (a)-(e). Camyllie Farm requests that application of this rule be reviewed year by year.

8.360 J Stringer seeks to retain the current wording but seeks an exclusion for water collected from roofs.

8.361 17 submitters seek the deletion of this rule and retention of the operative RWP provisions. J Kennedy seeks a simplification of the abstraction rules to remove the 'complex numbers, metering and reporting requirements'.

8.362 A number of submitters, including DHL and Federated Farmers, seek clarification that the permitted volumes of surface water are provided in addition to the volumes provided for under section 14(3)(b) of the RMA.

8.363 W Devine seeks that any water taken for the purpose of commercial and financial gain except farming or community water supply must be subject to significant royalties for the public benefit of Southland and funds gained used to assist with infrastructure and or reduce rates.

8.364 P, R and W Blackmore support the change to the permitted take being changed from 20 to 86 cubic metres.

8.365 D Diprose opposes having a permitted take of 86 cubic metres as he believes this resource needs better protection. Donald Farms and Nithdale Station seek an amendment to base the permitted abstraction on a per hectare basis rather than landholding.

8.366 Federated Farmers seeks to delete Rule 54(a)(iii)(1) and (2). Fish and Game seek to amend Rule 54(a)(iii) to include the following additional bullet points:

- (4) What the water was used for; and
- (5) Maximum rate of take.

8.367 Environment Southland staff submission seeks that the following subclause is added to clause (a):

Where the volume of the take exceeds 2000 litres per day, a water meter capable of recording the rate of take, and maximum daily volume of take shall be installed. The water take data shall be recorded daily and that data shall be provided to the Southland Regional Council on request. The water meter shall be verified every 12 months.

8.368 The submission also seeks that Rule 54 (b)(i)(3) is deleted, which requires that the rate and volume of the take does not exceed “if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is not Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;”

~~(ii)(4)~~

8.369 The submission also seeks that clauses (d) and (f) are amended as follows:

(d) ~~Other than that provided for by Rule 54(a), the take and use of groundwater ~~takes~~ from groundwater management zones aquifers listed in Appendix L.5 is a discretionary activity provided the following conditions are met:...~~

...

(f) ~~Other than that provided by Rule 54(a), the take and use of groundwater outside groundwater management zones listed in Appendix L.5 is a discretionary activity provided the following conditions are ~~is~~ met;~~

~~(i) the allocation is within the primary allocation limit established following the methodology outlined in Appendix L.7~~

~~(ii) any interference effects are ‘acceptable’ in accordance with Appendix L.3;~~

8.370 Fernview Family Trust seeks to amend Rule 54 to require automated transfer of water take data to Council.

8.371 DOC and Fish and Game seek to include ‘moderate’ takes to the list within Rule 54(d)(ii) as they believe that failure to consider the cumulative effects of moderate takes of groundwater on spring fed creek flows or the small rivers of Southland will result in their further depletion. The submitters consider that the proposal is contrary to section 5 6(a), (c) and (e) and 7(f) of the RMA.

8.372 Fonterra seeks to delete Rule 54(d)(iii) and replace it with the following:

(iii) any significant interference effects that impact on the use of adequately penetrating bores are avoided, remedied or mitigated;

8.373 Forest and Bird and Fish and Game seek to amend Rule 54(c)(iv) to include the requirements of section 70(1) of the RMA and include performance based standards to achieve the matters set out in section 70(1)(c) – (g).

8.374 Hort NZ seeks that it be clarified how the definition of landholding will be applied in respect of ‘occupier’.

8.375 INZ requests the insertion of new Rule 54(ca) to provide an avenue for renewal of existing consents as follows:

Other than that provided for by Rules 54(a) and 54(c), the replacement of existing resource consents is a restricted discretionary activity.

Environment Southland will restrict its discretion to the following matters:

- The rate, volume and timing of the take;
- The reasonable need for the quantities of water sought;
- Duration of consent;
- Lapsing of consent;
- Review of consent conditions;
- The collection, recording, monitoring and provision of information.

For groundwater takes:

The effects the take (on its own, or in combination with other takes) has on any other authorised takes (including well interference drawdown effects):

8.376 A number of submitters including T Smalley and Nithdale Station seek to retain consented water rights.

8.377 L & M seeks to amend Rule 54(b)(ii) to take into account slight variances in the quantity of water returned to the same waterbody or aquifer to allow for losses through any groundwater take system (i.e. evaporation from ponds) and amend Rules 54(d) to (f) to include reference to Rule 54(b) as follows:

*Other than that provided by Rules 54(a) and 54(b), ...*

8.378 Landpro seeks further justification for the allocation volumes.

8.379 W Menlove seeks several amendments to Rule 54 to:

- tighten up the process around pump testing to better reflect how an aquifer is being utilised;
- reflect the rights of existing users within the description and level of understanding around “acceptable interference”; and
- make the protocols around transfer of water rights more vigorous and give existing consent holders in the new area an opportunity to submit on the transfer.

8.380 Meridian seeks to amend Rule 54 to make groundwater takes with a moderate hydraulic connection in the Te Anau catchment non-complying rather than discretionary.

8.381 WaterForce seeks a review of the quantities and science in relation to how this rule works practically to manage the water resource.

8.382 NZFS seeks that the abstraction and use of groundwater for fire-fighting emergency response is included as a permitted activity and not subject to the permitted activity conditions.



8.383 The Oil Companies seek to insert the following section after Rule 54(c) to allow temporary construction dewatering activities as a permitted activity and include reference to it within Rules 54(d) to (f):

- (x) The take and use of groundwater for temporary construction dewatering activities is a permitted activity provided the following conditions are met:
- (i) Environment Southland must be notified at least three days prior to dewatering commencing;
  - (ii) the rate of take does not exceed 40 litres per second;
  - (iii) the duration of pumping does not exceed 10 consecutive days;
  - (iv) the point of abstraction is not within 50 metres of an existing lawfully established groundwater take;
  - (v) records of the rate and duration of pumping are taken and are provided to Environment Southland within three months.

### Analysis

8.384 I consider that it would be inappropriate to review this rule year by year as suggested by Camyllie Farm. The cost and time involved in this would outweigh the benefit. The submission from J Stringer is dealt with under the analysis of Rule 49.

8.385 J Kennedy seeks a simplification of the abstraction rules which, in my opinion, is not appropriate. The rule provides a permitted activity status, and the complexity of the conditions is about ensuring that this status is only applied to takes that are expected to have a no more than minor adverse effect, to align with the policy direction and ensure the objectives of the Plan are met.

8.386 The submission from W Devine is suggesting the implementation of a tariff system on the commercial abstraction of water. However, this would require a significant change in Council policy, consultation and implementation for Council apply tariffs or resource rentals to water takes, if indeed Council had the ability to do so at all under the RMA. On this basis, the submission is recommended to be rejected.

8.387 As written, the wording of Rule 54(d)(ii) (and consequently DOCs interpretation of it) appears incorrect. The correct version should read as follows:

- (ii) if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is ~~not~~ Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;

8.388 Mr Hughes has advised that it is not possible for groundwater takes with a classification not listed (i.e. Low or Moderate) to satisfy minimum flow requirements given the nature of their hydraulic connection. The revised wording would ensure all groundwater takes which are sufficiently well connected to surface water are managed in accordance with relevant minimum flow and allocations. This should satisfy the submissions from DOC and Fish and Game.

8.389 The submissions seeking clarification of the relationship between section 14(3)(b) of the RMA and permitted water takes are discussed in detail under the analysis of Rule 49 in section 8.2 of this report. I recommend, in accordance with the discussion in section 8.2,

that a provision be added to Rule 54 that clarifies that the permitted volumes of surface water includes the volumes provided for under section 14(b)(3) of the RMA.

- 8.390 In relation to the request by NZFS to explicitly include groundwater takes for fire-fighting emergency response, my view is that as this is already provided for under section 14(3)(e) of the RMA, including reference to it in Rule 49 is unnecessary and could cause confusion.
- 8.391 The maximum level of permitted abstraction has been assessed as the volume which can be abstracted without causing cumulative adverse effects within Southland's waterways. I therefore do not agree with the submission from D Diprose, as the removal of the permitted level of abstraction may result in a large increase in consents for small water takes and the cost of the additional consenting is not necessary to avoid adverse cumulative effects. Without further evidence from Donald Farms or Nithdale Station, it is difficult to assess whether the submission to base permitted abstraction on a per hectare basis would not have adverse cumulative effects on Southland's waterways. Rather, I assume that this amendment would result in adverse cumulative effects due to takes from larger landholdings.
- 8.392 The submission from Fish and Game and Federated Farmers to include the end use of water and maximum rate of take is intended to align Rule 54 (a)(iii) with the equivalent section of Rule 49. I recommend this submission is accepted. Federated Farmers submission to delete Rule 54 (a)(iii)(1) and (2) should not be accepted. These points are included to allow Council to record water use to comply with section CC of the NPSFM.
- 8.393 The addition of Rule 54(a)(iv), as requested in the submission from Environment Southland staff is the same as the submission for Rule 49(a)(vii). The analysis can be found in section 8.2 of this report. I recommend the submission be accepted in accordance with the reasoning given in the previous section with the addition of a 5 litre per second threshold to align with the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010. Minimum flows and allocation limits referenced in Rule 54(b)(i)(3) will not be affected by non-consumptive takes so should be deleted and moving 54(a)(i)(4) to 54(a)(ii) is to ensure the rule makes sense. I recommend this submission by Environment Southland staff is accepted. I agree with the suggested amendments from Environment Southland staff submission to Rule 54(d), except the deletion of 'groundwater management zones' as it is referenced like this in Appendix L. Accepting these changes will improve consistency within this rule.
- 8.394 In relation to Rule 54(f), I note the amendments sought by Environment Southland staff introduces a method to establish allocation limits for takes outside the aquifers listed in Appendix L.5, which was initially omitted from the draft pSWLP in error. This addition will ease application of the rule and ensure consistency with the preceding rules, which contain allocation limits.
- 8.395 I do not agree with the submission from Forest and Bird and Fish and Game on Rule 54(c)(iv) that considers reference to the section 70 requirements from the RMA is insufficient to satisfy requirements in the RMA and NPSFM. Reference to section 70 is sufficient to highlight the specific requirements, and expanding on them will unnecessarily complicate the rule. I acknowledge these requirements have been expanded in other pSWLP rules or stricter provisions introduced, but due to the short duration and infrequency of the activity, I consider a performance based analysis is unnecessary.

- 8.396 Fonterra does not consider that Rule 54(d)(iii) correctly reflects effects based management. In my opinion, the current wording in the pSWLP is appropriate as the rule is dealing with groundwater management zones which are set out in Appendix L. Mr Hughes has advised that the “acceptable” determination set out in Appendix L.3 has been established to determine scientifically the interference effect of any new groundwater abstraction. In any instance, this amendment is not required if the amendment to Appendix L.3 submitted by Fonterra is accepted, as suggested.
- 8.397 Hort NZ asks for clarification how the definition of landholding will be applied in respect of ‘occupier’. This is better dealt with under the definition of ‘landholding’ in section 7 of this report.
- 8.398 The submission from INZ is similar to its submission on Rule 49, to include a provision for the renewal of water takes. I recommend this submission and others seeking to retain consent conditions are not accepted on the basis that when an application is made for the replacement of an existing consent it will be required to comply with the same conditions within Rule 54 as a new resource consent.
- 8.399 In relation to the non-consumptive take of water, it is my understanding that Council will take a pragmatic approach when determining whether the same amount of water is returned to the water source, which means a small amount of loss through trans- evaporation will be taken into account. However, if there is a ‘significant delay’ between the taking and returning of the water, or there is a large difference in water quantity, then it is unlikely this is an appropriate rule for the activity L & M is seeking to permit. I support the submission requesting the inclusion of a reference to Rule 54(b) into Rules 54(d) – (f).
- 8.400 Additional details regarding the allocation volumes (as sought by Landpro) is included in Appendix C5. The submission from W Menlove to tighten up pump testing to reflect how an aquifer is being utilised has merit. This will ensure the results more accurately reflect levels of allocation to ensure the aquifer is not over-allocated. However, it would be difficult to insert a requirement within Rule 54 to ensure testing is only conducted when current users are fully extracting and it would be very difficult for a bore test to only be allowed when current user extraction is at its peak. The other submission points from W Menlove will be assessed against Appendix L in this section of this report.
- 8.401 In my opinion, the submission from Meridian seeking to make groundwater takes with a moderate hydraulic connection in the Te Anau catchment non-complying rather than discretionary is not appropriate in this instance. Council will assess consents on a case by case basis, taking into account the allocation status of the aquifer and any linked waterways. It is my view that the proposed rule regime (as notified) sufficiently provides for this.
- 8.402 The submission from WaterForce is analysed under Rule 49 in section 8.2 of this report.
- 8.403 Rule 54 specifically permits the taking of water for various end uses (including hydraulic testing and bore development), provided the abstraction meets the conditions of those rules. The effects associated with the abstraction for these purposes are reasonably well understood, with the activity largely being confined to a short duration (i.e. up to five days). The abstraction of groundwater for other purposes (such as dewatering) may

occur over a much greater period of time (i.e. up to 10 days, as requested by the Oil Companies) which may result in adverse effects that are not anticipated for an activity of a lesser scale, including effects on nearby water takes. Given that there is limited information contained in the submission describing the likely effects associated with such abstractions, I do not consider it appropriate to extend the rule to cover the abstraction of water for temporary construction activities. I do not recommend the submission from the Oil Companies is accepted.

## Recommendation

8.404 Amend Rule 54 as follows:

- (a) *The take and use of groundwater is a permitted activity provided the following conditions are met:*
- (i) *The rate and volume of abstraction does not exceed:*
    - (1) *A maximum of 86 cubic metres per day per landholding; and*
    - (2) *A maximum rate of 5 litres per second; and*
    - (3) *The point of abstraction is not within 50 metres of an existing lawfully established groundwater take;*
  - (ii) *The maximum volume of take allowed under this rule and Rule 50(a) is not added. A maximum of 86 cubic metres of groundwater and surface water combined per landholding per day is allowed;*
  - (iii) *The following details are supplied to Environment Southland upon request:*
    - (1) *Farming type;*
    - (2) *Stocking rate; and*
    - (3) *Point of abstraction;*
    - (4) *What the water is used for; and*
    - (5) *Maximum rate of take.<sup>604</sup>*
  - (iv) *Where the volume of the take exceeds 2000 litres per day or the rate of take exceeds 5L/s, a water meter capable of recording the rate of take, and maximum daily volume of take shall be installed. The water take data shall be recorded daily and that data shall be provided to the Southland Regional Council on request. The water meter shall be verified every 12 months.<sup>605</sup>*
- (b) *The non-consumptive take and use of groundwater is a permitted activity provided the following conditions are met:*
- (i) *the rate and volume of take does not exceed:*
    - (1) *a maximum rate of 10 litres per second;*
    - (2) *a maximum daily volume of 750 cubic metres;*
    - (3) ~~*if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is not Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;<sup>606</sup>*~~
  - (ii) ~~(4)~~ *any interference effects are “acceptable” in accordance with Appendix L.3;*
  - (iii) ~~(ii)~~ *the same amount of water is returned to the same waterbody or aquifer within 250 metres of the point at which it was taken;*
  - (iv) ~~(iii)~~ *there is no significant delay between the taking and returning of the water.*
- (c) *The take and use of groundwater for hydraulic testing and bore development purposes and any associated discharge of groundwater into water or onto or into land is a permitted activity provided the following conditions are met:*
- (i) *Environment Southland must be notified at least three days prior to test commencement;*

<sup>604</sup> 752.147 Fish and Game

<sup>605</sup> 247.17 Environment Southland

<sup>606</sup> 247.17 Environment Southland

- (ii) *the rate of take must not exceed 75 litres per second;*
  - (iii) *the duration of pumping does not exceed five consecutive days;*
  - (iv) *any discharge of water to water is consistent with water quality requirements of section 70 of the RMA;*
  - (v) *water discharged onto land must not contribute to flooding on any other landholding;*
  - (vi) *records of all pumping and recovery tests including the rate and duration of pumping, water levels in the pumped well and any water level observation wells and the time measurements are taken are provided to Environment Southland within one month of the completion of the test.*
- (d) *Other than that provided for by Rule 54(a), 54(b) and 54(c)<sup>607</sup>, the take and use of<sup>608</sup> groundwater ~~takes~~<sup>609</sup> from groundwater management zones listed in Appendix L.5<sup>610</sup> is a discretionary activity provided the following conditions are met:*
- (i) *the total groundwater allocation is within the primary or secondary allocation limits established in Appendix L.5; and*
  - (ii) *if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is ~~not~~ Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;*
  - (iii) *any interference effects are ‘acceptable’ in accordance with Appendix L.3;*
  - (iv) *if the total groundwater allocation is within the secondary allocation limit, then minimum groundwater level cut-offs and seasonal recovery triggers are established in accordance with criteria outlined in Appendix L.6.*
- (e) *Other than that provided by Rule 54(a), 54(b) and 54(c)<sup>611</sup>, the take and use of groundwater from a confined aquifer is a discretionary activity provided the following conditions are met:*
- (i) *total groundwater allocation is within the primary allocation limits (including minimum water level cut-offs and seasonal recovery triggers) established in Appendix L.5 or following the methodology outlined in Appendix L.6;*
  - (ii) *any interference effects are ‘acceptable’ in accordance with Appendix L.3*
- (f) *Other than that provided by Rule 54(a), 54(b) and 54(c)<sup>612</sup>, the take and use of groundwater outside groundwater management zones listed in Appendix L.5 is a discretionary activity provided the following conditions are ~~is~~<sup>613</sup> met:*
- (i) *the allocation is within the primary allocation limit established following the methodology outlined in Appendix L.7.<sup>614</sup>*
  - (ii) *any interference effects are ‘acceptable’ in accordance with Appendix L.3;*
- (g) *The take and use of groundwater that does not comply with Rules 54(b) to 54(f) is a non-complying activity.*

## Definitions

## Provisions and Submissions

8.405 Fish and Game is the only submitter on the definitions for “Aquifer”, “Confined aquifer”, “Drawdown”, “Fractured rock aquifer”, “Groundwater”, “Interference effects”,

<sup>607</sup> 457.1 L & M

<sup>608</sup> 247.17 Environment Southland

<sup>609</sup> 247.17 Environment Southland

<sup>610</sup> 247.17 Environment Southland

<sup>611</sup> 457.1 L & M

<sup>612</sup> 457.1 L & M

<sup>613</sup> Cl 16

<sup>614</sup> 247.17 Environment Southland

“Radius of influence”, and “Unconfined aquifer” and seeks to retain the proposed wording.

- 8.406 The definition of “Bore or well”, received four submissions. Two submitters seek to retain the notified wording. NZTA seek to amend the definition to exclude test pits and soak holes associated with State highways. The Oil Companies seek to amend the definition as follows:

*Any structure or hole, regardless of the method of formation, that has been constructed to provide access to groundwater, ~~or which intercepts groundwater.~~*

- 8.407 The definition of “Total groundwater allocation” received two submissions. Fish and Game seek to retain the definition and the Oil Companies seek to exclude construction dewatering activities from the definition.

### **Analysis**

- 8.408 I do not agree with the submission by NZTA that test pits and soak holes associated with State Highways should be excluded from the definition of Bore or Well. It is more appropriate to retain these as controlled activities under Rule 53. I consider that the submitter would need to provide a more robust alternative to merely excluding these activities from this definition, through possible activity specific conditions that may be appropriate for a permitted activity.
- 8.409 In my opinion, the submission from the Oil Companies on the definition of “Bore or Well” should not be accepted. The definition of Bore or Well has been carried over from the operative RWP and has worked successfully. The suggested amendments may allow for minor activities such as digging for post holes, utility trenches or test pits, which are not currently captured by the definition. I see the merit in what the submitter is trying to achieve, however, removing from the definition a structure or hole that intercepts groundwater will exclude a large number of activities that accidentally intercept groundwater and can cause adverse environmental effects. These types of activities require management and I therefore do not recommend the submission be adopted.
- 8.410 I recommend the Oil Companies’ submission on “Total groundwater allocation” to exclude temporary construction activities is not accepted. Not taking these abstractions into account when determining total allocation may result in over-allocation of waterways, which does not give effect to the requirements in the NPSFM.

### **Recommendation**

- 8.411 Retain definitions as notified.

### **Appendix L**

- 8.412 Appendix L is linked in to the groundwater policies and rules by reference. The appendix contains specific details on aquifer allocation limits, effects that need to be assessed and methodologies used to help determine the activity status of any resource consent application for a take and use from groundwater.

8.413 The recommended amendments to Appendix L are set out at the end of this section.

## **General**

### **Submissions**

8.414 Appendix L received 2 submissions. B Jarvis opposes Appendix L in general. Federated Farmers seeks to delete the proposed changes and return to the existing allocations in the RWP.

8.415 The Environment Southland staff submission seeks to amend references to table names and subsections from Y to L.

### **Analysis**

8.416 I support the submissions from Environment Southland staff, which are generally intended to improve clarity and readability and ensure consistency, including amending table names from Y to L and wording throughout Appendix L. More specific amendment points are discussed below.

## **Appendix L.1**

### **Submissions**

8.417 Environment Southland staff submission seeks to either delete Appendix L.1, or clarify its application through Rules 16 and 54.

8.418 Landpro seeks to delete Appendix L.1.

8.419 Fonterra seeks to amend Appendix L.1 as follows:

*Minimum aquifer test requirements to support resource consent applications to take groundwater, other than replacement consent applications for abstraction quantities that have been occurring with no adverse effects of a more than minor scale, are outlined in Table Y.1 below.*

### **Analysis**

8.420 I agree that the reference to Appendix L.1 should be included through Rules 16 and 54, where necessary. Currently this part of the Appendix is not referred to in the body of the pSWLP.

8.421 I agree with Landpro that establishing minimum requirements may not be the best process in every instance, but including them will provide some form of streamlining that would not be available if this was assessed on a case by case basis. I recommend Appendix L.1 be retained.

8.422 I support the submissions from Fonterra that Appendix L.1 should not apply to replacement consent applications for abstraction quantities that have been occurring for many years with no indication of any adverse effects. This recommendation is subject to

the inclusion of an additional clause within Rule 54 that dictates how replacement applications will be assessed.

## Appendix L.2

### Submissions

8.423 Environment Southland staff submission seeks to amend Appendix L.2 to replace the reference to Policy 16 with the methodology outlined in Appendix K. Also, amend Table Y.2 as follows:

Direct	Where the calculated effect on an adjacent surface waterbody after 7 days abstraction at the maximum authorised rate is greater than 80 percent of the assessed pumping rate	The groundwater take will be managed as an equivalent surface water take for flow and allocation purposes and therefore subject to any relevant minimum flow <del>and flow sharing</del> regime
Moderate	Where the calculated effect on an adjacent surface waterbody after pumping at the maximum authorised rate for either: the maximum period allowed by the seasonal volume; or a continuous period of 90 days is <del>less</del> between 30 and 60 percent of the assessed pumping rate or has a magnitude greater than 5 litres per second	Where the magnitude exceeds 2 litres per second, the calculated stream depletion effect will be included in the allocation calculated from an adjacent surface waterbody <u>with the balance of the abstraction</u> <del>remainder of the allocation</del> included in the allocation volume for the relevant groundwater zone. No specific minimum flow restrictions will be imposed on the groundwater take.

8.424 Both Fonterra and the Environment Southland staff submission seek an additional note at the end of Table Y.2 to clarify that the assessment of stream depletion effects shall take into account the offsetting component of any non-consumptive aspects of the take and use of water.

8.425 Forest and Bird and Fish and Game seek to amend Table Y2 to ensure the wording prior to a percentage includes “equal to or greater than...”.

8.426 Growplan submits that there is too much reliance on models in Appendix L.2, rather than real (or even just daily)-time monitoring of water levels which could easily lead to a dry bed. It submits that ephemeral streams should not be excluded from consideration of stream depletion effects. It also seeks clarity regarding the bullet point “Stream depletion effects due to groundwater abstraction should not result in a more than minor effect on the frequency, extent and duration of flow loss in intermittent waterbodies”, specifically questioning how cumulative effects are taken into account, how responsive any controls will be to climatic extremes and whether there will be a way to control takes during climate events.

8.427 The submission from DOC, Forest and Bird and Fish and Game intends to ensure groundwater takes classified as having a medium degree of hydraulic connection will be subject to any relevant minimum flow regime.



- 8.428 Landpro seeks to replace the timeframes within Table Y.2 with assessments with more certainty and also to change the 2 litre per second stream depletion threshold to 5 litres per second. It considers the timeframes in the table are arbitrary and proposes the assessment for High and Moderate takes should be either:
- (i) at the maximum abstraction rate until the annual allocation volume is reached; or
  - (ii) at an average continuous abstraction rate over the maximum pumping period.
- 8.429 Landpro also seeks to attach a note or schedule to the pSWLP which specifies how Council intended to implement the Mataura WCO in conjunction with the policies and rules in the pSWLP. This would clarify matters for all parties and avoid unnecessary contesting through the consent process.

### Analysis

- 8.430 I support the submission from Fonterra and Environment Southland staff that a clarification should be included to Appendix L.2 that an offsetting component of non-consumptive aspects of any takes or use of water will be considered. A non-consumptive take has no net effect on the water resource so it makes sense that this component should be considered when determining stream depletion effects. Mr Hughes' advice is that the suggested addition may provide a useful means to assess any non-consumptive aspects of a particular take, for example takes for cooling water or ground source heat pumps.
- 8.431 I do not support the submission from Landpro to replace the timeframes within Table Y.2 or to change the stream depletion threshold from 2 litres per second to 5 litres per second. The current stream depletion calculations have been determined with support of scientific evidence and are similar to the current calculations within the RWP, which have been applied successfully.
- 8.432 The submission from Landpro relating to the implementation of the Mataura WCO in conjunction with the policies and rules of the pSWLP is analysed under Policy 23 in this section of this report.
- 8.433 I recommend the submissions to include "*equal to or*" should be accepted and applied to all percentages within Table Y.2 to improve clarity.
- 8.434 I do not support the submission from Growplan to include ephemeral streams within the assessment of Appendix L.2. Appendix L.2 specifically excludes ephemeral waterbodies on the basis that minimum flow restrictions would be difficult to apply to waterways that only flow following high rainfall events or when the water table is high. The modelling set out in Appendix L.2 is designed to control the abstraction effect, in my view it is more practical than real time monitoring and based on scientific reasoning. Without further information from the submitter that provides a suitable alternative, I recommend this submission is not accepted.
- 8.435 Growplan queries the application of one of the bullet points in Appendix L.2. The controls included within the bullet points will be applied as part of the consenting process, so determinations such as what is more than minor and the cumulative effect will be assessed then. Also in response to a query from Growplan, there are protections

against water shortages included throughout the pSWLP, including minimum flow restrictions.

8.436 I have been advised by Mr Hughes that one purpose of the hydraulic connection classification is to differentiate those takes for which it is possible to mitigate stream depletion effects during low flows (i.e. Riparian, Direct and High) from those for which it is not (Moderate and Low). The submission by DOC, Forest and Bird and Fish and Game seeking Moderate takes to be subject to minimum flow restrictions would significantly affect the reliability of supply for users while not providing any significant environmental benefit. Based on this advice, I recommend the submissions are not accepted.

### Appendix L.3

#### Submissions

8.437 The Environment Southland staff submission seeks to amend Appendix L.3 as follows:

*Determination of "Acceptable"*

(a)...

(iii) *no more than 10 percent of the available drawdown in an unconfined aquifer which exists 50 percent of the time during natural conditions when no pumping is occurring from the aquifer, for bores utilised for long-term monitoring of water levels; or*

(iv) *no more than 20 percent of the available potentiometric head in a confined aquifer that exists 50 percent of the time during natural conditions when no pumping is occurring from the aquifer, for bores utilised for long-term monitoring of water levels.*

(b) *An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under Policy 22~~this policy~~.*

(c) *Adequacy of bore construction and the available drawdown will be calculated following the methodology outlined in Appendix L.3. ~~An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under this policy~~*

8.438 Fonterra seeks to amend Appendix L.3 by adding a new clause (a)(v) as follows:

(a)(v) In any situation where the drawdown interference exceeds any of the limits in sub-clauses (i) – (iv) the new groundwater abstraction will be considered acceptable if it can be demonstrated that the drawdown interference will not have an impact upon the yield of the bore that is any more than minor or the effect is mitigated.

8.439 Fonterra also seeks to insert the following additional clause to Appendix L.3:

(e) The assessment of drawdown interference shall take into account the offsetting component of any non-consumptive aspects of the take and use of water.

## Analysis

- 8.440 I support the amendments submitted by the Environment Southland staff to improve clarity of Appendix L.3 and delete a repetition.
- 8.441 Based on advice from Mr Hughes, I consider that the suggested new clause (a)(v) from Fonterra is a useful addition to cover off those situations where it can be demonstrated that a drawdown effect greater than those listed will not constitute an adverse effect or can be mitigated.
- 8.442 I support the submission from Fonterra that a clarification should be included to Appendix L.3 that non-consumptive takes will be provided for with the reasoning provided above under Appendix L.2.

## Appendix L.4

### Submissions

- 8.443 Landpro seeks to include reference of Appendix L.4, where relevant, throughout the pSWLP.
- 8.444 The Environment Southland staff submission seeks to amend Appendix L.4 as follows:
- Where not specified by existing resource consent conditions, maximum daily and seasonal abstraction rates used for calculating total groundwater allocation ~~cumulative allocation volumes~~ under Rule 54~~2~~ will be established on the following basis...*
- 8.445 Balfour, Wendonside & Waikaia Group and Springlands Group seek a provision to apply stock drinking water volumes to surface water takes in Appendix L.4. Landpro opposes stock drinking water volumes applying to surface water takes.
- 8.446 DHL seeks to amend Appendix L.4 to apply it to calculation of 'reasonable use' of water, where relevant.
- 8.447 HSV Dairy seeks consideration of whether the peak allocation of groundwater for dairy at 140 litres/head/day is relevant moving forward. Flaxwood South seeks to apply table Y.3 to surface water as well as groundwater.

## Analysis

- 8.448 In  
my opinion, if Appendix L.4 does not apply as a determination for how much water can be taken under section 14(3)(b), then it would be appropriate that it apply to surface water as well as groundwater. However, it is currently unclear whether these levels apply in this instance as Appendix L.4 is not referenced elsewhere in the pSWLP. As this Appendix relates specifically to groundwater, I recommend this amendment is not accepted until the application of the Appendix is clarified throughout the pSWLP. Landpro opposes this applying to surface water as well as groundwater but does not

provide reasoning for this submission and therefore I am unable to recommend that it be accepted.

- 8.449 I agree with the submission from Landpro that Appendix L.4 should be referred to within the rules of the pSWLP. The appendix fits best at policy level, and adding the reference at the end of Policy 20(3) '*and Appendix L.4*' ensures reference to the appendix within the body of the pSWLP.
- 8.450 The submission from DHL is intended to expand the use of Appendix L.4 to include determining 'reasonable use' of water, where relevant. Appendix O determines the reasonable use of water, however, this part of Appendix L gives a good indication of the reasonable needs for stock water and dairy use, which is not included in Appendix O. In my opinion this amendment should be accepted, as it would assist in determining reasonable use in instances such as the determination required in Policy 20(3).
- 8.451 The submissions from HSV Dairy and Flaxwood South have been assessed by Mr Hughes and his responses are attached as a technical memorandum at Appendix C4 of this report.

## Appendix L.5

### Submissions

- 8.452 Landpro and the RJ Miller Trust seek further justification of the changed water allocation volumes from the RWP to the pSWLP and a number of submitters seek to return groundwater allocations to RWP levels.
- 8.453 The Environment Southland staff submission seeks the following amendments to Appendix L.5:

*Amend Table Y.4 as follows:*

<b>Groundwater Zone</b>	<b>Primary Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>
<i>Awarua</i>	<del>32.29</del> <u>45.81</u>
<i>Blackmount</i>	<del>15.46</del> <u>21.12</u>
<i>Castlerock</i>	<del>4.00</del> <u>6.12</u>
<i>Cattle Flat</i>	<del>4.65</del> <u>2.39</u>
<i>Central Plains</i>	<del>20.99</del> <u>31.29</u>
<i>Centre Hill</i>	<del>5.29</del> <u>6.07</u>
<i>Croydon</i>	<del>2.05</del> <u>2.56</u>
<i>Dipton</i>	<del>6.32</del> <u>9.52</u>
<i>Edendale</i>	<del>9.34</del> <u>11.71</u>
<i>Five Rivers</i>	<del>12.23</del> <u>17.05</u>
<i>Knapdale</i>	<del>2.22</del> <u>2.74</u>

<b>Groundwater Zone</b>	<b>Primary Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>
Longridge	<del>3.47</del> <u>4.67</u>
Lower Aparima	<del>23.54</del> <u>32.41</u>
Lower Maitaura	<del>24.97</del> <u>34.98</u>
Lower Oreti	<del>43.49</del> <u>19.31</u>
Makarewa	<del>44.65</del> <u>62.67</u>
Orepuki	<del>8.00</del> <u>10.54</u>
Oreti	<del>4.99</del> <u>2.73</u>
Riversdale	<del>5.02</del> <u>6.53</u>
Te Anau	<del>88.94</del> <u>118.25</u>
Te Waenae	<del>43.83</del> <u>18.94</u>
Tiwai	<del>4.98</del> <u>2.57</u>
Upper Aparima	<del>44.06</del> <u>56.93</u>
Upper Maitaura	<del>27.84</del> <u>10.40</u>
Waibopai	<del>32.08</del> <u>44.50</u>
Waimatuku	<del>45.66</del> <u>22.27</u>
Waimea Plains	<del>9.30</del> <u>12.41</u>
Waipounamu	1.16
Wendon	<del>3.83</del> <u>5.22</u>
Wendonside	<del>7.07</del> <u>9.56</u>

Amend Table Y.5 as follows:

<b>Annual Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>	<b>Monitoring bore</b>	<b>Initial level trigger</b>		<b>Minimum level cut-off</b>	
		<b>m asl</b>	<b>% reduction in maximum daily abstraction rate (m<sup>3</sup>/day)</b>	<b>m asl</b>	<b>% reduction in maximum daily abstraction rate (m<sup>3</sup>/day)</b>
5.76	E44/0300	202.5	50	201.5	100

Amend Table Y.7 as follows:

<b>Annual Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>	<b>Monitoring bore</b>	<b>Minimum level cut-off</b>	
		<b>m asl</b>	<b>% reduction in maximum daily abstraction rate (m<sup>3</sup>/day)</b>
1.73	E44/0196	<del>204.5</del> <u>245.0</u>	100

Delete the following:

**Garvie Aquifer**

Groundwater abstraction from the Garvie aquifer will be managed in accordance with the allocation volume and minimum water level cut-offs outlined in Table Y.6.

**Table Y.6 Garvie Aquifer allocation and minimum groundwater level cut-offs**

<b>Annual Allocation</b> ( $m^3 \times 10^6$ /year)	<b>Monitoring bore</b>	<b>Initial level trigger</b>		<b>Minimum level cut-off</b>	
		<i>m asl</i>	<b>% reduction in abstraction</b>	<i>m asl</i>	<b>% reduction in abstraction</b>
8.38	F44/0304	147.0	50	146.0	100

- 8.454 A number of submitters including David Baker, Wilkins Farming and Eyre Creek seek the removal of cut offs for the Garvie Aquifer.
- 8.455 H English seeks to amend the cut-off in Table Y.7 from 201.5 msl to a range of 245-250 masl. Hopcroft Farms seeks amendment of the typo on Table Y.7 as the North Range Aquifer has the same cut-off level as the Lumsden Aquifer, yet these aquifers are offset by >10 metres. FarmRight and Springlands Group seek the removal of the allocation and the cutoffs in tables Y.7 and Y.8 for the North Range aquifer until the current process is complete.

**Analysis**

- 8.456 The submission from Landpro and others request that Council provide justification for changed water allocation volumes and groundwater management zone boundaries, if applicable. Reasoning for the amended allocation limits is provided by Mr Hughes and is attached at Appendix C5 of this report. Based on this advice I suggest the amended allocation volumes from the Environment Southland staff submission be accepted.
- 8.457 For the reasons set out in the Environment Southland staff submission, the cut off in Table Y.7 is recommended to be increased from 201.5 masl to 245 masl. This increase should partially address the submission from H English and note that further technical evidence would be required to support a further increase to 250 masl.
- 8.458 When the original draft of the pSWLP was prepared, the “Garvie Aquifer” was classified as a separate groundwater resource from the overlying unconfined aquifer. However, improved hydrogeological data from recent drilling and aquifer testing in the area now shows that the water-bearing layer previously referred to as the Garvie Aquifer is relatively ‘leaky’ so it is more appropriate to manage all groundwater in the Wendonside groundwater zone (regardless of depth) as a single resource for allocation purposes. This is included as part of the analysis by Mr Hughes in Appendix C4 attached to this report. As sought by a number of submitters, including Environment Southland staff, the cut offs for the Garvie aquifer are recommended to be removed.
- 8.459 I do not agree with the submission from Farmright to remove the North Range Aquifer allocation and minimum groundwater level cut-offs ‘as they are still being worked through’. If they are still to be confirmed, the figures can be amended as part of this Plan process, but it is not appropriate, in my view, to remove them until agreement has been reached.

- 8.460 As part of the analysis by Mr Hughes in Appendix C4 attached to this report, Mr Hughes recommends reference in Appendix Y.5.2 should be changed from ‘Annual Allocation’ to ‘Primary Allocation’ for consistency.

## Appendix L.6

### Submissions and Analysis

- 8.461 Landpro seeks clarification how confined or semi confined aquifers will be determined is provided in the pSWLP. In my opinion this is clear from the first two bullet points within Appendix L.6. If Landpro considers this not to be the case it will need to clarify how determination should be addressed.

## New Appendix L.7

### Submissions and Analysis

- 8.462 The Environment Southland staff submission seeks a new appendix L.7 which will limit allocation for groundwater takes outside groundwater management zones at equal to 35% of rainfall recharge in the area the water will be taken.
- 8.463 The introduction of this new appendix is based on introducing new Rule 54(f)(i) which is recommended above. Limiting the primary allocation for groundwater takes outside groundwater management zones at 35 percent of rainfall recharge occurring over the relevant land area is not supported by evidence or reasoning within the Environment Southland staff submission. I consider that introducing these limits are important, however before this submission is accepted, I recommend the submitter provide evidence to support the substance of the submission.

## Recommendation

- 8.464 Amend Appendix L as follows:

### ***Appendix L.1 Aquifer test requirements***

*Minimum aquifer test requirements to support resource consent applications to take groundwater, other than replacement consent applications for abstraction quantities that have been occurring with no adverse effects of a more than minor scale,<sup>615</sup> are outlined in Table Y.1 below.*

...

### ***Appendix L.2 stream depletion effects***

...

*in the Mataura River catchment, the relevant minimum flow cut-off for groundwater takes classified as having a riparian, direct or high hydraulic connection will be determined as the figure required to maintain compliance with the flow allocation provisions of the Water Conservation (Mataura River) Order 1997. In all other catchments minimum flow cut-offs for groundwater takes classified as having a*

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<sup>615</sup> 277.59 Fonterra

riparian, direct or high hydraulic connection will be determined following the methodology outlined in Appendix K<sup>616</sup> ~~Policy 16 Environmental flow and level regimes.~~<sup>617</sup>

**Table Y.2: Classification and management of stream depletion effects**

...

Direct	Where the calculated effect on an adjacent surface waterbody after 7 days abstraction at the maximum authorised rate is <u>equal to or</u> <sup>618</sup> greater than 80 percent of the assessed pumping rate	The groundwater take will be managed as an equivalent surface water take for flow and allocation purposes and therefore subject to any relevant minimum flow <del>and flow sharing regime</del> <sup>619</sup>
High	Where the calculated effect on an adjacent surface waterbody <sup>a</sup> after 7 days abstraction at the maximum authorised rate is <u>equal to or less than</u> 80 percent of the assessed pumping rate; and, Where the calculated effect on an adjacent surface waterbody <sup>a</sup> after pumping at the maximum authorised rate for either: (i) the maximum period allowed by the seasonal volume <sup>b</sup> , or (ii) a continuous period of 90 days is <u>equal to or greater than</u> 60 percent of the assessed pumping rate	Where the magnitude exceeds 2 litres per second the calculated stream depletion effect will be managed as an equivalent take from an adjacent surface waterbody with the remainder of the allocation included in the allocation volume for the relevant groundwater zone. Groundwater takes classified as having a high degree of hydraulic connection will be subject to any relevant minimum flow regime.
Moderate	Where the calculated effect on an adjacent surface waterbody after pumping at the maximum authorised rate for either: (i) the maximum period allowed by the seasonal volume; or (ii) a continuous period of 90 days is <del>less</del> <sup>620</sup> between 30 and 60 percent of the assessed pumping rate or has a magnitude greater than 5 litres per second	Where the magnitude exceeds 2 litres per second, the calculated stream depletion effect will be included in the allocation calculated from an adjacent surface waterbody <u>with the balance of the abstraction remainder of the allocation</u> <sup>621</sup> included in the allocation volume for the relevant groundwater zone. <del>No specific</del> <sup>622</sup> minimum flow restrictions will be imposed on the groundwater take. <sup>623</sup>

...

**Note-**

<sup>a</sup> Includes rivers, streams, lakes and wetlands.

<sup>616</sup> 247.29 Environment Southland

<sup>617</sup> 752.187 Fish and Game; 247.29 Environment Southland

<sup>618</sup> 279.122 Forest and Bird

<sup>619</sup> 247.29 Environment Southland

<sup>620</sup> 247.29 Environment Southland

<sup>621</sup> 247.29 Environment Southland

<sup>622</sup> 279.122 Forest and Bird

<sup>623</sup> 247.29 Environment Southland



<sup>b</sup> In situations where the seasonal volume limits maximum rate abstraction to a period of less than 90 days.

The assessment of stream depletion effects shall take into account the offsetting component of any non-consumptive aspects of the take and use of water.<sup>624</sup>

### **Appendix L.3 Interference effects**

#### **Determination of “Acceptable”**

(a)...

(iii) no more than 10 percent of the available drawdown in an unconfined aquifer which exists 50 percent of the time during natural conditions when no pumping is occurring from the aquifer,<sup>625</sup> for bores utilised for long-term monitoring of water levels; or

(iv) no more than 20 percent of the available potentiometric head in a confined aquifer that exists 50 percent of the time during natural conditions when no pumping is occurring from the aquifer,<sup>626</sup> for bores utilised for long-term monitoring of water levels; or

(v) In any situation where the drawdown interference exceeds any of the limits in sub-clauses (i) – (iv) the new groundwater abstraction will be considered acceptable if it can be demonstrated that the drawdown interference will not have an impact upon the yield of the bore that is any more than minor or the effect is mitigated.<sup>627</sup>

(b) An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under ~~Policy 22~~ this policy.<sup>628</sup>

(c) Adequacy of bore construction and the available drawdown will be calculated following the methodology outlined in Appendix L.3. ~~An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under this policy~~<sup>629</sup>

...

(e) The assessment of drawdown interference shall take into account the offsetting component of any non-consumptive aspects of the take and use of water.<sup>630</sup>

### **Appendix L.4 Calculation of seasonal surface water and groundwater allocation**

Where not specified by existing resource consent conditions, maximum daily and seasonal abstraction rates used for calculating ~~total groundwater allocation cumulative allocation volumes~~<sup>631</sup> under Rule 49 and Rule 5-24<sup>632</sup>, and for calculating ‘reasonable use’ of water where relevant,<sup>633</sup> will be established on the following basis.

#### **Stock water and dairy use**

Peak daily demand and annual allocation for surface water and<sup>634</sup> groundwater takes for stock and dairy use will be calculated based on the number of each stock type multiplied by the relevant figures outlined in Table Y.3.

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<sup>624</sup> 277.59 Fonterra

<sup>625</sup> 247.29 Environment Southland

<sup>626</sup> 247.29 Environment Southland

<sup>627</sup> 277.59 Fonterra

<sup>628</sup> 247.29 Environment Southland

<sup>629</sup> 247.29 Environment Southland

<sup>630</sup> 277.59 Fonterra

<sup>631</sup> 247.29 Environment Southland

<sup>632</sup> 247.29 Environment Southland

<sup>633</sup> 189.49 DHL

<sup>634</sup> 759.26 Springlands Group

## Appendix L.5 Groundwater Allocation

### Y.5.1 Unconfined Aquifers

The primary allocation for groundwater management zones defined on Map Series 3: Groundwater Management are listed in Table Y.4.

**Table Y.4 Primary groundwater allocation limits**

<b>Groundwater Zone</b>	<b>Primary Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>
<i>Awarua</i>	<del>32.29</del> <u>45.81</u>
<i>Blackmount</i>	<del>15.46</del> <u>21.12</u>
<i>Castlerock</i>	<del>4.00</del> <u>6.12</u>
<i>Cattle Flat</i>	<del>4.65</del> <u>2.39</u>
<i>Central Plains</i>	<del>20.99</del> <u>31.29</u>
<i>Centre Hill</i>	<del>5.29</del> <u>6.07</u>
<i>Croydon</i>	<del>2.05</del> <u>2.56</u>
<i>Dipton</i>	<del>6.32</del> <u>9.52</u>
<i>Edendale</i>	<del>9.34</del> <u>11.71</u>
<i>Five Rivers</i>	<del>12.23</del> <u>17.05</u>
<i>Knapdale</i>	<del>2.22</del> <u>2.74</u>
<i>Longridge</i>	<del>3.47</del> <u>4.67</u>
<i>Lower Aparima</i>	<del>23.54</del> <u>32.41</u>
<i>Lower Mataura</i>	<del>24.97</del> <u>34.98</u>
<i>Lower Oreti</i>	<del>13.49</del> <u>19.31</u>
<i>Makarewa</i>	<del>44.65</del> <u>62.67</u>
<i>Orepuki</i>	<del>8.00</del> <u>10.54</u>
<i>Oreti</i>	<del>4.99</del> <u>2.73</u>
<i>Riversdale</i>	<del>5.02</del> <u>6.53</u>
<i>Te Anau</i>	<del>88.94</del> <u>118.25</u>
<i>Te Waenae</i>	<del>13.83</del> <u>18.94</u>
<i>Timai</i>	<del>4.98</del> <u>2.57</u>
<i>Upper Aparima</i>	<del>41.06</del> <u>56.93</u>
<i>Upper Mataura</i>	<del>27.84</del> <u>10.40</u>
<i>Waihopai</i>	<del>32.08</del> <u>44.50</u>
<i>Waimatuku</i>	<del>15.66</del> <u>22.27</u>
<i>Waimea Plains</i>	<del>9.30</del> <u>12.41</u>
<i>Waipounamu</i>	1.16
<i>Wendon</i>	<del>3.83</del> <u>5.22</u>
<i>Wendonside</i>	<del>7.07</del> <u>9.56</u> <sup>635</sup>

### Y.5.2 Confined Aquifers

#### Lumsden Aquifer

Groundwater abstraction from the Lumsden aquifer will be managed in accordance with the allocation volume and minimum water level cut-offs outlined in Table Y.5.

<sup>635</sup> 247.29 Environment Southland

**Table Y.5 Lumsden Aquifer allocation and minimum groundwater level cut-offs**

<b>Annual Primary<sup>636</sup> Allocation (m<sup>3</sup> 10<sup>6</sup>/year) x</b>	<b>Monitoring bore</b>	<b>Initial level trigger</b>		<b>Minimum level cut-off</b>	
		<b>m asl</b>	<b>% reduction in <u>maximum daily abstraction rate</u> (m<sup>3</sup>/day)</b>	<b>m asl</b>	<b>% reduction in <u>maximum daily abstraction rate</u> (m<sup>3</sup>/day)<sup>637</sup></b>
5.76	E44/0300	202.5	50	201.5	100

**Garvie Aquifer**

Groundwater abstraction from the Garvie aquifer will be managed in accordance with the allocation volume and minimum water level cut-offs outlined in Table Y.6.

**Table Y.6 Garvie Aquifer allocation and minimum groundwater level cut-offs**

<b>Annual Allocation (m<sup>3</sup> x 10<sup>6</sup>/year)</b>	<b>Monitoring bore</b>	<b>Initial level trigger</b>		<b>Minimum level cut-off</b>	
		<b>m asl</b>	<b>% reduction in abstraction</b>	<b>m asl</b>	<b>% reduction in abstraction</b>
8.38	E44/0301	147.0	50	146.0	100 <sup>638</sup>

**North Range Aquifer**

Groundwater abstraction from the North Range aquifer will be managed in accordance with the allocation volume and minimum water level cut-off specified in Table Y.7. Groundwater takes from this aquifer will also be subject to a pro-rata reduction in seasonal allocation (1 October – 30 September) based on the seasonal recovery triggers specified in Table Y.8.

**Table Y.7 North Range Aquifer minimum groundwater level cut-off**

<b>Annual Primary<sup>639</sup> Allocation (m<sup>3</sup> 10<sup>6</sup>/year) x</b>	<b>Monitoring bore</b>	<b>Minimum level cut-off</b>	
		<b>m asl</b>	<b>% reduction in <u>maximum daily abstraction rate</u> (m<sup>3</sup>/day)<sup>640</sup></b>
1.83	E44/0196	-201.5 245.0	100

<sup>636</sup> Cl 16 – to align with the rest of Appendix L

<sup>637</sup> 247.29 Environment Southland

<sup>638</sup> 247.29 Environment Southland; 464.32 Landpro; 868.34 Wilkins Farming; and others

<sup>639</sup> Cl 16 – to align with the rest of Appendix L

<sup>640</sup> 247.29 Environment Southland

## 9. Landfills and Land Contamination

### Introduction

9.1 This section of the report relates to the provisions in the pSWLP for the management of discharges associated with landfills and contaminated land and is split into the following sections:

- the policy constraints applicable to the management of these discharges;
- the provisions relating to landfills;
- the provisions relating to land contamination.

### Policy Constraints

9.2 Section 30 of the RMA gives regional councils the specific role of controlling discharges of contaminants to land, water and air (section 30(1)(f)). The control of discharges of contaminants is one way that regional councils can work towards achieving the objectives for integrated management of a region's resources. The policies and rules for controlling discharges of waste, cleanfill material and from contaminated land are intended to help achieve the pSWLP's objectives.

9.3 Under section 15 of the RMA, the discharge of contaminants requires consent, unless there is a rule included in the regional plan permitting the discharge.

9.4 Objective 5.2 of the RPS seeks to ensure that in the discharge of contaminants, water quality is maintained and wherever practicable, enhanced. This is supported by Policy 5.5, which requires local authorities, when preparing plans or considering resource consents, to assess the effects of land use and development on ground water and surface water quality and provide for any adverse effects to be avoided, remedied or mitigated.

9.5 The relevant sections of the pSRPS that relate to the landfill rules include Chapter 4: Water, Chapter 11: Contaminated Land, Chapter 12: Hazardous substances and Chapter 13: Solid Waste. Objective WQUAL.1 aims for water quality that will safeguard the life supporting capacity of water and related ecosystems and the health of people and communities. Policy WQUAL.1 directs the management of discharges and land use activities to maintain or improve water quality so that freshwater objectives are met.

9.6 Objective CONTAM.2 aims to avoid, remedy or mitigate adverse effects from contaminated land. Following on from this Policy CONTAM.2 directs that contaminated land be managed to protect human health and to avoid, remedy or mitigate adverse effects on the environment.

9.7 Objective HAZ.1 seeks to prevent or mitigate any adverse environmental effects from the disposal of hazardous substances. Policy HAZ.4 requires the disposal of hazardous substances in undertaken in an environmentally safe manner.

9.8 Objective WASTE.2 aims to avoid, mitigate or where appropriate remedy any adverse effects of the disposal of solid waste. Policy WASTE.1 seeks to avoid, remedy and mitigate the effects of solid waste disposal and Policy WASTE.2 requires the

establishment of provisions within regional and district plans that provide for appropriately located cleanfill sites. Policy WASTE.7 requires consideration of minimum standards for landfills and other solid waste facilities. Policy WASTE.8 encourages the efficient use of existing landfills over the establishment of new landfills.

9.9 The most relevant objective of the as notified pSWLP is Objective 13, which reads:

*Enable the use and development of land and soils, provided:*

- (a) the quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land;*
- (b) the discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided; and*
- (c) adverse effects on ecosystems (including diversity and integrity of habitats), amenity values, cultural values and historic heritage values are avoided, remedied or mitigated to ensure these values are maintained or enhanced.*

9.10 Policy 35 seeks to achieve Objective 13 by encouraging the discharge of waste or cleanfill at appropriate sites.

9.11 Section 3.5.3 of Te Tangi a Taurira promotes that the RMA planning process and industry best practice should be used to ensure that solid waste disposal does not adversely affect tangata whenua values. It also encourages any new landfill site be appropriately designed to minimise adverse effects on the environment.

## **Landfills**

### **Introduction**

9.12 Disposal of overburden, farm and municipal waste is a necessary part of rural and urban life and if undertaken inappropriately, can lead to serious long-term environmental effects. The following analysis is in response to submissions received to Policy 35 & Rules 42-45 of the pSWLP, as well as the applicable definitions associated with these provisions which include Cleanfill, Cleanfill Site, Closed Landfill and Landfill. These provisions are focused on the management of clean fill sites, farm landfills, dead holes (offal pits) and landfills.

9.13 Due to the interconnected nature of these rules, they are analysed as one package.

### **Provisions and Applicable Definitions**

9.14 Policy 35 provides guidance regarding the discharge waste or cleanfill, which is then implemented through Rule 42 – Cleanfill sites, Rule 43 – Farm landfills, Rule 44 – Dead holes (offal pits) and Rule 45 – Landfills.

9.15 Policy 35 reads:

*Ensure the discharge of contaminants as waste or cleanfill occurs at an appropriate site.*

- 9.16 Rule 42(a) provides for the discharge of cleanfill into or onto land at a cleanfill site as a permitted activity, subject to a range of conditions, which include: a limit on the total amount of cleanfill discharged to 500m<sup>3</sup> per landholding; and required setbacks from specified features or boundaries. Discharges which do not meet the permitted activity conditions are a restricted discretionary activity (under clause (b) of the rule) and are expressly stated as not being subject to public or limited notification (except under special circumstances).
- 9.17 Rule 43(a) provides for the discharge of contaminants from a farm landfill as a permitted activity, subject to a range of conditions. These include: a requirement that the discharge is derived from the same landholding on which the farm landfill is located; limitations on what the discharge may contain; and setback requirements from specified features or boundaries; and a requirement that the landfill does not intercept an on-farm subsurface drain, or a spring or is not excavated below the seasonal mean groundwater level in that location. Discharges which do not meet the permitted activity conditions are a discretionary activity (under clause (b) of the rule).
- 9.18 Rule 44(a) provides for the discharge of a carcass or offal into or onto land at a dead hole as a permitted activity, subject to a range of conditions which are similar to those for farm landfills, and in addition require that the carcass or offal does not contact naturally formed limestone rock. Rule 44(c) explicitly provides for the discharge of the carcass of, or offal from, a single animal into or onto land as a permitted activity subject to conditions, which include that *“the carcass or offal cannot be reasonably disposed of in accordance with the conditions in Rule 44(a)”*. Discharges which do not meet the permitted activity conditions of either (a) or (c) are a discretionary activity.
- 9.19 Rule 45 expressly provides for discharges from landfill as a discretionary activity.
- 9.20 The definitions that are relevant to these rules are: cleanfill; cleanfill site; closed landfill; and landfill. Only one submission was received seeking a change to these definitions and pertains to the definition of cleanfill site, which reads:

***Cleanfill Site***

*Land used for the permanent disposal of cleanfill and no other type of material but excludes earthworks on the same landholding, earthworks associated with any road, driveway or track, and any area within a road reserve containing a formed road that is used for the deposition of roading material.*

**Submissions**

- 9.21 There are nine submissions on Policy 35 and 73 submissions on Rules 42-45. The clear majority are supportive of the rules and a limited number of those who are supportive request minor amendments.
- 9.22 Eight of the nine submissions seek the retention of Policy 35 as notified, and Fulton Hogan & Southern Aggregates requests that the policy be retained with an amendment so that it explicitly provides for the discharge of cleanfill.
- 9.23 The requested amendments include requests from both Forest and Bird and Fish and Game who want Rules 42-44 altered so that no material is discharged in the bed of wetland or ephemeral streams and gullies or the coastal marine area. Additionally, Fish

and Game also requests that dead holes have a setback of 50 m from any subsurface drainage. HNZ requests that the current wording regarding historic heritage in Rules 42-44 be retained as notified, or amended so that there are no recorded historical heritage sites at the site of the activity, rather than there be no modification, damage or destruction of a historical heritage site.

- 9.24 Fulton Hogan & Southern Aggregates requests that the activity status of Rule 42 be relaxed to controlled, if the permitted activity conditions cannot be met. ICC requests that the volume of up to 500 m<sup>3</sup> of cleanfill, as a permitted activity, be increased to 2000 m<sup>3</sup>. Additionally, KiwiRail requests that 500 m<sup>3</sup> restriction be per calendar year at any one site, to allow for repeated discharges of cleanfill as a permitted activity over a number of years at the same site.
- 9.25 There was limited opposition to Rule 42, with four submitters opposed or opposed in part. HWRG request that the setback requirements to waterways be decreased from 50 m to 20 m, so that it aligns with Southland District Plan. The opposition of Fish and Game is as mentioned above. W & T Holder requests an amendment such that any cleanfill site not be located within a known flood plain, which aligns with Ministry for the Environment (MfE) guidelines<sup>641</sup> regarding cleanfill sites.
- 9.26 The majority of submitters are supportive of Rule 43 Farm Landfills. However, there is some opposition to Rule 43 and the exclusion of carcasses and offal from being able to dumped within a farm landfill site. Federated Farmers also want the rule changed so that it allows for existing use rights in regard to the setback requirements from water abstraction points for drinking water supply sites.
- 9.27 The majority of submitters are supportive of Rule 44. Both Drylands Farming and the Drysdale Family Trust seek that the rule is amended to allow for the use of combustible material to burn carcasses to avoid pathogens entering the environment. B & G Lamb, S Marshall and Progress Valley Farms request the set back from dwellings is increased from 100 m to 300 m.
- 9.28 There is limited opposition to Rule 44, mainly around the requirement to have separate disposal sites for farm waste and carcasses/offal. Nithdale Station request the requirements for burial of single animals be removed, as this can be problematic during calving and lambing periods, especially in a hill country setting. The submitter suggests that instead, dead animals be moved to 20 metres away from waterways where possible.
- 9.29 There are seven submissions on Rule 45 that support the rule, with four seeking that it be retained as notified. Forest and Bird request that a discharge does not occur within the bed of a wetland, ephemeral stream and gully or within the coastal marine area. There are two submissions, from Matura Butcher Shop and Newton Slink Skins that request that landfills be a permitted activity.
- 9.30 There are seven submissions to the applicable definitions, with six supportive of the definitions. HWRG considers the cleanfill site definition is confusing and therefore request a wording change.

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<sup>641</sup> A Guide to the Management of Cleanfills, Ministry for the Environment 2002  
<http://www.mfe.govt.nz/sites/default/files/cleanfills-guide-jan02.pdf>

## Analysis

- 9.31 I consider the request by Fulton Hogan & Southern Aggregates for the policy to specifically refer to cleanfill is unnecessary since the discharge of cleanfill is already provided for in the form of a dedicated permitted activity rule. I suggest the submitter could provide evidence as to what the extra wording would achieve, otherwise I recommend that the policy be retained without amendment.
- 9.32 The submissions of Fish and Game and Forest and Bird have partly been addressed by recommended changes addressed elsewhere in this report<sup>642</sup>, to clarify what is considered a waterway. Additionally, I agree that wetlands should be added to the setback requirements as it is in line with Policy 33, which seeks to prevent adverse effects on wetlands. Therefore, I recommend their submissions be adopted, in part.
- 9.33 With respect to the 50 m setback of dead holes from sub-surface drains as sought by Fish and Game, I acknowledge there is a risk of the flow of contaminants through the soil profile into sub-surface drainage. However, I consider a blanket setback distance from sub-surface drains is inappropriate, given that sub surface drainage can be extensive on some properties in Southland. The setback requirements could potentially lead to properties that have extensive sub surface drainage not being able to locate a dead hole on the property without consent. Added to this they would not be able to dump animal waste on a property in a different land holding without consent under this rule (refer clause (a)(i)) and these restrictions combined could potentially lead to unsatisfactory environmental effects associated with uncontrolled disposal of carcasses and offal. Additionally, as discussed elsewhere in this report, the location of sub-surface drainage networks is not well known in the region, which could make the setback difficult to enforce.
- 9.34 I note the amendments requested by HNZ to Rules 42(a)(iii) and 43(a)(iv) align with a permitted activity condition on a number of rules related to the beds of rivers and lakes, addressed in section 10 of this report. For the reasons outlined in section 10, it is recommended that the permitted activity condition (in relation to recorded historic heritage sites) be deleted from the relevant rules for activities in the beds of lakes and rivers, and that an advice note is included outlining the obligations under the Heritage New Zealand Pouhere Taonga Act 2014. For the same reasons set out in section 10 of this report, I do not recommend the submission from HNZ in relation to Rules 42 and 43 be adopted. While it would be preferable that Rules 42(a)(iii) and 43(a)(iv) be deleted and replaced with the advice note, I do not believe there is sufficient scope to make such an amendment. Unless it is undertaken as a consequential change.
- 9.35 Fulton Hogan & Southern Aggregates request that the activity status for cleanfills that do not meet the permitted activity conditions be changed to controlled activities, as the submitter considers that 500 m<sup>3</sup> to be a small amount of material and therefore the risk of more than minor effects are limited. However, I consider that a restricted discretionary activity status is appropriate for clean fill sites that fall outside the permitted activity limits, as it provides Council with the ability to decline consent applications for large-scale cleanfill sites. Given that adverse effects that result from cleanfill sites are

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<sup>642</sup> See sections 10 and 11



generally linked to higher volume discharges, it is appropriate to maintain this activity status for larger scale cleanfills.

- 9.36 ICC request that the permitted volume be increased from 500 m<sup>3</sup> to 2000 m<sup>3</sup>. I consider that the 500 m<sup>3</sup> threshold appropriate, given that discharges to a cleanfill site that meets the permitted activity conditions should have minor or less than minor environmental effects, and the adverse effects that result from cleanfill sites are generally linked to higher volume discharges, particularly in terms of sediment losses, boundary effects and flood hazards. This point is also relevant to the submission by KiwiRail. I therefore do not recommend adopting these submissions.
- 9.37 A submission by HWRG seeks to align the clean fill rule with the operative Southland District Plan, which has a setback requirement from waterways, for the location of any clean fill site of 20 m rather than 50 m in the notified rule in the pSWLP. The 50 m setback was applied to the cleanfill rule to achieve consistency with Rules 43 and 44, and therefore ease of use in the field. However, due to the fact that clean fill material is more benign than the materials deposited in the other landfill sites, the environmental effects of locating a cleanfill site at a closer distance will have a less than minor effect. I consider decreasing the setback distance to 20 m as appropriate and therefore recommend adopting the submission from HWRG.
- 9.38 W & T Holder requests that no clean fill site be located on a known floodplain, to align the pSWLP with the MfE guidelines<sup>643</sup> regarding cleanfill sites. This would be problematic as a large area of Southland is known flood plain. I consider that the setbacks from the main stem rivers of Southland in the current wording of Rule 42 sufficient to mitigate the risk posed to cleanfill sites from future flood events. Cleanfill is also used in Southland to raise the ground level of a location to mitigate the flood risk to those sites, which is a mitigation technique Environment Southland encourages. Additionally, new Technical Guidelines for Disposal to Land<sup>644</sup> which was partly funded by MFE has been released, and the guidance does not require consideration of flood plains when establishing a cleanfill site. While these guidelines have yet to be formally endorsed by MFE, they provide useful guidance. I therefore do not recommend adopting the submission from W & T Holder.
- 9.39 A number of submitters, including Federated Farmers, J Gardyne and A & B Hunt request that carcasses and offal be permitted to be disposed of in a farm landfill. I consider this a valid point, that rather than requiring two separate dump sites, it may be more practical to allow the disposal of farm waste, carcasses and offal in one location. As a result, I recommend that Rule 43 – Farm landfills and Rule 44 – Dead holes (offal pits) be combined into one rule, in an effort to be more practical on the ground. I consider that this would also result in positive environmental outcomes in that it will restrict the location of farm landfill sites from being located in a gully, swale or intermittent waterbodies, as is the case for dead holes. Additionally under notified Rules 43 and 44 dead holes are required to have a 200m set back from a water abstraction point, dwelling, place of assembly, or landholding boundary if the discharge is to loose gravels, whereas farm landfills do not. By combining the two rules this setback

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<sup>643</sup> A Guide to the Management of Cleanfills, Ministry for the Environment 2002

<http://www.mfe.govt.nz/sites/default/files/cleanfills-guide-jan02.pdf>

<sup>644</sup> Technical Guidelines for Disposal to Land, Waste Management Institute New Zealand Incorporated 2016

<http://www.wasteminz.org.nz/pubs/technical-guidelines-for-disposal-to-land-april-2016/>

requirement would now also apply to farm landfills which would result in result in positive environmental outcomes, in that farm landfill leachate would have an increased buffer zone from water abstraction points, dwellings, place of assembly, or property boundaries. I therefore recommend that the submissions from Federated Farmers, J Gardyne, and A & B Hunt be adopted in part, as they relate to the disposal of carcasses and offal.

- 9.40 I consider the Federated Farmers request to protect existing use rights in regard to set back of any drinking water supply site to be inappropriate, given the risk to human health from any potential discharge from a farm landfill or dead hole and its potential inconsistency with the Drinking Water NES. I therefore do not recommend the submission from Federated Farmers to be adopted.
- 9.41 The submission by Drylands Farming and the Drysdale Family Trust to provide for the use of combustible material to help with burning of carcasses is more related to a discharge to air and as such is managed under the Regional Air Plan and not the pSWLP.
- 9.42 I consider the request by B & G Lamb, S Marshall and Progress Valley Farms to increase the setback requirements for the siting of an offal hole from 100 m to 300 m from a dwelling on an adjacent property as inappropriate. This is, in my view too onerous, which could result in unintended consequences such as the uncontrolled disposal of carcasses and offal, as once it becomes too difficult to comply with the requirements it could lead to carcasses being left where the animal died. Additionally this rule is focused on managing the discharge in relation to where it may enter water. I suspect the submitters concerns are more in relation to potential odour and nuisance issues arising from an offal pit. Odour issues are managed under the Regional Air Plan given that it arises from discharges to air. The submitters may want to present evidence to the contrary at the hearing, however at this stage I do not recommend adopting these submission points.
- 9.43 There is a request by Nithdale to remove the requirement for burial of single animals, which could be difficult in steep expansive hill country type farms. The intent of this rule is to appropriately manage the disposal of animals. The rule enables the burial of a single animal, with fewer requirements, recognising that burial of a single animal is a more 'natural' occurrence and is unlikely to have significant adverse effects. The intent of this part of the rule is to be enabling, rather than requiring that every single dead animal is buried. There would be no expectation for the burial of single animals on extensive farms, especially in a high country setting. Other statutes and regulations, as well as education and advisory services can more appropriately deal with any nuisance or health effects of dead animals. While the submission is helpful, I do not believe any changes are required to enable the situation the submitter has outlined and I therefore do not recommend adoption of the submission from Nithdale.
- 9.44 The submission by Forest and Bird on Rule 45 relates more to Rules 42-44, by requesting that a discharge does not occur within the bed of a wetland, ephemeral stream and gully or within the coastal marine area. Rules 42-44 are permitted activity rules and there are requirements about where not to locate a cleanfill, farm landfill or dead holes, whereas Rule 45 is a discretionary activity where the location of any potential land fill sites would be a matter of discretion during a resource consent process. I therefore recommend no to adopt the submission from Forest and Bird on this point.

- 9.45 I consider the request by Mataura Butcher Shop and Newton Slink Skins to provide for landfills as permitted activities to be inappropriate, given the potential adverse environmental effects of landfills. As such, permitting landfills would not assist in the achievement of the Plan's water quality objectives. I therefore recommend retaining Rule 45 as notified.
- 9.46 The submissions on the definitions for cleanfill, closed landfill and landfill were all supportive of the notified wording and as such I recommend that they all be retained as notified. However, HWRG opposed the cleanfill site definition as it considered that the definition is confusing and its intent unclear. I consider the submitter's suggested wording as inappropriate, as it could result in earthworks associated with common activities, such as the construction of buildings, being classed as cleanfill operations. The submitter may want to present evidence as to the intention of the suggested wording, otherwise I recommend that the definition be retained as notified.

## Recommendations

- 9.47 Retain Policy 35 as notified.
- 9.48 Amend Rule 42 as follows:
- (a) *The discharge of cleanfill into or onto land at a cleanfill site in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:*
- (i) *the total amount of cleanfill discharged at all cleanfill sites on a landholding does not exceed 500 cubic metres;*
  - (ii) *the discharge does not occur within:*
    - (1) *the bed of a lake, or river;*
    - (2) *~~50~~<sup>645</sup> metres of a ~~surface waterbody~~ lake, river, modified watercourse, artificial watercourse, wetland<sup>646</sup>, or the coastal marine area, or landholding boundary;*
    - (3) *the flood banks of the Waiau, Aparima, Ōreti or Mataura rivers, or 50 metres of these rivers where flood banks are not present;*
    - (4) *100 metres of a water abstraction point;*
  - (iii) *the activity does not modify, damage or destroy any recorded historic heritage sites;*
  - (iv) *stormwater is directed away from the discharge site.*
- (b) *The discharge of cleanfill into or onto land at a cleanfill site in circumstances where contaminants may enter water that does not meet one or more of the conditions of Rule 42(a) is a restricted discretionary activity.*
- Environment Southland will restrict its discretion to the following matters:*
1. *prevention of inundation of any other person's landholding, sedimentation in any waterbody, erosion and l and instability, or the restriction or diversion of flood flows or coastal water;*
  2. *site selection and effects on sensitive receiving environments;*
  3. *effects on historic heritage;*
  4. *design, construction and management of the cleanfill site;*
  5. *post-closure management practices and procedures;*
  6. *information and monitoring requirements;*
  7. *the quantity of cleanfill to be discharged.*

<sup>645</sup> 342.8 HWRG

<sup>646</sup> 247.41 Environment Southland; 752.135 Fish and Game; and 279.89 Forest and Bird

*An application for resource consent under Rule 42(b) will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

9.49 Delete existing Rules 43 and 44 and replace with new Rule 43 as follows:

***Rule 43 – Farm Landfills***<sup>647</sup>

- (a) The discharge of contaminants into or onto land in circumstances where that contaminant may enter water at a farm landfill is a permitted activity provided the following conditions are met:*
- (i) the carcass, offal, compost bulking agent or waste and any associated discharge is derived from the same landholding on which the farm landfill is situated or the activity is carried out by a local authority or government agency in the exercise of their statutory powers;*
  - (ii) the discharge does not include septic tank sludge, dairy farm sludge, or a hazardous substance;*
  - (iii) the discharge does not occur within:*
    - (1) the bed of a lake or river (including intermittent waterbodies), a gully, or a critical source area;*
    - (2) 50 metres of a lake, river, modified watercourse, artificial watercourse, wetland, or the coastal marine area, or 150 metres of a surface waterbody where the discharge is to loose gravels;*
    - (3) the flood banks of the Waiau, Aparima, Oreti or Mataura rivers, or 50 metres of these rivers where flood banks are not present;*
    - (4) 100 metres of a water abstraction point, dwelling, place of assembly, or landholding boundary; or 200 metres where the discharge is to loose gravels.*
    - (5) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
    - (6) 100 metres of a dwelling, place of assembly, or landholding boundary;*
  - (iv) the activity does not modify, damage or destroy any recorded historic heritage sites;*
  - (v) stormwater is directed away from the discharge site;*
  - (vi) the farm landfill does not intercept an on-farm subsurface drain, or a spring or is not excavated below the seasonal mean groundwater level in that location;*
  - (vii) as each section of the farm landfill becomes full or unused, the discharges are covered and the surface restored to a similar state as the surrounding land;*
  - (viii) any carcass or offal must not contact naturally formed limestone rock;*
- (b) The discharge of contaminants into or onto land in circumstances where that contaminant may enter water at a farm landfill that does not meet one or more of the conditions of Rule 43(a) is a discretionary activity.*
- (c) Notwithstanding the provisions of Rule 43A(a) and (b), the discharge of the carcass of, or offal from, a single animal into or onto land in circumstances where that contaminant may enter water is a permitted activity provided the following conditions are met:*
- (i) the carcass or offal cannot be reasonably disposed of in accordance with the conditions in Rule 43(a);*
  - (ii) the carcass or offal is derived from the same landholding;*
  - (iii) the carcass or offal is buried in a shallow pit that has no water in it and is immediately and completely covered by soil or plant material so as to prevent discharge of odour to air, or other nuisance;*
  - (iv) the carcass or offal burial does not occur within:*
    - (1) 20 metres of surface water or a water abstraction point;*

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<sup>647</sup> 265.99 Federated Farmers; 299.19 J Gardyne; and 402.17 A & B Hunt

- ~~(2) 20 metres of a dwelling, place of assembly, or landholding boundary;~~  
~~(v) the activity does not modify, damage or destroy any recorded historic heritage sites.~~  
~~(d) The discharge of the carcass of, or offal from, a single animal into or onto land in circumstances where that contaminant may enter water that does not meet one or more of the conditions of Rule 43(c) is a discretionary activity.<sup>648</sup>~~

9.50 Retain Rule 45 as notified.

9.51 Retain the definitions of “Cleanfill”, “Cleanfill Site”, “Closed Landfill” and “Landfill” as notified.

## Land Contamination

### Introduction

9.52 Discharges from land contaminated by a hazardous substance can result in significant effects to both human and environmental health. Policy 36 and Rule 46 concern the management of contaminated sites, and Rules 47 and 48 manage land that has the potential to discharge hazardous substances into the environment. Due to the interconnected nature of this policy and these rules, the following analysis has grouped all of these relevant provisions together.

### Provisions

9.53 Policy 36 reads:

*Require the best practicable option be adopted to prevent or minimise adverse effects from contaminated land or a discharge of a hazardous substance.*

9.54 Rule 46(a) provides for the discharge of contaminants from land contaminated by a hazardous substance as a permitted activity, provided that the hazardous substance in the discharge results from an activity authorised by the Plan rules or by a resource consent, and subject to the discharge meeting specified water quality standards. Rule 46(b) provides for the discharge of soil from land contaminated by a hazardous substance provided that the hazardous substance in the soil results from the application of a fertiliser or agrichemical to the land authorised by the Plan rules or by a resource consent and subject to the soil being returned to the excavation or site from which it was taken. Where the permitted activity conditions in clauses (a) or (b) are not met, the discharge is a discretionary activity (under clause (c)).

9.55 Rule 46(d) also provides for the use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil as a permitted activity, subject to conditions, and where the conditions are not met, the activity is discretionary (under clause (d)).

9.56 Rule 47 relates specifically to closed landfills (and takes precedence over Rule 46) and provides for the discharge of contaminants from a closed landfill onto or into land,

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<sup>648</sup> 265.99 Federated Farmers; 299.19 J Gardyne; and 402.17 A & B Hunt

provided that a risk assessment is carried out and provided to Council prior to 1 November 2015; where a risk assessment has not been carried out or provided, the discharge is a discretionary activity (under clause (b)).

- 9.57 Rule 48 relates to cemeteries and allows for the use of land for any existing cemetery (and associated discharges) as a permitted activity, and is not subject to any conditions. New cemeteries and extensions to existing cemeteries are permitted subject to specified setbacks being met and the depth to groundwater exceeding 3 metres. Where these conditions are not met, the cemetery would require consent as a discretionary activity (under clause (c)).

## Submissions

- 9.58 There are 34 submissions to Policy 36 and Rules 46-48, with the majority of submitters supportive of the provisions.
- 9.59 Most submissions on Policy 36 seek that be retained, as notified. There are two submissions, by Fish and Game and Oil Companies, which request amendments to the policy. Fish and Game requests that the words “*prevent*” and “*minimise*” be replaced with “*avoid, remedy or mitigate*”. The Oil Companies request that Policy 36 is split in two parts, with one focused on the management of adverse effects, and the other focusing on minimising the effects of the discharge of hazardous substances.
- 9.60 There were a number of requested amendments to Rule 46, these include a submission by Ballance that requests that reference to the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC) 2000 be deleted. KiwiRail requests that allowances be made for existing lawfully established activities. Both FANZ and Ravensdown request that the rule explicitly reference the table from the ANZECC guidelines. NZFS requests that allowances be made so that the discharge of contaminants as a result of a firefighting emergency response or training activities are made a permitted activity. The Oil Companies seek minor amendments to clearly distinguish between the discharges addressed in clauses (a) to (c) and site investigations addressed in clauses (d) and (e) to recognise that they are distinct activities.
- 9.61 In regard to Rule 48, SDC seeks that consideration be given to amending the required depth to groundwater of any new, or extension of an existing, cemetery. The submitter also seeks clarity around the expectations of the consenting process.
- 9.62 W & T Holder seeks that the activity status for both Rule 46 & 47 be increased to a non-complying activity status if the discharge does not meet the permitted activity requirements. A & S Wilson also requested that any discharge from a closed landfill, which may result in contaminants entering water, should be considered as a non-complying activity

## Analysis

- 9.63 Fish and Game’s submission requests replacing “*prevent or minimise*” with “*avoid, remedy or mitigate*” in Policy 36. In my opinion this is appropriate as this wording is more reflective of the wording present in Policy CONTAM.2 of the pSRPS, and aligns with the terminology in section 5(2)(c) the RMA. I also consider this wording to be more appropriate than using the word “*manage*” as sought by the Oil Companies.

- 9.64 I consider the request by the Oil Companies to split the policy into two as inappropriate because it could potentially lead to a lack of clarity, or could result in unnecessary duplication. I consider the request by Ballance as inappropriate, as the ANZECC guidelines have been used extensively in NZ and Australia since the guidelines were implemented. They are the only NZ guidelines available and are designed for the protection of freshwater and marine ecosystems. The ANZECC guidelines also provide for a wide range of industrial contaminants that the NPSFM does not provide for.
- 9.65 I do not support the submission from KiwiRail to provide for existing lawful activities as a permitted activity. The intent of this clause (a)(i) is to prevent activities such as discharge of fertiliser (which is covered by Rule 14) being caught by Rule 46 as well. In my view this is appropriate as the effects of the activity are adequately managed through Rule 14 without there being a duplication within Rule 46. Where an existing activity is lawful, because it is authorised (including as a permitted activity) elsewhere within this Plan, or through a resource consent issued by the Council, then the activity would already be permitted through this clause. In my view, reference to 'existing lawful activities' lacks certainty in a regional plan context. The submission has highlighted another potential uncertainty in this rule, and some other rules of the pSWLP, where 'resource consent' is intended to mean 'resource consent granted by the SRC'. Therefore, I recommend that a change be made in light of this submission to correct this potential uncertainty.
- 9.66 In regards to the submissions by FANZ and Ravensdown, who request that the rule explicitly reference the table from the ANZECC guidelines. I consider the additional wording requested by the submitters could potentially result in improved clarity for plan users, as it gives a quick reference to where someone should look to understand what levels pollutants are acceptable for any certain substance on the list. I therefore recommend that the reference requested be adopted.
- 9.67 In relation to the amendments sought by the NZFS, I note that the activity they refer to (discharges of contaminants associated with firefighting emergency response or training) does not relate to Rule 46, which manages discharges from contaminated land. I further note that consideration of these discharges is in any case addressed in section 7.1 of this report.
- 9.68 I agree with the submission by the Oil Companies requesting amendments to Rule 46. Its first request identified a drafting error in the Plan, whereby condition (i) of Rule 46(a) is intended to be a 'stand-alone' permissive rule, enabling discharges that have been otherwise authorised. However, as the condition is followed by an "and", rather than an "or", this is not the effect of the rule. I therefore recommend adopting its submission which will allow the error to be corrected. I consider that the submitter's second request regarding that site investigations have its own rule would add clarity. Whilst the submission does not request that consideration be given to incidental discharges, they may need to be managed under this new rule. The Hearing Panel may wish to consider the incorporating conditions within the new rule that manage incidental discharges.
- 9.69 I consider it inappropriate to change the activity status of Rule 46 as requested by W & T Holder. I consider the current activity status sufficient as it gives the ability for any an application to be assessed on its merits and if in the particular case the effects are not acceptable consent can be declined. I am unsure what the request by W & T Holder

would achieve in regards to managing land contamination. The submitter may want to provide evidence at the hearing as to what this will achieve.

- 9.70 W & T Holder and A & S Wilson have submitted that closed landfills should have a non-complying activity status. The intent of this rule is to require the persons responsible for closed landfills to conduct a risk assessment to identify if a discharge of contaminants is occurring. If the risk assessment<sup>649</sup> shows that the environmental risk was greater than low for the site, consent would be required under Rule 47(b). This allows for the effects of the closed landfill to be addressed in the consent process and appropriate mitigation methods put in place.
- 9.71 SDC requested that the depth of ground water requirement be reconsidered for Rule 48. However, given that standard burial practices result in a coffin being located at 1.6 – 2.1 m depth below ground level, any decrease in the depth of ground water requirement could potentially result in a discharge direct to ground water. The NES for Contaminants in Soils identifies cemeteries as a hazardous activity, and the User’s Guide to the NES clarifies that the hazardous substances which are typically associated with cemeteries are nitrates, lead, mercury, formaldehyde, and biological hazards. These arise from the bodies themselves as well as any embalming processes and the types of caskets used. The discharge from bodies and caskets can be toxic in high enough concentrations, and formaldehyde is carcinogenic.
- 9.72 There are potential environmental effects on groundwater and surface water (depending on location) which are most appropriately addressed prior to a cemetery being expanded or a new cemetery established. Therefore I consider it inappropriate to change the depth to ground water requirement of this Rule. However, I have recommended a slight clarification in wording to improve consistent interpretation of the rule. In regards to the other matter that SDC seeks clarification around the expectations of the consenting process, this matter would be addressed on a case by case basis, as is the case for any other discretionary activity, and the objectives and policies of the pSWLP would provide appropriate guidance.

## Recommendations

- 9.73 Amend Policy 36 as follows:

*Require the best practicable option be adopted to ~~prevent or minimise~~ avoid, remedy or mitigate<sup>650</sup> adverse effects from contaminated land or a discharge of a hazardous substance.*

- 9.74 Amend Rule 46 as follows:

- (a) *The discharge of contaminants from land contaminated by a hazardous substance onto or into land in circumstances which may result in contaminants entering water is a permitted activity provided:*
- (i) *the hazardous substance in the discharge results from an activity authorised by a rule in this Plan or a resource consent granted by the Southland Regional Council<sup>651</sup>; ~~and or~~<sup>652</sup>*

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<sup>649</sup> A Guide for the Management of Closing and Closed Landfills in New Zealand 2001

[http://www.mfe.govt.nz/sites/default/files/closed-landfills-guide-may01\\_0.pdf](http://www.mfe.govt.nz/sites/default/files/closed-landfills-guide-may01_0.pdf)

<sup>650</sup> 752.77 Fish and Game

<sup>651</sup> 449.21 KiwiRail

<sup>652</sup> 895.54 Oil Companies



- (ii) *the discharge does not result in a breach of the Trigger values for toxicants, presented in Table 3.4.1 in the<sup>653</sup> Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC) 2000 at the level of protection set in those guidelines for 80% of species, except for benzene where the level of protection is 90% of species (i.e. 1 milligram per litre), at the nearest of:*
  - (1) 50 metres;
  - (2) the landholding boundary;
  - (3) any point immediately adjacent to a lake, river, modified watercourse, artificial watercourse, the coastal marine area, natural wetland<sup>654</sup> or water abstraction bore (excluding monitoring bores); from the discharge; and
- (iii) *the discharge does not result in a breach of the Drinking Water Standards for New Zealand 2005 (Revised 2008) in any bore utilised for potable supply, except where the ambient water quality naturally breaches those Standards and the discharge does not result in any further degradation of the water quality;*
- (b) *The discharge of soil from land contaminated by a hazardous substance onto or into land in circumstances which may result in those contaminants entering water is a permitted activity provided:*
  - (i) *the hazardous substance in the soil results from the application of a fertiliser or agrichemical to the land authorised by a rule in this Plan or a resource consent granted by the Southland Regional Council<sup>655</sup>; or*
  - (ii) *the soil is being returned to the excavation or site from which it was taken.*
- (c) *The discharge of contaminants or soil from land contaminated by a hazardous substance onto or into land in circumstances which may result in those contaminants entering water that does not meet one or more of the conditions of Rule 46(a) or (b) is a discretionary activity.*
- ~~(d) *The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil is a permitted activity provided the following conditions are met:*~~
  - ~~(i) *The site investigation is to be undertaken in accordance with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Ministry for the Environment, 2011) and reported on in accordance with the Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand, (Ministry for the Environment, 2011); and*~~
  - ~~(ii) *The person or organisation initiating the site investigation provides a copy of the report of the site investigation to Environment Southland within two months of the completion of the investigation.*~~
- ~~(e) *The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil that does not meet one or more of the conditions in Rule 46(d) is a discretionary activity.*<sup>656</sup>~~

9.75 Add a new rule as follows:

Rule X – Site investigations

- (a) *The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil is a permitted activity provided the following conditions are met:*
  - (i) *The site investigation is to be undertaken in accordance with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Ministry for the Environment, 2011) and reported on in accordance with the Contaminated Land*

<sup>653</sup> 661.41 Ravensdown; 803.42 FANZ

<sup>654</sup> 247.13 Environment Southland

<sup>655</sup> 449.21 KiwiRail

<sup>656</sup> 895.54 Oil Companies

Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand, (Ministry for the Environment, 2011); and

- (ii) The person or organisation initiating the site investigation provides a copy of the report of the site investigation to Environment Southland within two months of the completion of the investigation.
- (b) The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil that does not meet one or more of the conditions in Rule X is a discretionary activity.<sup>657</sup>

9.76 Retain Rule 47 as notified.

9.77 Amend Rule 48 as follows:

- (a) *The use of land for an existing cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant may enter water is a permitted activity.*
- (b) *The use of land for a new cemetery or an extension to an existing cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant or water may enter water, is a permitted activity, provided the following conditions are met:*
- (i) *any new cemetery or an extension to an existing cemetery is not located:*
- (1) *within 20 metres of a lake, river, modified watercourse, artificial watercourse, ephemeral waterway, natural wetland*<sup>658</sup> *or the Coastal Marine Area; or*
  - (2) *within 50 metres of a bore used for water abstraction; or*
  - (3) *the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;*
  - (4) *where the depth to groundwater ~~exceeds~~ is less than*<sup>659</sup> *3 metres;*
- (c) *The use of land for a cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant or water may enter water, that does not meet one or more of the conditions in Rule 48(b) is a discretionary activity.*

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<sup>657</sup> 895.54 Oil Companies

<sup>658</sup> 247.41 Environment Southland

<sup>659</sup> Cl 16

## 10. Structures and Bed Disturbance Activities in River and Lake Beds

### Introduction

- 10.1 The pSWLP contains a number of policies and rules to manage the effects of activities in river and lake beds, including activities related to bed disturbance and the maintenance, alteration, extension, demolition and removal of structures.
- 10.2 Policy 28 provides guidance associated with the management of bed disturbance activities and structures in the bed of rivers and lakes, in order to avoid, remedy or mitigate adverse effects on a number of key values associated with waterways. The pSWLP also includes a number of activity specific policies and rules, including for gravel extraction, drainage maintenance and whitebait stands. These provisions are addressed separately following the analysis and recommendations on Policy 28 and related rules.
- 10.3 Some submitters made similar submissions against a number of the provisions related to river and lake beds. Rather than repeat the common submissions points and analysis for each provision, these submissions are addressed in an introductory section.

### Policy Considerations

- 10.4 Section 13 of the RMA contains restrictions on certain uses of beds of lakes and rivers (but does not apply to any use of land in the coastal marine area) unless expressly allowed by a regional rule or a resource consent. In particular, section 13(1) reads:

**13 Restriction on certain uses of beds of lakes and rivers**

- (1) *No person may, in relation to the bed of any lake or river,—*
- a) *use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or*
  - b) *excavate, drill, tunnel, or otherwise disturb the bed; or*
  - c) *introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
  - d) *deposit any substance in, on, or under the bed; or*
  - e) *reclaim or drain the bed—*
- unless expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.*

- 10.5 The SRPS sets the objectives, policies and methods to achieve the integrated management of the natural and physical resources in Southland. Of relevance to activities in relation to the bed of rivers and lakes are the following objectives and policies. Objective 6.4 requires that adverse effects of activities in, on, under, adjacent to, or over the beds of lakes, rivers and wetlands is avoided wherever practicable, remedied or mitigated. Policy 6.5 requires that access to and along the beds and margins of lakes, rivers and wetlands is encouraged and enhanced, except where restrictions are necessary to protect a range of identified matters. Policy 6.10 requires existing structures be recognised and provided for, including hydroelectric installations, flood alleviation and

river management works, allowing for their maintenance, upgrading and enhancement, subject to the adverse effects being avoided wherever practicable, remedied or mitigated. Policy 6.12 directs that the Region's fluvial gravel resources are managed so as to avoid, remedy or mitigate adverse effects of gravel extraction.

- 10.6 The pSRPS has a number of provisions that are relevant to activities related to beds of lakes and rivers. Objective BRL.1 (Lake and river bed values) requires that all significant values of lakes and rivers are maintained and enhanced. This is supported by Policy BRL.1 (Managing effects on values and physical process) which requires that regional plans include policies and methods that avoid as far as practicable, and only where avoidance is not practicable, remedy or mitigate adverse effects of activities in the beds of lakes and rivers, in particular the effects on: natural character; instream ecological values, including bird habitat; historic heritage and cultural values, particularly tangata whenua cultural values, and spiritual values; amenity values; and recreational values.
- 10.7 Policy BRL.1 also requires regional plans to include policies and methods that manage adverse effects of activities in the beds of lakes and rivers on erosion and deposition processes; flooding risk, bank stability and drainage capacity and the social, economic, cultural and environmental wellbeing of the community.
- 10.8 Policy BRL.2 (Existing uses of lake and river beds) provides for lawfully established structures and activities in the beds of lakes and rivers, including their maintenance, enhancement and upgrading while avoiding wherever practicable, mitigating or remedying any adverse effects.
- 10.9 Within the pSWLP, the key objectives related to beds of lakes and rivers are:
- Objective 1 (land and water and associated ecosystems are managed as integrated natural resources);
  - Objective 2 (water and land is recognised as an enabler of the economic, social and cultural wellbeing of the region);
  - Objective 14 (maintain and enhance the range and diversity of indigenous ecosystem types and habitats (including their life-supporting capacity));
  - Objective 15 (recognise and provide for taonga species);
  - Objective 16 (public access is maintained); and
  - Objective 17 (natural character of wetlands, rivers and lakes are protected from inappropriate use and development).
- 10.10 As discussed in section 5 of this report, there is room to better align the objectives in the pSWLP with the direction set out in Objective BRL.1 and Policy BRL.2 of the pSRPS.
- 10.11 Section 3.5.10 of Te Tangi a Tauira (Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan) sets out Ngāi Tahu's general water policy. Within this section of the IMP, Policy 3.5.10.3 (which seeks to protect and enhance the mauri, or life-supporting capacity, of freshwater resources throughout Murihiku) is of particular relevance to activities in the bed of lakes and rivers.
- 10.12 Section 3.5.15 of the IMP sets out Ngāi Tahu's policy position on activities in the beds and margins of rivers. Other policies of particular relevance are Policy 3.5.19.8 (in respect of riparian zones) and Policies 3.5.20.2 and 3.5.20.5 (in relation to freshwater fisheries).

## General provisions related to beds of lakes and rivers

### Policy 28 – Structures and bed disturbance activities of rivers (including streams and modified watercourses) and lakes

#### Introduction

10.13 Many structures and activities that disturb the beds of lakes and rivers can have economic, social, and in some cases, environmental benefits. However, these activities can also have a range of adverse effects on the environment which need to be avoided, remedied or mitigated, and Policy 28 seeks to manage these effects.

#### Provision

10.14 Policy 28 reads:

*Manage structures and bed disturbance activities in the beds of rivers and lakes, to avoid, remedy or mitigate adverse effects on:*

1. *water quality and quantity;*
2. *habitats, ecosystems and fish passage;*
3. *indigenous biological diversity;*
4. *historic heritage;*
5. *the spiritual and cultural values and beliefs of the tangata whenua;*
6. *mātaítai and taiāpure;*
7. *public access (except in circumstances where public health and safety are at risk) and amenity values;*
8. *natural character values and outstanding natural features;*
9. *river morphology and dynamics, including erosion and sedimentation;*
10. *flood risk;*
11. *infrastructural assets; and*
12. *navigational safety.*

#### Submissions

10.15 There are 23 submissions on Policy 28 with the majority in support of the policy. Meridian requests that specific reference to discharges associated with the management of structures and bed disturbance activities be included in the policy. The submitter notes that recognition of the associated discharges is consistent with the drafting of the rules and the requested amendments will provide greater clarity between the objectives, policies and rules.

10.16 Forest and Bird submits that the policy as notified does not provide any direction in the interpretation of the general requirements of the RMA and in some cases conflicts with Section 6 of the RMA. Rather than seeking to avoid, remedy or mitigate adverse effects, they request that the policy should aim to manage structures and bed disturbance of rivers and lakes in such a way that it maintains or improves the matters listed. The submitter also seeks to delete reference to natural character values and outstanding natural features.

- 10.17 DOC requests that landscape values be inserted into the policy on the basis that the policy is inconsistent with section 6(b) of the RMA. In particular, it notes that inappropriately located structures in outstanding landscapes can have significant adverse effects on landscape values. Fish and Game seeks similar relief. In addition, Fish and Game also seeks that clause (7) is amended so that there is no exception to the requirement to avoid, remedy or mitigate adverse effects on public access, and that the policy enables effects on navigational safety to be considered. I note Fish and Game also seeks amendments throughout the pSWLP that all references to activities in the beds of rivers and lakes also includes “and their margins”.
- 10.18 Both KiwiRail and Federated Farmers seek that reference to historic heritage be removed from the policy. KiwiRail note that the rail corridor is both an infrastructural asset and part of Southland’s historic heritage (with various sections opening prior to 1880). In its submission, KiwiRail state there is an inherent conflict in the requirements of Policy 28. Federated Farmers also request that consideration for historic heritage, spiritual and cultural values and beliefs of tangata whenua be removed as it states it is unclear what it is meant by adverse effects on these values.
- 10.19 M Tayler seeks the introduction of a rule/mechanism that allows landowners the ability to maintain a waterway if GMP’s are observed.

## **Analysis**

### **General matters**

- 10.20 Policy 28 directs that the management of structures and bed disturbance activities must be undertaken in such a way to avoid, remedy or mitigate any potential adverse effects from the activity. The values and attributes listed in Policy 28 provide for consideration of effects on water quality; habitats and ecosystems; and river morphology and dynamics (including sedimentation). It is my view that these matters allow for the consideration of the effects of associated discharges and as such, I do not consider that any further amendments are necessary to provide for the request from Meridian. I recommend the submission from Meridian be rejected.
- 10.21 Works in the beds of rivers and lakes typically result in a temporary degradation of water quality. For example, the installation of a bridge support in the bed of a river would likely result in some mobilisation of sediment (either during the installation of the structure or during works to divert the waterway around the area of works). I note that the policy seeks to manage activities to avoid, remedy or mitigate effects on water quality, rather than seeking to avoid any degradation of water quality. It is my view that no temporary degradation of water quality is a high standard that is unlikely to be achievable for activities in the bed of rivers and lakes. Rather, I consider the direction set out in Policy 28 is sufficient to manage such effects and is consistent with the direction set out in Policy BLR.1 of the pSRPS. As such, I recommend the submission from Forest and Bird is rejected.
- 10.22 The term “margins” is used in section 6(a) of the RMA in relation to “protecting the natural character” of lakes and rivers. Objectives 14 and 17 (as recommended to be amended by section 42A reporting officers) seek to maintain, enhance or protect various values associated with the beds and margins of lakes and rivers. To ensure the policies in

the pSWLP give effect to the objectives, it is my view that the addition of the words “*and their margins*” is appropriate and I recommend the submission from Fish and Game be accepted in part. I note that Fish and Game’s submission to include the terms “*and their margins*” also applies to a number of rules within the pSWLP, where it also seeks to add a new definition of “lake and river margins”. These matters are specifically addressed in the assessment of those rules.

- 10.23 Within the pSWLP there are a number of permitted activity rules that allow for works to occur within waterways provided the activity meets the permitted activity standards. It is my view that these rules already provide for the request made by M Tayler (to include a rule to allow landowners to maintain waterways). Any effects beyond those permitted by the Plan will necessarily require further assessment to ensure those effects are suitably managed. I therefore do not recommend this submission from M Tayler is accepted.

### **Landscape values**

- 10.24 As identified in submissions from Fish and Game and DOC, the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development is a matter of national importance that must be recognised and provided for in accordance with section 6(b) of the RMA. Effects from land use activities on landscape is a matter that falls primarily within the functions of district councils (including effects on landscape values associated with the use of land in or on the bed of rivers and lakes). However, at a policy level, it is an issue that can be, and possibly ought to be, taken into account during the processing of a resource consent, particularly given the direction set out in the pSRPS<sup>660</sup>. As such, I recommend that the submissions from Fish and Game and DOC (in relation to landscape values) are accepted.

### **Access**

- 10.25 The maintenance and enhancement of public access to and along lakes and rivers is also a matter of national importance that must be recognised and provided for (in accordance with section 6(d) of the RMA). Objective 16 of the pSWLP gives effect to section 6(d) of the RMA and Objective BRL.2 of the pSRPS.
- 10.26 The requirement to maintain (and enhance<sup>661</sup>) public access is reflected in Policy 28 by managing activities in the beds of rivers and lakes to avoid, remedy or mitigate effects on access, except in circumstances where public health and safety are at risk. For the reasons discussed in section 5 of this report in relation to Objective 16, I do not recommend Fish and Game’s submission in relation to public access is adopted as there is a clear need to ensure that health and safety is taken into consideration when providing public access to lakes and rivers. Further to this, the NZCPS sets a precedent by directing that public walking access can be restricted to protect public health and safety.

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<sup>660</sup> Method LNF.1: The Southland Regional Council will establish and maintain provisions in regional plans to protect outstanding natural landscapes from inappropriate land use and development and manage effects on natural features and landscapes identified as locally distinctive and valued.

<sup>661</sup> As per section 6(d) of the RMA, Objective BRL.2 of the pSRPS and officer’s recommended amendments to Objective 16.

## Historic heritage

- 10.27 The protection of historic heritage from inappropriate subdivision, use and development is also a matter of national importance<sup>662</sup>. Policy BRL.1 of the pSRPS requires regional plans to include policies and methods that avoid as far as practicable and only where avoidance is not practicable, remedy or mitigate adverse effects of activities in the beds of lakes and rivers on a number of matters, including historic heritage. While the objectives contained in the pSWLP do not give specific direction on this matter<sup>663</sup>, in accordance with section 67(3)(c) of the RMA, a regional plan must give effect to any relevant regional policy statement. On that basis, and given the pSRPS is directive in that regional plans must provide for historic heritage, I recommend that the submissions from KiwiRail and Federated Farmers (in relation to historic heritage) are rejected.
- 10.28 Similarly, the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga is also a matter of national importance that must be recognised and provided for (section 6(e) of the RMA). Policy BRL.1 of the pSRPS also directs that effects on cultural values (particularly tangata whenua cultural values, and spiritual values) are avoided, remedied or mitigated. For the reasons outlined above in relation to historic heritage, I recommend the request from Federated Farmers (to remove consideration for spiritual and cultural values and beliefs of the tangata whenua) be rejected.

## Recommendation

- 10.29 Amend Policy 28 as follows:

*Manage structures and bed disturbance activities in the beds and margins<sup>664</sup> of rivers and lakes, to avoid, remedy or mitigate adverse effects on:...*

*13. Landscape values<sup>665</sup>*

## Rules related to river and lake beds

- 10.30 The pSWLP contains 23 rules related to bed disturbance activities and/or structures in, on or under the bed of lakes and rivers. A significant number of rules received common submissions from the same submitters, covering topics such as significant indigenous vegetation, historic heritage, landscape values and access to waterways. These common submissions and the officers recommendations on these are outlined in the following section and are not repeated for each of the rules.

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<sup>662</sup> Section 6(f) of the RMA.

<sup>663</sup> Objective 17 (in relation to natural character of wetlands, rivers and lakes) does not include direction in relation to historic heritage.

<sup>664</sup> 752.69 Fish and Game

<sup>665</sup> 210.61 DOC



## Common submissions on rules in relation to activities in the bed of rivers and lakes

### Historic heritage - submissions and analysis

- 10.31 A number of the permitted activity rules in relation to activities in the bed of rivers or lakes include the following condition: “*there are no recorded heritage sites, at the site of the activity*”.
- 10.32 Where an activity cannot comply with the conditions of these permitted activity rules, the activity becomes either a controlled, restricted discretionary or discretionary activity. Where the Council has limited control or restricted discretion, the relevant rules in the pSWLP include a matter of control or discretion that enables the Council to consider effects on a number of matters, including historic heritage.
- 10.33 HNZ seeks to retain:
- (a) the condition that states “*there are no recorded heritage sites, at the site of the activity*” on rules for activities in the bed of rivers and lakes;<sup>666</sup> and
  - (b) any associated matter of control or discretion that specifically enables the Council to consider the effects of an activity on historic heritage.<sup>667</sup>
- 10.34 The submission from HNZ also contains a proposed schedule which sets out information to “*alert the public to their responsibilities regarding archaeological sites*”.
- 10.35 KiwiRail seeks to delete reference to historic heritage throughout the permitted activity rules related to activities in the bed of rivers and lakes. The submitter states that a trigger for resource consent for minor activities (including maintenance of structures and associated bed disturbance) is not supported. Given the age of the rail network, there is no ability to use the permitted standards in relation to the rail corridor, with consent likely to only be required from the Council in relation to heritage matters. NZTA similarly seek deletion of the permitted activity conditions from Rules 59, 61, 67, 68 and 75, noting that it is not clear what ‘historic heritage sites’ are. They also note that some activities managed in the pSWLP are undertaken in order to preserve heritage values associated with historic structures, such as bridges identified in the New Zealand Heritage list/Rarangi Korero.
- 10.36 Rule 65(a) (whitebait stands) specifies that the use of any lawfully established whitebait stand is a controlled activity, however this rule does not provide the Council with control to consider historic heritage. Fish and Game seeks that the rule is amended to include historic heritage (amongst other values) as a matter of control that the Council can consider.
- 10.37 In relation to the requirement that “*there are no recorded heritage sites, at the site of the activity*”, my view is that the condition is problematic. In my experience, ‘sites’ of historic significance are managed through district plan rules and the trigger in this rule could result in an unnecessary duplication of consenting. I also note that any activity that modifies or destroys an archaeological site requires an archaeological authority under the

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<sup>666</sup> Rules 55(a)(vii); 57(a)(xi); 58(a)(xv); 59(a)(xvi); 61(a)(xi) and (b)(xv); 62(a)(vii); 63(b)(vii); 64(a)(iv); 66(a)(vii); 67(a)(ii) and (x); 68(a)(viii); 72(a)(vi); 73(a)(x) and (b)(vii); 75(a)(viii) and 76(b)(vii)

<sup>667</sup> Rules 57(b)(2); 58(b)(2); 59(b)(2); 63(b)(2); 64(b)(2); 67(b)(1); 68(b)(1); 72(a)(2); 73(a)(2) and (b)(3).

Heritage New Zealand Pouhere Taonga Act 2014. In my view the condition is also somewhat uncertain as to when the “site of the activity” would include a historic heritage site. Given the uncertainty as to when the condition might be triggered and the potential for duplication of consenting, my recommendation would be to delete the condition from the permitted activity standards from the relevant rules and include an advisory note setting out the obligations under the Heritage New Zealand Pouhere Taonga Act 2014, with reference to the proposed schedule, as set out in the submission from HNZ:

*In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.*

- 10.38 For completeness, I note that Rules 55, 60, 63, 64, 72 and 76 also contain the permitted activity condition discussed above, but no submission has explicitly sought the deletion of this condition. If the Hearing Panel considers that there is sufficient scope to delete the condition from these rules, my preference would be to do so, for the reasons set out above and so that the rules are consistent.
- 10.39 As described earlier, where an activity does not meet the permitted activity standards, Council still has control or discretion to consider the effects of an activity on historic heritage, consistent with the direction set out in Policy BLR.1 of the pSRPS and Policy 28. The only exception to this is Rule 65(a), which relates to the use of a lawfully established whitebait stand. I do not consider that effects on historic heritage is a relevant consideration for the use of a lawfully established structure such as a whitebait stand.
- 10.40 NZTA, whilst supporting the intention of the heritage rules considers that Rules 67 and 68 both currently contain duplication. Within its submission, it states that “*it is not clear what ‘historic heritage sites’ are... additionally the Transport Agency is unclear what the reference to pre 1920 structures is derived from and is not mentioned in the section 32 evaluation.*” NZTA also submits that the reference to pre-1920 should be deleted. KiwiRail seeks similar amendments to these rules.
- 10.41 The recommended amendments to delete reference to historic heritage sites from the permitted activity standards to Rules 67 and 68 likely address the concerns raised by NZTA and KiwiRail. Should the Hearing Panel decide to retain these conditions, I note that reference to pre-1920 structures is to ensure that the effects on any structure that has heritage values (but is not included in a district plan or on the New Zealand Heritage List/Rā Kōrero) is appropriately considered via a consent process. Accordingly, if the condition is retained it is my view that it be amended to reflect the definition of “archaeological site” as set out in section 6 of the Heritage New Zealand Pouhere Taonga Act 2014, which references any building or structure (or part thereof) that was associated with human activity that occurred before 1900.

## **Recommendation**

- 10.42 That a new schedule be inserted into the plan as follows:

## **Schedule x: Archaeological Requirements**<sup>668</sup>

This Schedule sets out information to alert the public to their responsibilities regarding archaeological sites. This is relevant with regard to:

- (1) demolition/destruction of any structure associated with human activity prior to 1900, whether or not it is scheduled in a district or regional plan;
- (2) earthworks or other works that may disturb pre-1900 surface or sub-surface archaeological sites or material.

An archaeological site is defined by the Heritage New Zealand Pouhere Taonga Act 2014 as being:

- (a) any place in New Zealand, including any building or structure (or part of a building or structure), that:
  - (i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and
  - (ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand.

It is also possible for Heritage New Zealand Pouhere Taonga (Heritage New Zealand) to declare a post-1900 site as an archaeological site.

### **Consent required from Heritage New Zealand**

An authority (consent) from Heritage New Zealand must be obtained prior to the works noted in (1) or (2) above. It is an offence to modify or destroy an archaeological site, or demolish/destroy a whole building without an authority if the person knew or ought to reasonably suspect it to be an archaeological site. For further information contact Heritage New Zealand.

### **Known or suspected archaeological sites**

The following resources may assist in determining if an archaeological site is or may be present:

- historic and cultural heritage scheduled in a district or regional plan;
- sites listed by the New Zealand Archaeological Association's (NZAA) Archaeological Site Recording Scheme (latest information is on the NZAA website);
- Council GIS information that highlights known sites and areas where there is a higher risk of unidentified historic heritage being encountered;
- written and oral histories of the area, including those of Tangata Whenua.

### **Archaeological discovery without an authority (Protocol)**

In an authority has not first been obtained from Heritage New Zealand, and an archaeological site is subsequently discovered, the following protocol must be followed:

- immediately cease operations;
- inform the relevant iwi authority;
- inform Heritage New Zealand and apply for the appropriate authority, if required;
- take appropriate action, after discussion with Heritage New Zealand, Council and relevant iwi authority to remedy damage and/or restore the site.

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<sup>668</sup> 372.35 HNZ

## **Outstanding natural landscapes - submissions and analysis**

- 10.43 Fish and Game and DOC request that landscape values is included as a matter of discretion to a number of rules<sup>669</sup>. In particular, DOC seeks that Rule 57 (in relation to the placement, erection or reconstruction of a bridge) is amended to include “natural features and landscapes” as a matter of discretion. In its submission, it states that the adverse effects of a bridge on an outstanding landscape or natural feature are matters that should be considered by the Council, and it is contrary to section 6(b) of the RMA not to do so.
- 10.44 Similarly, Fish and Game seek that several rules are amended so that the Council has discretion to consider a number of additional matters, including the effects of the activity on landscape.
- 10.45 With regards to natural features and landscapes, it is my view that the matters that the Council considers when assessing the effects of an activity (in relation to the beds of rivers and lakes) should be consistent with the policy direction in Policy 28. I note that it is recommended that Policy 28 be amended to include consideration of effects on landscape values. I also note that the policy includes reference to both natural character values and outstanding natural features, so I consider it appropriate to amend the matters for discretion to include landscapes, natural character values, and outstanding natural features.
- 10.46 As such I recommend the submissions from DOC and Fish and Game in relation to adding consideration of landscape values and natural features to the matters of discretion are accepted in part.
- 10.47 For completeness, I note that no submission has explicitly sought the inclusion of “landscape” as a matter of discretion in Rule 65(e). If the Hearing Panel considers that there is sufficient scope to include this as a matter of discretion in this rule, my preference would be to do so, for the reasons set out above and so that the rules are consistent.

## **Significant indigenous vegetation - submissions and analysis**

- 10.48 J Bythell requests that the following clause “there shall be no damage or destruction of significant indigenous vegetation” be added to a number of rules.<sup>670</sup> In many cases J Bythell seeks that this clause forms part of the conditions required to be met in order for an activity to be classified as permitted; in other cases it would be a condition required to be met in order for an activity to be classified as restricted discretionary.
- 10.49 In my view, the permitted activity condition, as sought by J Bythell, is an inefficient way of implementing Policy 32 (Protect significant indigenous vegetation and habitat) because it will require determination, on a case-by-case basis, of whether the site of any application contains significant indigenous vegetation. If the types of activities governed by these rules were activities that had a high likelihood of affecting areas of significant indigenous vegetation, then such a condition might be justified. However, it is my view that permitted activities for which the additional condition is sought are already limited

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<sup>669</sup> Rules 57(b)(2); 58(b)(2); 59(b)(2); 65(a)(1); 67(b)(1); 72(a)(3); 73(a); 77(b)(2)

<sup>670</sup> Rules 51(a); 55(a); 57(a); 58(a); 59(a); 60(a); 61(a) and (b); 62(a); 63(b); 64(a); 65(e); 66(a); 67(a); 71(a); 72(a); 73(a) and (b); 75(a); 76(b); 77(a); and 78(a).

by other conditions, or by the nature of the activity itself being limited, for example, the placement, erection or reconstruction of any mooring, navigational aid or sign (Rule 63) or whitebait stands (Rule 65). Therefore my view is that the standard is not appropriate, nor necessary in order to implement Policies 28 or 32. Similarly, I do not consider a condition for restricted discretionary activities to be necessary.

- 10.50 I have also considered if it would be more appropriate, in terms of efficiency and effectiveness, for the matters of discretion to be amended to ensure that potential effects on significant indigenous vegetation are able to be considered where an activity does not meet the permitted activity requirements. Having reviewed the types of activities covered by the rules submitted on, and the existing matters of discretion, it is my view that no changes are required. This is because either the type of activity is such that it is unlikely to affect significant indigenous vegetation, or the matters of discretion already allow for consideration on such vegetation. For example, consideration of effects on aquatic and riverine ecosystems.
- 10.51 I therefore recommend that the addition of the words “there shall be no damage or destruction of significant indigenous vegetation” (or similar) sought by J Bythell be rejected.

#### **Access to waterways - submissions and analysis**

- 10.52 Fish and Game seeks that an additional condition is included within part (a) of the rule, requiring that “The structure does not impede any legal access to the river, modified watercourse or lake”. In its view, this is required because the rule as notified does not adequately protect legal access nor give effect to section 6(d) of the RMA<sup>671</sup>.
- 10.53 Proposed Objective 16 is “Public access to river and lake beds is maintained, except in circumstances where public health and safety are at risk.” This is also reflected in Policy 28, which directs that structures and bed disturbance in the beds of rivers and lakes is managed to avoid, remedy or mitigate adverse effects on a range of matters, including “public access (except in circumstances where public health and safety are at risk) and amenity values”. While these indicate that access is to be maintained, in my view, the question is whether or not the condition is actually required in order to achieve this.
- 10.54 In my view, the condition sought is problematic, because, for example, a structure could technically impede access to a waterbody in the particular spot that it was located (and thus would not meet the rule condition), but not to the waterbody as a whole. From a practical point of view, I think it is unlikely that the types of activities managed by these rules are going to affect access to such an extent that it justifies additional consenting. As such, I do not consider that the condition sought is an efficient way of implementing the policy and achieving the objective. I note that activities that do not otherwise meet the permitted activity standards and require consent could, as discretionary activities, include consideration of access and in my view this is more appropriate and efficient than a permitted activity standard. For completeness, I note that the default activity status where the permitted activity standard is not met is either controlled, restricted discretionary or discretionary, where the control or matters to which discretion is restricted already largely include consideration of public access. Where public access is

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<sup>671</sup> The direction in relation to section 6(d) of the RMA, referred to by Fish and Game, is to recognise and provide for the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers

not included as a matter to control or discretion,<sup>672</sup> and this has been sought by Fish and Game to be added, I recommend that the additional matter be included, in order to align the matters with Policy 28.

### **Water Conservation Orders - submissions and analysis**

10.55 Fish and Game submits that a number of the rules<sup>673</sup> which create permitted activities for the construction and/or erection and use of structures in river and lake beds do not recognise or provide for the protection of outstanding characteristics or features recognised by the Mataura or Oreti Water Conservation Orders (WCO). It submits that this is also the case where the permitted standards are not complied with and becomes a restricted discretionary activity (under Rules 56-60, 63, 65-68, 72, 73, 75-78). In order to address its concerns, Fish and Game seek that the aforementioned restricted discretionary rules are amended to include the following matter of discretion:

*Any outstanding characteristics or features recognised by a Water Conservation Order, including habitat for brown trout and angling amenity value where applicable.*

10.56 While the general provisions and restrictions set out in the Oreti River and Mataura River WCOs only relate to water permits and discharge permits and there are no equivalent restrictions associated with works in the bed of the river, Policy 28 (specifically clauses 7 and 8) reference amenity values and natural character values and outstanding natural features. I acknowledge that this is not a direct reference to the two WCOs, however it does provide a specific direction to achieve a desired environmental outcome.

10.57 I note that the matters of discretion set out for Rules 57(b) and 58(b) already provide the Council the discretion to consider these matters. While I do not consider it necessary to include specific reference to the matters recognised by the WCOs, it is my view that it is appropriate to amend the matters of discretion of Rules 59(b), 63(b), 65(e), 66(b), 67(b) and 68(b) to include consideration of the matters set out in Policy 28 (7) and (8). I recommend the submission from Fish and Game, in relation to amenity values, natural character values and outstanding natural features, be adopted in part for these rules. For completeness, I note that Rules 56, 60, 70 and 78 do not contain restricted discretionary rules and therefore recommend the submission from Fish and Game on these rules (in relation to outstanding features) be rejected. In addition, I do not consider that these matters are necessary consideration for activities related to the planting of vegetation (Rule 76) or the entry into or passage across the bed of a river or lake by a vehicle or machine (Rule 77) and, similarly, I recommend the submission from Fish and Game on these rules be rejected.

### **Margins of lakes and rivers – submissions and analysis**

10.58 Fish and Game and Forest and Bird seek to insert the words “and their margins” throughout the pSWLP, wherever provisions refer to the management of wetland, lake and river beds. The submitters state that the pSWLP (as notified) is inconsistent with section 6 of the RMA.

10.59 I note Objective 14 (as notified) seeks to maintain or enhance the life supporting capacity and the range and diversity of indigenous ecosystem types and habitats within dryland

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<sup>672</sup> Rule 58(b)(2); 59(b)(2); 67(b)(1); 72(a)(3); 73(a)(6) and 73(b)(3)

<sup>673</sup> Rules 55-59, 61-69, 70, 75 and 78.

environments, rivers, estuaries, wetlands and lakes, *including their margins*. The section 42A reporting officers recommend that Objective 17 and Policy 28 are amended to also include reference to river and lake margins. To ensure that the rules implement the policies in the pSWLP, it is my view that some amendments to the rules may be necessary to ensure that activities are appropriately managed to ensure that the values listed in Objectives 14 and 17 are maintained, enhanced or protected. However, it is my view that more careful analysis is necessary prior to inserting these terms across all of the rules in the pSWLP that relate to the management of beds of lakes and rivers. For example, Rule 63 seeks to manage the effects associated with the installation of moorings and signs, where such effects are typically limited only to the bed of the river or lake. Extending the rule to apply to land beyond that area may result in more resource consents being required than necessary to adequately manage such effects.

- 10.60 Without additional information supporting the inclusion of “*and their margins*” in Rules 55-78, I do not recommend the submissions from Fish and Game and Forest and Bird be accepted.

### **Matters of Discretion**

- 10.61 In addition to those matters discussed above, Fish and Game have sought that a number of controlled and restricted discretionary rules be amended to include additional matters of control or discretion. Where these matters are considered to better align the matters of discretion with the direction set in Policy 28, these are recommended to be included. For example, “*navigational safety*”. Where they do not relate to matters set out in Policy 28, or to the activity that the relevant rule manages, it is recommended that these changes be rejected, for example, reference to “*recreation values*”. Examples of where they do not relate to the activity include Rule 65(a) (the use of a whitebait stand) and Rule 78 (weed and sediment removal for drainage maintenance).

## **Activities in river and lake beds**

### **Rule 55 - Monitoring and sampling structures**

#### **Provision**

- 10.62 Rule 55(a) permits the use, placement, erection or reconstruction of any equipment, measuring apparatus or similar device, in on under or over the bed of any river or lake for the purpose of carrying out inspections, surveys, investigations (or similar), provided a number of permitted activity standards are met. Where the activity is unable to meet these conditions, consent is required as a discretionary activity.

#### **Submissions and Analysis**

- 10.63 Five submission points were received on Rule 55. Three support all or part of the rule and seek its retention. Submission points from J Bythell, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

## **Recommendation**

10.64 Retain Rule 55 as notified.

## **Rule 56 - Boat ramps, jetties and wharves**

### **Provision**

10.65 Rule 56 relates to boat ramps, jetties and wharves, where Rule 56(a) classifies the placement, erection or reconstruction of such structure, in, on or over the bed of any river or lake as a discretionary activity. Rule 56(b) permits the use of any lawfully established boat ramp, jetty or wharf in, on or under the bed of any river or lake provided a number of conditions are met. Where these conditions cannot be met, resource consent is required as a discretionary activity.

### **Submissions**

10.66 Four submission points were received on Rule 56. Two support the rule and seek its retention. Submission points from Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.67 Real Journeys seek that the rule is amended to provide for slipways and their maintenance as well as boat ramps. It also seeks that upgrading of structures is provided for in the pSWLP. The submitter states that the rule regime needs to acknowledge and enable the upgrading of existing wharf, boat ramp and slipway infrastructure, because such infrastructure within the district is older and requires upgrading. Real Journeys consider that repair work could be deemed as either alteration or reconstruction and express concerns that the former can be undertaken as a permitted activity whereas the latter would be discretionary.

### **Analysis**

10.68 It is my view, with respect to slipways, that the rule does not require any amendment in order to provide for slipways and their maintenance and ongoing use, as sought by Real Journeys. This is based on my understanding that a slipway is the same thing as a boat ramp (although such a ramp is not included in the glossary). With regards to providing for the upgrade of structures, it is my view that 'enabling' this needs to be considered against the policy direction in the pSWLP, particularly Policy 28 which seeks to manage structures and bed disturbance activities in the beds of rivers and lakes, to avoid, remedy or mitigate adverse effects on a range of identified matters. A fully discretionary activity status for any reconstruction allows for the effects on the matters in the policy to be considered through a resource consent application. In my view, this is an appropriate activity status to implement the policy and ensure that effects of such reconstruction are appropriately addressed.

## **Recommendation**

10.69 Retain Rule 56 as notified.



## Rule 57 – Bridges

### Provision

- 10.70 Rule 57 provides for the placement, erection, reconstruction and use of any bridge in, on or over the bed of any river or lake (including any associated bed disturbance and discharge). Where any permitted activity standards cannot be met, resource consent is required for a restricted discretionary or discretionary activity, depending on which standard is not met.

### Submissions

- 10.71 Fourteen submission points were received on this rule. Seven support all or part of the rule and seek its retention. Submission points from DOC, J Bythell, KiwiRail, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.
- 10.72 Several submissions relate to condition (a)(i) of the rule which limits permitted activity status to bridges that do not include support structures. By virtue of this condition, bridges that do include support structures would require consent. These submission points include L & C Cowan who oppose the rule, stating that it is unreasonable to make people pay for the construction of a bridge without any support structures and that bridges over a certain length must have such support structures. They seek that people are left to make their own bridges, or those people who know what is required to do so. Similarly, PD and PAE Hudson oppose condition (a)(i) of the rule, seeking that bridge replacement be considered on a case by case situation, as replacing an existing bridge with piles with a single span structure would be too costly. KiwiRail support the condition as it relates to new bridges, however it seeks that it is amended so that reconstruction of existing bridges with support structures is included, provided that the reconstruction does not involve any additional support structures.
- 10.73 NZDF seek that an additional permitted activity rule is included which would allow for “The use, erection, construction, placement, the removal, or demolition of a temporary bridge for military training activities in, on, under or over the bed of a stream or river, and associated bed disturbance”, subject only to the condition that the bridge is removed entirely within 2 weeks of its erection. This is sought on the basis that temporary bridges are a key part of military training and as they are temporary they have no lasting effect on the environment including the capacity of the waterway to pass flood flows. The submitter considers a requirement to seek consent every time a temporary bridge is proposed is logistically and administratively difficult. It states that the general permitted activity standards of Rule 57 are adequate to address the effects of a temporary bridge with no specific permitted activity standards being necessary.
- 10.74 Fish and Game seeks an additional condition as follows: “*Where the bridge is intended for use by stock and/or vehicles, the bridge and abutments are designed and constructed to avoid animal waste or sediment entering the river, lake or modified watercourse.*” This is sought in order to direct animal waste and sediment away from the riparian margins of the waterway.

## Analysis

- 10.75 In my view L and C Cowan and PD and PAE Hudson may have misunderstood the intention of condition (a)(i) of the rule which relates to a bridge only being permitted if there are no support structures. The effect of this condition is that bridges that require support structures will require a resource consent, rather than requiring any bridge to be built without support structures. As such, the rule does not result in costs associated with having to build single span structures, although it will result in the costs associated with consenting of structures that require support structures. In my view this is reasonable because support structures have the potential to affect water bodies, and the cost of resource consent process is outweighed by the benefits of a full assessment of the effects of such support structures.
- 10.76 In terms of the changes sought by KiwiRail to provide for the replacement of existing support structures, while accepting that the on-going effects of the support structures are part of the existing environment, it is my view that there are additional effects arising from the disturbance associated with the replacement of such structures. Again, the exclusion of replacement of support structures within the rule does not mean such structures cannot be replaced, rather it means that a consent will be required and the full effects of the activity can be assessed.
- 10.77 In my view, what is sought by the NZDF is not appropriate. The submitter states that the standards in Rule 57 are adequate to address the effects of temporary bridges, yet then seeks a rule which removes such standards. I further note that the submitter appears to consider that temporary bridges associated with military training will always require consent, but have not identified which standards would not be met thus triggering the need for consent on every occasion. If the submitter is able to expand on what conditions are not able to be met for temporary bridges and how the effects of a temporary bridge can be managed through alternative conditions, then changes to the rule may be appropriate, but are not recommended at this stage.
- 10.78 In my view the additional condition sought by Fish and Game to part (a) of the rule is not necessary. This part of the rule relates to the placement, erection or reconstruction of bridges; however part (c) relates to the use of a bridge and includes the requirement that “(vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.” This means that the potential for contaminants is sufficiently addressed on an on-going basis and does not need to be duplicated in part (a) of the rule.

## Recommendation

- 10.79 That Rule 57(c) and 57(d) are retained as notified, and that Rule 57(a) and 57(b) are amended as follows:

- (a) *The placement, erection or reconstruction of any bridge in, on or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity is a permitted activity provided the following conditions are met:*
- (i) *there are no support structures (for example, piles) in the bed;*
  - (ii) *the bridge and its abutments shall not increase the risk of flooding to surrounding land;*
  - (iii) *the bridge and its bank abutments shall not impede the flow of water within the river channel;*

- (iv) *the structure is not within any mātaítai, noboanga, or taiāpure;*
- (v) *fish passage shall not be impeded as a result of the activity;*
- (vi) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
- (vii) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
- (viii) *any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
- (ix) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
- (x) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
- ~~(xi) *there are no recorded historic heritage sites, at the site of the activity;*<sup>674</sup>~~
- (xii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
- (xiii) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
- (xiv) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
- (xv) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
- (xvi) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
- (xvii) *the structure shall be maintained in a state of good repair.*

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>675</sup>

- (b) *The placement, erection or reconstruction and any associated bed disturbance of any bridge in, on or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity that does not meet one or more of the conditions of Rule 57(a) is a restricted discretionary activity.*

*Environment Southland will restrict its discretion to the following matters:*

1. *the design and location of the bridge;*
2. *effects on flood risk, river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitats, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, natural character and amenity values, outstanding natural features,<sup>676</sup> public access<sup>677</sup> and navigational safety;*
3. *any conditions in Rule 57(a) that cannot be met.*

<sup>674</sup> 449.26 KiwiRail

<sup>675</sup> Consequential amendment relating to 449.26 KiwiRail

<sup>676</sup> 210.89 DOC

<sup>677</sup> 752.150 Fish and Game

## Rule 58 - Cables, wires and pipes

### Provision

10.80 Rule 58 provides for the placement, erection or reconstruction of any cable, wire, pipe or pipeline (including any intake or discharge pipe or temporary gauging) and associated safety signs or markers in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity. Any activity that does not meet the conditions of the permitted activity Rules 58(a) and (c) requires consent as a restricted discretionary or discretionary activity, depending on the condition that is breached.

### Submissions

10.81 Eight submissions were received on this rule. Three support all or part of the rule and seek its retention. Submission points from J Bythell, KiwiRail, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.82 Meridian seeks that (b) is amended to include any discharge resulting from the carrying out of the activity in order to ensure that it provides for associated discharges, consistent with part (a) of the rule.

10.83 Real Journeys submit that the rule should also provide for fences especially if the council wishes to keep stock out of waterways.

### Analysis

10.84 I agree with Meridian that part (b) of the rule should be amended so as to be consistent with part (a) although I recommend alternate wording that provide greater clarity.

10.85 The submission from Real Journeys is somewhat unclear. In the absence of further information, I do not recommend this submission is adopted.

### Recommendation

10.86 Amend Rule 58 as follows:

- (a) *The placement, erection or reconstruction of any cable, wire, pipe or pipeline (including any intake or discharge pipe or temporary gauging) and associated safety signs or markers in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity is a permitted activity provided the following conditions are met:*
- (i) *the structure shall not have any support structures (for example, stays or piles) in the bed (other than if it is attached to a pre-existing structure, such as a bridge);*
  - (ii) *the structure shall not cause a hazard to boating/ navigation, or aircraft/ aviation;*
  - (iii) *where the structure crosses over the bed, and is not a temporary structure, it shall not impede the flow of water within the river channel;*
  - (iv) *where the structure crosses over the bed, and is designed to carry contaminants, it shall comply with the relevant construction standards imposed by a territorial authority under the Building Act;*

- (v) where the structure crosses under the bed it shall be completely buried and remain buried, with the depth of burial being indicated on markers on either bank;
- (vi) where the structure is an intake pipe, it shall have a screening device to prevent fish from entering the pipe;
- (vii) where the structure is a discharge pipe, any discharge from the pipe shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
- (viii) the structure is not within any mātaimai, noboanga, or taiāpure;
- (ix) fish passage shall not be impeded as a result of the activity;
- (x) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
- (xi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
- (xii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (xiii) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (xiv) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- ~~(xv) there are no recorded historic heritage sites, at the site of the activity;~~<sup>678</sup>
- (xvi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (xvii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
- (xviii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
- (xix) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
- (xx) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
- (xxi) the structure shall be maintained in a state of good repair.

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>679</sup>

- (b) The placement, erection or reconstruction and any associated bed disturbance or discharge,<sup>680</sup> of any cable, wire, pipe or pipeline (including any intake or discharge pipe or temporary gauging) and associated safety signs or markers in, on, under or over the bed of any river, modified watercourse, or lake that does not meet one or more of the above conditions of Rule 58(a) is a restricted discretionary activity.

Environment Southland will restrict its discretion to the following matters:

1. the design and location of the structure;
2. effects on river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitats, the spiritual and cultural values and beliefs of the tangata

<sup>678</sup> 449.27 KiwiRail

<sup>679</sup> Consequential amendment relating to 449.27 KiwiRail

<sup>680</sup> 562.17 Meridian.

- whenua, historic heritage, taonga species, landscape,<sup>681</sup> natural character and amenity values, navigation and aviation hazard, and public access and recreation values;*
3. *any conditions in Rule 58(a) that cannot be met.*

## **Rule 59 - Culverts and Sediment Traps**

### **Provision**

- 10.87 Rule 59 enables culverts, associated inlets or protection structures or sediment traps in, on or over the bed any river, modified watercourse or lake to be installed to enable vehicles and stock to cross without disturbing the bed or banks and thus impacting water quality. If culverts, inlets and sediment traps are designed and positioned appropriately, adverse effects, such as restricted fish passage, flooding risks and sediment loss, are reduced. Sediment traps are used as a containment area to enable fine particles of soil within the water to settle out, and accumulate, and this sediment can be excavated at a later date.
- 10.88 Rule 59(a) provides for the “*placement, erection or reconstruction of any culvert, including any associated inlet or outlet protection structure, or sediment trap in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity*” as a permitted activity, subject to meeting 22 conditions, including size limits, ensuring fish passage, flood prevention and erosion control. If these permitted activity conditions cannot be met, resource consent is required for a controlled activity. Rule 59(c) provides for the use of any culvert as a permitted activity, subject to meeting four conditions. If these permitted activity conditions cannot be met, resource consent is required for a discretionary activity.

### **Submissions**

- 10.89 There were approximately 72 submissions on this rule, with 11 in support seeking that the rule is retained as notified. Submission points from J Bythell, KiwiRail, HNZ, NZTA and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.
- 10.90 P & L Cruickshank seeks that the rule is deleted as they believe that consideration by ES staff is “excessive interference”.
- 10.91 Several submitters seek that the permitted activity Rule 59(a) for the placement, erection or reconstruction of any culvert be amended so that the maximum diameter of the culvert be increased from 1200 millimetres to 1800 millimetres. Other submitters seek that the dimension of the culvert provided for by Rule 59(a) be amended to refer to a cross sectional area of 2.54m<sup>2</sup>; include a minimum height to width ratio, or to allow two culverts of up to 600 mm in diameter to be placed in the same crossing. NZTA submits that a cross-sectional area is more appropriate as not all culverts are circular. Some of these submitters also outline concerns with the requirement to get consent and the time that it may take to do so. Similarly, several submitters state that culverts are essential for accessing farms, and their safe use is a top priority and therefore seek that the replacement/restoration of a damaged culvert is provided for as a permitted activity.

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<sup>681</sup> 752.151 Fish and Game

- 10.92 Several submitters suggest that Council publishes a set of acceptable designs that culverts must meet in order to be a permitted activity. The submitters suggest these design standards would form part of the permitted activity criteria for Rule 59(a).
- 10.93 DG and BJ Carter submits that the maximum permitted diameter of a culvert will risk the “non-clearance” of flooding streams, creating erosion. Instead, the submitters seek to “*allow consultation with Environment Southland if a possible over size pipe might be needed*”.
- 10.94 G McGregor and Southland RLC seek amendments to Rule 59(a)(viii), as they state that the fill of 4 metres referred to in the condition needs to be linked to a height above the downstream invert of the structure, consistent with Rule 60. Environment Southland seek similar amendments.
- 10.95 NZTA submits that the term “flood flows” at 59(a)(iv) is not clear and seeks to replace this with a 0.5% Annual Exceedance Probability (AEP) event. The submitter also seeks that the conditions of the rules be amended to ensure that any culvert shall not increase the risk of flooding or damage to network utilities upstream or downstream of the culvert.
- 10.96 Several submitters seek that the size of the sediment traps permitted by Rule 59(a) be amended to increase up to 15m<sup>2</sup>, on the basis that sediment traps are low risk structures and should be encouraged.
- 10.97 Fish and Game seek that the matters of discretion of Rule 59(b) include the location of the culvert.
- 10.98 SIEIA seeks that the permitted activity condition 59(a)(x) be amended so that it is clear that upstream and down stream fish passage shall not be impeded as a result of the activity. Fish and Game also seek that this condition be included as part of Rule 59(c). In addition, it believes that non-compliance with condition 59(a)(x) should be a discretionary activity, and not a controlled activity as proposed.

## **Analysis**

### **Increase in culvert size**

- 10.99 One of the key themes in the submissions is in respect to the diameter of a culvert as a permitted activity. Several submissions suggest this should be increased from 1200mm, as set out in Rule 59(i), up to 1800mm. Advice was sought on this from Environment Southland’s Land Sustainability staff and the Technical Services Engineer, both of whom do not support the increase in diameter.
- 10.100 The Land Sustainability team have advised that it does not support an increase from 1200mm to 1800mm, as an increase in this size would nearly double the catchment area and the consequent flow that the culvert can handle. What this would mean in practice, is that a 1800mm pipe would enable installation of culverts with relatively large upstream catchments without requiring consent, and therefore with limited ability to avoid, remedy or mitigate adverse effects, other than those provided for in the permitted activity standards. In addition, 1200mm culverts can be installed by landowners without the need for heavy construction equipment, with the pipe itself able to be installed using

manual labour and bedded in with crowbars, front end loaders and farm machinery. An 1800mm pipe would normally need diggers to bed and install, which means more instream disturbance and increases the potential for adverse effects.

- 10.101 With the standard culvert length of 2.44m, the weight of a 1200mm diameter culvert is approximately 2000kg and for a 1800mm diameter culvert is approximately 4000kg. To provide further context to what the increase in catchment area from a 1200mm to a 1800mm culvert means, advice was sought from Environment Southland's Technical Services Engineer who advised that the catchment area for a 1200mm diameter culvert could be up to 348 ha. If the culvert size is increased to a 1800mm diameter culvert, it is understood that the catchment area could be as large as 700 ha or more.
- 10.102 I note that submissions that seek consultation with Environment Southland should an oversize culvert be required, or if a larger culvert was considered more environmentally beneficial are already provided for under Rule 59(b), as landholders can apply for a controlled activity resource consent. Based on the technical recommendations outlined above, it is my view that the diameter of the culvert should be retained as set out in Rule 59(i) being 1200mm (and not 1800mm as requested by a number of submitters) on the basis that a larger culvert size may result in potential adverse effects that require assessment, mitigation or remediation. Enabling potential adverse effects via a permitted activity rule will not give effect to Policy 28 of the pSWLP. I therefore do not recommend adopting the submissions which seek an increase in relation to the size of the culvert.

#### **Other general changes to culvert widths or two culverts side-by-side**

- 10.103 Other submissions seek a minimum height to width ratio, a cross sectional area of 2.54m<sup>2</sup> or to allow two culverts up to 600 mm in diameter to be placed in the same crossing. It is unclear from submissions what the impact would be by including a culvert cross sectional area or a minimum height to width ratio, as it could result in the installation of an inappropriately sized culvert. In my view, non-standard culvert dimensions are more appropriately considered via a resource consent process.
- 10.104 Both the Land Sustainability team and the Technical Services Engineer have identified that there are also risks with placing two culverts side-by-side in the same crossing, as this could cause a culvert to be placed incorrectly on the bed, e.g. different levels, meaning adverse environmental effects may occur. Because of this advice, I recommend retaining Rule 59(ii) as notified, to provide an effective and enforceable rule that is consistent with Policy 28. I note that there is a "Culvert Installation Diagram" on the Environment Southland website depicting the correct installation of culverts, and also note that people, whether it be the farmers or a contractor, should also always refer to the manufacturer's specifications and installation advice. I therefore do not recommend adopting the submissions that seek alternative standards for culverts.

#### **Installation depth**

- 10.105 The submission from S Crack seeks to remove the requirement within Rule 59(a)(v) which requires the invert (or bottom) of any culvert to be installed to a depth of either 300mm below the natural bed level or one-third of the diameter of the culvert, whichever is the lesser. Other submissions seek to retain this requirement. This requirement is included in the rule because it provides for drainage maintenance both up



and downstream and to enable fish passage, both of which could be compromised if a culvert is not installed appropriately. It is therefore not appropriate to remove this requirement and I therefore do not recommend the adoption of the submission from S Crack.

### **Sediment traps**

10.106 Under Rule 59(a) (vii), the maximum area of a sediment traps needs to be less than or equal to 2.5m<sup>2</sup>. Some submitters have sought to increase the area, with Scandrett Rural requesting an increase to 15m<sup>2</sup>. A and K Marshall request deletion of all reference to sediment traps.

10.107 Advice was sought from the Land Sustainability team on the merits of an increased sediment trap area. The advice received was that a *“2.5m trap may be adequate for cut-outs on a farm track/forestry road but for trapping sediment in a [Critical Source Area] or tile drain system they would need to be larger to be effective. The recommended length to width ratio for sediment traps/ponds is 5:1 upwards. Smaller sediment retention structures might be 1m x 5m (5m<sup>2</sup>) to 2m x 10m (20m<sup>2</sup>).”*

10.108 Advice on the environmental impacts resulting from larger sediment traps was sought from the Science team who agreed with<sup>682</sup> and supported the advice from Land Sustainability. In addition, they note that for many Southland cases, with a channel width of 1.0m, sediment traps of up to approximately 15 m<sup>2</sup> (and sometimes larger) are likely to be required, especially if in-flow rate is high (i.e. significant or non-ephemeral stream). Given the environmental benefits associated with the installation and use of a sediment trap, and based on the advice from Council staff (above), it is my view that it is appropriate to increase the permitted size of sediment traps.

10.109 Overall, I agree with the requirement to increase the size of sediments traps from 2.5m<sup>2</sup> as a permitted activity. Based on the information received, a sediment trap of 5m<sup>2</sup> appears appropriate to provide for mitigation for tile drains and critical source areas, and while this is still a reasonably arbitrary number, it is my view that it provides for greater opportunity to reduce the effects associated with sedimentation. I do not support an increase up to 15m<sup>2</sup> as a permitted activity because the works associated with the installation of larger sediment traps may result in greater effects on the environment (both temporary and ongoing). Should a landholder wish to install a sediment trap above 5m<sup>2</sup> in surface area, this is provided for under Rule 59(c) as a controlled activity which is appropriate, and enable the design and location to be assessed.

10.110 For the avoidance of doubt, I note that the installation of a sediment trap on an artificial watercourse, such as a drainage channel or as a part of a subsurface drainage network, is not limited by these rules.

### **Height of fill over culvert**

10.111 Some submitters have requested that further clarity be provided to Plan users in respect of Rule 59(a) (viii) regarding the measurement of fill over a culvert not being greater than 4 metres. I agree that the condition as proposed is unclear and therefore recommend

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<sup>682</sup> Hudson, H.R. 2002. *Development of an in-channel coarse sediment trap best management practice*. Environmental Management Associates Report 2002-10 for Ministry of Agriculture and Forestry Project FRM 500.

inserting ‘measured from the bed’ to provide certainty. I therefore recommend adopting the submissions from G McGregor, Environment Southland and the Southland RLC.

## **Flooding**

10.112 The NZTA seeks a change to Rule 59(a)(iv), amending the wording from “flood flows” to “a 0.5% AEP flood event” on the basis that this will provide additional certainty to Plan users. The meaning of a 0.5% Annual Exceedance Probability (AEP) is a 1 in 200 year flood event. An additional permitted activity criteria was also proposed in this submission that *“any culvert shall not increase the risk of flooding or damage to neighbouring properties or network utilities upstream or downstream of the culvert.”*

10.113 Advice was sought from the Technical Services Engineer and the Senior Policy Planner – Hazard Mitigation around the ability of the average Plan user to calculate or understand what a 0.5% AEP flood event actually meant. Both agreed that from a practical point of view, if you cannot calculate/estimate the exact size of flood event size, you cannot apply the permitted rule criteria, which in turn means that including a 0.5% AEP flood event would not provide certainty and would be impractical to assess. Based on this information set out above, I do not support a change from flood flows to a 0.5% AEP flood event.

## **General Matters**

10.114 I do not consider the request from P & L Cruickshank (to delete the rule) to be appropriate as it would mean that that the installation of culverts and sediment traps would not be managed, and in turn, this means that the objectives and policies contained within the pSWLP would not be achieved, in particular those seeking to improve water quality within the region.

10.115 Meridian seeks amendment to Rule 59(b) to include modified watercourse, or lake *“or discharge resulting from the carrying out of that activity...”*. I note that this would make the clause (b) of the rule consistent with part (a) and would provide greater clarity. I therefore recommend this change be accepted.

10.116 Where submitters seek amendments so that the replacement/restoration of a damaged culvert occurs in a timely manner to ensure farm safety, I consider that this is already provided for under the permitted activity in Rule 59(a) subject to compliance with conditions, and do not recommend any further changes.

## **Recommendation**

10.117 Amend Rule 59 as follows:

- (a) *The placement, erection or reconstruction of any culvert, including any associated inlet or outlet protection structure, or sediment trap in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
  - (i) *the maximum diameter of any culvert shall be 1,200 millimetres;*
  - (ii) *any culvert is a single structure (i.e. it is not placed in combination with other culverts across the width of the river);*
  - (iii) *any culvert shall be positioned so that its alignment is the same as the river;*

- (iv) any culvert shall be designed to pass flood flows (either through, around or over the culvert) and shall not increase the risk of flooding to neighbouring properties;
- (v) the invert (or bottom) of any culvert shall be installed to a depth of either 300 mm below the natural bed level or one-third of the diameter of the culvert, whichever is the lesser;
- (vi) any culvert shall be purpose built for the passage of water (i.e. it shall not be a drum, container or other item not designed as a culvert);
- (vii) any sediment trap is less than or equal to ~~2.5~~ 5.0<sup>683</sup> square metres in surface area;
- (viii) fill over any culvert shall not be greater than 4 metres (the vertical distance measured from the crest of the culvert to the natural bed)<sup>684</sup>;
- (ix) any structure is not within any mātaihai, noboanga, or taiāpure;
- (x) fish passage shall not be impeded as a result of the activity;
- (xi) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
- (xii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
- (xiii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (xiv) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (xv) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- ~~(xvi) there are no recorded historic heritage sites, at the site of the activity;~~<sup>685</sup>
- (xvii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (xviii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
- (xix) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
- (xx) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
- (xxi) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
- (xxii) the structure shall be maintained in a state of good repair.

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>686</sup>

- (b) The placement, erection or reconstruction and any associated bed disturbance<sup>687</sup> of any culvert, including any associated inlet or outlet protection structure, or sediment trap, in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity,<sup>688</sup> that cannot meet one or more of the conditions of Rule 59(a) is a controlled activity.

<sup>683</sup> 666.24 Rimu Grasslands & Leicester Downs; 708.4 Scandrett Rural

<sup>684</sup> 523.9 G McGregor

<sup>685</sup> 449.28 KiwiRail

<sup>686</sup> Consequential amendment relating to 449.28 KiwiRail

<sup>687</sup> 101.11 T Buckingham; A & K Marshall; 646.9 Progress Valley Farms; and others

<sup>688</sup> 562.18 Meridian

*Environment Southland will exercise control over the following matters:*

1. *the design and location<sup>689</sup> of the culvert or sediment trap;<sup>690</sup>*
2. *any effects on flood risk, river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitat (including fish passage), taonga species, the spiritual and cultural values and beliefs of the tangata whenua, and historic heritage, landscape, natural character and amenity values, navigational safety, and public access.<sup>691</sup>*
3. *any conditions in Rule 59(a) that cannot be met.*

...

## **Rule 60 – Dams and weirs**

### **Provision**

10.118 Rule 60 provides for the use, placement, erection or reconstruction of any dam or weir, in, on or over the bed of any lake, river, modified watercourse as a permitted activity, subject to a range of conditions being met. This also includes the associated damming of water (either inside or outside the bed of a river or lake) and any associated bed disturbance and discharge. However, it does not include any associated take, diversion, use or discharge of water which may require consent under other rules. Where these conditions are not met, the dam or weir is a discretionary activity, except that the damming of water on the main stems of the Aparima River, downstream of the Aparima Forks at NZ Topo 50 CE09 051 299, and the Ōreti River, downstream of the forks at NZ Topo 50 CC09 245 832, is a non-complying activity, and the placement or erection of dams or weirs in the Maitai or Waikaiti River, including the tributaries is expressly listed as a prohibited activity

### **Building Act Provisions**

10.119 In addition to the policy considerations set out earlier, the provisions of the Building Act 2004 are relevant to dams.

10.120 The Southland Regional Council transferred its Dam Management Functions under the Building Act 2004 to the Otago Regional Council (ORC) in 2008. The Deed of Transfer states that “*the transfer of the scheduled functions is desirable on the ground of efficiency, technical and special capability and expertise.*” The functions that SRC retain are to maintain a register of dams, to maintain responsibility for dams within the region, and responsibility for resource consents within the Southland region.<sup>692</sup> If a Building consent, Code of Compliance Certificate, or a Certificate of Acceptance, is sought within the Southland region, the applicant must apply to ORC.

10.121 A dam is defined in section 7 of the Building Act 2004 as:

- (a) *means an artificial barrier, and its appurtenant structures, that—*
  - (i) *is constructed to hold back water or other fluid under constant pressure so as to form a reservoir; and*

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<sup>689</sup> 752.153 Fish and Game

<sup>690</sup> CI 16

<sup>691</sup> 752.153 Fish and Game

<sup>692</sup> ORC and Environment Southland Dam Management Functions information adapted from <http://www.orc.govt.nz/Information-and-Services/dam-safety-and-building-consents/#4>

- (ii) *is used for the storage, control, or diversion of water or other fluid; and*
  - (iii) *[Repealed]*
- (b) *includes—*
- (i) *a flood control dam; and*
  - (ii) *a natural feature that has been significantly modified to function as a dam; and*
  - (iii) *a canal; but*
- does not include a stopbank designed to control floodwaters*

10.122 The term “large dam” is also defined within the Building Act, and means “*a dam that has a height of 4 or more metres and holds 20 000 or more cubic metres volume of water or other fluid.*”

10.123 By way of further background context, Building (Dam Safety) regulations were proposed during 2008, and had originally been due to commence in July 2014, however they were subsequently revoked by the Governor-General with effect from 30 June 2015.

### **Submissions and Analysis**

10.124 There were 39 submissions received on this rule, with four in support seeking that the rule is retained as notified. Submission points from Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.125 M K H Farming seek that the rule be deleted on the basis that it is contrary to WCO and dams/weirs are vital to future farming in the area.

### **Maximum height of the dam and requirement for the design and construction to be certified by an Engineer**

10.126 One of the key themes in the submissions is opposition to the requirement for the design and construction of the dam or weir to be certified by a suitability qualified and experienced engineer when the maximum height is less than 4 metres.

10.127 Scandrett Rural seeks that dams below 0.5 metres in height to the crest are able to be constructed as a permitted activity without requiring the design and construction of the dam to be certified by a suitability qualified and experienced engineer.

10.128 Riverfield Farms seeks amendments to expand Rule 60 “*to allow the suitable and experienced construction operators to design and construct dams and weirs.*”

10.129 Five submissions stated: “*A dam (happens to catch sediment) under 500 ha catchment doesn’t require consent, this is a huge area and should be halved. The need for a consent could be added here, along with the need for an engineers sign off. So that under 250ha doesn’t require a consent or engineers sign off provided it meets other requirements in the rule.*”

10.130 INZ seeks the inclusion of the word “*and*” in respect of the impoundment volume in Rule 60(a)(i). Environment Southland also submitted on this point, as “*the rule unintentionally allows for large scale dams as permitted activities.*”; this means that as Rule 60(a) (i) is currently drafted, any dam or weir that is more than 4 metres in height does not have a limit on the impoundment volume.

10.131 Fish and Game seeks to delete Rule 60 (a) (ii) in its entirety. Its submission notes that a number of wetlands formed by way of dams on private land are partially or fully funded

by Fish and Game through a subsidy scheme that it administers. “Wetlands formed with such dams have numerous environmental benefits, such as habitat for indigenous and introduced waterfowl, wading birds and threatened species such as Marsh Cuckoo, Fern-Birds and Britten, as well as various native fish species if there is connectivity with surface water.” Fish and Game seek to delete the requirement for construction and use of dams “which are not classified as large dams under the Building Act, to have their design and construction certified by a suitably qualified and experienced engineer”. It is concerned that the cost of complying with engineering certification is likely to be significant relative to the cost of construction and be a financial and logistical impediment to the construction of dams, which have significant habitat and environmental benefits. The submission goes on to note that the other conditions of the rule are sufficient to ensure there will not be any significant consequences to property or infrastructure in the event of dam failure.

- 10.132 Fish and Game are also concerned that Rule 60(a) as drafted conflicts with Policy 33(2)<sup>693</sup> of the pSWLP which recognises the potential for wetlands to improve water quality through the establishment of wetland areas on-farm. The submission goes on to say that “this potential is likely to be substantially reduced if there are significant compliance costs (relative to construction cost) associated with the construction of dams that are not defined as ‘large dams’ in the Building Act.” Fish and Game also do not consider that the cost or significance of the proposed change with respect to engineering certification has been considered within the section 32 report.
- 10.133 Advice on the submission points outlined above was sought from the Council’s Technical Services Engineer to determine if there is potential for the threshold for Engineer certification to be amended, from the current requirement of a dam up to 4.0 metres as a permitted activity. The advice received was that a dam of up to 2.0 metres could be a permitted activity and not be required to be designed and certified by a suitably qualified and experienced engineer. However, for any dam with a height of 2.0 metres up to 4.0 metres, in order to be a permitted activity, they should require certification by an experienced Engineer to ensure dam safety. Some of the reasons for this are due to the potential for any dam failure to result in damage downstream to life, property, infrastructure and the environment. Any dam that is above 4.0 metres will require resource consent under Rule 60(b), noting the requirements of Rule 60(d) where the placement of dams or weirs in the Mataura, Oreti or Waikaia River, including tributaries (in locations as identified in the relevant Water Conservation Orders) is a prohibited activity. Analysis of Rule 60(d) is covered further in the sections below.
- 10.134 Submitters also opposed the word “use” in Rule 60(a) which means that existing dams or weirs would need to be retrospectively certified by a suitably qualified and experienced engineer. One of these submissions was from Environment Southland, which seeks amendments including removal of the word “use” in respect of using existing dams, and other minor amendments to improve readability. I consider that these amendments would improve readability and resolve the concerns in a number of submissions regarding the requirement for existing dams or weirs to be certified by a suitably qualified and experienced engineer.
- 10.135 Noting the submission point from Fish and Game regarding a lack of assessment within the Section 32 Report of the cost or significance of engineering certification, I consider that every dam will have unique characteristics in terms of location, topography,

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<sup>693</sup> The Fish and Game submission has incorrectly referenced Policy 33(2) for this submission point, but uses the wording from Policy 34(2). The correct reference is Policy 34(2), which the report writer has used for analysis.

geotechnical and design requirements depending upon the proposed size of the dam. Given the uncertainty around cost, the proposed amendments outlined above, with different thresholds for permitted activity dams requiring certification will largely address the concerns raised by Fish and Game.

10.136 In respect of how to determine the height of a dam, this is defined in section 133B of the Building Act 2004 as follows:

*For the purposes of this Act and any regulations made under it, the height of a dam is the vertical distance from the crest of the dam and must be measured,—*

- (a) in the case of a dam across a stream, from the natural bed of the stream at the lowest downstream outside limit of the dam; and*
- (b) in the case of a dam not across a stream, from the lowest elevation at the outside limit of the dam; and*
- (c) in the case of a canal, from the invert of the canal.*

10.137 I note that this definition is also included in Rule 60(a) (ix). Minor amendments to Rule 60(a)(i) have been recommended to improve readability and understanding in respect of height.

#### **Inclusion of sediment traps within Rule 60**

10.138 A number of submissions also sought that the sediment traps rules as outlined in Rule 59 be moved to this rule, rather than being considered with culverts. A reason given by H King is *“Dams are sediment traps and should be encouraged to act as filtration systems on farms”*.

10.139 P Callahan opposed the rule, stating that *“surely we should be encouraged to build ponds for sediment traps and sanctuaries for waterfowl. But consents and engineer’s reports should only be needed for large ponds.”*

10.140 In my opinion, sediment traps which have a particular purpose are covered under Rule 59 (Culverts and Sediment Traps). I do not consider that there is sufficient merit in moving sediment traps to this rule, and amendments to increase the size of sediment traps have been recommended in Rule 59 above. Furthermore, the proposed amendments to the permitted activity rules as outlined above will, in my opinion, addresses the concerns raised by the submitters. Therefore I do not recommend further changes.

#### **Dams and Weirs in the Mataura, Oreti, Waikaia River, including tributaries and the Aparima River**

10.141 Alliance opposes the rule in part, and seeks amendments to Rule 60(d) to reference new dams, and exclude the reconstruction of any existing dams or weirs.

10.142 Ardel Dairies opposes Rule 60 and has submitted in opposition stating: *“as long as there is robust environmental and scientific studies done there is no reason why tributaries should not be able to be dammed to allow for irrigation”*.

10.143 Glendhu Dairies seeks that the rule *“enable dams to be established in tributaries as a discretionary activity so that each case can be considered on its merits”*.

- 10.144 Landpro opposed condition 60(d) as it considers that it is suitability covered by the Oreti and Mataura WCOs.
- 10.145 A number of submissions have sought to remove “including tributaries” from Rule 60 (d) from the reference to the Mataura or Waikaia Rivers.
- 10.146 Fish & Game also submitted that “As drafted Rule 60(c) and (d) are inconsistent with the damming provision set out in the Mataura and Oreti Water Conservation Orders and should be amended accordingly.”
- 10.147 The WCOs for both the Mataura River and the Oreti River were reviewed to consider the submission points raised above regarding condition 60 (c) and (d). Within both WCOs there is specific reference to the water that is to be protected, and areas where water permits to dam are not to be granted as listed below:

***Mataura Water Conservation Order section 6:  
Water permit to dam not to be granted, etc—***

- (1) *A permit to dam the Mataura River from its source to the sea and the Waikaia River from its source to its confluence with the Mataura River must not be granted under Part 6 of the Act.*
- (2) *A permit to dam any tributary of the Waikaia River or the Mataura River which forms part of the protected waters must not be granted under Part 6 of the Act if the dam would harm salmonid fish-spawning or prevent the passage of salmonid fish.*
- (3) *The prohibition in subclause (1) does not apply to water permits in respect of the weir at approximate map reference NZMS 260 F46:912385 if the water permits are granted or renewed subject to similar terms and conditions to which the former permits were subject.*

***Oreti Water Conservation Order Schedule 1, Clauses 5, 7, 8 and 9:  
Protected waters with outstanding characteristics***

<b><i>Item</i></b>	<b><i>Waters</i></b>	<b><i>Outstanding Characteristics or Features</i></b>	<b><i>Conditions to Apply</i></b>
<i>1</i>	<i>Oreti River main stem at Rocky Point at NZMS 260 E44373946 upstream to the forks at E42 345 450</i>	<i>Habitat for brown trout Angling amenity Value in accordance with tikanga Māori</i>	<i>Prohibit damming (Clause 7) Maintenance of fish passage (Clause 8) Maintenance of water quality (Clause 9)</i>

- 10.148 Fish and Game seek that Rule 60(a) (viii) is amended to include that the dam or weir is not in the Aparima, in addition to the already listed Mataura, Oreti and Waikaia River. I note however that damming on the main stems of the Aparima River, downstream of the Aparima Forks is already expressly listed in Rule 60(c) as a non-complying activity, so the change sought is not necessary. However, I support a change to the wording of condition 60(d) to reference the Oreti River. With respect to the other changes sought in terms of either removal to the reference to tributaries, or to enable applications for resource consent to be sought, I consider that the amendments sought by Fish and Game to condition 60(d) will provide further clarity as to areas where the WCO does not apply and recommend adopting them. Where Rule 60(d) does not apply, the dam or weir would be discretionary under Rule 60(b).



10.149 Nokomai Station seeks amendments relating to its understanding that the Mataura WCO deals with the Mataura River and not prohibition of Dams or weirs within the entire Mataura Catchment. The submitter states that if all water takes on the property now have to be consented (particularly for stock drinking purposes) there will be no ability to provide for storage of water on the property.

10.150 It is noted that within the Water Conservation (Mataura River) Order 1997 section 5 states the following which addresses the stock water submission point raised by Nokomai Station:

- 5 *General provisions relating to water permits, discharge permits, and regional plans-*
- (1) *A water permit or a discharge permit must not be granted under Part 6 of the Act and a regional plan must not be made under Part 5 of the Act in respect of any part of the protected waters if such a permit or plan would contravene the provisions of this order.*
  - (2) *The prohibitions in subclause (1) do not apply to water permits or discharge permits granted or regional plans made in respect of any part of the protected waters for all or any of the following purposes:*
    - (d) *stock water and stock-water reservoirs.*

10.151 This gives clarity in respect of the submission point from Nokomai Station in relation to stock drinking water, so in my opinion no further changes are required.

### **General Matters**

10.152 Submission points from J Bythell, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.153 NZTA seek an additional note to be included, stating that “*Note 3: This rule does not apply to weirs constructed for erosion control purposes under Rule 61.*” It considers there is some duplication between Rule 60 and Rule 61(c), in that a weir permitted under Rule 61 may require consent under Rule 60. In its submission, it notes that infrastructural assets such as bridges and culverts often have a small weir installed in order to address erosion issues. Policy 28 (Structures and bed disturbance activities of rivers (including streams and modified watercourses) and lakes) seeks to manage these activities to avoid, remedy or mitigate adverse effects on infrastructure assets. I consider that the requirements under Rule 61 for weirs are specific to erosion control structures, whereas a weir as defined in the New Zealand Oxford Dictionary is “*a dam built across a river to raise the level of water upstream or regulate its flow*”, thus the use of the weir is for slightly different purposes. However, for clarity for Plan users, I support the inclusion of the advice note as requested by the NZTA.

### **Recommendation**

10.154 Amend Rule 60 as follows:

*Note 1: The Building Act 2004 specifies obligations on the owner of a dam as defined in the Act regarding classification, certification and other matters of safety. Plan users should contact Environment Southland to inquire as to the need to meet these requirements in each case.*

Note 2: These rules manage dam and weir structures. Any associated take, diversion, use or discharge of water requires consent under other rules.

Note 3: This rule does not apply to weirs constructed for erosion control purposes under Rule 61.<sup>694</sup>

- (a) The ~~use~~<sup>695</sup> placement, erection or reconstruction of any dam or weir, in, on or over the bed of any lake, river, modified watercourse and the associated damming of water (either inside or outside the bed of a river or lake), and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) ~~if~~<sup>696</sup> the maximum height of the dam is ~~4 metres~~ 2 metres<sup>697</sup> or less ~~in height~~ (the vertical distance measured from the crest of the dam to the natural<sup>698</sup> bed), ~~and~~<sup>699</sup> the impoundment volume is ~~shall be~~ less than 20,000 cubic metres;
  - (ii) if the maximum height of the dam is between 2 to 4 metres (the vertical distance measured from the crest of the dam to the natural bed), and<sup>700</sup> the impoundment volume is less than 20,000 cubic metres<sup>701</sup> the design and construction of the dam or weir is certified by a suitably qualified and experienced engineer;
  - (iii) the dam or weir is located below a catchment area of less than 500 hectares;
  - (iv) the dam or weir shall not be located upstream of any railway, formed public road, or residence, where these are likely to be affected by any failure of the structure;
  - (v) the dam or weir shall have a spillway, or an auxiliary spillway that is capable of conveying flood flows;
  - (vi) the dam or weir shall neither impound water nor adversely affect drainage beyond the landholding on which it is constructed, unless agreed to in writing by any affected landowner;
  - (vii) the discharge from the dam or weir shall be to the original channel, and shall not cause significant erosion of, or deposition on, the downstream bed or banks;
  - (viii) the dam or weir is not in the Maitauru, Oreti or Waikaiti River;
  - (ix) For the purposes of Rule 60(a)(i) the height of a dam is the vertical distance from the crest of the dam and must be measured:
    - (1) in the case of a dam across a stream, from the natural bed of the stream at the lowest downstream outside limit of the dam; and
    - (2) in the case of a dam not across a stream, from the lowest elevation at the outside limit of the dam; and
    - (3) in the case of a canal, from the invert of the canal;
  - (x) the structure is not within any mātauitai, nohoanga, or taiāpure;
  - (xi) fish passage shall not be impeded as a result of the activity;
  - (xii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (xiii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (xiv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (xv) no fuel storage or machinery refuelling shall occur on any area of the bed;

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<sup>694</sup> 614.24 NZTA

<sup>695</sup> 247.18 Environment Southland

<sup>696</sup> 247.18 Environment Southland

<sup>697</sup> 560.12 T & J McRae

<sup>698</sup> Consequential amendment to 523.9 G McGregor and to align with the Building Act 2004

<sup>699</sup> 414.11 INZ

<sup>700</sup> 414.11 INZ

<sup>701</sup> 759.23 Springlands Group (subsequent amendment due to height changes required for certification)

- (xvi) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
- ~~(xvii) *there are no recorded historic heritage sites, at the site of the activity;*~~
- (xviii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
- (xix) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
- (xx) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
- (xxi) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
- (xxii) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
- (xxiii) *the structure shall be maintained in a state of good repair.*
- (aa) *The use of any dam or weir is a permitted activity provided the following conditions are met:*
  - (i) *the structure was lawfully established;*
  - (ii) *the structure does not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (iii) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, is removed as soon as practicable;*
  - (iv) *the structure is maintained in a state of good repair; and*
  - (v) *no contaminants, other than sediment released from the bed, are discharged to water during the activity unless allowed by a relevant permitted activity rule.*<sup>702</sup>

...

*Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.*<sup>703</sup>

- (d) *The placement or erection of dams or weirs in the Maitai or Waikaiti River, including the tributaries and in the Oreti River main stem at Rocky Point at NZMS 260 E44373946 upstream at the forks at E42345 450*<sup>704</sup> *is a prohibited activity.*

## Rule 61 – Erosion control structures

### Provision

10.155 Rule 61 provides for the placement or reconstruction of concrete, rock rip rap or anchored or layered trees in, on, under or over the bed of any river, modified water course or lake (and includes any associated bed disturbance and discharge resulting from the activity) as a permitted activity, subject to a range of conditions being met. Any activity that cannot meet the permitted activity conditions will require resource consent as a discretionary activity.

<sup>702</sup> 247.19 Environment Southland

<sup>703</sup> Consequential amendment relating to 449.28 KiwiRail

<sup>704</sup> 752.154 Fish and Game

## Submissions and Analysis

10.156 There were 15 submissions received on this rule, with six in support seeking the rule is retained as notified. There are no submissions seeking that the rule be deleted. Submission points from J Bythell, HNZ, KiwiRail and NZTA on this rule that have been assessed earlier in this section of the report are not repeated here.

## Activity status

10.157 D Harris seeks that the permitted activity status is amended to a restricted discretionary activity status. This change has been sought as *“this rule allows the construction of erosion control structures without any other considerations. These structures can have a significant effect on the habitat within the water body and there needs to be some form of control.”* As permitted activities mean that no resource consent is required, they relate to activities where the Council consider that compliance with any requirements, conditions, and permissions will adequately manage the effects expected.<sup>705</sup> In my opinion, Rule 61 (a) and (b) provide sufficient direction and clarity for users, and the effects associated with these small-scale structures are not considered to be more than minor. It is therefore appropriate to retain the threshold of a permitted activity, and I do not recommend adopting the submission of D Harris to amend to a restricted discretionary activity.

## Inclusion of additional erosion control structures

10.158 KiwiRail seek the addition of *“gabion baskets and groynes”* within Rule 61(a) as a permitted activity subject to meeting the relevant conditions, rather than it being contained within Rule 61(c) which would require a discretionary activity resource consent.

10.159 NZTA seek inclusion of *“erosion control structures, debris traps, rail and mesh, rope retards, gabion baskets, drop structures, groynes, weirs”* within Rule 61(a).

10.160 These changes are seeking a broader range of erosion control structures to be included as permitted activities, rather than having to get a resource consent under Rule 61(c). The reason that these other erosion control structures have not been included within Rule 61(a) is that there is the potential for some of these structures to have adverse effects on habitats, natural character, amenity and other values, as examples. In my opinion, including the additional erosion control structures as sought above within Rule 61(a), would not meet the intent of Policy 28 of the pSWLP; meaning that inclusion of these additional structures as a permitted activity would not ensure that adverse effects on the matters listed within Policy 28 would be avoided, remedied or mitigated. I therefore do not recommend the submissions from KiwiRail and NZTA be accepted in relation to extending the permitted activity rules to apply to other erosion control structures.

## Reference to concrete

10.161 NZTA seeks amendments to Rule 61(b) to reference reconstruction of *“any formed concrete... for the purposes of erosion control.”* I partially support this change for wording

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<sup>705</sup> Quality Planning website <http://www.qualityplanning.org.nz/index.php/plan-steps/writing-plans/writing-effective-and-enforceable-rules>

consistency within the Rule 61 (c) of the pSWLP. As such instead of formed concrete, I recommend using pre-formed concrete to be consistent with the wording within Rule 61(c) which also uses “*pre-formed*” concrete.

### Use of crack willow

10.162 G McGregor seeks an amendment to include the following within Rule 61 (a) (iii) “*excluding the use of crack willow for river control purposes*”. The NZTA and Southland RLC also seek this addition.

10.163 Crack willow is classified as a suppression plant within the Regional Pest Management Strategy, meaning a breach of these rules is an offence under Section 154(R) of the Biosecurity Act. Within the RPMS it states “*crack willow can be useful as a river management tool*” as it provides “*protection from flooding by holding banks in place*”. It goes on to state “*however, crack willow can form large dense stands along river and stream channels, displacing native species, choking waterways and increasing the risk of flooding.*” The aim within the RPMS is “*to prevent Crack willow being planted in waterways that are currently free of it, and to support initiatives to control Crack willow in High Value Areas.*” Crack willow is listed as an ‘Unwanted Organism’ on the Biosecurity New Zealand website, where it advises discussion with the local regional council. Given this listing, in my opinion, unless there are changes made during the upcoming review of the Regional Pest Management Strategy in respect of the classification of Crack willow, Rule 61(a) (iii) should not be amended to include Crack willow. I therefore do not recommend adopting these submission points.

### General Matters

10.164 NZTA seeks the inclusion of the following within Rule 61(a) “*unless the work is associated with the protection of a State highway or State highway asset.*” This is requested, as within Southland there are large parts of the State Highway network that run through national parks such as Fiordland National Park. A specific example given is “*the installation of 2 metres of riprap adjacent to a bridge in Fiordland National park would require resource consent, yet 500 metres (or longer) of the same riprap outside of the Park would not require consent under this rule*”. I note that National Parks have protection under the National Parks Act (1980). Section 6 of the Conservation Act 1987 states that the functions of DOC are to administer both the Conservation Act and any enactments specified (which includes the National Parks Act). DOC have subsequently prepared the Fiordland National Park Management Plan<sup>706</sup> as part of its obligations under the National Parks and Conservation Acts. Given the status of National Parks, it is my view that condition 60(a)(i) is appropriate and necessary in order ensure any proposed activities in these areas are appropriately considered. I do not recommend any exceptions to this requirement.

10.165 NZTA seek amendments to the wording of Rule 61(c) to include reference to “*rock rip rap, anchored or layered trees*” and further clarity that if an activity “*does not meet one or more of the conditions listed in Rule 61(a) or Rule 61(b) is a discretionary activity.*” In my opinion this rule does provide clarity that a discretionary activity resource consent is required, and therefore I do not recommend any additional changes.

10.166 P F Olsen seeks the inclusion of the word “*removal*” within Rule 61(a). This word has not been inserted into other rules within the Structures in river and lake beds section of the

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<sup>706</sup> In accordance with section 66(2)(c)(i) of the RMA, in preparing a regional plan the Council must have regard to any management plans and strategies prepared under other Acts

pSWLP, and for consistency of drafting, I do not recommend including it within Rule 61. I note that the bed disturbance associated with the removal of structures is provided for in Rule 68 (Demolition and/or removal of structures).

## Recommendation

10.167 Amend Rule 61 as follows:

- (a) *Notwithstanding any other rule in this Plan, the placement or reconstruction of rock rip rap or anchored or layered trees in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) *the work is not in a lake bed, national park, reserve or land in respect of which there is a covenant under the Conservation Act 1987, Queen Elizabeth the Second Trust Act 1977 or Reserves Act 1977;*
  - (ii) *any anchored or layered trees shall be anchored to the bed or banks so that they will not wash away in a 2% Annual Exceedance Probability flood event;*
  - (iii) *there shall be no planting of pest plant species as identified in the Regional Pest Management Strategy for Southland 2013 or Biosecurity NZ Register of Unwanted Organisms;*
  - (iv) *the structure is not within any mātaítai, nohoanga, or taiāpure;*
  - (v) *fish passage shall not be impeded as a result of the activity;*
  - (vi) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (vii) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (viii) *any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (ix) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (x) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(xi) *there are no recorded historic heritage sites, at the site of the activity;*<sup>707</sup>~~
  - (xii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (xiii) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
  - (xiv) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
  - (xv) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (xvi) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
  - (xvii) *the structure shall be maintained in a state of good repair.*

*Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process*

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<sup>707</sup> 449.30 KiwiRail; 614.26 NZTA

*under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>708</sup>*

- (b) *The placement or reconstruction of pre-formed<sup>709</sup> concrete in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) *the river is less than 3 metres wide on average over the area of construction;*
  - (ii) *the placement of the concrete shall be for the sole purpose of remedying or mitigating an erosion problem;*
  - (iii) *the work shall not be in a lake bed, national park, reserve or land in respect of which there is a covenant under the Conservation Act 1987, Queen Elizabeth the Second Trust Act 1977 or Reserves Act 1977;*
  - (iv) *any individual concrete piece shall have a minimum length of 300 millimetres;*
  - (v) *there shall be no concrete that has not set, or loose cement present;*
  - (vi) *the concrete shall not have been used in direct contact with chemicals that are toxic to aquatic life;*
  - (vii) *the concrete shall not contain asbestos pipe or asbestos cement mixtures;*
  - (viii) *no reinforcing steel shall protrude from the completed works;*
  - (ix) *fish passage shall not be impeded as a result of the activity;*
  - (x) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (xi) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (xii) *any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (xiii) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (xiv) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - (xv) *there are no recorded historic heritage sites, at the site of the activity;*
  - (xvi) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (xvii) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
  - (xviii) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
  - (xix) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (xx) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
  - (xxi) *the structure shall be maintained in a state of good repair.*

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## **Rule 62 – Fords**

### **Provision**

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<sup>708</sup> Consequential amendment relating to 449.30 KiwiRail; 614.26 NZTA

<sup>709</sup> 614.26 NZTA

10.192 Rule 62 provides for the excavation of the bed of any river or lake for the purpose of constructing a ford, and the use of any ford, as a permitted activity, subject to meeting a range of conditions. Where the permitted activity conditions are unable to be met, resource consent is required as a discretionary activity.

### Submissions

10.193 Fifteen submissions were received on Rule 62, with ten submitters seeking that the rule, or specific parts of the rule are retained, and six seeking amendments. I note that there are no submissions seeking that the rule is deleted. Submission points from J Bythell, KiwiRail, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.194 Ernslaw One and PF Olsen both seek to amend the conditions of Rule 62 *“to limit the use of the bed of a river for forwarding to no more than 20 axel crossings per day, at times when forwarding of the river causes a conspicuous change in water clarity, as measured 100m downstream after reasonable mixing.”* The reason for the change sought by Ernslaw One is that 20 axel crossings *“equates to a total of five return trips by tractor or light utility vehicle, or 2 axel lime spinner “bulky truck per day, or one return trip by a heavy truck and trailer.”*

10.195 Fish and Game seek that the wording within Rule 62(a) is changed from “constructing” to “maintaining” a ford as a permitted activity, as it considers that the effects of the construction and use of new fords should be considered through consenting as a discretionary activity. The submitter also seeks that new fords should only be located in the Alpine or Bedrock/ Hill Country Physiographic zone. In particular, Fish and Game submit that the use of fords is not a GMP and should be discouraged as construction and use of new fords is inconsistent with Objective 18 of the pSWLP. In its submission, Fish and Game state that it accepts that there are circumstances where the use of a ford may be the only practical option for shifting stock in the alpine and bedrock/hill country physiographic zones, but the installation of culverts or bridges should be required elsewhere.

10.196 The Ernslaw One submission goes on to seek changes in the planning hierarchy that favours the installation of “dry fords” or culverts ahead of use of fords in beds of all rivers with permanent flow, on the basis that this will dis-incentivise fording of streams in high use situations (which can affect water quality).

10.197 I note that ten submissions seek that the rule as notified in the pSWLP is retained. The submission from V and G Dyson gives the following reason: *“we support these rules as they pertain to our farming business and feel that they have a positive impact for the environment.”* M Gardyne supports retaining Rule 62 as *“fords are a good cost effective tool with low environmental impact”*.

10.198 Ernslaw One seeks that Rule 62 (c) should not have a reliance on “lawfully established” for any ford constructed or installed prior to the introduction of the RMA in 1991.

10.199 Fish and Game seek amendments to Rule 62(c)(ii) to provide for a *“stock crossing”* that *“the activity shall meet the conditions set out in Rule 62(a)”*. Additional changes sought to Rule 62(c) are that fish passage shall not be impeded, and that *“no alternative structure is available to facilitate stock or vehicle crossings”*.



## Analysis

- 10.200 In my view, the request to include a permitted activity condition that limits ford crossings to no more than 20 axel crossings per day, at times when fording the river will cause a conspicuous change in water clarity, is not practical. In particular, there may only be a few instances where such an event occurs which would result in the use of that ford requiring resource consent. In my view, the other permitted activity standards are sufficient to manage effects on the waterbody and as such, I do not recommend the submissions from Ernslaw One and PF Olsen be adopted.
- 10.201 I also do not support a change to a blanket discretionary activity, or restricting fords based on physiographic zones, as I consider that the permitted activity conditions are sufficient to manage potential effects, and if an activity cannot meet those requirements, then a discretionary activity resource consent is already required under Rule 62(b). Furthermore, culverts can be installed as a permitted activity, subject to conditions under Rule 59 of the pSWLP, so I consider that the necessary incentive (in terms of enabling other crossings to be installed) is already within the Plan's provisions. I therefore do not recommend adopting a change to the activity status sought by Fish and Game.
- 10.202 Objective 18 of the pSWLP requires that "*all activities operate at "good (environmental) management practice" or better.*" Rule 62 (a) provides for constructing a ford as a permitted activity, and Rule 62 (c) provides for their use as a permitted activity, subject to meeting a number of conditions. The conditions imposed within Rule 62 ensure that good management practices are undertaken to mitigate adverse effects, and I note that a discretionary activity resource consent would be required under Rule 62 (b) or 62 (d) if a ford cannot meet the activity standards, or if the ford would involve construction of a structure such as a concrete pad. To meet the requirements of being a permitted activity means that Council is confident that compliance with any requirements, conditions, and permissions will adequately manage the effects expected.<sup>710</sup> Fords can provide practical access for the passage of stock and vehicles and as such, in my opinion, subject to compliance with the relevant conditions, the adverse effects of fords can be managed, and the rule as drafted achieves Objective 18 of the pSWLP. I therefore do not recommend adopting the submission from Fish and Game in relation to good management practice.
- 10.203 Ernslaw One seeks that Rule 62 (c) should not have a reliance on "lawfully established" for any ford constructed or installed prior to the introduction of the RMA in 1991. While "lawfully established" is referred to in the RMA, the concept applies to structures or activities that occurred prior to the RMA. I do not recommend making further changes. While I agree that proving evidence that a ford was legally established may be difficult, I do not consider it is the role of a regional plan review to 'regularise', if it can even do so, any illegally established fords.
- 10.204 Fish and Game seek amendments to Rule 62(c)(ii) to provide for a "*stock crossing*" that "*the activity shall meet the conditions set out in Rule 62(a)*". Additional changes sought to Rule 62(c) are that fish passage shall not be impeded, and that "*no alternative structure is available to facilitate stock or vehicle crossings*". Whilst I support that fish passage shall not be impeded, I do not recommend making the change, as Rule 62(c) (ii) references Rule 62 (a) (i) that

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<sup>710</sup> Information on permitted activities adapted from: <http://www.qualityplanning.org.nz/index.php/plan-steps/writing-plans/writing-effective-and-enforceable-rules>

specifically references that fish passage shall not be impeded, so the submission point is already covered.

## Recommendation

10.205 Amend Rule 62 as follows:

- (a) *The excavation of the bed of any river, modified watercourse or lake for the purpose of constructing a ford is a permitted activity provided the following conditions are met:*
- (i) *fish passage shall not be impeded as a result of the activity;*
  - (ii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (iii) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (iv) *any bed disturbance shall be kept to the minimum necessary to undertake the activity;*
  - (v) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (vi) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(vii) *there are no recorded historic heritage sites, at the site of the activity*~~<sup>711</sup>
  - (viii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (ix) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
  - (x) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
  - (xi) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (xii) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
  - (xiii) *the structure shall be maintained in a state of good repair.*

*Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.*<sup>712</sup>

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## Rules 63 and 64 (Moorings, navigational aids and signs and Temporary canoe gate or ski lane markers)

### Provisions

10.206 Rule 63 provides for the placement, erection or reconstruction of any mooring, navigational aid or sign in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, as a permitted activity, subject to a range of conditions being met. Where these conditions are not met, resource consent is required as a restricted discretionary

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<sup>711</sup> 449.31 KiwiRail

<sup>712</sup> Consequential amendment relating to 449.31 KiwiRail

activity. It also provides for the use of any mooring, navigational aid or sign in, on, under or over the bed of any river, modified watercourse, or lake as a permitted activity, subject to a range of conditions being met. Where these conditions are not met, resource consent is required as a discretionary activity.

10.207 Rule 64 provides for the use, placement, erection or reconstruction of any temporary canoe gate or ski lane marker in, on or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, as a permitted activity, subject to a range of conditions being met. Where these conditions are not met, resource consent is required for a restricted discretionary activity.

### **Submission and Analysis**

10.208 There were nine submissions received on Rule 63, Springlands Group and R Van Gool seek that the rule is retained as notified in the pSWLP. Submission points from J Bythell, HNZ and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.209 There were four submissions received on Rule 64. Rimu Grasslands & Leicester Downs and R Van Gool seek that the rule is retained as notified. Submission points from J Bythell, HNZ, KiwiRail and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here. I note that there are no submissions seeking that Rule 64 is deleted.

### **Navigational aids and signs – Rule 63**

10.210 The Environment Southland staff submission seeks to remove reference to navigation aids within Rule 63 (b). Rule 63 currently restricts the placement, erection or reconstruction of moorings, signs and navigational aids to within Fiordland National Park. The Council submission states: “*while there is a desire to restrict the placement, erection or reconstruction of moorings and signs within Fiordland National Park as a permitted activity, the same is not so for navigational aids. Navigational aids require permission from Maritime New Zealand.*” I support the proposed change to remove the five references to navigational aids from Rule 63, and to insert a new Rule 63(a) to provide a separate rule for navigational aids.

10.211 NZTA support Rule 63, but seeks amendments to include reference to “*navigational*” signs. This is sought as the submitter is concerned that the rule as drafted could capture a sign that is located within its State highway network on bridges and culverts, rather than the intent of the rule which is for navigational signage. In my opinion, the changes sought from the Council, as outlined above, will address the concerns raised by NZTA, and as such I do not recommend any changes in response to its submission.

### **General Matters – Rule 63**

10.212 Real Journeys seeks an advice note to outline that the installation of moorings within the National Park would require a DOC concession. I agree with this being included as an advice note, to provide clarity for Plan users.

10.213 Meridian seeks amendments to Rule 63 (b) to reference “*or discharge resulting from the carrying out of the activity*”. I do not support this change, as in my opinion, any discharge,

such as sediment, that may occur from carrying out of the activity is covered under Rule 63 (b) (vi).

## Recommendation

10.214 Retain Rule 64 as notified, insert new Rule 63A and amend Rule 63 as follows:

*Rule 63 - Moorings, ~~navigational aids~~<sup>713</sup> and signs*

*Note 1: The installation of moorings within the Fiordland National Park will require a Department of Conservation Concession.<sup>714</sup>*

- (a) *The placement, erection or reconstruction of any mooring, ~~navigational aid or~~<sup>715</sup> sign in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) *the structure is located in Fiordland National Park (including lakes Te Anau, Manapouri, Monowai and Hauroko);*
  - (ii) *in the case of a mooring, the mooring block shall be free of contaminants including oil and grease;*
  - (iii) *in the case of a mooring, the use of the mooring shall not interfere with the use of existing lawful moorings;*
  - (iv) *where the structure has been moved to the site from any other area, it shall be effectively cleaned to prevent the spread of pest species; and*
  - (v) *the structure shall be maintained in a state of good repair; and*
  - (vi) *the structure is not within any mātaimai, noboanga, or taiāpure.*
- (b) *The placement, erection or reconstruction and any associated bed disturbance of any mooring, ~~navigational aid or~~<sup>716</sup> sign in, on, under or over the bed of any river, modified watercourse or lake, that does not meet one or more of the conditions of Rule 63(a), is a restricted discretionary activity provided the following conditions are met:*
- (i) *fish passage shall not be impeded as a result of the activity;*
  - (ii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (iii) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (iv) *any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (v) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (vi) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - (vii) *there are no recorded historic heritage sites, at the site of the activity;*
  - (viii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (ix) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*

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<sup>713</sup> 247.20 Environment Southland

<sup>714</sup> 664.26 Real Journeys

<sup>715</sup> 247.20 Environment Southland

<sup>716</sup> Consequential amendment relating to 247.20 Environment Southland

- (x) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
- (xi) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
- (xii) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
- (xiii) *the structure shall be maintained in a state of good repair.*

*Environment Southland will restrict its discretion to the following matters:*

1. *the location of the structure;*
  2. *any effects on natural character and amenity values, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, existing users and navigational safety, suitability of mooring for its purpose, and maintenance requirements;*
  3. *the use of the structure;*
  4. *where the structure has been moved to the site from any other area, the cleaning required to prevent the spread of pest species;*
- (c) *The use of any mooring, ~~navigational aid or~~<sup>717</sup> sign in, on, under or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:*
- (i) *the structure is located in Fiordland National Park (including lakes Te Anau, Manapōuri, Monowai and Hauroko);*
  - (ii) *in the case of a mooring, the use of the mooring shall not interfere with the use of existing lawful moorings;*
  - (iii) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (iv) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;*
  - (v) *the structure shall be maintained in a state of good repair; and*
  - (vi) *no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.*
- (d) *The use of any mooring, ~~navigational aid and~~<sup>718</sup> sign in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 63(c) is a discretionary activity.*

Rule 63A - Navigational aids

- (a) The placement, erection or reconstruction of a navigational aid in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) where the structure has been moved to the site from any other area, it shall be effectively cleaned to prevent the spread of pest species; and
  - (ii) the structure shall be maintained in a state of good repair; and
  - (iii) the structure is not within any mātaītai, noboanga, or taiāpure.
- (b) The placement, erection or reconstruction and any associated bed disturbance of a navigational aid in, on, under or over the bed of any river, modified watercourse or lake, that does not meet one or more of the conditions of Rule 63A(a), is a discretionary activity
- (c) The use of a navigational aid in, on, under or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;

<sup>717</sup> Consequential amendment relating to 247.20 Environment Southland

<sup>718</sup> Consequential amendment relating to 247.20 Environment Southland

- (ii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
- (iii) the structure shall be maintained in a state of good repair; and
- (vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of a navigational aid in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 63A(c) is a discretionary activity.<sup>719</sup>

## Rules 66, 67 and 68

### Provisions

10.215 Rules 66, 67 and 68 relate to the maintenance, alteration, extension, demolition and removal of structures. In each case, the rule provides for these as permitted activities where a range of conditions are met, and as a restricted discretionary activity where they are not.

### Submission and Analysis

10.216 There are 11 submissions on Rule 66, with four seeking that the rule is retained, five seeking amendments, and two opposing the rule.

10.217 There were nine submissions received on Rule 67, four seeking that the rule is retained, with the remainder seeking amendments.

10.218 There were eight submissions received on Rule 68. Four submissions seek that the rule is retained, and the remainder seek amendments as. I note that there are no submissions seeking that Rule 64 is deleted.

10.219 Submission points from J Bythell, HNZ, KiwiRail, NZTA and Fish and Game on these rules have been assessed earlier in this section of the report and are not repeated here.

10.220 Further information on the specific submission points received on Rules 66, 67 and 68 are set out below.

### General

10.221 NZTA seeks an amendment to Rule 66(xii) as “*some structures such as groynes are designed for material to accumulate to address erosion issues which conflicts with the permitted activity condition (xii).*” The submitter seeks additional wording to explain that in certain instances that this can be the purpose of a structure. Rule 66(a) commences with “*unless otherwise stated in this Plan*”, and Rule 66(a)(xii) has been worded to ensure that “*a structure shall not cause significant erosion of, or deposition on, the surrounding bed or bank.*”. Within Rule 61(c) (erosion control structures) there is provision for structures such as groynes to be established to prevent erosion as a discretionary activity. In my opinion, given the opening wording of Rule 66(a) being “*unless otherwise stated in this Plan*”, the amendment sought by NZTA is not necessary, as it is already provided for within Rule 61 of the pSWLP.

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<sup>719</sup> 247.20 Environment Southland

10.222 Meridian opposes in part Rule 66(b), and seeks an amendment to provide for discharges resulting from the carrying out of the activity as per the wording from Rule 66(a). The amendment sought is contained within Rule 67(b) and Rule 68(b). For consistency within the pSWLP, I recommend including “and discharge resulting from the carrying out of the activity” to Rule 66(b).

## Recommendation

10.223 Amend Rules 66, 67 and 68 as follows:

### **Rule 66 - Maintenance of structures**

- (a) *Unless otherwise stated in this Plan, the maintenance of any structure in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) *the structure was lawfully established;*
  - (ii) *fish passage shall not be impeded as a result of the activity;*
  - (iii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (iv) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (v) *any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (vi) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (vii) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(viii) *there are no recorded historic heritage sites, at the site of the activity;*~~<sup>720</sup>
  - (ix) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (x) *all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;*
  - (xi) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;*
  - (xii) *the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;*
  - (xiii) *any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and*
  - (xiv) *the structure shall be maintained in a state of good repair.*
- Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.*<sup>721</sup>
- (b) *Unless otherwise stated in this Plan, the maintenance and any associated bed disturbance of any structure in, on, under or over the bed of any river, modified watercourse, or lake and discharge*

<sup>720</sup> 449.33 KiwiRail

<sup>721</sup> Consequential amendment relating to 449.33 KiwiRail

resulting from the carrying out of the activity<sup>722</sup> that does not meet one or more of the conditions of Rule 66(a) is a restricted discretionary activity.

Environment Southland will restrict its discretion to the following matters:

1. any conditions in Rule 66(a) that cannot be met; and
2. any effects on taonga species, amenity values, natural character, outstanding natural features,<sup>723</sup> and historic heritage.<sup>724</sup>

### **Rule 67 – Alteration and/or extension of structures**

(a) Unless otherwise stated in the Plan, the alteration or extension of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:

- (i) the structure is lawfully established;
- (ii) the structure is not listed on the New Zealand Heritage List/Rarangi Korero, and was not constructed prior to 1920;
- (iii) the alteration or extension shall not involve an increase in the number or area of any support structures in the bed of the river, modified watercourse, or lake;
- (iv) fish passage shall not be impeded as a result of the activity;
- (v) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
- (vi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
- (vii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (viii) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (ix) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- (x) ~~there are no recorded historic heritage sites, at the site of the activity;~~<sup>725</sup>
- (xi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (xii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
- (xiii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
- (xiv) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
- (xv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
- (xvi) the structure shall be maintained in a state of good repair.

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>726</sup>

<sup>722</sup> 562.21 Meridian

<sup>723</sup> 752.159 Fish and Game

<sup>724</sup> Consequential amendment relating to 449.33 KiwiRail

<sup>725</sup> 449.34 KiwiRail

<sup>726</sup> Consequential amendment relating to 449.34 KiwiRail



- (b) Unless otherwise stated in this Plan, the alteration or extension of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, that does not meet one or more of the conditions of Rule 67(a) is a restricted discretionary activity.

Environment Southland will restrict its discretion to the following matters:

1. any effects on the morphology and dynamics (including erosion and deposition) of the river, modified watercourse, or lake, landscape, outstanding natural features,<sup>727</sup> natural character and amenity values, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, ~~and~~<sup>728</sup> historic heritage, and public access;<sup>729</sup> and
2. any conditions in Rule 67(a) that cannot be met.

### **Rule 68 – Demolition and/or removal of structures**

- (a) Unless otherwise stated in this Plan, the demolition or removal of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:

- (i) the structure is not listed on the New Zealand Heritage List/Rarangi Korero, and was not constructed prior to 1920;
- (ii) fish passage shall not be impeded as a result of the activity;
- (iii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
- (iv) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
- (v) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (vi) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (vii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- ~~(viii) there are no recorded historic heritage sites, at the site of the activity;~~<sup>730</sup>
- (ix) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (x) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
- (xi) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level; and
- (xii) demolition or removal of the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks.

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>731</sup>

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<sup>727</sup> 752.160 Fish and Game

<sup>728</sup> Minor amendment for readability

<sup>729</sup> 752.161 Fish and Game

<sup>730</sup> 449.35 KiwiRail

<sup>731</sup> Consequential amendment relating to 449.35 KiwiRail

- (b) *Unless otherwise stated in this Plan, the demolition or removal of any structure in, on, under or over the bed of any river or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, that does not meet one or more of the conditions of Rule 68(a) is a restricted discretionary activity.*

*Environment Southland will restrict its discretion to the following matters:*

- 1. any effects on the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, ~~and~~<sup>732</sup> natural character values and outstanding natural features<sup>733</sup> and amenity values;*
- 2. any conditions in Rule 68(a) that cannot be met.*

## **Rule 69 – Structures not covered by, or not complying with, rules**

### **Provision**

10.224 Rule 69 classifies that any use, erection, maintenance, reconstruction, placement, alteration, extension, removal or demolition of any structure in, on, under or over the bed of a river or lake that is not provided for by another rule in the pSWLP, is a discretionary activity.

### **Submissions and Analysis**

10.225 Six submissions were received on Rule 69, five seeking that the rule is retained, and one seeking amendments.

10.226 Ernslaw One supports Rule 69, but seek amendments so that the installation of driven railway irons in the beds of small non-navigable streams to create a “Woody Debris Trap structure” in or downstream of harvested forestry blocks is a controlled activity, as opposed to a discretionary activity. The submission also seeks conditions including requirements to inspect the debris trap within 5 days of a flood event, clear it out within 20 days of a flood event, and maintain the structure for five years following tree harvesting.

10.227 I do not support the proposed change from a discretionary activity to a controlled activity for this specific activity, as I do not consider that all possible effects from the structure are appropriately controlled or mitigated by the proposed conditions. This is particularly problematic given that the consent authority must grant resource consent applications for controlled activities<sup>734</sup>. I consider that a discretionary activity status is appropriate, as it will enable a full assessment of all potential adverse of effects that may occur, consistent with the direction set out in Policy 28. I therefore do not recommend the changes sought by Ernslaw One.

### **Recommendation**

10.228 Retain Rule 69 as notified.

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<sup>732</sup> Minor amendment for readability

<sup>733</sup> 752.161 Fish and Game

<sup>734</sup> Section 87A(2)(a) of the RMA.

## **Rule 71 – Channel realignment, widening or deepening**

### **Provision**

10.229 Rule 71 classifies the excavation or disturbance of the bed of any river or lake for the purpose of realigning, widening or deepening any channel within the bed as a discretionary activity.

### **Submissions**

10.230 16 submissions have been received on Rule 71, of these ten support the proposed rule and seek its retention. A submission point from J Bythell on this rule has been assessed earlier in this section of the report and is not repeated here.

10.231 AQA, KiwiRail and Rural Contractors of NZ are concerned there is potential for this rule to trigger resource consent for activities provided for elsewhere in the Plan (for example Rule 73 or Rule 78).

10.232 Gladvale Farms requests the rule is amended to a permitted activity to enable ditches to be deepened and straightened to provide sufficient fall for tile drainage. M Tayler seeks that the rule is amended to include a new condition which allows limited bank battering and removal of gravel beaches on smaller creeks where erosion is occurring or the course of the creek is being altered and flood capacity compromised.

### **Analysis**

10.233 Rule 71 specifically provides for the excavation or disturbance of the bed of any river, modified watercourse, or lake for the purpose of realigning, widening or deepening any channel within the bed. Other rules identified by submitters (i.e. Rule 73 (gravel extraction) or Rule 59 (culverts and sediment traps)) do not manage activities for this purpose, although it is acknowledged this may occur as a consequence of these activities being undertaken. Due to the differing purposes of the rules I do not recommend the submissions on this matter are adopted.

10.234 It is unclear whether the submission from Gladvale Farms is seeking a permitted activity rule for works in artificial waterbodies or natural waterways. For completeness, I note that the rule does not apply to artificial waterbodies<sup>735</sup>. Regardless, the realignment, widening and deepening of rivers, modified watercourses, or lakes can have a range of adverse effects including on water quality, habitats, ecosystems, fish passage and natural character as such it is not considered appropriate to enable this activity to occur as a permitted activity. I therefore do not recommend changes sought by Gladvale Farms.

10.235 It appears that the submission from M Tayler is seeking that bank battering and removal of gravel beaches (where there is erosion or the flood capacity is compromised) is classified as a permitted activity. It is unclear from the submission in what circumstances the permitted activity rule would apply (i.e. how the activity is defined) and what conditions are necessary to ensure that the effects of the activity are acceptable, in accordance with the direction set out in Policy 28. Without this additional information, it

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<sup>735</sup> As per the definition of “artificial watercourse” contained in the glossary of the pSWLP.

is my view that the proposed permitted activity would not give effect to Objectives 14-17 inclusive.

## **Recommendation**

10.236 Retain Rule 71 as notified.

## **Rule 72 – Dry cuts**

### **Provision**

10.237 Rule 72 provides for the excavation or disturbance of the bed of any river or lake for the purpose of making a dry cut as a restricted discretionary activity, provided the activity meets a number of conditions related to the scope and potential effects of the activity. Where an activity is unable to meet these conditions, it is classified as a discretionary activity.

### **Submissions**

10.238 13 submissions were received on Rule 72, nine of these are in support and seek the retention of the rule. Submission points from J Bythell, HNZ, and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.239 D Harris seeks the inclusion of conditions for the maintenance of the natural character of the riverbed.

10.240 Fish and Game seeks amendments to the matters of discretion to include consideration of the of volume of material extracted and any conditions in Rule 72(a) that cannot be met. In addition, Fish and Game seek to amend discretion matter 2 as follows:

*Any effects on the rate of gravel replenishment, flood risk, river, modified watercourse, stream, lake or associated waterbody morphology and dynamics (including erosion ~~and~~ or deposition)...*

### **Analysis**

10.241 Condition 72(a)(iii) requires the bed to “*be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation)*”. Whilst I accept there may be some temporary effects on natural character, it is my view that condition 72(a)(iii) sufficiently enables effects on natural character to be remedied and do not consider that further amendments are necessary. I do not recommend the submissions from D Harris on this matter be accepted.

10.242 I note that the Council is able to consider the quantity of material extracted under discretion matter 72(a)(1). Similarly, I note that the effects on flood risk and rate of gravel replenishment are already provided for under the matters listed in discretion matter 72(a)(2). I do not consider that the further amendments requested by Fish and Game are necessary to provide for these matters.

10.243 It is my view that an additional matter of discretion to enable the Council to consider any conditions of Rule 72(a) that cannot be met is not necessary. If an activity cannot meet

the conditions of the restricted discretionary rule it becomes a discretionary activity under Rule 72(b). I do not recommend the adoption of the submission by Fish and Game on this matter.

## Recommendation

10.244 Amend Rule 72 as follows:

- (a) *The excavation or disturbance of the bed of any river, modified watercourse, or lake for the purpose of making a dry cut is a restricted discretionary activity provided the following conditions are met:*
- (i) *fish passage shall not be impeded as a result of the activity;*
  - (ii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (iii) *any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (iv) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (v) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - (vi) *there are no recorded historic heritage sites, at the site of the activity;*
  - (vii) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (viii) *all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and*
  - (ix) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.*
- Environment Southland will restrict its discretion to the following matters:*
1. *the design and location of the work;*
  2. *any effects on river, modified watercourse, stream or lake morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitat, public access,<sup>736</sup> the spiritual and cultural values and beliefs of the tangata whenua, landscape, natural character and amenity values, outstanding natural features, navigation hazards<sup>737</sup> and historic heritage.*
- ...

## Rule 75 - Vegetation flood debris

### Provision

10.245 Vegetation flood debris can provide habitats for fauna, providing shelter, food and substrate. However, when vegetation flood debris obstructs water flow it often needs to be removed from rivers, modified watercourses, and lake beds to mitigate a flooding or erosion problem and to protect infrastructure. This activity is generally beneficial but may have adverse effects on river bed processes, water quality and other values including habitat if not carried out appropriately. Rule 75(a) permits the removal of vegetation flood debris, provided a number of conditions are met. Vegetation flood debris removal

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<sup>736</sup> 752.165 Fish and Game

<sup>737</sup> 752.165 Fish and Game

that cannot meet the permitted activity standards will require a resource consent as a restricted discretionary activity.

## Submissions

- 10.246 Nineteen submissions were received on Rule 75. All of the submitters are supportive of the rule with some requesting minor amendments. Submission points from J Bythell, HNZ, KiwiRail, NZTA and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.
- 10.247 The Environment Southland staff submission seeks that it be permitted to remove plants that have been dislodged and transported. In its submission, Environment Southland staff note that in some circumstances flood events can dislodge live vegetation such as willows trees and transplant these into the middle of a river, where it establishes. They state that this poses safety issues and can be an impediment to river flows.
- 10.248 NZTA request that the removal of vegetation required to maintain the integrity of structures be permitted.
- 10.249 B Yorke seeks that the rule be amended to clarify whether or not accreditation is required when performing these tasks on behalf of Environment Southland.

## Analysis

- 10.250 In regards to the submission by Environment Southland staff I consider it appropriate to make this amendment as it allows for the removal of vegetation the has been dislodged during flood events and has re-established itself in a location where it presents a flood risk. These amendments may partly address the submission from NZTA in relation to the removal of “live vegetation”. However the request from NZTA goes further than this as it also seeks the ability to remove vegetation such as willows and their root beds which can choke small waterways and constrict flows around bridges and culverts that are not necessarily flood debris. I consider this as inappropriate as bed disturbance activities such as the removal of vegetation has the potential to have significant adverse effects and therefore consider it more appropriate that these activities be assessed via a consent process. Therefore, I do not recommend the adoption of NZTA’s submission on this matter.
- 10.251 In regards to the submission from B Yorke, it is unclear what accreditation is being referred to. The submitter may wish to clarify this at the hearing.

## Recommendation

- 10.252 Amend Rule 75 as follows:

(a) *The removal of vegetation flood debris obstructing water flow, including plants dislodged and transplanted during flood flows.<sup>738</sup> from any river, modified watercourse, or lake bed and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*

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<sup>738</sup> 247.23 Environment Southland

- (i) *the removal of the material is for the purpose of flood or erosion control or maintaining the integrity of infrastructure;*
- (ii) *following the removal of material, the area of lake bed, modified watercourse or river which has been disturbed, shall be returned as near as practicable to its original channel shape, area, depth and gradient;*
- (iii) *fish passage shall not be impeded as a result of the activity;*
- (iv) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
- (v) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discolouration to the river or lake. Where any sediment release occurs, it will be only temporary;*
- (vi) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
- (vii) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
- ~~(viii) *there are no recorded historic heritage sites, at the site of the activity;*~~<sup>739</sup>
- (ix) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
- (x) *all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and*
- (xi) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.*

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>740</sup>

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## Rule 76 – Vegetation planting

### Provision

10.253 Rule 76 manages planting in the bed of any lake, river, or modified watercourse. There are many benefits to planting waterways however, there is also potential for adverse effects on flood and drainage management, as well as biosecurity concerns. The extent of these effects depends on the type, location and scale of planting. Rule 76(a) permits the planting of vegetation provided the activity complies with the conditions of the rule, which relate to a specified management plan having been prepared and limitations on the type of planting. If any of these conditions cannot be met, then resource consent is required as a restricted discretionary, subject to a range of conditions being met, or a discretionary activity where they are not.

### Submissions

10.254 Twenty-five submissions were received on Rule 76, six of which support the rule seeking its retention. Submission points from J Bythell, Fish and Game and HNZ on this rule that have been assessed earlier in this section of the report are not repeated here.

<sup>739</sup> 449.38 KiwiRail

<sup>740</sup> Consequential amendment relating to 449.38 KiwiRail

- 10.255 Both the Brentleigh Family Trust and the 254 Partnership and Gerken Family Trust oppose the rule and state that riparian planting should be illegal. They seek that riparian planting on streams is not encouraged as the roots of riparian planting will clog tile drains.
- 10.256 Five submitters, including G McGregor and Southland RLC, raise concerns about condition 76(a)(ii) *“the planting is not production forestry”*. Three submitters, including NZTA, seek exemptions for the planting of production forestry where this is undertaken for soil conservation and river control purposes, as forestry plantation species can be used for river management. Environment Southland is concerned condition 76(a)(ii) captures trees that are planted for riparian management and later cut down for fire wood, which is a practice that Environment Southland carries out occasionally. Environment Southland envisage that others will also be affected by this rule. To resolve these concerns, it seeks amendments to better define the meaning of production forestry as *“forestry primarily for production of wood, fibre, bio-energy and/or non-wood forest products”*. A Wilson and S Wilson request the rule provides for production forestry as a permitted activity where GMP’s are followed.
- 10.257 B+LNZ seek the deletion of 76(a)(i) *“the planting is undertaken pursuant to a Riparian Management Plan or a Management Plan prepared in accordance with Appendix N”* and (iii) *“no plants listed in the Regional Pest Management Strategy for Southland 2013 are introduced or planted”*. The submitter considers the rules to be unnecessary and duplicate other regulations (for example, the Regional Pest Management Strategy 2013). In contrast, B Smith also has concerns regarding condition 76(a)(iii) stating that there are many plants not listed in the Pest Management Strategy that would be unsuitable. B Smith seeks that the condition is amended to only allow suitable native plants historically found in the area.
- 10.258 T Buckingham raises concerns that the rule framework is too rigid and introduces additional costs and time, stating there is *“no reason to get a consent for it”*. The submitter seeks amendments to the rule to enable farm owners to work with land sustainability officers *“to sort it out at no cost to the farm”*.
- 10.259 Four submitters, including DOC and Forest and Bird, raise concerns about impacts on biodiversity. J Bythell is concerned about the impact on significant indigenous vegetation and seeks the additional condition *“any native species planted do not adversely affect the long-term viability of the indigenous plant communities already present”*. DOC, Forest and Bird and Fish and Game seek the inclusion of a new condition that excludes planting and disturbance of bare gravel bars in both the permitted and restricted discretionary clauses of this rule. The reason for this is primarily due to the habitat they provide to braided river birds, however Fish and Game also consider bare gravel bars are important for flood flow capacity and gravel mobilisation and downstream migration.
- 10.260 HortNZ is concerned that the rule does not address vegetation removal and seeks provision *“...for the removal of vegetation that is infected by unwanted organisms or pest species from both land and within the bed of a river, lake or modified water course as a permitted activity”*.
- 10.261 B Yorke seeks that the rule be amended to clarify that accreditation is not required if this activity is undertaken on behalf of Environment Southland. Growplan requests no changes to the rule, however, notes that innovation will change the design of riparian schemes.



## Analysis

- 10.262 Rule 76(a) permits planting of vegetation in the bed of lakes, rivers or modified watercourses in certain circumstances, provided the conditions of the rule are met. By enabling such activities to occur, the rule gives effect to Policy 18, which seeks to reduce sedimentation and microbial contamination of waterbodies and improve river and riparian ecosystems and habitats by a range of actions, including “*encouraging the establishment and enhancement of healthy vegetative cover in riparian areas, particularly through use of indigenous vegetation*”. In response to the concerns raised by T Buckingham about the time and costs of consenting the planting of vegetation, I note that the activity is classified as permitted provided the conditions of the rule can be met. I therefore do not recommend any changes in response to the submission by T Buckingham.
- 10.263 The submission from B+LNZ correctly notes that condition 76(a)(i) prevents people without a FEMP from planting vegetation in the bed of a lake, river or modified watercourse as a permitted activity. B+LNZ questions whether or not this is necessary and seeks that riparian planting outside of a FEMP is allowed. I agree there may be other instances where it is appropriate that the planting of vegetation is permitted, such as plantings for soil conservation, enhancing biodiversity, improving aquatic habitats or river control purposes. Rather than delete the reference to the Management Plan and Appendix N (as requested by B+LNZ), it is my view that the reference should be retained and that these other purposes are also listed in the conditions of the rule. I consider that enabling the planting of vegetation for these purposes is consistent with Policy 18 and therefore recommend adopting the submission from B+LNZ in part, and including planting for the purposes of soil conservation and river control purposes (as suggested by Southland RLC, G McGregor and NZTA). In addition, I recommend that planting for the purposes of enhancing biodiversity and improving aquatic habitats be included, to better align with the direction set out in Policy 18.
- 10.264 As Fish and Game and others submit, bare gravel bars provide important habitat for braided river birds, however I note that the rule only permits the planting of vegetation “*undertaken pursuant to a Riparian Management Plan or a Management Plan prepared in accordance with Appendix N*”. It is my understanding that vegetation naturally establishes on gravel bars but is typically washed away during flood or high flow events. Given that the permitted activity rule limits the types of planting that can occur and noting that any vegetation planted on gravel bars may be swept away in flood flows, it is unclear why plantings would be undertaken on gravel bars in the first instance. In addition, given that some gravel bars may have some vegetative growth it is unclear when a gravel bar would be classified as “bare”, or why planting on bare gravel bars require more scrutiny than one that contains some vegetation. It is my view that the term “bare gravel bar” is not sufficiently certain to meet the requirements for a permitted activity rule. In response to these concerns, the submitters may wish to provide further information to support this request. In addition, I do not consider it necessary to include this as a condition for the restricted discretionary rule, as condition 76(b)(ii)<sup>741</sup> and discretion matter (3)<sup>742</sup> enable the consent authority to address any potential adverse effects raised in the submissions from Fish and Game, DOC and Forest and Bird.

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<sup>741</sup> “*there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel*”

<sup>742</sup> “*any effects on flood risks, river morphology and dynamics (including erosion or deposition), taonga species, and aquatic and riverine ecosystems and habitat.*”

- 10.265 The pSWLP does not contain a specific rule for the disturbance of the bed of a river or lake associated with the removal of vegetation, and this is therefore classified as a discretionary activity under Rule 4 of the pSWLP. As discussed under Rule 75, there may be adverse effects associated with the removal of vegetation from within the bed of a waterway, where the effects of such activities are more appropriately assessed via a resource consent process. I therefore do not recommend accepting the submission from HortNZ.
- 10.266 I support the retention of the condition relating to the Regional Pest Management Strategy for Southland 2013 (RPMS). I acknowledge the RPMS, in accordance with Sections 52 and 53 of the Biosecurity Act, does not enable the sale, distribution or propagation of any of the pests identified in the strategy. However, I consider it is appropriate to align this requirement with Rule 76, to ensure that no pest species are planted in the beds of rivers, lakes and modified watercourses in Southland. No amendments are necessary to provide for this. I do not consider it is appropriate to narrow the rule to the planting of only native plants historically found in the area as requested by B Smith as other plant species may be equally appropriate or more accessible, and restricting species is a less effective means of achieving the direction set out in the plan.
- 10.267 I consider there is merit in enabling the planting of forestry species for soil conservation and river control purposes. This would enable for example the planting of poplars for pest suppression on the beds of rivers, lakes and modified watercourses. This approach would also capture the planting of forestry for riparian management as submitted by Environment Southland. I prefer to link the exclusion back to works undertaken pursuant to the Soil Conservation and Rivers Control Act 1941 and therefore recommend the partial adoption of the submissions by the Southland RLC, G McGregor and NZTA.
- 10.268 I do not, however, consider it is appropriate to enable the planting of production forestry where harvesting GMP's are followed as a permitted activity, as requested by A Wilson and S Wilson. I note that this rule is for the planting of vegetation only, and that the removal (harvesting) of vegetation is not controlled by this rule. Production forestry has been specifically excluded from Rule 76(a) as the effects associated with this activity are greater than what is considered acceptable as a permitted activity. I therefore do not recommend the adoption of the submissions by A Wilson and S Wilson.
- 10.269 It is unclear what accreditation is being referred to in the submission by B Yorke. The submitter may wish to expand upon this at the hearing. Brentleigh Family Trust and the 254 Partnership and Gerken Family Trust raise concerns that the planting of vegetation in streams may clog tile drains. Given that the rule only applies to the planting in the bed of rivers, lakes or modified watercourses (rather than artificial drains), it is my view that there is limited ability for Council to consider effects of the planting on tile drains. In addition, given the distinct benefits associated with riparian plantings and the appropriateness of enabling this to occur as a permitted activity (particularly in achieving the direction set out in Policy 18), I do not recommend that planting of vegetation in the bed of rivers, lakes or modified watercourses be classified "illegal" and therefore recommend rejecting the submission from Brentleigh Family Trust and the 254 Partnership and Gerken Family Trust.

## Recommendation

10.270 Amend Rule 76 as follows:

- (a) *The introduction or planting of any plant, or part of any plant, in the bed of any lake, river, or modified watercourse is a permitted activity, provided the following conditions are met:*
- (i) *the planting is undertaken pursuant to a Riparian Management Plan, ~~or~~ a Management Plan prepared in accordance with Appendix N, or is for the purposes of soil conservation, river control<sup>743</sup>, enhancing biodiversity or improving aquatic habitats<sup>744</sup>;*
  - (ii) *the planting is not production forestry (excluding forestry species planted pursuant to the Soil Conservation and Rivers Control Act 1941);<sup>745</sup>*
  - (iii) *no plants listed in the Regional Pest Management Strategy for Southland 2013 are introduced or planted.*

## Rule 77 - Vehicles and machinery

### Provision

10.271 Rule 77(a) permits the entry into or passage across the bed of any river or lake by any wheeled or tracked vehicle or machine (including any associated bed disturbance and discharge) provided the conditions of the rule are met. The permitted activity standards seek to ensure the effects of the activity are minimised. If the activity does not meet any of the permitted activity standards, consent is required as a restricted discretionary activity.

### Submissions

10.272 Rule 77 received 23 submissions, with 16 submissions in support seeking that it is retained as notified. Submission points from J Bythell, HNZ, KiwiRail, and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.273 Several submitters seek amendments to the rule to clearly state whether particular activities are covered by the permitted activity rule. In particular, the AQA seek that Rule 77(a) is amended to provide an exemption to the permitted activity standards for activities that are provided for as a gravel extraction activity under Rule 73.

10.274 Similarly, the NZFS seeks that the disturbance of the bed associated with a fire appliance vehicle responding to an emergency is provided for as a permitted activity. In its submission, the NZFS note that this will provide clarity that it will not need to apply for a retrospective consent.

10.275 Two submitters raise concerns about the effects of permitted activities on ecosystems. L Esler submits that recreational 4WD, quadbike or motor-bike off road vehicles are often the cause of disturbance to nesting or roosting birds, and notes that the rule does not specifically prohibit these activities.

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<sup>743</sup> 614.36 NZTA

<sup>744</sup> Consequential amendment

<sup>745</sup> 523.17 G McGregor; 614.36 NZTA; and 753.17 Southland RLC

## Analysis

10.276 The request made by NZFS to ensure that vehicle entry or passage associated with fire-fighting is a permitted activity has merit, however section 330 of the RMA provides an exemption to sections 9, 12, 13, 14 and 15 for emergency works. Given that section 330 applies to firefighting emergencies and only requires retrospective consent to be sought where the adverse effects of the activity continue, I do not consider that it is necessary to specifically provide for vehicle access or passage associated with fire-fighting as a permitted activity.

10.277 The amendments sought by the AQA are already provided for in Rule 77(a)(ii). It is my view that specific reference to activities consented under Rule 73 are unnecessary. I do not recommend this submission point is adopted.

## Recommendation

10.278 Amend Rule 77 as follows:

- (a) *The entry into or passage across the bed of any river, modified watercourse, or lake by any wheeled or tracked vehicle or machine and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) *there shall be no alteration to the original profile of the bed;*
  - (ii) *the activity is necessary for the purposes of crossing over the bed, or carrying out another permitted or consented activity within the bed;*
  - (iii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (iv) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (v) *any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (vi) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (vii) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(viii) *there are no recorded historic heritage sites, at the site of the activity;*<sup>745</sup>~~
  - (ix) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (x) *all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and*
  - (xi) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.*

*Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre 1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.*<sup>746</sup>

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<sup>745</sup> 449.39 KiwiRail

<sup>746</sup> Consequential amendment relating to 449.39 KiwiRail

## Stock exclusion

- 10.279 Stock exclusion is the permanent or temporary exclusion of stock from the bed and banks of waterbodies and wetlands. The benefits of stock exclusion include preventing direct deposition of contaminants to waterways, as well as preventing damage to river banks and beds, riparian margins, wetlands and lake and riverine habitats.
- 10.280 However, in many cases this will require fencing, which comes at a (often considerable) cost to landowners, and in some situations, can be difficult to install and maintain.
- 10.281 In February 2017 (after submissions and further submissions on the pSWLP had closed) the Government published draft regulations on stock exclusion<sup>747</sup>. Those draft regulations are open for consultation until 28 April 2017. I note that the draft regulations appear to be drafted in a manner that enables Council to have more restrictive provisions in its Plan, but not less restrictive. As these regulations will likely come into force during the hearing process the recommendations made in this report may need to be adjusted accordingly. I have not dwelt long on the submissions that seek less restrictions than the draft regulations, as I am of the view that they provide an appropriate ‘start-point’ for stock exclusion in Southland, and are based on the national framework of the Land and Water Forum.

## Provisions

- 10.282 The pSWLP requires staged exclusion of all stock, except sheep, from waterways within most physiographic zones. Stock exclusion within the Bedrock/Hill Country physiographic zone is only required on slopes below 16 degrees, and is not required within the Alpine zone. In effect, stock exclusion is targeted at lower altitude land where stocking rates may be more intensive. Exclusion in this instance does not necessarily require permanent fencing but rather active management. This is broadly consistent with the LAWF Fourth Report and the MfE 2016 discussion document – Next Steps for Freshwater, although the proposed dates for exclusion differ.
- 10.283 For sheep, the pSWLP requires farmers to prepare and implement a Riparian Management Plan as part of the FEMP in Appendix N. The Riparian Management Plan focuses on the methods to manage critical source areas on sheep properties.

## Submissions and analysis

- 10.284 A large number of submissions were received on the provisions relating to stock exclusion. Submitters include Ngāi Tahu, B+LNZ, Federated Farmers, Forest and Bird, and DOC. The submission points summarised and analysed in the following sections relate to Policy 18 – Stock exclusion from waterbodies, and Rule 70 – Stock exclusion from waterbodies.

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<sup>747</sup> *Clean Water: 90% of Rivers and Lakes Swimmable by 2040*, 2017

10.285 A number of submitters, including Fonterra, Ngāi Tahu and DOC, are in support of stock exclusion from waterbodies. Within the range of submission points, there are six recurring issues:

- stock exclusion on extensive properties
- sheep exclusion;
- exclusion of stock other than sheep;
- definitions of and exclusion from different types of waterbodies;
- timeframes for exclusion;
- stock crossings.

### **Stock exclusion on extensive properties**

#### **Submissions**

10.286 A number of submitters, including B+LNZ and the Lower Aparima CG, request that extensive farming operations should not have to exclude stock from waterways to the same extent as intensive farms, and that stock units/ha should be used as a trigger for requiring exclusion. Federated Farmers suggest that on hill and high country farms, a stocking rate of 5 stock units per ha or less should not require exclusion. Most cited the cost of fencing and water reticulation on extensive properties compared to the lower environmental impact associated with lower stocking rates as the rationale for this.

10.287 While some submitters, such as B+LNZ, support continued stock access to waterbodies where slopes are above 16 degrees, the Pourakino CG request that this be extended to all physiographic zones, and NZ Deer are concerned that variability in slope measuring methods could expose farmers to compliance action from Environment Southland. NZ Deer request clarification on whether the whole paddock needs to be fenced if there is only a small area within a paddock with a slope of less than 16 degrees. Federated Farmers submit that a strict interpretation of the 16 degrees threshold could see small stretches of unconnected fence line along a waterway that “lead to nowhere”.

10.288 In contrast, the SIEIA oppose stock access to waterways on slopes greater than 16 degrees as it is aware of many areas where intensive grazing occurs on slopes greater than 16 degrees. It is unclear whether the submitter is referring to intensive winter grazing or intensive farming activities more broadly. The Hearing Panel may wish to clarify this with the submitter at the hearing, as, if its concern is access to waterbodies during intensive winter grazing, this is addressed through Rule 23.

#### **Analysis**

10.289 The pSWLP has lesser requirements for extensive farming operations, by not requiring stock exclusion on slopes of 16 degrees and over within the Bedrock/Hill Country physiographic zone, which is the largest of the physiographic zones. I acknowledge that there are instances where extensive farming activities are undertaken on slopes less than 16 degrees, and that in these instances the cost of stock water reticulation and fencing will be significant compared to the benefit derived from exclusion. However, this is the subject of clear provisions within the draft regulations. Due to the impending regulation,

the comparative simplicity of a slope class, and the complexity of administering a stocking rate provision, I recommend that the submissions seeking exclusion based on stocking rates be rejected.

10.290 The requirement to exclude stock on slopes less than 16 degrees will require some pragmatism in its implementation. The draft regulations suggests the use of LRI slope classes – an existing dataset and mapping, with an element of generalisation due to the resolution of the data. Overall, I do not consider that the implementation challenges associated with the condition are such that it should be deleted.

10.291 The basis of the stock exclusion rule is, in part, on the physiographic zones. However, the impending regulation does not enable a less restrictive regime based on physiographic zones. There are approximately 260,000 ha of pastoral land in the Bedrock/Hill Country physiographic zone that have slopes greater than 16 degrees. If the condition was deleted, this could result in up to 10,000 km of additional stock exclusion fencing being required across Southland, based on 0.04 km of riparian margin per ha<sup>748</sup>. However, given the content of the draft regulations, I do not consider this flexibility is likely to be available in the future.

## Sheep exclusion

### Submissions

10.292 A number of submitters, including Ngāi Tahu, Fish and Game and DOC, request that sheep be excluded from waterbodies over time, as is the case for cattle and deer. Reasons cited for this include that sheep:

- leave lower post-grazing residuals, removing much of the sward that filters overland flow;
- camp on beds and banks causing pugging, devegetation and erosion of stream banks;
- crowd streams in hot weather, contributing significant pathogens to surface water bodies from direct deposition in the channel zone;
- fall into streams and drown, their carcasses causing contamination and requiring removal by landowners downstream.

10.293 DOC notes that temporary fencing is an effective and comparatively low cost way to exclude sheep. Ngāi Tahu requests that sheep be excluded over the same timeframe as cattle ideally, but recognise that this may cause farmers some hardship. Ngāi Tahu suggests that sheep be excluded from sensitive areas as a minimum.

10.294 Fish and Game requests that sheep be excluded from critical source areas, and all stock from critical source areas on slopes above 16 degrees. Fish and Game also requests that sheep be excluded from natural wetlands by 2022, waterbodies in the catchments of the Otautau Stream, Opouriki Stream and Winton Stream by 2024, and any other streams that are subsequently found to be failing the NOF bottom line for *E.coli*. Forest and Bird request that sheep be excluded from wetlands by 2020, and all stock be progressively

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<sup>748</sup> Riparian Management Spreadsheet for Southland – WAL 2020 Steering Group Meeting 5 August 2013

excluded from sensitive water bodies, including coastal estuaries and lagoons, and critical source areas by 2025 through Policy 18.

10.295 Fish and Game considers that Rule 70 is contrary to Rule 74(c) as Rule 70 allows sheep to access natural wetlands, and Rule 74(c) makes modification of a wetland a non-complying activity.

10.296 Conversely, other submitters, including B+LNZ, support allowing sheep continued access to waterways.

### **Analysis**

10.297 The draft national regulations for stock exclusion suggest staged exclusion of all stock except sheep, on the basis that sheep do less damage to stream banks and beds than other stock, and do not have the same affinity for water. Background documentation to these draft regulations suggest that sheep pose a lower level of environmental risk, so a national stock exclusion regulation should not include them. However, these documents also outline that a regional council may need to adopt a more stringent approach to managing sheep due to individual circumstances and water quality issues.

10.298 There are three key pathways for agricultural sources of microbial contaminants to enter waterbodies:

- overland flow;
- direct deposition into the channel (such as on gravel bars) or onto the stream banks; and
- artificial drainage.

10.299 Fencing prevents direct deposition, and riparian management, more broadly (such as fencing off critical source areas and riparian planting), can mitigate transport via overland flow. As I understand it, direct deposition presents the greatest risk to human health during low flow conditions, when recreational activities such as swimming are most likely.

10.300 As outlined in Section 6.2 of the section 32 report, monitoring shows that five Southland catchments exceed the National Objectives Framework (NOF) *E.coli* secondary contact bottom line of 1000 *E.coli*/100 ml. All five of these locations have a positive sheep *E.coli* signature. One of the five catchments shows a persistent human source of *E.coli*, and in another, the *E.coli* concentrations indicate a local source rather than an upstream source.

10.301 The remaining three sites not meeting the secondary contact bottom line are:

- Otatau Stream at Waikouro;
- Opouriki Stream at Tweedie Road;
- Winton Stream at Lochiel.

10.302 Fish and Game suggest that, in addition to other stock, sheep be excluded within these catchments. Water quality in these catchments has to improve over time to at least the secondary contact bottom line. This is because regional councils are only permitted to set freshwater objectives below national bottom lines where existing water quality is



below bottom lines due to natural processes or infrastructure listed in Appendix 3 (currently empty) of the NPSFM.

10.303 Neither of these circumstances apply in the catchments in question. As sheep have been identified as a contributor to the bottom line being exceeded in these catchments, it is possible that over time stock exclusion, including of sheep, will be required in the catchments of the Otautau Stream at Waiouro, Opouriki Stream at Tweedie Road, and the Winton Stream at Lochiel. However, the advice to date is that exclusion of sheep from waterbodies will not, by itself, solve the problem. As I understand it, as sheep naturally avoid water bodies, overland flow from paddocks to waterbodies is a significant contributor, rather than 'direct deposition', which tends to be the case with cattle, deer and pigs. Therefore, simple exclusion of sheep from waterbodies may only have limited effectiveness and a more nuanced solution is required to address overland flow and artificial drainage sources.

10.304 As I see it, there are three options for addressing sources of contaminants from sheep:

1. require the exclusion of sheep from these three catchments over time (as sought by some submitters, such as Forest and Bird and Fish and Game);
2. rely on FEMPs and education and advocacy to deal with critical source areas and exclusion where appropriate;
3. rely on FEMPs and education and advocacy to deal with critical source areas and exclusion where appropriate, backed up by monitoring and a sheep exclusion requirement if the NOF bottom-lines are not met within a defined timeframe.

10.305 These three options are not necessarily mutually exclusive from a practical perspective. Option 1 is comparatively simple, but may be relatively expensive and only contribute to solving the problem. Option 2 will require investment from both the Council and farmers, and is acknowledged as a largely voluntary response. Option 3 provides a back-stop for Option 2, but does not resolve the uncertainty as to the outcome acknowledged with respect to Option 1.

10.306 At this juncture, I consider it would be beneficial to hear evidence from farmers and industry groups on sheep exclusion from waterbodies, before making recommendations.

10.307 As there is a high level of certainty required for permitted activity standards, I do not consider it appropriate to require exclusion from all catchments which are found to be below the NOF secondary contact bottom line in the future. I consider that the most appropriate way to deal with any future failures would be through a plan change at that time, mostly likely associated with future FMU processes.

10.308 Ngāi Tahu request that sheep be excluded from sensitive areas. Waterbodies which are particularly sensitive to degradation from agricultural contaminants, such as *E.coli* from stock access to waterways, are identified in Appendix Q of the pSWLP (now recommended to be part of Appendix A).

10.309 I agree with Ngāi Tahu that exclusion of all stock, including sheep, from sensitive waterbodies is appropriate. This would require amendment to both Policy 18 and Rule 70 to include stock exclusion (including sheep) from sensitive waterbodies. It appears from Ngāi Tahu's submission that they request the date for exclusion to be 1 May 2018, to align with exclusion of stock other than sheep and deer from waterbodies, but the

Hearing Panel may wish to clarify this with the submitter during the hearing process. Alternatively, Forest and Bird suggest 2025 for exclusion from sensitive waterbodies, including estuaries and coastal lagoons. I have recommended 2025 below, as it aligns with other recommended timeframes in Rule 70.

- 10.310 The challenge of incorporating critical source areas into permitted activity rules in the pSWLP is addressed in Section 7 of this report, and I do not repeat those matters here.
- 10.311 I do not agree that Rule 70 is contrary to Rule 74(c). The latter rule only applies to the modification of a wetland where it is not otherwise listed in the Plan; therefore if Rule 70 applies to the activity, Rule 74(c) does not. Recommended amendments to Rule 74 (see Section 11 of this report) have clarified this position in the case of any potential confusion.

## Exclusion of stock other than sheep

### Submissions

- 10.312 Deer exclusion is addressed in the most detail in the submission of NZ Deer. NZ Deer points out that active management, such as temporary fencing, won't work for deer, and that permanent fencing would be required to exclude deer from waterways, at significant cost. NZ Deer also notes that the Ministry for the Environment discussion document – Next Steps for Freshwater proposes exclusion of deer from waterways by 2025 for farms on slopes less than 4 degrees, and by 2030 for farms on slopes of 4-15 degrees. NZ Deer proposes a 10-year plan for fencing off waterways for deer farmers on low-lying country after the pSWLP becoming operative. NZ Deer also seek clarification on what would constitute a significant adverse effect in Policy 18(4), arguing that deer crossing a waterbody is unlikely to have a significant effect as they cross quickly and infrequently. NZ Deer requests Policy 18(1) be revised as follows:

- 1.1 requiring progressive exclusion where possible and practical of all stock, except sheep, from all waterbodies, including artificial watercourses, on land with a slope of less than 16° within ten years of the plan becoming operational, and the management of sheep in critical source areas;*
- 1.2 where exclusion is not possible or practical, alternative mitigation measures to reduce sedimentation and microbial contamination of waterbodies and improve river and riparian ecosystems and habitats are provided in a Management Plan;*

- 10.313 A large number of submitters request changes to the timeframes for cattle and deer exclusion. Many request the timeframes be extended, for example B+LNZ propose cattle be excluded by 2025, and deer by 2030. Scandratt Rural requests longer timeframes if there are physical or financial constraints on farmers that make exclusion challenging. Conversely, the SIEIA requests that all dairy cattle be excluded immediately.
- 10.314 A number of submitters also comment on the resource consent and FEMP requirements where the stock exclusion timeframes cannot be met. NZ Deer requests that where exclusion is not possible or practical, alternative mitigation measures to reduce sedimentation and microbial contamination of waterbodies and improve river and riparian ecosystems and habitats are provided in a Riparian Management Plan in accordance with Appendix N. NZ Deer also request the deletion of Rule 70(b), which

allows those not able to meet the exclusion timeframes to apply for resource consent to extend the timeframe provided they outline their plan for exclusion by 2025 in their FEMP.

- 10.315 B+LNZ submits that farmers should not have to prepare an FEMP as well as apply for resource consent if they cannot meet the exclusion timeframes, on the basis that this is duplication, the resource consent threshold is arbitrary, and that an FEMP should be enough. B+LNZ also request flexibility for farmers to choose where they exclude stock, rather than blanket exclusion, as well as allowing additional extensions to deadlines if people are managing risk appropriately.
- 10.316 Federated Farmers requests that Policy 18 be amended to require exclusion of stock, except sheep, where the effects of access are more than minor, and require the adoption of GMP's (rather than management plans) that set out methods and timeframes to achieve these outcomes.
- 10.317 Several submitters, including Fish and Game, request that there is no feeding out or supplementary feeding of stock in, over or on the bed of a lake, river, natural wetland, artificial watercourse or modified watercourse and their margins, and that this would apply to all stock, including sheep.

## **Analysis**

- 10.318 Amending Policy 18 to include phrases such as 'where possible and practical', 'alternative mitigation measures', and 'exclusion of stock where the effects are more than minor', would make the policy much more subjective. This subjectivity would be difficult to give effect to through Rule 70, as permitted activity standards require a high level of certainty, without discretion in their interpretation and implementation.
- 10.319 However, I acknowledge NZ Deer's concern about the cost associated with fencing deer out of waterways, and its request for a 10-year timeframe to exclude deer. I recommend a range of amendments to bring the pSWLP policy and rule framework into closer alignment with respect to the draft regulations. I note that the timeframes will represent a considerable relaxation from the notified provisions for some landowners, and note that there may be an opportunity to align the dates more closely with the notified provisions, if that was considered appropriate by the Hearing Panel.

## **Definitions of and exclusion from different types of waterbodies**

### **Submissions**

- 10.320 A number of submitters requested clarity around the definition of waterbodies, pointing out that Policy 18 refers to exclusion from waterbodies, but the Glossary contains a definition of 'surface waterbodies' rather than 'waterbodies'. Some requested a definition aligned with the Sustainable Dairying: Water Accord, 2013. Page 6 of the Sustainable Dairying: Water Accord, 2013 sets expectations for stock exclusion, which include exclusion from waterways and drains<sup>749</sup> (similar to the pSWLP definition of artificial

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<sup>749</sup> The Sustainable Dairying: Water Accord, 2013 defines a drain as: An artificially created channel designed to lower the water table and/or reduce surface flood risk and that permanently contains water but does not include any modified (e.g. straightened) natural watercourse.

watercourse) greater than one metre in width and deeper than 30 cm. A number of submitters request that a watercourse of this size be the smallest which requires exclusion. Federated Farmers consider it is inappropriate to have a more restrictive rule than the Sustainable Dairying: Water Accord, 2013. Conversely, Fonterra submits in support of fencing intermittent waterways, and waterways less than 1 m wide that are permanently flowing. Fonterra requests a definition of active bed to provide clarity on what needs to be fenced.

10.321 Fonterra proposes the following definition of active bed:

*the bed of a river (including any modified river) or artificial watercourse that is permanently or intermittently flowing and where the bed is predominantly unvegetated and comprises sand, gravel, boulders or similar material.*

10.322 B+LNZ submits in partial support of Policy 18, but requests the removal of artificial watercourses from Policy 18(4), on the basis that artificial watercourses are built for production purposes, not to add ecological value. Federated Farmers also request the removal of artificial watercourses.

10.323 The Environment Southland staff submission raises the difficulty in defining where a ‘tidally influenced river and adjacent riparian habitat’ begins and ends, and suggests the term be substituted for ‘tidal river habitat up to the spring tide level’ which appears in 19 other locations within the pSWLP.

10.324 DOC request that Policy 18 include stock exclusion from the beds of rivers and lakes, marginal strips, esplanade reserves and strips, and unformed roads adjacent to river and lake beds where the waterbody is present, to create riparian buffers. Fish and Game raise concerns that Rule 70 allows stock access to headwater seeps/springs, tarns, and intermittent/ephemeral streams with an active bed greater than 1 m wide, requesting that these waterbodies are added into Rule 70. Some submitters, including Forest and Bird, also requested that Rule 70 require exclusion from estuaries and coastal lagoons.

## **Analysis**

10.325 I recommend the specific types of waterbodies referenced in Rule 70 be inserted into Policy 18 in place of ‘waterbodies’. This would remove the confusion about which waterbodies are covered by the policy. Artificial waterbodies, like waterways smaller than 1 m and shallower than 30 cm, flow into larger waterbodies, providing a pathway for contaminants. In the Southland context, particularly the lowland areas, it is very difficult to distinguish what is natural, modified natural or artificial, as so much artificial drainage and channelisation of natural waterbodies has occurred.

10.326 I recommend Fonterra’s suggestion of requiring exclusion from waterbodies with an active bed be adopted, and this also has support from Environment Southland’s Land Sustainability team. An active bed is easy to identify and excludes swales and areas of rushes that would be impractical to exclude stock from across the Region. Recommendations for changes to the definition of ephemeral waterbodies, intermittent waterbodies and active bed to incorporate this requested change are presented in Section 11.

- 10.327 The Hearing Panel may wish to clarify the environmental effects basis on which DOC considers it is necessary to exclude stock from marginal strips, esplanade reserves and strips and unformed roads. These instruments are legal property delineations rather than areas of particular environmental sensitivity, so would generally be more appropriate for property owners, often territorial authorities and the Crown, to manage any stock exclusion, in accordance with any regional council rules or national regulations. As such, I do not recommend a change to Policy 18 and Rule 70 to include them.
- 10.328 Given that Objective 6 requires no reduction in the quality of water in estuaries and lagoons, and Objective 14 requires indigenous ecosystems and their life supporting capacity in estuaries to be maintained or enhanced, I agree with Forest and Bird that there is justification to add estuaries and coastal lagoons to the list of waterbodies in Policy 18 and Rule 70.

## **Riparian management**

### **Submissions**

- 10.329 Pourikino CG requests clarity on why Policy 18(3) contains a preference for indigenous vegetation. It submits that exotic vegetation could be advantageous in certain situations as a result of topography and may be more beneficial in terms of reducing sedimentation.
- 10.330 Federated Farmers requests that Policy 18 encourage vegetative cover in riparian areas only where there is significant risk of sedimentation and overland flow containing contaminants, without compromising the effective management of pests, flooding and bank erosion. Federated Farmers is concerned that riparian planting will impose significant establishment and maintenance costs, and may have little impact on water quality.
- 10.331 Fish and Game submits that Policy 18 does not adequately provide for exclusion of stock from waterbodies and does not establish appropriate riparian setbacks in relation to stock exclusion, requesting setbacks for exclusion of 5 m on flat land and 10 m on steep land.

### **Analysis**

- 10.332 Policy 18 encourages the establishment and enhancement of healthy vegetative cover in riparian areas, particularly through the use of indigenous vegetation. The policy does not preclude the use of exotic species, or make a judgement about appropriateness in a given situation. I consider this is appropriate, particularly in light of Objective 14, which requires the maintenance and enhancement of the range and diversity of indigenous ecosystem types and habitats, including rivers, estuaries, wetlands and lakes, and their margins.
- 10.333 There is value in healthy vegetative cover in the riparian area regardless of whether there is significant risk of sedimentation and overland flow or not. There are advantages for ecosystem health and macroinvertebrates from appropriate riparian planting and management. This is particularly so if there is an element of shading of the waterbody, which tends to suppress nuisance weed growth, both terrestrial and aquatic.

10.334 I note that Policy 18(3) ‘encourages’ rather than ‘requires’ establishment and enhancement of healthy vegetative cover, and therefore I do not consider it necessary to make this part of the policy conditional on effective management of pests, flooding and bank erosion. Making the policy subject to such constraints would reduce its effectiveness in implementing Objective 14.

10.335 Policy 18 provides for exclusion of stock other than sheep from waterbodies on slopes less than 16 degrees. As for stock other than sheep, it is not clear why Fish and Game do not consider that Policy 18 adequately provides for their exclusion. The Hearing Panel may wish to clarify this with the submitter during the hearing.

10.336 Specifying riparian setbacks in Policy 18 would risk changing the activity class of some activities. This not considered good drafting practice, as I consider such thresholds should be addressed within rules<sup>750</sup>. At the rule level, Rule 70 is designed to mitigate the effects from stock access to waterbodies, rather than those associated with overland flow. Setbacks from waterbodies are typically used to address overland flow risk. Setbacks are incorporated into the pSWLP through Rules 14 – Fertiliser discharges, 23 – Intensive winter grazing and 25 – Cultivation on sloping ground. These activities, where the ground can be devegetated, represent a higher risk for overland flow and sedimentation, so are the focus of setbacks in the pSWLP. Requiring blanket setbacks of 5 or 10 m across the region would mean many existing riparian fences would no longer be adequate, and based on an average riparian margin of 0.04 km/ha<sup>751</sup>, could result in up to 2% of pastoral land being retired as riparian margins on flat land, and up to 4% of pastoral land on steeper slopes.

## Stock crossings

### Submissions

10.337 Some submitters, including Fish and Game and Forest and Bird, request that additional requirements be placed on stock crossings and fords through Rule 70(a)(v), including:

- there is no existing structure available for use;
- there is no discharge that gives rise to any conspicuous change in the colour or visual clarity or sedimentation in the receiving water;
- there is no slumping, pugging or erosion of banks; and
- the discharge does not reduce the water quality below any standards set for the Relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone.

10.338 A number of submitters, including MD and DW Heenan submit that Rule 70(a)(v) does not provide for stock to use existing stock crossings, and that putting bridges and/or culverts in would be cost prohibitive in many situations. Conversely, Fish and Game submit that such crossings should be bridged or culverted for stock other than sheep. NZ Deer request that where a dedicated stock crossing is used that condition (i) also be disregarded.

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<sup>750</sup> QP The RMA Quality Planning Resource – Writing issues, objectives and policies. Available online at: <http://www.qualityplanning.org.nz/index.php/plan-steps/writing-plans/writing-issues-objectives-and-policies>

<sup>751</sup> Riparian Management Spreadsheet for Southland – WAL 2020 Steering Group Meeting 5 August 2013

## Analysis

- 10.339 The intention of Rule 70(a) was to allow the ongoing use of stock crossings and fords. Unintentionally, the notified version of the pSWLP does not allow for this, as Rule 70(a)(vi) and (vii) require exclusion despite Rule 70(a)(v). This means that as notified, once the 2018 and 2020 dates for stock exclusion pass, stock crossings and fords can no longer be used for stock other than sheep.
- 10.340 By explicitly disregarding condition (ii) of Rule 70(a), Rule 70(a)(v) implies that Rules 70(a)(i), (iii) and (iv) must be met in relation to stock crossings and fords. This could be made more explicit in Rule 70(a)(v). This would address the request from Fish and Game (among others) that discharges from stock crossings and fords should not give rise to conspicuous change in colour or visual clarity in the receiving water. However, the recommended change would not incorporate the concept of sedimentation. Sedimentation is the process of suspended particles settling out of water, and it is unclear how stock crossing through a stock crossing or ford would result in sedimentation without causing a conspicuous change in colour or visual clarity (i.e. causing the particles to become suspended in the first place) and as such I do not consider it a necessary addition.
- 10.341 It seems unusual that a stock crossing or ford would be used if there is a bridge or culvert available for the stock to cross over. As such, I do not recommend that Rule 70(a)(v) be amended to require existing structures to be used in favour of stock crossings and fords.
- 10.342 The slumping, pugging or erosion of banks from stock access to waterbodies is dealt with in Rule 70(a)(ii). Rule 70(v) explicitly exempts stock crossings and fords from complying with Rule 70(a)(ii) provided the crossing point is no more than 20 m wide and aligns with a constructed track or raceway on either side of the crossing point. This acknowledges the reality of stock crossings and fords, while trying to minimise the extent of their impact. By their very nature, stock crossings and fords are areas where the profile of the bed and banks are altered, often by erosion (including slumping). Additionally, pugging on the margins and bed of a stock crossing or ford is inevitable due to their saturated nature. As such I do not recommend including making Rule 70(a)(v) conditional on there being no slumping, pugging or erosion of banks.
- 10.343 I do not consider it appropriate to require discharges under Rule 70(a)(v) to meet the Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone. The Water Quality Standards and reasonable mixing zones are oriented to point-source discharges. A stock crossing is likely to be in use for only very limited periods of time, rather than on a continuous basis. Therefore, it is reasonable and practical that some short-term failure to meet the Water Quality Standards is accepted, on the basis that the effect is very temporary.
- 10.344 Overall, I note that the draft national regulations have a specific set of requirements for stock crossings, which are somewhat inconsistent in approach to the notified Rule 70. For the reasons outlined at the beginning of this section, I have recommended that the stock crossing provisions from the draft regulations be adopted.

## Recommendation

10.345 Amend Policy 18 as follows:

*Reduce sedimentation and microbial contamination of waterbodies and improve river and riparian ecosystems and habitats by:*

1. ~~*Requiring progressive exclusion of all stock, except sheep, from all waterbodies including artificial watercourses—lakes, rivers (including intermittent rivers), natural wetlands, artificial watercourses, modified watercourses, estuaries and lagoons,<sup>752</sup> on land with a slope of less than 16° by 2030~~2025~~<sup>753</sup>, and the management of sheep in critical source areas and in those catchments where E.coli levels fail to meet the National Objectives Framework secondary contact bottom line.<sup>754</sup>;*~~
2. ~~*requiring the adoption of management plans that set out methods and timeframes to achieve these outcomes;<sup>755</sup>*~~
3. *encouraging the establishment and enhancement of healthy vegetative cover in riparian areas, particularly through use of indigenous vegetation;*
4. *ensuring that when stock access waterbodies, including artificial watercourses—lakes, rivers (including intermittent rivers), natural wetlands, artificial watercourses, modified watercourses, estuaries and lagoons,<sup>756</sup> this is managed in a manner that avoids significant adverse effects on water quality, bed and bank integrity and stability, mahinga kai, and aquatic, river and riparian ecosystems and habitats;*

10.346 Delete existing Rule 70 and replace with the following (noting that no recommendation has been made with respect to sheep exclusion from waterbodies that exceed NOF bottom lines):

- (a) ~~*The disturbance of the bed of a lake, river (including an intermittent river), natural wetland, artificial watercourse (other than a stockwater dam or race), modified watercourse, estuary or lagoon<sup>757</sup> by stock and associated discharges through access by stock is a permitted activity provided the following conditions are met:*~~
  - (i) ~~*there is no access by stock to roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*~~
  - (ii) ~~*there is no access by stock to the tidal river habitat up to the spring tide level; and*~~
  - (iii) ~~*for the purposes of deer, cattle and pigs crossing a water body:*~~
    1. ~~*the deer, cattle or pigs are being supervised and are actively driven across the water body in one continuous movement;*~~
    2. ~~*from 1 July 2019, the crossing occurs less frequently than once per week.*~~
- (b) ~~*Other than crossing points in accordance with Rule 70(a)(iii), cattle deer and pigs shall be excluded from a lake, river (including an intermittent river), natural wetland, artificial watercourse (other than a stockwater dam or race), modified watercourse, estuary or lagoon in accordance with the dates and conditions set out in Table xx below:*~~

<sup>752</sup> 247.41 Environment Southland

<sup>753</sup> 609.2 NZ Deer

<sup>754</sup> 752.62 Fish and Game

<sup>755</sup> 265.49 Federated Farmers

<sup>756</sup> 247.41 Environment Southland

<sup>757</sup> 279.102 Forest and Bird



Table xx:<sup>758</sup>

<u>Farm/stock type</u>	<u>Land slope (as classified by the LRI slope dataset)</u>		
	<u>Plains (0-3°)</u>	<u>Undulating/rolling land (&gt;3-15°)</u>	<u>Steeper land (&gt;15° and over)</u>
<u>Dairy cattle (on milking platforms) and pigs</u>	<u>Excluded from all water bodies that are:</u> <ul style="list-style-type: none"> <li>• <u>over 1 metre wide by 1 July 2017 on all slopes</u></li> <li>• <u>less than 1 metre wide by 1 July 2020 on the plains</u></li> </ul>		
<u>Dairy support (on either land owned/leased by the dairy farmer or third party land)</u>	<u>Excluded from all water bodies from 1 July 2022</u>	<u>Excluded from all water bodies over 1 metre wide from 1 July 2022</u>	<u>Excluded from all water bodies where break feeding occurs from 1 July 2022</u>
<u>Beef cattle and deer</u>	<u>Excluded from all water bodies from 1 July 2025</u>	<u>Excluded from all water bodies over 1 metre wide from 1 July 2030</u>	<u>Excluded from all water bodies where break feeding occurs from 1 July 2022</u>

- (c) Despite Rule 70(a) or (b), all stock shall be excluded from a lake, river (including an intermittent river), natural wetland, artificial watercourse (other than a stockwater dam or race), modified watercourse, estuary or lagoon, and a distance of not less than 3m from the edge of the bed, where intensive winter grazing or break feeding of pasture or cereal crops is being undertaken between May and September inclusive; and<sup>759</sup>
- (d) Despite Rule 70(a) or (b), all stock shall be excluded from a sensitive waterbody listed in Appendix A by 2025<sup>760</sup>; and
- (e) The disturbance of the bed of a lake, river (including an intermittent river), natural wetland, artificial watercourse (other than a stockwater dam or race), modified watercourse, estuary or lagoon by stock and associated discharge that does not comply with Rules 70(a)-(d) is a discretionary activity, provided that the following condition is met:
1. a Farm Environment Management Plan is prepared and submitted with the application<sup>761</sup>
- (f) The disturbance of the bed of a lake, river (including an intermittent river), natural wetland, artificial watercourse (other than a stockwater dam or race), modified watercourse, estuary or lagoon by stock and associated discharge that does not comply with the condition of Rules 70(e) is a non-complying activity.

## Glossary: Significant de-vegetation

10.347 The definition of “Significant de-vegetation” states:

*“Means any farming activity that results in the exposure of bare ground and/or pugging of the soil.”*

## Submissions and analysis

10.348 The definition of “Significant de-vegetation” received three submissions, with Fish and Game seeking that the definition is retained as notified. Horticulture NZ raises concerns with the definition, noting that it is unclear where the term is used and how it would be applied. In particular, they note that cultivation activities for horticulture production

<sup>758</sup> Clean Water: 90% of Rivers and Lakes Swimmable by 2040, 2017

<sup>759</sup> 779.6 Strathallan Trust

<sup>760</sup> 210.91 DOC

<sup>761</sup> 247.1 Environment Southland

would be considered “significant de-vegetation”, however state that this can be appropriately managed through best management practices.

10.349 The submission from the Fertiliser Association NZ correctly identifies that the term “significant de-vegetation” is only used in Rule 70 (in relation to stock exclusion from waterbodies). The submitter seeks that the definition is amended so that it only applies to the effects of on the bed or banks of waterbodies. I agree that the amendments sought by the Fertiliser Association NZ appropriately limits the definition to the activity managed by Rule 70, and while I do not consider that this amendment is necessary to assist in the implementation of the pSWLP, I recommend the submission be adopted on the basis that it provides additional certainty to plan users. This may also address the concerns raised by Horticulture NZ.

## **Recommendation**

10.350 That the definition of “Significant de-vegetation” be amended as follows:

*Means any farming activity that results in the exposure of bare ground and/or pugging of the soil on the bed or banks of a waterbody<sup>762</sup>.*

## **Extraction of gravel**

### **Introduction**

10.351 Gravel, being a raw material for roading, building and other infrastructure, is a very important resource within the region. Gravel is commonly extracted from river beds and adjacent floodplain deposits because of the high quality of the material and economic and access considerations. In addition, river gravels are sometimes removed to alleviate flooding and erosion problems and associated threats to infrastructure. While a number of objectives and policies within the pSWLP are relevant for gravel extraction, Policy 29 specifically seeks to provide for the extraction of gravel to meet the needs of the community, in a way that avoids, remedies or mitigates adverse effects from the extraction of gravel on rivers and their margins.

### **Policy Constraints**

10.352 The policy constraints for the bed disturbance activities in rivers and lake beds for gravel extraction is similar to the assessment provided above in relation to structures and activities within the beds of rivers and lakes. However, in addition to that assessment, Policy BRL.3 of the pSRPS is also relevant. Policy BRL.3 (Managing gravel resources) requires that the regions fluvial gravel resources shall be managed in a sustainable way by managing adverse effects, avoiding or remedying the adverse effects of rivers on adjacent land and providing for the social, economic and cultural wellbeing of people and communities.

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<sup>762</sup> 803.56 Fertiliser Association NZ

## Policy 29 – Provide for the extraction of gravel

10.353 Policy 29 reads:

*Provide for the extraction of gravel to meet the needs of the community, in a way that avoids, remedies or mitigates adverse effects on rivers and their margins; and:*

1. *maintains or enhances aquatic and riparian habitat; or*
2. *ensures no long-term net loss of habitat in the river channel and floodplain; or*
3. *maintains or enhances flood protection, erosion control or the integrity of physical resources; and*
4. *does not adversely affect the cultural values associated with the river, including mahinga kai and taonga species habitat, mātaītai and taiāpure; and*
5. *does not adversely affect recreational values.*

### Submissions

10.354 Policy 29 received 47 submissions, with 28 seeking that it is retained as notified and only one submitter opposing the policy (in part).

10.355 AQA request that the wording of Policy 29 be changed to more closely align with Policy BRL.3 of the pSRPS by referring to the “*social, economic and development*” needs of the community.

10.356 Several submitters support the policy on the basis that gravel extraction helps prevent flooding by maintaining river bed levels and can reduce river bed erosion, with H and H Blakely seeking amendments to make digging holes besides rivers illegal and to encourage removing alluvial deposits by way of a permitted activity. Lower Aparima CG, L and P Templeton and John White request that the policy is strengthened to allow for the ability to remove gravel to reduce river and stream bank erosion. The submitters have not suggested specific wording amendments to this effect. M Tayler seeks that the removal of gravel to help maintain flood capacity is a permitted activity, provided GMP’s are observed. Drylands Farming and Drysdale Family Trust submit that landowners that are affected by floods should have more say in how much and where gravel can be extracted from.

10.357 Similarly, J, D and S Cleland Partnership request that the policy makes it easier to extract gravel from beaches of rivers noting that it would “stop a lot of erosion”. The submitter raises specific concerns about the management of Waikaka River, seeking that the Council takes equal responsibility for the river’s management.

10.358 DOC requests that the policy provides for the protection of braided river bird habitat. Forest and Bird and SCB submit that the use of “or” between clauses 1, 2 and 3 should be “and”. In addition, Forest and Bird request that the policy includes the following additional clauses:

6. *Does not adversely affect the habitat of threatened indigenous species;*
7. *Preserves the natural character of rivers and their margins;*
8. *Protects areas of significant indigenous vegetation and habitats of indigenous species;*
9. *Maintains public access*

10.359 Fish and Game also request a number of changes as it states that the policy is contrary to Part 2 of the RMA, in particular sections 5 and 6(a)-(e). In particular, the submitter seeks the following amendments:

1. *Maintains or ~~enhances~~ improves aquatic and riparian habitat, including the habitat of trout and salmon and wildlife. Methods of gravel extraction that can result in the creation of habitats for fish and wildlife will be encouraged, where appropriate; ~~or~~ and*
2. *Ensures no ~~net~~ loss of habitat in the river channel, ~~bed, and~~ floodplain and riparian habitat and that the rate of gravel extraction is sustainable; ~~or~~ and*
3. *Maintains or ~~enhances~~ improves flood protection, erosion control or the integrity of physical resources; and*
4. *Does not adversely affect the cultural values associated with the river, including mahinga kai and taonga species habitat, mataitai and taiapure; and*
5. *~~Does not adversely affect recreational values~~ Maintains or improves recreational values; and*
6. *Maintains or improves landscape, natural character of rivers and their margins, natural features and amenity values; and*
7. *Maintains or improves any legal access to the river, modified watercourse, stream or lake.*

10.360 In its submission, Fulton Hogan and Southern Aggregates note that gravel extraction contributes significantly to the economic wellbeing of the region and support the policy on that basis. However, Fulton Hogan and Southern Aggregates request that the clauses of the policy be removed as it considers them to be stringent restrictions. Additionally, the submitter states that the policy is limited to river based extraction and seeks amendments so that the policy also applies elsewhere.

10.361 HWRG also considers that this policy is onerous and that a requirement to “avoid, remedy or mitigate” adverse effects is not consistent with section 5 of the RMA.

10.362 HNZ requests that the policy includes consideration on the adverse effects on heritage values. Ngāi Tahu seeks a change in word order as they consider mahinga kai as more than just food species and consider the current word order suggests that.

## Analysis

10.363 I consider that the request from AQA to amend the policy so that it more closely aligns with Policy BRL.3 of the pSRPS is appropriate. However, I note that Policy BRL.3 does not include reference to “development needs” of Southland. As such, I recommend the submission from AQA is accepted in part. This change may also partly address the request by Fulton Hogan and Southern Aggregates.

10.364 It is my view that each of the matters listed in Policy 29 are necessary in order to achieve the outcomes sought by Objectives 14-17 (inclusive). As such, I do not recommend that Policy 29 is amended as requested by Fulton Hogan and Southern Aggregates, and other submitters seeking substantial amendments to the policy which have the effect of weakening the policy position such that the objectives in the Plan will no longer be achieved.

10.365 While the benefits of gravel excavation are recognised, it is also important that the potential adverse effects of the activity are appropriately avoided, mitigated or remedied (as per the requirements set out in the policy), consistent with the objectives of the pSWLP. As such, I do not consider it appropriate to make the requirements for

excavating gravel less stringent than what is provided for in the Plan, as requested by a number of submitters.

- 10.366 The request by Fulton Hogan and Southern Aggregates to extend the policy to apply to extraction of material beyond the beds of rivers has merit as is consistent with Objective 13. I note that other effects associated with land based quarrying will likely be addressed via provisions in the relevant district plan or the Regional Air Plan, however I note that there may be other matters that need to be considered to better align the policy with Objective 13. Without a full understanding of the relevant considerations associated with gravel extraction outside of the bed of a river, I do not recommend this part of Fulton Hogan and Southern Aggregates be adopted.
- 10.367 I agree with the request by Forest and Bird and SCB to correct what is a drafting error, whereby the “or” within clauses 1-3 should read “and”.
- 10.368 In regards to the submission by DOC that specific consideration for braided river bird habitat be provided for under Policy 29, I consider that clause 2 of the policy already provides for this matter. As such I do not recommend that the request by DOC is adopted.
- 10.369 In my view, the consequence of the other requested amendments from Forest and Bird would be that there are to be no effects on the matters/values that are listed in the policy. I do not consider this necessary or appropriate, as such activities can be managed so that effects can be remedied or mitigated as appropriate. This is consistent with Part 2 of the RMA and the direction set out in Objectives 2 and 13. This point is also relevant to the request from Fish and Game that there be no long term net loss of habitat.
- 10.370 Additionally, I consider it unnecessary to provide for the protection for areas of significant indigenous vegetation and habitats of indigenous vegetation or that any works do not adversely affect the habitat of threatened indigenous species within Policy 29. As these issues are already managed by Policy 32 of the pSWLP (noting that the pSWLP is to be read together in its entirety), I do not recommend this request by Forest and Bird is adopted.
- 10.371 In regards to the inclusion of the preservation of natural character within Policy 29 and consideration of effects on historic heritage, it is my view that amendments that better align the policy with Objective 17 have merit. However, I note that the specific amendments sought by Forest and Bird and Fish and Game would impose a higher standard than that set out in Objective 17. I also note that the policy already seeks to ensure that the extraction of gravel is undertaken in a way that “avoids, remedies or mitigates adverse effects on rivers and their margins”. In my view, this is a catch all phrase that extends to effects on natural character and historic heritage. I therefore do not recommend the suggested amendments from Forest and Bird and Fish and Game (in relation to natural character) or HNZ (in relation to historic heritage) be adopted.
- 10.372 It is my view that the request from Fish and Game and DOC to include consideration of effects on public access is appropriate, as it will ensure that the policy gives better effect to Objective 16. However, there may be some circumstances where gravel extraction could present a health and safety risk to the public and hence be a valid reason for public access not to be maintained. I therefore recommend accepting Fish and Game’s

submission in regards to public access in part, with consequential amendments to better align the clause with the outcomes sought by Objective 16.

10.373 In regard to Fish and Game’s request that specific mention of the protection of habitat of trout and salmon is included within Policy 29, it is my view that the wording ‘*maintain or enhances aquatic and riparian habitat*’ already encapsulates the habitat of trout and salmon and wildlife and also already promotes action that improves this habitat. I therefore do not recommend accepting Fish and Game’s submission on this point. In addition, I cannot see the need to change “enhance” to “improve” as requested by Fish and Game, the Oxford English Dictionary describes improve as *make or become better* whilst enhance is described as *improve (something already of good quality)*. The submitter may want to provide evidence at the hearing as to why it sees the need to make these amendments.

10.374 I consider that the request by Fish and Game to include the requirement that the rate of extraction is sustainable is appropriate and in line with Policy BRL.3 of the pSRPS. I do not agree with Fish and Game’s request that riparian habitat be included as a consideration in clause (2) as the consideration for riparian habitat is already present in clause (1) and would therefore result in unnecessary duplication.

## Recommendation

10.375 Amend Policy 29 as follows:

*Provide for the extraction of gravel to meet the social, economic and cultural<sup>763</sup> needs of the community, in a way that avoids, remedies or mitigates adverse effects on rivers and their margins; and:*

1. *maintains or enhances aquatic and riparian habitat; ~~or~~ and<sup>764</sup>*
2. *ensures no long-term net loss of habitat in the river channel, bed and floodplain and that the rate of gravel extraction is sustainable; ~~or~~ and<sup>765</sup>*
3. *maintains or enhances flood protection, erosion control ~~or~~ and<sup>766</sup> the integrity of physical resources; and*
4. *does not adversely affect the cultural values associated with the river, including mabinga kai and taonga species habitat, mabinga kai<sup>767</sup>, mātaītai and taiāpure; and*
5. *does not adversely affect recreational values; and*
6. *maintains public access (except in circumstances where public health and safety are at risk).<sup>768</sup>*

## Rule 73 – Gravel extraction

10.376 Rule 73 provides for the excavation or disturbance of the bed of any river, modified watercourse, stream or lake for: the purpose of extracting gravel (Rule 73(a)), or for the purpose of extracting gravel or aggregate for flood or erosion control or the protection of infrastructure (Rule 73(b)), as a restricted discretionary activity, subject to a range of conditions being met. If the conditions of these rules are not met, the activity becomes discretionary.

<sup>763</sup> 10.1 AQA; 288.22 Fulton Hogan & Southern Aggregates

<sup>764</sup> 279.35 Forest and Bird; 749.56 SCB

<sup>765</sup> 752.70 Fish and Game

<sup>766</sup> 279.35 Forest and Bird

<sup>767</sup> 797.26 Ngāi Tahu

<sup>768</sup> 279.35 Forest and Bird; 752.70 Fish and Game

## Submissions and analysis

10.377 There are 60 submissions on Rule 73, with 13 in support seeking that it is retained as notified. Submission points from J Bythell, Fish and Game, HNZ and KiwiRail on this rule that have been assessed earlier in this section of the report are not repeated here.

### Activity status, increase in extraction levels and gravel extraction for flood and erosion control

10.378 Some submissions seek that the rule is amended to allow gravel extraction for flood and erosion mitigation as long as it is not within 100 metres of a bridge structure. A number of submissions seek amendments to include the ability to remove gravel from river beds where appropriate to reduce river and stream bank erosion.

10.379 Federated Farmers seeks amendments *“to provide for the extraction of gravel where gravel build-up is causing erosion and for uses ancillary to farming the land as a permitted activity, with the conditions as per gravel extraction as a restricted discretionary activity.”*

10.380 Several submitters seek that gravel extraction is a permitted activity, with the permitted level of extraction ranging from 20 cubic metres per site up to 500 cubic metres per year. The submission from Eyre Creek seeks to *“amend Rule 73 to allow the extraction of gravel for farming purposes as a permitted activity”*. The submission goes on to suggest that gravel extraction should be undertaken on a case-by-case basis *“that captures the environmental benefits of managing aggrading gravel beds and river containment as well as economic benefits.”*

10.381 N Braithwaite and RL Miller and S J Farm Trust both seek to *“increase the gravel extraction allowed to 500m<sup>3</sup> per year.”* Other submissions also seek to increase extraction limits. Ernslaw One seek that the rule is amended to *“make the allocation per unit area of land, for example 12m<sup>3</sup> per 100 ha.”*

10.382 Rule 73 (a) currently provides for the extraction of up to 120 cubic metres per year as a restricted discretionary activity subject to complying with a number of conditions, and Rule 73 (b) provides for gravel and aggregate extraction for flood or erosion control or the protection of infrastructure. Some submissions are seeking amendments to allow gravel extraction to occur as a permitted activity with options put forward ranging from 20m<sup>3</sup> to 500m<sup>3</sup>, or based on an allocation per unit of land. Whilst I consider that gravel extraction can have many benefits, it can also have environmental effects, and by requiring a resource consent it enables Council an opportunity to consider the many variable effects of the particular extraction, and impose conditions where appropriate. As such I do not support adopting a permitted activity rule framework.

10.383 In my opinion, the rule structure as proposed, gives the ability for landholders to remove a varying amount of gravel where it may be causing river or stream bank erosion, subject to applying for consent. I therefore do not recommend adopting any of the changes to the activity status, or creating a permitted activity take, or changes to allow for flood and erosion control as set out in this section above.

10.384 The submission from B and C McLeod seeks that *“Environment Southland must be proactive in removing gravel build-ups in river channels. (Ref. Southland Regional Council publication no. 2007-01.)”* as they consider it is the responsibility of Environment Southland to maintain

river channels and banks for flood and erosion control. Gladvale Farms seek that Council river staff (Catchment) have power to say where gravel comes from.

10.385 I note that the Council assists communities to reduce the risk of flooding and erosion on their properties by carrying out river and drainage works within river catchment rating districts, as per their obligations under the Soil Conservation and Rivers Control Act 1941. The River Engineering staff currently undertake such works in seven major river catchments and ten special land drainage districts, and also provide an advisory service to the public. The annual programme of works is determined by River Engineering staff in conjunction with river rating district liaison committees. These committees assist Council in representing the needs of the people within each rating district. People within each rating district pay for a portion of the work through a targeted rate, and the remaining amount is funded from the general rate to reflect the wider benefits to the community at large.<sup>769</sup> Given that the Council is already obliged to minimise and prevent damage by floods and erosion<sup>770</sup>, I do not consider that the change sought by B and C McLeod is necessary. I do not recommend the submission is accepted.

10.386 I note that the submission from Gladvale Farms seeks that Council catchment staff have the power to say where gravel comes from; while consultation may occur with the catchment team on consent applications for gravel extractions, the wider assessment of environmental effects sits with the consents team under the relevant council functions and delegations, and I do not support adopting this change from Gladvale Farms.

### **Legal access and additional matters of discretion**

10.387 NZTA seeks the recognition of the positive effects on the physical environment in relation to gravel extraction under the matters of discretion. The submission also seeks recognition of how gravel extraction can have positive environmental effects in relation to the protection of infrastructure, such as the state highway network.

10.388 Whilst I note that the NZTA have not given any specific examples of how gravel extraction of up to 120m<sup>3</sup> has previously positively impacted infrastructure within its submission, overall I support this change to ensure that any effects on infrastructure (including both positive and negative) can be considered. This change will also ensure consistency with Rule 73(b). I therefore recommend adopting recognition of effects on infrastructure based on the submission from NZTA to Rule 73(a).

10.389 J McGregor and the Southland RLC seeks recognition of the positive effects on the physical environment in relation to gravel extraction under the matters of discretion. Overall, I support the intent of the submission to include “*positive effects*” within the matters of discretion, however in my opinion “effects” can be both positive and negative, and thus be avoided, remedied or mitigated based on the specific circumstances. Furthermore, Policy BRL.3 (Managing gravel resources) in the pSRPS sets out that within the explanation that there can be both positive and negative effects, and as such I consider that there is sufficient ability for a case-by-case assessment. Therefore, I do not recommend adopting this change by G McGregor and the Southland RLC, as I consider that within existing the RMA framework and the pSWLP there is scope for an applicant, and/or a consent officer to reference positive effects, insofar as the positive effect falls within the matter of discretion.

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<sup>769</sup> Adapted from: <http://www.es.govt.nz/services/river-and-drainage-management/Pages/default.aspx>

<sup>770</sup> Under the Soil Conservation and Rivers Control Act 1941



10.390 Fish and Game seek that the third matter of discretion be amended to include effects on “*the rate of gravel replenishment*”. In my view, this is already covered by reference to “*river morphology and dynamics (including erosion or deposition)*” and I therefore do not recommend including it within the matters of discretion.

### General submission points

10.391 J Bythell seeks that, when an application for resource consent for gravel extraction is sought, the council have regard to the following:

- *Braided riverbeds are a naturally rare ecosystem as listed in the New Zealand Biodiversity Priorities (Priority 3).*
- *Encourage the establishment of suitable nesting habitat for braided river bird species such as black billed gulls (Nationally Critical), black fronted tern (Nationally Endangered), banded dotterel (Nationally Vulnerable), pied stilt (Declining), South Island pied oystercatcher (Declining).*
- *Encourage offsetting work such as riparian restoration and increased ease of public access (where safety is not an issue).*

10.392 Any application for gravel extraction will be assessed on its merits, and I note that there are a number of conditions that need to be considered, and if an application cannot comply with the conditions, then a discretionary activity resource consent is required under Rule 73(c). Rule 73(a)(v) and Rule 73(b)(ii) provide protection for the roosting and nesting areas of a number of birds, and habitat is already listed as a matter of discretion for council to consider, consistent with Policy 29; and as such I do not recommend adopting these changes requested by J Bythell.

10.393 DOC seeks a new condition to be inserted in Rule 73 (a) and (b) that “*the gravel shall not be taken from any bare gravel bars*”. Forest and Bird also supports this submission point, and J Bythell seeks to discourage the extraction of gravel from the wetted part of the river. Fish and Game seek additional conditions within Rule 73 (a) and 73 (b) that “*there is no gravel extraction from clear gravel bars*”. I note that effects on aquatic and riverine ecosystems and habitat is already a matter of discretion and therefore do not recommend adopting these specific submission points.

10.394 Fulton Hogan and Southern Aggregates seeks amendments to provide further clarity to remove the reference to Rule 73 (a) (ii) “*or from below the Q95 level of the river*” as the submitter finds it confusing and states that it should be removed on the basis that the condition requires work to be undertaken in the dry. Throughout the entire pSWLP, any reference to MALF has been replaced with Q95. Q95 is defined within the pSWLP as “*the flow that is exceeded 95% of the time during the year*”. It is unclear from the submission how this condition therefore requires works to be undertaken “*in the dry*”. I do not recommend adopting this submission point from Fulton Hogan and Southern Aggregates.

10.395 The submission also seeks to remove the reference to “*no holes or pits shall be dug*” in Rule 73 (a) (iii). I do not support this change, as this is a condition to be complied with for smaller quantities of gravel extraction, e.g. up to 120 cubic metres per year; this means that if an applicant cannot comply with this condition then they must apply under the remaining gravel extraction rules. I therefore do not recommend adopting this submission point from Fulton Hogan and Southern Aggregates.

## Recommendation

10.396 Amend Rule 73 as follows:

- (a) *The excavation or disturbance of the bed of any river, modified watercourse, ~~stream~~<sup>771</sup> or lake for the purpose of extracting gravel is a restricted discretionary activity provided the following conditions are met:*
- (i) *the quantity of gravel removed is less than 120 cubic metres per year;*
  - (ii) *there shall be no extraction from flowing water or from below the Q95 level of the river;*
  - (iii) *no holes or pits shall be dug and the area shall be left level and tidy on completion of the activity;*
  - (iv) *fish passage shall not be impeded as a result of the activity;*
  - (v) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*
  - (vi) *any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;*
  - (vii) *any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);*
  - (viii) *no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (ix) *no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - ~~(x) *there are no recorded historic heritage sites, at the site of the activity;*<sup>772</sup>~~
  - (xi) *before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;*
  - (xii) *all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and*
  - (xiii) *from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.*
- Environment Southland will restrict its discretion to the following matters:*
1. *the quantity and location of the extraction;*
  2. *any effects on infrastructure<sup>773</sup>, river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, taonga species, natural character and amenity values, navigation hazard, public access, recreation values<sup>774</sup>, historic heritage and the spiritual and cultural values and beliefs of the tangata whenua.*
- (b) *The excavation or disturbance of the bed of any river, modified watercourse, ~~stream~~<sup>775</sup> or lake for the purpose of extracting gravel or aggregate for flood or erosion control or the protection of infrastructure is a restricted discretionary activity provided the following conditions are met:*
- (i) *fish passage shall not be impeded as a result of the activity;*
  - (ii) *there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;*

<sup>771</sup> Cl16 – minor amendment as “stream” is redundant as “river” is already listed.

<sup>772</sup> 449.37 KiwiRail

<sup>773</sup> 614.34 NZTA

<sup>774</sup> 752.166 Fish and Game

<sup>775</sup> Cl16 – minor amendment as “stream” is redundant as “river” is already listed.

- (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
- (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- (vii) there are no recorded historic heritage sites, at the site of the activity;
- (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (ix) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
- (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

*Environment Southland will restrict its discretion to the following matters*

1. the location of the extraction;
  2. the design of the works and the quantity of material extracted;
  3. any effects on infrastructure, flood risk, river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, taonga species, natural character and amenity values, navigation hazard, public access, recreation values<sup>776</sup>, historic heritage and the spiritual and cultural values and beliefs of the tangata whenua.
- (c) The excavation or disturbance of the bed of any river, modified watercourse, ~~stream~~<sup>777</sup> or lake for the purpose of extracting gravel that cannot meet the conditions in Rules 73(a) or 73(b) and is a discretionary activity.

Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process under the Heritage New Zealand Pouhere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X.<sup>778</sup>

## Drainage maintenance

### Introduction

10.397 Land drainage is an essential element of agriculture in many parts of Southland. Improved drainage and land productivity have been achieved through the construction of artificial watercourses (including open drains) and the straightening and modification of existing natural rivers and streams. Ongoing maintenance of the drainage system, including both artificial and modified watercourses, is carried out to remove the build-up of sediment and vegetation and restore the original drainage capacity of the system. Policy 30 is aimed at allowing drainage maintenance activities to occur for drainage maintenance purposes provided the effects of the activities are appropriately managed.

<sup>776</sup> 752.166 Fish and Game

<sup>777</sup> C116 – minor amendment as “stream” is redundant as “river” is already listed.

<sup>778</sup> Consequential amendment relating to 449.37 KiwiRail

## Provision – Policy 30

10.398 Policy 30 reads:

*In recognition of the community benefits of maintaining flood capacity and land drainage, ensure that drainage maintenance activities within artificial watercourses and the beds of modified watercourses are managed in a way that either:*

1. *avoids, remedies or mitigates significant adverse effects on the aquatic environment; or*
2. *maintains or enhances habitat value.*

## Submissions

10.399 There are 35 submissions on Policy 30 with the majority of submitters supportive of this policy, and a few asking for minor amendments. Only DOC and Fish and Game are opposed to the policy.

10.400 Bristol Grove Dairies seeks that the policy is amended to acknowledge that appropriate drainage and maintaining flood capacity is not only beneficial, but necessary to the economical sustainability of the province.

10.401 Forest and Bird, DOC and Fish and Game submit that the policy is inconsistent with Part 2 of the RMA and the NPSFM. The submitters subsequently seek that the policy is amended so that effects on a number of additional matters are provided for, including natural character, indigenous vegetation and habitats of indigenous species, fish passage, bank stability effects related to overland flow and ensuring stock does not damage banks or margins of streams. Forest and Bird and Fish and Game also request that the allowance to remedy or mitigate significant adverse effects is removed from clause (1). Forest and Bird also seeks that clause (2) is amended so that the requirement to maintain or enhance habitat only applies to degraded habitats.

10.402 SIEIA requests that the policy is amended to provide for taonga species listed in Appendix M.

10.403 J Bythell requests that clause (1) be amended so that it reads “*avoids, remedies or mitigates significant adverse effects on the aquatic environment*” and “*nearby naturally occurring wetlands*”.

10.404 B Hamilton opposes the policy on the basis that blocked drains will retain water and impose additional cost. D Harris requests that maps be produced that show what waterways are considered to be artificial or modified watercourses in Southland.

## Analysis

10.405 Policy 30 recognises the community benefits of drainage maintenance, consistent with the submission from Bristol Grove Dairies seeking that the policy be amended to acknowledge drainage maintenance is beneficial and an economic necessity. Given that the policy already acknowledges the importance of drainage maintenance, I do not recommend the submission from Bristol Grove Dairies is accepted.

10.406 It is my view that the policy already provides scope to consider a wide range of potential effects on the aquatic environment and habitat values. I do not recommend adopting

submissions from Fish and Game, DOC, Forest and Bird, SIEIA or J Bythell where they seek the inclusion of additional matters, as these are already provided for in the wording of the policy.

10.407 I am unsure as to what the submission by B Hamilton is seeking to achieve as the purpose of the policy is to allow the unblocking of drains. The submitter may wish to present evidence that clarifies the request. In regards to the submission by D Harris that maps are provided that show which rivers are in a natural state and which could be considered a modified watercourse, this would be extremely difficult given that there are large number of modified water courses that are yet to be identified at a regional scale.

10.408 I do not recommend the submission from DOC in regards to the management of overland flow and stock, as these matters are managed by other policies and rules, including the physiographic zone policies and Policy 16.

### **Recommendation**

Retain Policy 30 as notified.

### **Rule 78 - Weed and sediment removal for drainage maintenance**

10.409 Rule 78(a) permits weed and sediment removal for drainage purposes provided certain conditions are met. Where any condition of Rule 78(a) cannot be met, resource consent is required for a discretionary activity.

### **Submissions**

10.410 There are 46 submissions on Rule 78 with the majority of submitters either supportive, or supportive in part with requested amendments. Fish and Game oppose the rule.

10.411 Submission points from J Bythell, HNZ, KiwiRail and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

10.412 J Bythell also seeks that the following condition be added to the rule *‘the bed of the modified watercourse is not lowered where it will affect groundwater levels in adjacent naturally occurring wetlands.’*

10.413 DOC's submission states that sediment removal can include gravel which is essential habitat for fish and on that basis consider that removal of mud, with an allowance of up to 5% of the material being gravel, be a permitted activity. Additionally, the submitter considers that sediment removal can have significant adverse effects on threatened indigenous fish and consider that a permitted activity allowing removal of weed and sediment in the habitats of Gollum and alpine galaxiids is inappropriate. Forest and Bird and Fish and Game have made a similar request (that a permitted activity should only allow a maximum of 5% of the sediment removed to be gravel). In addition, it submits that drainage maintenance should not be permitted to occur in habitats of threatened native fish (noting that its requested amendments will require a schedule to show those habitats).

10.414 Federated Farmers request an amendment to Rule 78(a)(x) (the protection of archaeological sites and wāhi tapu). It submits that the use of the statement ‘no known’ is

uncertain and question what a known site is, and who holds this knowledge, especially as wāhi tapu sites are often known only to kaumatua or upoko. The submitter also considers the use of the term 'the area' is also too uncertain as a condition of a permitted activity. KiwiRail seeks that the condition relating to archaeological and wāhi tapu sites (Rule 78(a)(x)) be removed in its entirety as it considers that this is managed under separate legislation (namely the Heritage New Zealand Pouhere Taonga Act).

10.415 HNZ requests that amendments be made to Rule 78 that illustrate that Environment Southland alone does not have the mandate to make a decision about whether or not work may recommence following the discovery of archaeological and cultural material. The submitter has also requested that the use of the term archaeological site be changed to historic heritage site as it considers this a more appropriate wording that would ensure consistency with other provisions in the pSWLP.

10.416 Fish and Game request that the rule is amended so that the lowering of the bed for drain maintenance shall not result in the lowering of the bed below previous modified levels.

10.417 Ngāi Tahu request that new conditions be included into Rule 78 so that no activity, in relation to drainage maintenance, shall result in greater sediment loss to the drain or shall significantly adversely affect the habitat or health of any taonga species as identified in Appendix M.

10.418 B Yorke seeks that the rule be amended to clarify that when performing these tasks on behalf of Environment Southland, accreditation is or is not required.

10.419 R Hamilton requests that the date restrictions that seek to protect the spawning times of fish species to be removed and manage through GMP's. D, R, E and L Shearing seeks similar relief.

10.420 Nithdale Station seeks that the rule be expanded so that it not only permits the removal of weed and sediment for drainage purposes, it also permits the ability to do maintenance on waterways to prevent sheep from getting stuck in them.

## Analysis

10.421 In regards to the submission by J Bythell related to water levels, the intent of the rule is to allow for drainage maintenance to occur in watercourses where it has been undertaken in the past, in an effort to restore the drainage capacity of the watercourse. The rule does not allow for the deepening of a watercourse as a permitted activity, it is limited to the restoration of the drainage capacity. However it is my view that amendments may be necessary to make this clearer. Therefore I recommend that text is added to this rule that states that weed and sediment removal "*shall not result in lowering of the bed below previously modified levels*". This also partly addresses the submission on this matter by Fish and Game.

10.422 Whilst I acknowledge sediment removal can include gravel (as per the submission from DOC) I consider it inappropriate to impose a maximum percentage of gravel that can be removed. This is due to the fact that in some modified watercourses in Southland the sediment removed in an effort to restore drainage capacity, can be made up of significant amounts of gravels dependant on the watercourse where the activity is undertaken. I reiterate the point that this rule is solely focused on the removal of weed and sediment in

modified watercourses where it has occurred before. Additionally, it is my view that the proposed condition is problematic in that it would be impractical and difficult to determine during the removal of sediment whether or not a threshold of 5% (or any percent) had been exceeded. Rather, I consider that the existing permitted activity standards (including 78(a)(i)-(iii)) are sufficient to limit the amount of gravel taken from the watercourse. I therefore do not recommend adopting the submission from DOC, Forest and Bird and Fish and Game on this matter.

10.423 In response to the submissions from DOC and Forest and Bird that no work be permitted in modified watercourses that is habitat for threatened native fish (with the inclusion of a schedule to identifies such habitat), I note that the submitters have not included this schedule as part of their submissions. It is therefore difficult to ascertain the impact of such a condition and how many watercourses it would apply to, and subsequently I do not consider there is sufficient scope within the submission to include such a schedule. Despite not knowing which watercourses the requested amendments would apply to, I consider that the limited nature of the permitted bed disturbance activities is sufficient to address effects of the activity on threatened species (including conditions related to minimising bed disturbance, fish passage, fish spawning and captured or stranded fish). Any weed and sediment removal activity that exceeds the permitted threshold is appropriately assessed as a discretionary activity. As such, I do not recommend the submissions from Forest and Bird and DOC (in relation to habitats of threatened native fish) be adopted.

10.424 I note that the time of year where works are permitted seek to minimise bed disturbance activities during a crucial part of some fish species lifecycle, where any works could potentially have significant adverse effects. It is unclear what good management activities could be used to mitigate these effects that could be encapsulated in a permitted activity rule or a management plan. The submitter may wish to present evidence at the hearing to outline what GMP's could be utilised that would not lead to significant adverse effects during these times. This approach also addresses the submissions by D, R, E and L Shearing.

10.425 In relation to submissions on Rule 78(a)(x) (archaeological sites and wāhi tapu), and as discussed earlier in this section of the report, I agree with the submission from KiwiRail that matters in relation to archaeological sites are managed under the Heritage New Zealand Pouhere Taonga Act 2014. For the reasons set out earlier, I recommend the submission from KiwiRail be adopted in part, and that an advisory note is included outlining obligations in regards to the Heritage New Zealand Pouhere Taonga Act 2014. This amendment may also address the concerns raised by HNZ in their submission.

10.426 Given the potential for adverse effects associated with works in the bed of waterbodies, I do not consider it appropriate to make the changes sought by Nithdale Station to expand the rule to allow for works in non-modified watercourses. Rather, it is my view that these activities are more appropriately addressed under other rules of the Plan where an appropriate level of scrutiny is given to the activity.

10.427 Ngāi Tahu have requested that the rule be structured in such a way that any works do not result in greater sediment loss to the drain. From a practical point of view, I consider these amendments to be unnecessary as any work that results in greater sediment loss to the watercourse is counterproductive and result in the need to more frequently works be undertaken, which increases costs. In addition, it is my view that the current conditions

are sufficient to limit the effects on the habitat of taonga species. Therefore I do not recommend the adoption of the submission by Ngāi Tahu.

10.428 In regards to the submission from B Yorke, it is unclear what accreditation is being referred to. The submitter may wish to clarify this at the hearing.

## Recommendation

10.429 Amend Rule 78 as follows:

- a) *The removal of aquatic weeds and plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:*
- (i) the activity shall be undertaken solely to maintain or restore the drainage capacity of a modified watercourse that has previously been modified or maintained for drainage maintenance/restoration purposes at that location;*
  - (ii) the activity shall be restricted to the removal of aquatic weeds and plants and/or sediment deposits for drainage maintenance/restoration purposes;*
  - (iii) any incidental bed disturbance and removal of gravel shall be only to the extent that it is necessary to undertake the activity and shall be kept to the absolute minimum and shall not result in lowering of the bed below previously modified levels;<sup>779</sup>*
  - (iv) upon completion of the activity, fish passage shall not be impeded as a result of the activity;*
  - (v) the operator shall take all reasonable steps to return any fish captured or stranded by the activity to water immediately;*
  - (vi) between the beginning of June and the end of October, there shall be no disturbance of the spawning habitat of trout;*
  - (vii) between the beginning of November and the end of May, there shall be no disturbance of banks within the tidal river habitat that floods at spring tide;*
  - (viii) no fuel storage or machinery refuelling shall occur on any area of the bed;*
  - (ix) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;*
  - (x) ~~there are no known archaeological sites or wāhi tapu in the bed, at the site of the activity. In the event of the discovery of a site of potential historical or cultural importance (for example, archaeological site or wāhi tapu), the activity shall cease and Environment Southland's Director of Policy, Planning and Regulatory Services shall be informed immediately. The activity may not recommence without the permission of the Director of Policy, Planning and Regulatory Services~~<sup>780</sup>*
  - (xi) before any equipment, machinery, or operating plant is moved to a new activity site from any other area it shall be effectively cleaned to prevent the spread of "pest" or "unwanted organisms" as defined in the Biosecurity Act, 1993;*
  - (xii) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity;*
  - (xiii) where the modified watercourse is spring-fed, removal of aquatic weeds and plants shall be only to the extent that is necessary to undertake the activity and shall be kept to the absolute minimum.*

*Note: In addition to the provisions of this Plan and any relevant district plan, any activity which may modify, damage or destroy pre-1900 archaeological sites is subject to the archaeological authority process*

<sup>779</sup> 108.107 J Bythell; 752.171 Fish and Game

<sup>780</sup> 449.40 KiwiRail



under the Heritage New Zealand Pouere Taonga Act 2014. The responsibilities regarding archaeological sites is set out in Appendix X<sup>781</sup>

## **Whitebait stands**

### **Policy 31**

10.430 Policy 31 reads:

*Restrict the allocation of space for whitebait stands in the beds of lakes, rivers, modified watercourses and streams to:*

- 1. stands lawfully existing as of 1 June 2003; or*
- 2. new stands used in lieu of previously lawfully existing stands, but as close as practical to the former site where that site can no longer be used because of either natural alterations to the course of the river, bank erosion or high-water mark alterations.*

### **Submissions and Analysis**

10.431 There are 10 submissions to Policy 31 and all are supportive of the policy. DOC seeks amendments so that construction of any replacement stand complies with the relevant whitebait regulations.

10.432 The Whitebait Fishing Regulations (1994) apply to all waters and places throughout New Zealand, with the exception of the waters and places to which the Whitebait Fishing (West Coast) Regulations 1994 apply. The regulations set out requirements such as when the fishing season is; the type of fishing gear that can be used; and general requirements such as returning of unlawfully taken fish and offences/penalties.

10.433 Overall, DOC is responsible for managing New Zealand's whitebait fisheries, not Environment Southland. As such, I do not support including this consideration, as Environment Southland would be unable to enforce the requirements of the Whitebait Fishing Regulations under its functions.

### **Recommendations**

10.434 Retain Policy 31 as notified.

### **Rule 65 – Whitebait stands**

10.435 Rule 65 provides for the use of any lawfully established whitebait stand in, on, under or over the bed of any river as a controlled activity, subject to the specified conditions being met. The maintenance and repair of any lawfully established whitebait stand, and any alteration or reconstruction of a stand, and the removal of any stand, is a permitted activity, subject to the specified conditions being met.

10.436 The placement or erection of any replacement whitebait stand is a restricted discretionary, subject to a range of conditions being met. Where these conditions are not

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<sup>781</sup> Consequential amendment relating to 449.40 KiwiRail

met, a whitebait stand is prohibited. The effect of the conditions is such that new whitebait stands (i.e. those that are not replacements) are prohibited.

### Submission and Analysis

10.437 There are seven submissions on Rule 65. Sharp Trust and R Van Gool seek that the rule is retained as notified, and the remaining submissions seek amendments as set out below. I note that there are no submissions seeking that Rule 65 is deleted. Submission points from J Bythell, Forest and Bird and Fish and Game on this rule that have been assessed earlier in this section of the report are not repeated here.

### Alteration of activity status

10.438 Big Bay Whitebaiters Group (BBWG) seeks to amend Rule 65(e) from a restricted discretionary activity to a permitted activity when a replacement whitebait stand is required. Also proposed as part of this amendment sought by BBWG, is a new condition requiring *“the precise location of the replacement stand is supplied to Council prior to rebuilding”*.

10.439 BBWG seek these amendments as it considers that there is no need for a resource consent, if Council is informed of where the replacement stand is to be located. Reasons given, include that *“there is potential for serious disruption to whitebaiting if a resource consent is required to replace a whitebait stand which washes away during the season”*.

10.440 The BBWG submission also states that the requirement for resource consent is, *“inconsistent with Policy 31”*. The purpose of a policy within a plan can be described as a course of action to achieve or implement an objective, and policies are implemented through methods such as rules within a plan.<sup>782</sup> The purpose of Policy 31 (Whitebait stands), is to restrict the allocation of space for whitebait stands to those that were lawful as of 1 June 2003, or new stands used in lieu of previously lawful existing stands, as close as practical to the former site. Rule 65(e) as drafted has five conditions to be complied with, to have the status of a restricted discretionary activity; it sets out matters that Environment Southland will restrict its discretion to, which includes matters such as amenity values, public safety and public access.

10.441 Policy BRL.2 of the pSRPS (Existing uses of lake and river beds) recognises lawfully established structures within the beds of lakes and rivers, and this includes the need for maintenance, enhancement and upgrading while avoiding, remedying or mitigating adverse effects. This policy is supported by Methods BRL.1 (Regional plans) and Method BRL.2 (Regional rules) which provide for provision of rules, in particular the use, maintenance, enhancement and upgrading of existing structures, and for public access.

10.442 As drafted, the policy and rule structure within the pSWLP provides for lawful whitebait stands, and for replacement of lawful whitebait stands that have been destroyed or it is necessary to move due to natural alterations of e.g. the course of the river. I note the issue raised by BBWG that if a stand washes away due to a flood event during the season, it will take time to go through a consent process, and for re-building to occur. However, in my opinion, changing Rule 65(e) from a restricted discretionary activity to a permitted activity would not ensure that adverse effects are avoided, remedied or mitigated, in

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<sup>782</sup> Information adapted from Quality Planning website <http://www.qualityplanning.org.nz/index.php/plan-steps/writing-plans/writing-issues-objectives-and-policies>

particular the matters that Environment Southland has listed as matters of discretion, and as such I do not support the change.

### Consistency with Whitebait Fishing Regulations

10.443 DOC supports Rule 65, but seeks an amendment to Rule 65(e) to include the following condition: “consistency with the relevant Whitebait Fishing Regulations”. As set out above in relation to Policy 31, as DOC is responsible for managing New Zealand’s whitebait fisheries under Whitebait Fishing Regulations, I do not support including this additional condition within Rule 65(e), as Environment Southland would be unable to enforce these regulations under its functions.

### Recommendation

10.444 Amend Rule 65 as follows:

- ...
- (e) *The placement or erection of any replacement whitebait stand in, on or over the bed of any lake, river, or modified watercourse is a restricted discretionary activity provided the following conditions are met:*
- (i) *the original stand has been destroyed or it is necessary to move the stand due to natural alterations to the course of the river, bank erosion, or high water mark alterations;*
  - (ii) *the replacement stand complies with the conditions in Rule 65(b);*
  - (iii) *the replacement stand is erected a minimum distance of 20 metres from any existing stand;*
  - (iv) *the replacement stand is located on the same river as the original stand, as close as practicable to the former site;*
  - (v) *the original stand is removed in accordance with Rule 65(e).*
- Environment Southland will restrict its discretion to the following matters:*
- 1. *the location of the new stand; and*
  - 2. *any effects on amenity values, natural character values and outstanding natural features,<sup>783</sup> river morphology and dynamics (including erosion and deposition), public safety and public access.*
- ...

### New policies and rules related to activities in the bed of lakes and rivers

10.445 Two submitters seek the addition of either a new rule or policy in relation to activities in the beds of rivers and lakes.

### Submissions and analysis

10.446 Real Journeys seeks that a new policy is included in the Plan to specifically provide for dredging activities. In its submission, it notes that it is necessary to remove gravel and sand from river and lake beds to maintain waterways in a navigable state, using the Te Anau boat harbour as an example. I note that very few activities (such as dredging) have a specific policy within the pSWLP to manage the potential effects (both positive and/or

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<sup>783</sup> 752.158 Fish and Game

adverse) of that particular activity occurring. It is unclear from the submission what such a policy would achieve over and above the direction set out in the objectives of the Plan, or within Policy 28. I do not recommend that an additional policy is included to provide for dredging activities and therefore recommend the submission from Real Journeys be rejected.

10.447 Fish and Game seek the addition of a new permitted activity rule in relation to the use, placement, erection, alteration or reconstruction of any maimai. The rule proposed by Fish and Game sets a maximum permitted structural area of 10m<sup>2</sup> and requires that the structure is at least 90 metres from any adjacent maimai. I have some concerns about the validity and certainty of the permitted activity conditions proposed for this rule, and note that the submitter has not provided any reasons for the inclusion of this rule. In addition, there is no clear justification for the permitted activity threshold proposed by the submitter, nor has an effectiveness or efficiency assessment been undertaken. In the absence of this rationale, I do not recommend that a new permitted activity rule is included in the Plan, particularly given that the existing rule framework already manages such structures.

## Definitions

10.448 A number of submissions were received seeking amendments to words defined in the Glossary, or the addition of new terms. Submissions on definitions related to activities in the bed of river and lake beds are analysed in the section below.

### Artificial watercourse

10.449 The definition of Artificial watercourse reads:

*Means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and a farm drainage channel. It does not include natural or modified natural watercourses, or artificial swales, kerb and channelling or other watercourses designed to convey stormwater.*

### Submissions

10.450 The definition of “Artificial watercourse” received 15 submissions, with four in support seeking that it is retained as notified.

10.451 Several submitters seek that the definition is amended to include additional waterbody types, including constructed or artificial wetlands<sup>784</sup> and duck ponds. The five submitters that request the addition of “duck pond” believe it will be beneficial in terms of Rules 23 and 25. DairyNZ state that constructed or artificial wetlands need to be included in the definition as it could cause confusion in future regarding which rules and objectives should apply to artificial as opposed to natural wetlands.

10.452 Hort NZ states that subsurface drainage needs to be added to the exclusions in the definition so that it is clear that they are not classified as artificial watercourses.

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<sup>784</sup> 190.23 DairyNZ

10.453 Four submitters seek that the definition of artificial watercourse is amended so that Rules 23, 25 and 70 only apply to “*a permanently flowing surface waterbody that has a width of 1m or more and a depth of 30cm or more*”.

### **Analysis**

10.454 It is my understanding that the definition of artificial watercourse applies to waterbodies that flow on or above the surface of the ground, however the wording set out in the glossary does not make this immediately obvious to those using the plan. The amendments sought by Hort NZ, in my view, provide useful clarification and I therefore recommend that the definition is amended to include “*subsurface drainage systems*” as part of the exclusions. For completeness, I note that “*subsurface drainage systems*” is also defined in the pSWLP, therefore avoiding any additional ambiguity by its use in this definition.

10.455 Similarly, it is also my understanding that the definition of artificial watercourse does not extend to constructed or artificial wetlands. The pSWLP refers to ‘wetlands’, ‘natural wetlands’ and ‘Regionally Significant Wetlands’. Each category has a specific purpose. The term wetland is intended to be broad enough and capture all types of wet areas of land that support natural ecosystems of plants and animals. In my view, the existing definitions in the Plan are sufficient to determine which rules apply to constructed or artificial wetlands. I therefore do not recommend the definition of “artificial watercourse” is amended in response to the submission from DairyNZ.

10.456 I note that several submitters raise concerns that the definition of lake (as per section 2 of the RMA) applies to duck ponds, which would have significant implications in regards to the area of land that can be used for intensive winter grazing (see section 7, Rule 23). I note that the 100m buffer for intensive winter grazing (as per permitted activity Rule 23(b)) is not intended to apply to duck ponds as this would result in a substantially higher number of resource consents required across the Southland region. Given that the rules are not intended to apply to duck ponds, it is my view that the submissions requesting that the definition of “artificial watercourse” includes duck ponds is a sensible solution to the issues raised against Rule 23 (and others) on this matter. For completeness, I note that the definition specifically applies to watercourses that are “created by human action”, therefore I do not consider there is a risk that the definition inadvertently captures naturally formed lakes or wetlands used for the purposes of a duck pond. I recommend the submissions on this point are accepted.

10.457 I note that smaller watercourses (i.e. less than 30cm deep and 1m in width) typically flow into larger waterbodies. In my view, if smaller watercourses are excluded from the definition of “artificial watercourse” there remains a risk to water quality as rules that require setbacks or stock exclusion will not apply to these waterbodies. It is my view that both small and large watercourses require the same level of protection and therefore do not recommend the definition is amended to only include waterbodies that “*has a width of 1m or more and a depth of 30cm or more*”.

## Recommendation

10.458 Amend the definition of Artificial watercourse as follows:

*Means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, a constructed duck pond,<sup>785</sup> and a farm drainage channel. It does not include natural or modified natural watercourses, or artificial swales, kerb and channelling or other watercourses designed to convey stormwater, or subsurface drainage systems.<sup>786</sup>*

## Maintenance

10.459 The definition of Maintenance reads:

*Work on a structure, necessary to maintain that structure in good order and repair, including repainting, that does not alter its dimensions.*

## Submissions and analysis

10.460 The definition of “Maintenance” received three submissions, with two in support seeking that it is retained as notified. Real Journeys submits that the definition is too restrictive and seeks that a broader definition of maintenance is required to provide for the removal of accumulated gravel from structures such as slipway rails. In its submission, Real Journeys notes that minor repair work on wharves can involve the replacement of fixtures (including rubbing strips, wharf fenders and bollards) that can result in an alteration of the structure’s dimensions. The submitter notes that installation of such fixtures does not result in bed disturbance and therefore believe that such changes to structures should be accommodated in the definition.

10.461 It is my view that the works referred to by the submitter constitute alteration and/or extension of the structures, which are appropriately provided for under Rule 67 as a permitted activity (if the permitted activity standards are met). There is a risk that extending the definition of “Maintenance” could result in a wider range of activities (with potential adverse effects) being permitted under Rule 66 (Maintenance of structures). Given the risks associated with the amendments sought by Real Journeys, and noting there is a suitable alternative permitted activity rule for the activities noted in the submission, I do not recommend the submission from Real Journeys be adopted.

## Recommendation

10.462 Retain the definition of Maintenance as notified.

## Modified watercourse

10.463 The definition of Modified watercourse reads:

*A water carrying channel that was existing in some form prior to land development but has been modified or straightened for drainage or other purposes.*

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<sup>785</sup> 47.30 Balfour, Wendonside & Waikaia Group

<sup>786</sup> 390.41 Hort NZ

## Submissions

10.464 The definition of “Modified watercourse” received five submissions, with one in support seeking it be retained as notified.

10.465 Four submitters seek that the definition be amended so that the rules associated with modified watercourses (particularly those requiring setbacks or stock exclusion) only apply to “*a permanently flowing surface waterbody with has a width of 1m of more and a depth of 30cm or more*”. I note that smaller watercourses (i.e. less than 30cm deep and 1m in width) typically flow into larger waterbodies. In my view, if smaller watercourses are excluded from the definition of “modified watercourse” there remains a risk to water quality as rules that require setbacks or stock exclusion will not apply. It is my view that both small and large watercourses require the same level of protection and therefore do not recommend the definition is amended to only include waterbodies that “*has a width of 1m or more and a depth of 30cm or more*”.

## Recommendation

10.466 Retain the definition of Modified watercourse as notified.

## Recorded historic heritage site

10.467 The definition of Recorded historic heritage site reads:

*Sites recorded on the New Zealand Heritage List/Rarangi Kōrero or on the New Zealand Archaeological Association (NZAA) Site Recording Scheme, or a historic heritage site, tree or building listed in an operative district plan.*

## Submissions and analysis

10.468 The definition of “Recorded historic heritage site” received three submissions. Fish and Game support the definition and seek that it is retained.

10.469 KiwiRail submit that its first preference is that the definition is deleted, however if the definition is retained then the submitter seeks that it be amended to reflect the concerns raised in its submission, including that the terms “historic heritage” and “recorded historic heritage” are used consistently to avoid confusion. In my view, the secondary relief sought by KiwiRail is somewhat unclear in how it relates to the definition of “recorded historic heritage site”.

10.470 I note that “recorded historic heritage sites” are referred to in a number of permitted activity rules throughout the pSWLP, however as per officer recommendations, it is recommended reference to “recorded historic heritage sites” is deleted from most of the permitted activity standards.

10.471 HNZ submits that the pSWLP unnecessarily duplicates archaeological site protection under the Heritage New Zealand Pouhere Taonga Act 2014 and seeks that the definition be amended to delete reference to the NZAA Site Recording Scheme. In addition, the submitter notes that a rule in a proposed plan has immediate legal effect if the rule protects historic heritage and therefore considers it appropriate to include reference to historic heritage places that are scheduled in proposed plans.

10.472 I agree that removing unnecessary duplication between the functions of the regional council and HNZ is a useful amendment to the definition. I also agree that reference to proposed plans is required for the reasons outlined in HNZ's submission. I therefore recommend that the submission from HNZ is adopted.

### **Recommendation**

10.473 Amend the definition of Recorded historic heritage site as follows:

*Sites recorded on the New Zealand Heritage List/Rārangi Kōrero ~~or on the New Zealand Archaeological Association (NZAA) Site Recording Scheme,~~ or a historic heritage site, tree or building listed in an operative or proposed district or regional plan.<sup>787</sup>*

### **Riparian area/margins**

10.474 The definition of Riparian area/margins reads:

*Land situated along the bank of a lake, river, wetland or other waterbody.*

### **Submissions and analysis**

10.475 The definition of "Riparian area/margins" received four submissions. Fish and Game supports the definition seeking that it be retained as notified.

10.476 DairyNZ seeks amendments so that a more comprehensive definition is provided, as it notes that the proposed definition is not particularly helpful because it fails to provide any practical guidance on where any setback is measured from or to. The submitter has not suggested an alternative definition. In the absence of an alternative definition, I do not recommend the submission from DairyNZ be adopted.

10.477 Forest and Bird seek that a definition of "margin" is inserted in the pSWLP. Real Journeys also seeks that the margins of rivers and lakes be defined. In its submission, Forest and Bird states that the term "margin" used throughout the Plan and warrants a definition. Forest and Bird seeks that the definition used in the Canterbury Regional Policy Statement be used, as follows:

*Land immediately adjacent to the bed of a river, wetland, lake or estuary which is likely to be affected by a high water table, flooding, fluvial erosion, or sediment deposition, and often contains distinctive vegetation. The size of the margin will vary according to local site factors but may extend to the limits demarcated by natural river terraces and constructed stopbanks.*

10.478 The definition suggested by Forest and Bird has merit, however in my view it does not provide any additional certainty to Plan users when applying the provisions set out in the pSWLP than the existing definition of "riparian area/margin". I therefore recommend the submission from Forest and Bird is rejected.

### **Recommendation**

10.479 Retain the definition of Riparian area/margins as notified.

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<sup>787</sup> 372.36 HNZ



# 11. Wetlands

## Introduction

- 11.1 Wetlands include permanently and intermittently wet areas, shallow water, and margins, that support a natural ecosystem of plants and animals adapted to wet conditions.<sup>788</sup> They provide important hydrological functions and ecosystem services such as filtering contaminants from water and soils. They are also an important natural and cultural resource, rich in biodiversity and important sources of mahinga kai. Wetlands were previously more prevalent, with Southland region having only 10% of its historic wetlands (excluding Fiordland and Rakiura/Stewart Island National Parks) remaining.<sup>789</sup> Such a large reduction in wetland extent indicates the potential that virtually all remaining wetlands in the Southland region could be considered significant.<sup>790</sup>
- 11.2 Environment Southland has recently mapped wetlands greater than 0.5 Ha in size, using aerial photography. The aerial mapping results show a decline in wetland extent from 2007 to 2016 of 10%.<sup>791</sup> This research finds that the loss of wetlands, primarily through agricultural development, is an ongoing issue for Southland.
- 11.3 The pSWLP contains three categories of wetland: wetland, natural wetland and Regionally Significant Wetlands. The terms ‘wetland’ and ‘natural wetland’ are defined in the Glossary, and a list of Regionally Significant Wetlands are contained in Appendix A. The term ‘wetland’ is used to capture a wide range of wet areas that support species adapted to wet conditions (not necessarily indigenous), and ‘natural wetland’ as a narrower term with certain exclusions. Regionally Significant Wetlands listed in Appendix A have been adopted from the RWP, but originated from the RPS, and have not been updated since.
- 11.4 There are a number of provisions specific to wetlands throughout this Plan including Objective 17, Policies 33 and 34, and Rule 74. These provisions are discussed in more detail below along with the policy framework under which they operate.

## Policy framework

- 11.5 Section 6 of the RMA sets out matters of national importance that Council is required to recognise and provide for. The two most relevant clauses of section 6 in relation to wetlands are (a) and (c) as follows:

(a) *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

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<sup>788</sup> As defined in the RMA.

<sup>789</sup> Clarkson, B., Briggs, C., Fitzgerald, N., Rance, B., Ogilvie, H. (2011), *Current and historic wetlands of Southland Region: Stage 2. Landcare Research Contract Report LC312*, Hamilton. p. 16.

<sup>790</sup> Clarkson et al., p. 16.

<sup>791</sup> Ewans, R. (2016). *Environment Southland Wetland Inventory Project: Monitoring wetland extent on non-public conservation land in the Southland regions – Interim report for 2016*. p. 22.

- (c) *the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

11.6 Other legislative direction relating to wetlands arises from the NPSFM, in particular:

11.7 Objective A2 which requires,

*The overall quality of fresh water within a region is maintained or improved while:*

- (a) *protecting the significant values of outstanding freshwater bodies;*  
(b) *protecting the significant values of wetlands;...*

11.8 Additionally, Objective B4 states:

*To protect significant values of wetlands and of outstanding freshwater bodies.*

11.9 New Zealand is also obliged to protect and restore wetlands as a signatory to the Convention on Biological Diversity 1992 and the Ramsar Convention on Wetlands 1971. As a response to these commitments and the on-going decline of indigenous biodiversity across the country, the New Zealand Biodiversity Strategy 2000 (NZBS)<sup>792</sup> was prepared. The purpose of the NZBS is to establish a strategic national approach for halting this decline and sustainably managing New Zealand's biodiversity. The four goals of the NZBS are aspirational, with Goal 2 (Halt the decline in New Zealand's indigenous biodiversity) being specifically relevant. Following the realisation that much of New Zealand's rare and threatened native biodiversity is found on private land, the National Priorities Statement 2007<sup>793</sup> was produced. It identifies the types of ecosystems and habitats most in need of protection. National Priority 2 is:

*To protect indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity.*

11.10 Following this national direction, the RPS and pSRPS contain various provisions which are discussed in the following paragraphs, relevant to wetlands at the regional scale.

11.11 The RPS contains a number of provisions which are relevant to wetlands. Section 5.6 – Lakes, Rivers and Wetlands is the most applicable part and contains four main objectives. Objective 6.1 requires the protection of the natural character, heritage values and outstanding natural features of lakes, rivers and wetlands in the region. Objective 6.2 entails the need to recognise and provide for the relationship of Maori and their culture and traditions with lakes, rivers and wetlands. Objective 6.3 applies to the maintenance and enhancement of public access and Objective 6.4 involves the need to avoid, remedy or mitigate adverse effects of activities in, on, under, adjacent to or over the beds of lakes, rivers and wetlands.

11.12 Following these objectives, the associated policies are Policies 6.1-6.8. Importantly, Policy 6.1 lists and requires the protection of significant wetlands in the region, and these are listed (and have been carried into Appendix A of the pSWLP). Policy 6.3 requires regional and district plans to establish provisions to preserve the natural character and outstanding natural features of lakes, rivers and wetlands in the region. This policy is also reflected in Objective 17 of the pSWLP. Policy 6.5 encourages the provision and

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<sup>792</sup> Department of Conservation & Ministry for the Environment. (2000).

<sup>793</sup> Ministry for the Environment. (2007).

enhancement of access to, and along wetlands, and provides some exceptions where certain restrictions are necessary.

- 11.13 The decision version of the pSRPS includes a number of chapters which discuss wetlands and these include Chapter 4 – Water Quality, Chapter 6 – Biodiversity and Chapter 8 – Natural Hazards. Of these, Chapter 8 is not subject to appeal and the appeals on Chapter 6 have been resolved by consent order.
- 11.14 Chapter 4 contains Objective WQUAL.2<sup>794</sup> which proposes to halt the decline of water quality and encourages water quality enhancement in lowland water bodies, in accordance with NPSFM freshwater objectives developed for Southland. Following this, Policy WQUAL.1 requires the management of discharges and land use activities to maintain or improve water quality to also ensure freshwater objectives are met. Policy WQUAL.3<sup>795</sup> requires the identification and protection of significant values of wetlands and outstanding freshwater bodies.
- 11.15 Chapter 6 of the pSRPS contains Objective BIO.2 which aims to maintain indigenous biodiversity in Southland and to protect significant indigenous vegetation and significant habitats of indigenous fauna. A number of policies implement this objective, and of particular relevance are Policy BIO.1 regarding the identification of significant areas, Policy BIO.2 requiring protection for significant areas and Policy BIO.4 requiring the maintenance of indigenous habitats and ecosystems.
- 11.16 Chapter 8 relates to Natural Hazards. Objective NH.1 requires communities to understand, avoid, remedy and mitigate risk in order to become more resilient. Wetlands are recognised in Policy NH.8 as a natural feature to be protected and enhanced because of their ability to mitigate natural hazards. The additional values provided by natural features such as wetlands are also listed, and include biodiversity, cultural, amenity and landscape values.
- 11.17 Te Tangi a Taurira was developed by the four Runanga Papatipu o Murhiku to provide iwi direction on resource management in Murhiku (Southland) and is an Iwi management Plan recognised by the Southland Regional Council. Specifically the document provides direction on Repo - Wetlands (section 3.5.18) and riparian zones (section 3.5.19). The policies acknowledge the importance of wetlands and riparian areas for biodiversity, mahinga kai and the ecosystem services, such as filtering of contaminants from water and soils that they provide. The policies promote the avoidance of drainage or modification of wetlands, the need to establish wetlands and riparian zones to filter and clean impurities from land activities, and the fencing of streams and wetlands where they are at risk from stock damage.
- 11.18 Within the pSWLP a range of provisions aim to achieve the outcomes set out above.
- 11.19 The relevant objectives of the pSWLP are Objective 14 and 17 as follows:

***Objective 14***

*The range and diversity of indigenous ecosystem types and habitats within dryland environments, rivers, estuaries, wetlands and lakes, including their margins, and their life-supporting capacity are maintained or enhanced.*

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<sup>794</sup> Still subject to appeal

<sup>795</sup> Still subject to appeal

### **Objective 17**

*The natural character values of wetlands, rivers and lakes including channel form, bed rapids, seasonably variable flows and natural habitats, are protected from inappropriate use and development.*

11.20 In relation to wetlands, these objectives flow into Policies 33 and 34.

11.21 In turn, the most specific wetland rule associated with these two policies is Rule 74, but a number of other rules in the pSWLP pertain to wetlands less directly, and aim to implement Policy 33 – Adverse effects on wetlands. One example is Rule 51 regarding the use of water.

### **Policy 33 – Adverse effects on wetlands**

11.22 Policy 33 is intended to halt the decline in loss of wetlands and their ecosystem functions through controlling various land and water management practices. It links to Objective 14 and more specifically to Objective 17 requiring the protection of the natural character of wetlands.

11.23 Policy 33 reads:

*Prevent the reduction in area, function and quality of wetlands, including through drainage and vegetation removal.*

### **Submissions**

11.24 A number of submitters support this policy and request it is retained. However, the bulk of submitters query the terminology and question whether it can be amended, either to ‘natural formed’<sup>796</sup> wetlands, or ‘significant natural’<sup>797</sup> wetlands, ‘significant’<sup>798</sup> wetlands or ‘natural’<sup>799</sup> wetland. Bathurst Resources are concerned that the policy has the effect of a blanket prohibition on the reduction in area, function and quality of all wetlands and assert such a provision should only apply to ‘wetlands of significance’. Others, such as Forest and Bird would like to see the wording “Protect the significant values of wetlands and preserve the natural character of wetlands” added. Another submitter opposes the policy on the basis that it should be applied on a case by case basis.<sup>800</sup> One submitter requests the policy be deleted and replaced with existing use rights<sup>801</sup> and one submitter questions whether the sediment in a duck pond can be removed and spread onto the land it came from.<sup>802</sup> Finally, the SIEIA request that ‘discharges’ are added to the end of the policy alongside drainage and vegetation removal.

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<sup>796</sup> D Diprose.

<sup>797</sup> Federated Farmers.

<sup>798</sup> Seaview Trust & Oraka Farms.

<sup>799</sup> Hort NZ; Pourakino CG; and Three Rivers CG

<sup>800</sup> P & P Hudson.

<sup>801</sup> P & L Cruickshank.

<sup>802</sup> D Clarke.

## Analysis

- 11.25 Throughout the submissions on the provisions pertaining to wetlands the question of whether ‘natural wetlands’ is more appropriate has been raised, along with other qualifiers such as ‘significant’ wetlands.
- 11.26 For consistency, the terms ‘Regionally Significant Wetlands’, ‘wetland’ and ‘natural wetland’ are the three categories of wetlands that occur repeatedly throughout the pSWLP. They have different meanings and are used strategically depending on the situation. The term ‘wetland’ has been used in Policy 33 to capture a broad spectrum of wetlands and includes all ‘natural wetlands’ and ‘Regionally Significant Wetlands’ as well as other wetlands. This is because Southland has lost a large percentage of its wetlands, and recent monitoring verifies this ongoing decline.<sup>803</sup> The aim of Policy 33 is to prevent further loss in the area, function and quality of all areas defined as wetlands. It is also supported by national direction, firstly from the RMA which requires that the natural character of wetlands is to be preserved and protected from inappropriate development, and secondly from the NPSFM which requires the protection of significant values of wetlands. Direction at this level does not distinguish between ‘wetlands’ and ‘natural wetlands’. The term ‘natural wetlands’ was introduced by the Water and Land Forum’s Fourth Report and has been adopted within the pSWLP in the appropriate places, for example within Rule 70, to manage stock exclusion.
- 11.27 The rules which link to this policy define more explicitly the activities which are permitted, discretionary or non-complying in terms of ‘wetlands’, ‘natural wetlands’ and ‘Regionally Significant Wetlands’. In this way, the policy provides general direction on all wetlands, and the rule framework then distinguishes between what is inappropriate use and development in the context of the values of different wetlands. For example, a Regionally Significant Wetland will be subject to stronger rules in recognition that this is required to prevent a reduction in its quality. For Policy 33, I consider ‘wetland’ is the most appropriate term, as it includes all permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals adapted to wet conditions. This policy relates to the adverse effects on wetlands of all types, and supports the achievement of Objectives 14 and 17.
- 11.28 Although Forest and Bird propose additional wording to implement national direction, I do not consider this necessary because these concepts are captured by Objectives 14 and 17. Policy 33 is focussed on how these objectives are to be achieved, rather than restating the end goal, which is what the additional wording would have the effect of doing.
- 11.29 The question around duck ponds is addressed in Rule 74 and to the definition of ‘natural wetland’. A “duck pond” could range from a simple artificial storage pond, through to a highly natural wetland with significant values. The former would not require resource consent to remove sediment under Rule 74, while the latter would. Therefore a simple ‘rule of thumb’ for duck ponds cannot be given. In my view this is appropriate because the rules are necessarily focussed on managing the effects on the values of wetlands, rather than managing what their function or use is.

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<sup>803</sup> Ewans, R. (2016). *Environment Southland Inventory Project. Monitoring wetland extent on non-public conservation land in the Southland region – Interim report for 2016.*

11.30 In terms of deleting the policy and replacing it with existing use rights, it is not clear exactly what the submitter is seeking and they may wish to clarify this in evidence. I note that section 20A of the RMA, which provides for certain lawfully established activities to continue after a regional rule becomes operative for a 6 month period of time, will continue to apply to such activities in any case and do not consider that there is a need to repeat this at a policy level.

11.31 The suggestion by the SIEIA to include the word “discharges” has merit. It is an adverse effect and would sit comfortably within this policy, which provides a course of action for the rules to follow. The rules in the pSWLP around discharges generally consider the effects on surface waterbodies and wetlands and this connection would be strengthened by adding “discharges” to the policy.

### **Recommendation**

11.32 Amend Policy 33 as follows:

*Prevent the reduction in area, function and quality of wetlands, including through drainage, discharges<sup>804</sup> and vegetation removal.*

### **Policy 34 – Restoration of existing wetlands and the creation of wetlands**

11.33 Policy 34 is intended to recognise the diversity and importance of wetlands, particularly their potential to improve water quality, regardless of whether they are natural occurring or man-made.

11.34 Policy 34 reads:

*Recognise the importance of wetlands and indigenous biodiversity, particularly the potential to improve water quality, through encouraging:*

- 1. the maintenance and restoration of existing wetlands and the creation of new wetlands; and*
- 2. the establishment of wetland areas, including on-farm, in subdivisions, on industrial sites and for community sewage schemes; and*
- 3. offsetting peak flows and assisting with flood control.*

### **Submissions**

11.35 There were 17 total submissions on Policy 34. Nine submitters support the policy being retained and three submitters would like to see the policy narrowed to ‘natural’<sup>805</sup> wetlands. These same three submitters request amendments around the phrase ‘indigenous biodiversity’, either that it be deleted<sup>806</sup> or that the word ‘biodiversity’ be replaced with ‘flora’.<sup>807</sup> Three Rivers CG and Pourakino CG make the following submission:

*It is not clear how indigenous biodiversity can improve water quality and we suggest that it is the benefits of indigenous flora (plants) that the policy can provide for. As this policy covers restoration*

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<sup>804</sup> 742.8 SIEIA

<sup>805</sup> Federated Farmers; Pourakino CG; and Three Rivers CG

<sup>806</sup> Federated Farmers

<sup>807</sup> Pourakino CG; and Three Rivers CG

*and creation of wetlands it is not clear how existing artificial wetlands such as duck ponds would be regulated should a farmer wish to remove one. We seek clarification that the policy relates to 'natural wetlands' rather than 'wetlands'.*

- 11.36 Fonterra suggest the title of the policy be changed to “*Restoration of existing wetlands, ~~and~~ the creation of wetlands and riparian planting”*, along with the addition of “*and indigenous riparian plantings adjacent to waterbodies...* in point two. Additionally, J Bythell would like to see the diversity of wetlands recognised, and D Clarke asks if the sediment from a duck pond can be spread on the land it came from.

## Analysis

- 11.37 In general, submitters are supportive of this policy, which I consider indicates that the ecological and cultural benefits of wetlands are well-understood, although there is the recurring question of whether the policy should refer to ‘wetlands’ or ‘natural wetlands’. As the title suggests, ‘restoration of wetlands’, would apply to all wetlands containing a natural ecosystem of plants and animals adapted to wet conditions. I see no reason for narrowing the scope of this policy especially when Objective 14 refers to ‘wetlands’. Policy 34 simply sets out how this objective is to be achieved. However, the concerns of the submitters seeking changes may be partially met in the amendments recommended to Rule 74 (refer to section 11 of this report).
- 11.38 The other recurring theme throughout the submissions on wetlands is their application to “duck ponds”. These submissions are clear that “duck ponds” should not be controlled. Once again, I refer submitters to the definitions of ‘wetland’ and ‘natural wetland’. The rules will then determine what activities require resource consents, and in my view appropriately focus management on the values of different wetlands, rather than their function.
- 11.39 As alluded to by the Three Rivers CG, the words ‘indigenous biodiversity’ do seem to hang awkwardly within this provision. However, Fonterra provide an elegant solution by suggesting that it is riparian plantings which aid the potential to improve water quality. I support Fonterra’s submission as I believe it provides more certainty to the policy.

## Recommendation(s)

- 11.40 Amend Policy 34 as follows:

*Policy 34 – Restoration of existing wetlands, ~~and~~ the creation of wetlands and riparian planting<sup>808</sup>  
Recognise the importance of wetlands and indigenous biodiversity, particularly the potential to improve water quality, through encouraging:*

- 1. the maintenance and restoration of existing wetlands and the creation of new wetlands; and*
- 2. the establishment of wetland areas and associated indigenous riparian plantings,<sup>809</sup> including on-farm, in subdivisions, on industrial sites and for community sewage schemes; and*
- 3. offsetting peak flows and assisting with flood control.*

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<sup>808</sup> 277.33 Fonterra.

<sup>809</sup> 277.33 Fonterra.

## New policy proposed Policy 33A – Other wetlands

11.41 Submitter TNZ Growing request the following new policy:

*Recognise that modification of wetland not identified as regionally significant may be appropriate where adverse effects can be avoided, remedied or mitigated*

11.42 The submitter seeks this policy, to provide for the modification of a wetland for peat harvesting. In my view, the request needs to be considered alongside the existing provisions in the Plan. In this instance, my view is that Policy 33 provides general direction in relation to managing effects on wetlands. For the reasons outlined earlier, at this level no distinction is made between regionally significant and other wetlands. Modification of a wetland (for peat harvesting or otherwise) would need to be assessed against the related Plan rules and any application for resource consent would also be assessed against Policy 33 as well as Objectives 14 & 17. It is this process and assessment that would determine if the modification is appropriate, including with regard to whether adverse effects have been adequately avoided, remedied or mitigated. In my view, an additional policy, which has a different focus than Policy 33 is not necessary and could create a layer of conflict.

### 11.1.5 Rule 74 – Wetlands

11.43 Rule 74 has two key components: the first seeks to encourage the maintenance and enhancement of wetlands and access to them; the second provides a ‘default’ rule for the modification of a wetland that is not otherwise controlled under the Plan rules.

11.44 Rule 74(a) provides for the “*use of land for the modification of a wetland for the purposes of maintaining and enhancing the wetland, or maintaining and enhancing pedestrian access to the wetland (including the construction, maintenance or upgrading of structures)*” as a permitted activity, subject to a number of permitted activity conditions. Modification that does not meet these conditions is then a discretionary activity under clause (b).

11.45 Rule 74(c) reads:

*(c) The use of land for the modification of a wetland, including through the grazing by stock or drainage, that is not provided for as a permitted activity or a discretionary activity is a non-complying activity.*

11.46 A number of rules throughout the pSWLP already control the use of land for the modification of a wetland, for example stock access and drainage rules. Rule 74(c) therefore acts as a default rule where the modification is not covered by other Plan rules.

### Submissions

11.47 21 parties made submissions on Rule 74. The points for amendments raised fall into five broad categories of, terminology, grazing, draining, planted indigenous vegetation and other matters.



- 11.48 Firstly, three submitters request that the wording is amended to ‘natural wetland’<sup>810</sup>, and two submitters request a distinction is made for ‘man-made’<sup>811</sup> wetlands.
- 11.49 The second point concerns the grazing of wetlands. Submitter P Chartres requests “provision of light low impact grazing by stock”. J Bythell would like clarification on when modification of a wetland through grazing is a permitted or discretionary activity, and for Council to consider how any proposed activity will impact the pattern and diversity of an adjacent wetland.
- 11.50 An issue around drainage is raised by Fish and Game who request that ‘diversion’ be added to Rule 74(c), while Ngāi Tahu, Fish and Game, and Forest and Bird request drainage of a natural wetland be a prohibited activity.
- 11.51 Leniency for modification of indigenous vegetation to enable “minor damage and limited removal”<sup>812</sup> is sought by two submitters.
- 11.52 Related to this, Fish and Game request a new permitted activity rule, subject to a number of standards, for “*the placement, erection, use, alteration or reconstruction of any structure (including existing structures) in, on, under or over the bed of any natural wetland, and any associated bed disturbance resulting from the carrying out of the activity, for the purposes of maintaining or enhancing a natural wetland*”. They seek this so as to provide a streamlined process for structures in wetlands, where these structures are for the purpose of maintaining or enhancing a natural wetland.
- 11.53 The final points raised relate to a range of other matters. There is a minor error in subclause (b) of the rule, two submitters prefer alternative wording,<sup>813</sup> one requests the activity status of subclause (c) be changed from non-complying to discretionary<sup>814</sup> and another requests deletion of subclause (c) altogether.<sup>815</sup>

## Analysis

### Terminology

- 11.54 As previously discussed the terms ‘wetland’ and ‘natural wetland’ are defined in the Glossary, and a list of Regionally Significant Wetlands is in Appendix A. Natural wetland is a subset of wetland, and notably excludes areas of wet pasture, damp gully heads, areas where water temporarily ponds after rain, or pasture containing patches of rushes. It also excludes artificial storage facilities, detention dams, effluent ponds, community water supplies and artificial water courses. The definition of ‘natural wetland’ has been adopted from the Fourth report of the Land and Water Forum.<sup>816</sup>
- 11.55 Some submitters request that the term ‘wetland’ is replaced with ‘natural wetland’, or alternatively that a distinction is made for man-made wetlands so that consent is not required for modification to the latter. This would narrow the scope of the rule and in my view, would reduce the rule’s implementation of Policy 34, which aims to recognise

<sup>810</sup> L & M; Pourakino CG; and Three Rivers CG

<sup>811</sup> ICC; Smithill.

<sup>812</sup> A Wilson; S Wilson.

<sup>813</sup> Forest and Bird; N McRae.

<sup>814</sup> TNZ Growing Products.

<sup>815</sup> Federated Farmers.

<sup>816</sup> Land and Water Forum, (2015). *Fourth Report of the Land and Water Forum*. p. 52.

the importance of all wetlands, through encouraging the maintenance and restoration of existing wetlands and through creating new wetlands. This rule therefore directly relates back to Policy 34, through providing a permitted activity status for the use of land for modification of a wetland, whether natural or not, where such modification meets the permitted standards and where it is for the purpose of maintaining or enhancing the wetland or pedestrian access to it. In my view, this activity status is appropriate only for the modification of a wetland for the purpose of maintaining or enhancing the wetland or pedestrian access to it. A wider permitted activity status would, in my view, not assist in implementing Policy 33 which seeks to prevent the reduction in area, function and quality of all wetlands. However, as set out below, I do recommend a change to the rule that amends the ‘default’ activity status for the modification of a non-natural wetland.

### **Grazing of wetlands**

- 11.56 Subclause (c) is effectively a ‘default’ rule for the use of land for the modification of a wetland, whereby unless otherwise specified in the pSWLP, the modification defaults to a non-complying activity. Subclause (c) refers to the grazing of wetlands and drainage as examples of activities that can cause modification of a wetland, and which are therefore non-complying activities unless such modification is otherwise specified as a permitted or discretionary activity). Federated Farmers note that stock access and draining of wetlands seems out of place in Rule 74 and request (c) is deleted.
- 11.57 The use of land for modification of a wetland through the grazing of stock is also covered by Rule 70 *Stock exclusion from water bodies* which permits (as notified) the disturbance of ‘natural wetlands’ by stock provided certain conditions are met, including (ii) *there is no significant de-vegetation of the bed and banks, pugging, or alteration to the profile of the bed and banks, other than at fords or stock crossings.* If Rule 70 (ii) cannot be met the disturbance of the bed of a natural wetland by stock is a discretionary activity, provided a Riparian Management Plan outlines how stock exclusion will be achieved by 1 January 2025. If this condition of Rule 70 cannot be met the activity is non-complying. In my view, Rule 74(c) would therefore not be ‘triggered’ by an activity that is covered explicitly by Rule 70, and specific reference to grazing by stock as an example within the rule could be misleading. I therefore recommend that subclause (c) is amended to remove the reference to ‘grazing by stock’, with a note is added after Rule 74 referring readers to Rule 70. This would allow P Charters to graze stock provided he could meet the permitted activity status of Rule 70.
- 11.58 With regards to amending the subclause so that it applies only to ‘natural wetlands’, my concern with this approach is that it would add confusion by then not making it clear what activity status applies to the use of land for the modification of a non-natural wetland. However, I agree with submitters that there is a possible disconnect in terms of Rule 70 and Rule 74(c), with the former only relating to natural wetlands and therefore the modification of a non-natural wetland via stock grazing would default to non-complying. In my view this is an overly restrictive activity status. I therefore recommend that subclause (c) is amended to refer to ‘natural’ wetlands, and a new subclause (d) is added so that the default status for the use of land for the modification of a wetland that is not within the ‘natural wetland’ definition is discretionary rather than non-complying. This would also assist to clarify the rule, as requested by J Bythell.

## Drainage of wetlands

11.59 Rule 74 controls the use of land for the modification of a wetland; it is a land use rule. Fish and Game request “diversion of water” is added to the rule and Ngāi Tahu request the rule prohibit the drainage of any natural wetlands. However, the diversion of water is governed by section 14 of the RMA and addressed by Rule 51 – *Minor diversions of water* of the pSWLP. Rule 51(b)(iii) does not permit the diversion of water from a Regionally Significant Wetland identified in Appendix A or any naturally occurring wetland; such an activity would be considered discretionary under subclause (d) of Rule 51. Therefore, Rule 51 is the specific rule governing diversion, and I recommend that the words “or drainage” are removed from Rule 74(c). This would also remove any confusion that may be created by using the word drainage in this rule. As with stock grazing wetlands, I also recommend a note be added below Rule 74 referring readers to Rule 51 for diversion matters.

## Planted indigenous vegetation

11.60 A and S Wilson request subclause (a)(i) “*the modification does not result in any destruction or removal of any indigenous vegetation unless that vegetation was planted*” is deleted and replaced with “*minor damage and limited removal of any indigenous vegetation unless that vegetation was planted*”. The proposed words widen the scope of the provision and potentially lessen Council’s ability to control the clearance or modification of naturally occurring indigenous vegetation associated with wetlands. The alternative words could also introduce an inappropriate level of uncertainty as to what constitutes ‘minor damage’ and ‘limited removal’ that would make the rule difficult to enforce. The existing words are consistent with the national direction provided by the RMA and the NPSFM, as well as the biodiversity provisions in the pSRPS, specifically Method BIO.6 – *Protect significant indigenous vegetation and significant habitats of indigenous fauna* and Method BIO.8 – *Lawful maintenance and operation of existing activities*. Consequently, no changes to this sub-clause are recommended.

## Other matters

11.61 Several submitters raise the drafting error in subclause (b) which should read “...*comply with the conditions of Rule 74(4)(a) is a discretionary activity.*” This error has been noted and recommended to be corrected. Adding words “in a manner that is likely to result in”<sup>817</sup> is a stylistic choice, which in my view makes the provision more lengthy and is not in keeping with the tailored nature of the pSWLP as a whole. I do not support this addition.

11.62 In relation to Fish and Game’s request for a new rule, my view is that this is not necessary, as Rule 74 already provides a permitted activity status for the use of land for the modification of a wetland where it is for the express purpose of maintaining and enhancing a wetland (or access to it), and explicitly includes “*the construction, maintenance or upgrading of structures*”. As such, the rule sought by Fish and Game would result in duplication and is not necessary to provide for the type of activity contemplated by the submitter. I therefore do not recommend a new rule is included.

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<sup>817</sup> Forest and Bird.

## Recommendation

11.63 Amend Rule 74 as follows:

- (a) *The use of land for the modification of a wetland for the purposes of maintaining and enhancing the wetland, or maintaining and enhancing pedestrian access to the wetland (including the construction, maintenance or upgrading of structures), is a permitted activity provided the following conditions are met:*
- (i) *the modification does not result in any destruction or removal of any indigenous vegetation unless that vegetation was planted;*
  - (ii) *the modification does not result in any reduction in the size of the wetland;*
  - (iii) *the modification does not result in any flooding or ponding on any land owned or occupied by another person; or*
  - (iv) *the modification does not result in any establishment of pest plant species that:*
    - (1) *is listed in the Regional Pest Management Strategy for Southland 2013;*
    - (2) *may damage existing biodiversity values of the wetland; or*
    - (3) *will form the dominant vegetation type in the wetland.*
- (b) *The use of land for the modification of a wetland for the purposes of maintaining or enhancing the wetland, or maintaining or enhancing pedestrian access to the wetland that does not comply with the conditions of Rule 74(4)(a)<sup>818</sup> is a discretionary activity.*
- (c) *The use of land for the modification of a natural<sup>819</sup> wetland, ~~including through the grazing by stock or drainage,~~<sup>820</sup> that is not provided for as a permitted activity or a discretionary activity is a non-complying activity.*
- (d) The use of land for the modification of a wetland, other than a natural wetland, that is not provided for as a permitted activity or a non-complying activity is a discretionary activity.<sup>821</sup>

Notes: For the avoidance of doubt Rule 70 - Stock exclusion from waterbodies and Rule 51 – Minor diversions of water must also be complied with.<sup>822</sup>

## Glossary

### Existing definitions

#### Natural wetland

11.64 The definition of natural wetland, to which many of the rules refer, is from the Fourth Report of the Land and Water Forum<sup>823</sup>.

*Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions, but excludes:*

- (a) *wet pasture, damp gully heads, or where water temporarily ponds after rain or pasture containing patches of rushes;*
- (b) *effluent ponds;*
- (c) *artificial storage facilities and detention dams;*
- (d) *artificial watercourses such as conveyance and drainage canals;*

<sup>818</sup> 247.22 Environment Southland; 265.104 Federated Farmers.

<sup>819</sup> 457.2 L & M; 640.51 Pourakino CG; and 810.50 Three Rivers CG

<sup>820</sup> 125.5 P Chartres; 752.167 Fish and Game; and 797.51 Ngāi Tahu.

<sup>821</sup> 897.2 TNZ Growing Products.

<sup>822</sup> 125.5 P Chartres; 752.167 Fish and Game; and 797.51 Ngāi Tahu.

<sup>823</sup> November 2015, p. 54.

- (e) *reservoirs for firefighting, domestic or community water supply; and*
- (f) *engineered soil conservation structures.*

11.65 There are 12 submissions on this definition. Federated Farmers, A & B Hunt and NZFS request that the definition is retained. Drylands Farming and Drysdale Family Trust request that ‘duck ponds’ be included in the list of exclusions and Hort NZ request “sediment control measures or artificial wetlands” are also added. Three further submitters seek clarification.<sup>824</sup> J Bythell requests that the definition:

*be expanded to include those wetlands which might have intact soil or hydrological functions but whose native plant community is modified or absent (that is, a wetland which may rate as ecologically important even if it is degraded or modified).*

11.66 Another amendment, proposed by Fish and Game, reads “including in the beds of lakes and rivers, the coastal marine area (e.g. saltmarsh), and groundwater-fed wetlands (e.g. springs) but excludes. Natural wetlands do not include:”

11.67 While a variety of suggestions are made by these submitters, in my view, none of these are more appropriate than the notified definition. In particular, the case has not been made as to why there should be deviation from the national direction provided by the Land and Water Forum. Therefore, my recommendation is to retain the definition without change.

## **Wetland**

*Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.*

11.68 There are 14 submissions for this definition. Four submitters request that the definition of wetland is deleted<sup>825</sup> while Fish and Game requests it is retained. A common concern of those seeking that the definition of wetland is deleted, is that they consider it captures wetlands that do not have ecological values, such as paddocks that are periodically wet. RL & SJ Farm Trust, T Henderson and Wilkins Farming suggest that ‘intermittently wet pasture’ is deleted from the definition.

11.69 The pSWLP refers to ‘wetlands’, ‘natural wetlands’ and ‘Regionally Significant Wetlands’. Each category has a specific purpose. The term wetland is intended to be broad enough and capture all types of wet areas of land that support natural ecosystems of plants and animals. The last words are, in my opinion, the key to the definition and submitters may want to consider whether their damp pasture really supports “a natural ecosystem of plants and animals that are adapted to wet conditions”.

11.70 Therefore, I do not recommend deviating from the national definition provided by the RMA, and note that the definition of ‘natural wetland’ enables more focussed controls, where appropriate.

<sup>824</sup> D Shearing; A Wilson; and S Wilson.

<sup>825</sup> B+LNZ; V&G Dyson; Federated Farmers; A&B Hunt.

## **Wetland boundary**

*The point in the transition from wetland to dryland where wetland plant species occur at more than four times their ungrazed height apart. Wetland edge has a similar meaning.*

- 11.71 Both DOC and Fish and Game request that the definition is deleted. Both submitters state that the definition will result in development of the margins of wetlands including streams which collect water from wetlands, and in their view is contrary to ss 5, 6(a), 6(b) and 6(c) of the RMA.
- 11.72 The definition is relied on in only one rule in the pSWLP, being Rule 14 – Discharge of fertiliser, part (a)(iii)(2). The relevant condition in the rule permits the discharge of fertiliser in circumstances where contaminants may enter water provided that (additional to other conditions), where any permanently flowing river, lake, lagoon, estuary, artificial watercourse or wetland does not have riparian planting from which stock is excluded, fertiliser is not discharged directly into or within 10 metres of the bed or within 10 metres of a wetland boundary. I note that neither submitter has sought an amendment to the rule as it relates to reference to a wetland boundary. As such, my view is that the definition is required in order to provide clarity to the permitted activity condition. For completeness, my view is that the definition, as relied on in the rule, ensures that the margins of wetlands are appropriately managed in relation to the discharge of fertiliser. In addition, it is my view that the definition adds some certainty to the general treatment of wetlands, in that it provides an acknowledgement of where a wetland may begin and end, and is recommended to be relied on with respect to a new definition of “wetland boundary”.

## **New definitions**

### **Existing wetland**

- 11.73 K Clement seeks a clear definition of ‘existing wetland’, especially in relation to Policy 34(1) and Rule 74. She notes “we currently have many areas on our farm that has ‘wetland grass’ growing on it but I would not term them as a wetland’. This is potentially a grey area for many submitters who raise this issue in different guises. The definitions of ‘wetland’ and ‘natural wetland’ may help the submitter. Beyond this it could be appropriate for a Council staff member to visit the farm and provide an opinion on whether the wet areas support a natural ecosystem of plants and animals or not. If it is still unclear expert ecological advice would be required. Either way I do not consider a new definition of ‘existing wetland’ would assist clarity of interpreting the pSWLP provisions on the ground.

### **Regionally significant wetlands**

- 11.74 Fish and Game requests the following definition:

*Regionally significant wetlands means wetlands identified in Appendix A (Regionally Significant Wetlands in Southland) and any natural wetland with indigenous vegetation cover.*

- 11.75 Forest and Bird also request this definition be included in Appendix A and in the Glossary.

- 11.76 Regionally Significant Wetlands are listed in Appendix A, and while this is the case, it does not seem necessary to have a definition highlighting this fact. Accordingly, the key part of the requested definition is the addition of *and any natural wetland with indigenous vegetation cover*. The addition of the proposed words potentially negate the need to have a list, as all wetlands with indigenous vegetation are then regionally significant.
- 11.77 Moreover, aerial wetland monitoring undertaken by Council staff throughout Southland have identified approximately 1606 wetlands larger than 0.5 ha in size and 992 which contain indigenous vegetation cover.<sup>826</sup> Incorporating all of these in Appendix A (as an alternative to the amended to the definition sought by the submitter) would be unwieldy. Amending the definition as sought leaves the definition of Regionally Significant Wetland open to argument because it is problematic to determine what is indigenous cover, how far that cover extends, how many species constitute ‘cover’, whether the data has been verified and whether the wetland should be a certain size to qualify.
- 11.78 As previously stated, the pSWLP has three types of wetlands, i.e. wetlands, natural wetlands and Regionally Significant Wetlands. Effects of activities can be controlled through the Plan rules and the activity status of a rule may be elevated depending on the particular type of wetland concerned. Therefore, having a manageable and robust list of Regionally Significant Wetlands that meet the significance criteria (outlined in the section below) is efficient and effective. Any wetlands that do not qualify as Regionally Significant Wetlands will still be captured by the rules which refer to “wetlands” because this broad term captures all wetlands.
- 11.79 Accordingly, I do not recommend adding the definition requested by Fish and Game.

### **Appendix A – Regionally Significant Wetlands in Southland**

- 11.80 The list of Regionally Significant Wetlands contained in Appendix A has been carried over from the RWP, and this appears to have been adopted previously from the RPS. The original list was put together for the RPS by phoning local agencies, such as DOC, to get its input into what wetlands were thought to be regionally significant at that time.<sup>827</sup> Hence, no particular assessment criteria were applied to the initial list of Regionally Significant Wetlands. Consequently, most of the wetlands listed lie within the conservation estate. Because the list has not been updated since 1997, no additions were included prior to notification of the pSWLP.
- 11.81 Two submitters, G & R Cockburn and M & T Williams, request that the extent of the Lagoon Creek wetland is defined. Ngāi Tahu request the Appendix is retained and DOC, Forest and Bird and Fish and Game each submit similar lists of wetlands that they consider should be added to the Appendix.
- 11.82 Submitter J Bythell requests Appendix A be expanded to include all wetlands of regional significance, irrespective of their land status, and for Council to develop criteria for assessing whether wetlands are regionally significant or not.

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<sup>826</sup> R Ewans (email, 8 Dec 2016). Also note that the numbers were calculated as a desktop exercise and only apply to private and leasehold land. Many hundreds more exist on DOC land.

<sup>827</sup> G. Morgan, ES Land Sustainability Officer (personal communication, 19 October 2016).

11.83 Because the list of Regionally Significant Wetlands has not been updated since 1997, the submissions received on the pSWLP provide a timely opportunity to revisit the list. In order to analyse whether submitters' proposed wetlands warrant addition to Appendix A, the significance assessment criteria from the pSRPS has been used. These criteria is set out in Policy BIO.1 as follows:

***Policy BIO.1 – Identification of significant areas***

*Identify areas of significant indigenous vegetation and significant habitats of indigenous fauna using the following:*

- (a) the Schedule of Threatened, At Risk and Rare Habitat Types in Appendix 2 which provides an indication of areas likely to be significant.*
- (b) Ecological assessments undertaken by a suitably qualified ecologist using the ecological significance criteria listed in Appendix 3 to ascertain whether an area listed is significant or otherwise.*
- (c) the ecological significance criteria listed in Appendix 3 which incorporate the following matters:*
  - (i) representativeness;*
  - (ii) rarity or distinctiveness;*
  - (iii) diversity and pattern; and*
  - (iv) ecological context;*
- (d) in collaboration with landowners the investigation and identification of areas of indigenous vegetation on private land that are likely to be significant.*

11.84 Using these criteria, an evaluation of the wetlands proposed by submitters has been undertaken by ecologist Richard Ewans.

11.85 Firstly, a wetland is likely to be significant if it appears in Appendix 2 of the pSRPS which contains the Schedule of Threatened, At Risk and Rare Habitat Types (the Schedule). The Schedule describes characteristics of habitat types at a regional scale and provides an indication of areas likely to be significant. There are two main threatened wetland habitat types - these are raised peatland bogs, and swamps (flaxland) and marshes. Rare wetland habitat types include estuaries, lake margins, coastal lagoons, ephemeral wetlands, cushion bogs, string mires, blanket mires, seepages and snowbanks.

11.86 If a wetland does not appear in Appendix 2 of the pSRPS, it could still be determined as significant if it triggers one or more of the assessment criteria in Appendix 3 of the pSRPS, which are representativeness, rarity, diversity and ecological context. These criteria are widely used throughout New Zealand to establish significance.

11.87 Thirdly, an on-the-ground assessment of the site can determine significance. No specific on-the-ground assessments have been undertaken for analysing the wetlands requested to be added in submissions. However, this has historically been undertaken for some wetlands and has been inferred from reports published, where on ground assessments have been undertaken in the past.

11.88 Most of the additions proposed by DOC, Forest and Bird and Fish and Game appear to have been sourced from the document '*A Directory of Wetlands in New Zealand*',<sup>828</sup> or a number of survey reports for the Protected Natural Areas Programme. These reports

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<sup>828</sup> Compiled by P Cromarty, Edited by D.A. Scott for the Department of Conservation



identify areas that have high ecological values based on their size and presence of indigenous vegetation.

- 11.89 Table A below sets out whether the wetlands proposed by submitters meet the test for significance using the pSRPS criteria. If a wetland already sits in Appendix 2 of the pSRPS it is automatically considered a Regionally Significant Wetland which has been through the public consultation process. These wetlands are identified on the attached maps as dots where they have not been more specifically mapped as polygons. It should be noted that the names used in Table A may differ from those used in submissions. This is a result of: some individual wetlands referred to in submissions being grouped in Table A a number of the wetlands not having official names and therefore being referred to with a variety of names; and some wetlands being referred to more than once in the submissions. There were two wetlands (Leitham Burn wetland and Wairaki River wetland) where ecologist Richard Ewans could not identify what area the submitter was referring to. Therefore they are not included in the table.
- 11.90 In addition, there are some wetlands that do not meet the pSRPS criteria, but are on land owned by the submitter (DOC) requesting the wetland be listed. These have been recommended to be included in any event.
- 11.91 It should also be noted that in some cases the submissions by DOC, Forest and Bird and Fish and Game are unclear as to what text is sought to be added to the pSWLP as underlining or italicising is used inconsistently. As a result, there may be additional wetlands sought by the submitters that have been missed from the table. Submitters may wish to identify where this is the case and provide additional assessment against the pSRPS on these to support their inclusion.

**Table A**

Wetland name	GIS ID	pSRPS – Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types	pSRPS – Appendix 3 Significance Assessment Criteria	Ground truthed (i.e. document name)	Note	Regionally significant wetland?
Balloon Loop Oxbow Lake	79	N	not assessed	Te Anau basin report, Rance (1995), WERI 0102	DOC-owned	Y
Big Bite/Swampy Bite (Glen Echo Station)	73	N	Rarity/Distinctiveness (b:i)	none found		N
Big Lagoon	52	N	Representativeness (a:i); Rarity/Distinctiveness (b:i); Diversity (c:i)	RAP 8, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003); WERI 0137		Y
Blue Bottle Peatland	87	N	Representativeness (a:i)	Southland Conservancy Wetland Survey (Walls, 2003)		Y
Bog Lake (and adjacent wetlands)	63	N	Representativeness (a:i); Rarity/Distinctiveness (b:i), (b:ii)	Wetlands of the Te Anau basin report (Rance, 1995)		Y
Borland Saddle-Mt Burns	81	N	not assessed	none found	DOC-owned	Y
Braxton Burn Bog	48	N	Representativeness (a:i), (a:ii)	RAP 15, Taringatura Ecological District Protected Natural Areas Survey (Simpson, 1998)		Y
Brydone West Tussockland	115	N	Representativeness (a:i); Rarity/Distinctiveness (b:i)	RAP 43, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Campbell's Creek Wetlands	119	Y, Cushion bogs	not assessed	Appendix 2		Y
Chocolate Swamp - Dean Forest	82	N	not assessed	none found	DOC-owned	Y
College Stream Swamp	112	N	Representativeness (a:i); Rarity/Distinctiveness (b:i), (b:ii); Diversity (c:i)	RAP 40, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Cross Road Swamp	111	N	Representativeness (a:i); Rarity/Distinctiveness (b:i), (b:ii); Diversity (c:i)	RAP 39, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Dale Bog Pine Wetland	68	N	not assessed	Te Anau basin report, Rance (1995)	DOC-owned	Y
Dawson City/Mt Prospect Wetlands	76	N	not assessed	Wetlands of the Te Anau basin report (Rance, 1995)	DOC-owned	Y
Deer Flat Wetland	61	N	not assessed	none found	DOC-owned	Y
Downs Road North Tussockland	114	N	Representativeness (a:i); Rarity/Distinctiveness (b:i)	RAP 42, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y

Wetland name	GIS ID	pSRPS – Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types	pSRPS – Appendix 3 Significance Assessment Criteria	Ground truthed (i.e. document name)	Note	Regionally significant wetland?
Downs Road Tussockland	116	N	Representativeness (a:i); Rarity/Distinctiveness (b:ii)	RAP 44, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Dunearn Wetland	98	N	not assessed	RAP 3, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)	DOC-owned	Y
Ewe Burn Wetlands	70	N	Representativeness (a:i); Diversity (c:i)	Wetlands of the Te Anau basin report (Rance, 1995)		Y
Feldwick Wetlands	86	N	Representativeness (a:i)	Southland Conservancy Wetland Survey (Walls, 2003)		Y
Ferry Road/Oreti Beach Lagoon	102	N	Representativeness (a:i); Rarity/Distinctiveness (b:ii)	RAP 13 & RAP 14, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Freestone Hill wetland		N	Not assessed	none found	QEII covenant	N
Glenary Station Alpine Wetlands	120	Y, Cushion bogs	not assessed	Appendix 2		Y
Grove Bush Peatland	107	N	Representativeness (a:i)	RAP 31, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Henry Creek Wetland	67	N	not assessed	Te Anau basin report, Rance (1995), WERI 1211, SSWI 0139	DOC-owned	Y
Hidden Burn Wetlands (upper Oreti Valley)	94	N	requires further information	none found		N
Hindley Burn Wetland	83	N	not assessed	none found	DOC-owned	Y
Hokonui South-East Peatland	105	Y, Raised peatland bogs	not assessed	Appendix 2		Y
Jacobs River Estuary	49	Y, Estuaries	not assessed	Appendix 2		Y
Lake Cook & wetland	123	N	not assessed	WERI 0891	QEII covenant	N
Lake Echo-Lady Burn-Dale Creek	74	N	not assessed	WERI 0900	QEII covenant	N
Lake Hauroko Wetland	57	N	not assessed	none found	DOC-owned	Y
Lake Mistletoe	64	N	not assessed	Te Anau basin report, Rance (1995), WERI 1521		Y
Lake Murihiku	100	Y, Lake margins - Lowland Lakes	not assessed	Appendix 2		Y

Wetland name	GIS ID	pSRPS – Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types	pSRPS – Appendix 3 Significance Assessment Criteria	Ground truthed (i.e. document name)	Note	Regionally significant wetland?
Lake Thomas & Wetland	89	N	not assessed	Wetlands of the Te Anau basin report (Rance, 1995)	DOC-owned	Y
Lill Burn Wetland	84	N	requires further information	none found		N
Long White Lagoon	53	N	not assessed	WERI 1278	QEII covenant	N
Lookout Hill Wetland	71	N	not assessed	Te Anau basin report, Rance (1995), WERI 1280, SSWI 0126	DOC-owned	Y
Lower Hogkinson Road Peatland	106	Y, Raised peatland bogs	not assessed	Appendix 2		Y
Makarewa Peatland	108	Y, Raised peatland bogs	not assessed	Appendix 2		Y
Martins Bay Wetlands	55	Y, Coastal wetlands - Dune Slacks	not assessed	Appendix 2		Y
Mavora Lakes (and associated wetlands)	60	Y, Lake margins - Glacial Lakes	not assessed	Appendix 2		Y
Morley Stream Wetland	88	N	Rarity/Distinctiveness (b:i), (b:ii); Diversity (c:i)	Southland Conservancy Wetland Survey (Walls, 2003)		Y
Mt Prospect Wetlands	75	N	requires further information	none found		N
Old Man Swamp	91	N	Representativeness (a:i)	Wetlands of the Te Anau basin report (Rance, 1995)		Y
Oreti Beach coastal turf/wetland	101	Y, Coastal wetlands - Dune Slacks	not assessed	Appendix 2		Y
Oreti Beach Gravel Pits	103	N	Representativeness (a:i); Rarity/Distinctiveness (b:ii)	RAP 16, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Pebbly Hills Swamp	110	N	Representativeness (a:i); Rarity/Distinctiveness (b:i)	RAP 38, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Pleasant Bay Wetland	66	N	not assessed	Te Anau basin report, Rance (1995)	DOC-owned	Y
Pukerau red tussock Scientific Reserve	121	Y, Red tussock grassland	not assessed	Appendix 2		Y
Pyke Valley (including Lake Alabaster and Lake Wilmot)	54	Y, Lake margins - Glacial Lakes	not assessed	Appendix 2		Y
Rainbow Reach Oxbow Lake	78	N	not assessed	Te Anau basin report, Rance (1995)	DOC-owned	Y
Rakeahua Valley Wetlands	58	N	not assessed	WERI 2064	DOC-owned	Y
Ramparts Scenic Reserve	93	N	not assessed	Te Anau basin report, Rance (1995)	DOC-	Y

Wetland name	GIS ID	pSRPS – Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types	pSRPS – Appendix 3 Significance Assessment Criteria	Ground truthed (i.e. document name)	Note	Regionally significant wetland?
					owned	
Retford Stream Wetland	62	N	Representativeness (a:i); Rarity/Distinctiveness (b:i); Diversity (c:i)	Wetlands of the Te Anau basin report (Rance, 1995)		Y
Sharp Ridge Wetland	85	N	Rarity/Distinctiveness (b:i), (b:ii)	Southland Conservancy Wetland Survey (Walls, 2003)		Y
Sinclair Road Wetlands	72	N	not assessed	Wetlands of the Te Anau basin report (Rance, 1995)	Part DOC-owned, part QEII covenant	Y (in part)
Southdowns Swamp	113	N	Representativeness (a:i); Rarity/Distinctiveness (b:i)	RAP 41, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Spurhead Swamp	117	N	Representativeness (a:i); Rarity/Distinctiveness (b:ii)	RAP 45, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Stony Creek Wetland	92	N	requires further information	none found	QEII covenant	N
Taramoa Peatland	99	N	Representativeness (a:i); Rarity/Distinctiveness (b:i)	RAP 10, Southland Plains Ecological District Protected Natural Areas Programme Report (Walls & Rance, 2003)		Y
Taylor Road Wetland	109	Y, Swamps (flaxland) and marshes	not assessed	Appendix 2		Y
Te Anau Downs Wetland	65	N	Representativeness (a:i); Rarity/Distinctiveness (b:i), (b:ii); Diversity (c:i)	Wetlands of the Te Anau basin report (Rance, 1995)		Y
Thornbury Peatland	50	N	Representativeness (a:i)	RAP 4, Southland Plains Ecological District Protected Natural Areas Programme Report (Walls & Rance, 2003)		Y
Toitoi Flat	59	N	not assessed	WERI 2497	DOC-owned	Y
Transit Valley Wetlands	56	N	not assessed	WERI 1299, WERI 1504	DOC-owned	Y
Upper Mararoa (Boundary Hut) Wetland	90	N	not assessed	none found	DOC-owned	Y
Upper Oreti Valley, including Ashton Flats	95	Y, Red tussock grassland	not assessed	Appendix 2		Y

Wetland name	GIS ID	pSRPS – Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types	pSRPS – Appendix 3 Significance Assessment Criteria	Ground truthed (i.e. document name)	Note	Regionally significant wetland?
Waiau Terrace Wetland	77	N	not assessed	Te Anau basin report, Rance (1995), WERI 2059, SSWI 0120	DOC-owned	Y
Waiau Valley/Borland Burn Wetlands	80	N	not assessed	none found	DOC-owned	Y
Waihopai River Rushland	104	N	Representativeness (a:i)	RAP 18, Southland Plains Ecological District Protected Natural Areas Programme Report, Walls & Rance (2003)		Y
Waimatuku Estuary	124	Y, Coastal wetlands - Dune Slacks	not assessed	Appendix 2		Y
Waipapa Beach dune slack Wetlands	122	Y, Coastal wetlands - Damp Sand Plains	not assessed	Appendix 2		Y
Wash Creek Wetland	96	N	not assessed	none found	DOC-owned	Y
West Dome Station Wetland	118	N	Rarity/Distinctiveness (b:i)	none found		N
Weydon Burn	97	N	not assessed	WERI 2858	DOC-owned	Y
Wrights Bush Peatland	51	N	Representativeness (a:i)	RAP 6, Southland Plains Ecological District Protected Natural Areas Programme Report (Walls & Rance, 2003)		Y

- 11.92 From the table it is possible to determine that all of the wetlands proposed by submitters meet the pSRPS criteria for significance except for:
- Big Bite/Swampy Bite (Glen Echo Station)
  - Freestone Hill wetland
  - Hidden Burn Wetlands
  - Lake Cook & wetland
  - Lake Echo-Lady Burn-Dale Creek
  - Lill Burn Wetland
  - Long White Lagoon
  - Mt Prospect Wetlands
  - Stony Creek Wetland
  - West Dome Station Wetland
- 11.93 Based on the analysis, which is consistent with the direction provided by the pSRPS, I recommend that all wetlands in Table A that are marked as Regionally Significant Wetland in the final column be added to Appendix A. Additional wetlands on the DOC Estate have been recommended to be added, as they have been requested by the landowner/administrator. For the Sinclair Road Wetlands, I recommend that the DOC portion of the wetland be included, but, in the absence of landowner support, not the QEII covenanted area.
- 11.94 For those sites which are not recommended to be added, submitters are welcome to produce evidence at the hearing that shows the sites meet the pSRPS criteria.
- 11.95 Maps are attached showing wetlands already listed in Appendix A and wetlands that have been recommended for inclusion through the pSRPS process.
- 11.96 Wetlands proposed by submitters fall into two groups, namely those recommended for addition to Appendix A based on the assessment criteria from the pSRPS or requested by the landowner, and those where there is not enough available information to make a recommendation on. Only ten of the wetlands proposed by submitters fall into the latter category (and a portion of another) and submitters may want to consider providing additional information on these ten wetlands for their potential inclusion.
- 11.97 The map displays wetlands in two ways - there are polygons for specific wetland areas, and points for general threatened, at risk and rare wetland habitat type localities, such as tarns, snowbanks, etc. that cannot easily be delineated.
- 11.98 For the submitters requesting delineation of the extent of the Lagoon Creek this should be able to be determined from the maps attached and provide the submitters with certainty to its extent.
- 11.99 A change to the name of Appendix A is recommend to include Sensitive Waterbodies. This recommendation is derived from the analysis of Appendix Q, which recommends Q be deleted entirely to avoid duplication. The other recommendation from the analysis of Appendix Q is to add “Waiiau River Lake Manapouri to Mararoa Weir” to Appendix A and I also support this.

## Recommendations

11.100 Amend title of Appendix A as follows:

*Appendix A - Regionally Significant Wetlands and Sensitive Waterbodies<sup>829</sup> in Southland*

11.101 Add the following 68 wetlands to Appendix A:

Balloon Loop Oxbow Lake  
Big Lagoon  
Blue Bottle Peatland  
Bog Lake (and adjacent wetlands)  
Borland Saddle-Mt Burns  
Braxton Burn Bog  
Brydone West Tussockland  
Campbell's Creek Wetlands  
Chocolate Swamp - Dean Forest  
College Stream Swamp  
Cross Road Swamp  
Dale Bog Pine Wetland  
Dawson City/Mt Prospect Wetlands  
Deer Flat Wetland  
Downs Road North Tussockland  
Downs Road Tussockland  
Dunearn Wetland  
Ewe Burn Wetlands  
Feldwick Wetlands  
Ferry Road/Oreti Beach Lagoon  
Glenary Station Alpine Wetlands  
Grove Bush Peatland  
Henry Creek Wetland  
Hindley Burn Wetland  
Hokonui South-East Peatland  
Jacobs River Estuary  
Lake Hauroko Wetland  
Lake Mistletoe  
Lake Muribiku  
Lake Thomas & Wetland  
Lookout Hill Wetland  
Lower Hogkinson Road Peatland  
Makareva Peatland  
Martins Bay Wetlands  
Mavora Lakes (and associated wetlands)  
Morley Stream Wetland  
Old Man Swamp  
Oreti Beach coastal turf/wetland  
Oreti Beach Gravel Pits  
Pebbly Hills Swamp  
Pleasant Bay Wetland

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<sup>829</sup> Consequential amendment to deletion of Appendix Q - see 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.



Pukerua red tussock Scientific Reserve  
Pyke Valley (including Lake Alabaster and Lake Wilmot)  
Rainbow Reach Oxbow Lake  
Rakeabua Valley Wetlands  
Ramparts Scenic Reserve  
Retford Stream Wetland  
Sharp Ridge Wetland  
Sinclair Road Wetlands  
Southdowns Swamp  
Spurhead Swamp  
Taramoa Peatland  
Taylor Road Wetland  
Te Anau Downs Wetland  
Thornbury Peatland  
  
Toitoi Flat  
Transit Valley Wetlands  
Upper Mararoa (Boundary Hut) Wetland  
Upper Oreti Valley, including Ashton Flats  
Waiau Terrace Wetland  
Waiau Valley/ Borland Burn Wetlands  
Waibopai River Rushland  
Waimatuku Estuary  
Waipapa Beach dune slack Wetlands  
Wash Creek Wetland  
Weydon Burn  
Wrights Bush Peatland<sup>830</sup>  
Waiau River Lake Manapouri to Mararoa Weir\*

\* sensitive waterbody<sup>831</sup>

## Appendix Q – Sensitive Waterbodies

11.102 Appendix Q lists lakes and estuaries, including all Regionally Significant Wetlands contained in Appendix A, that are sensitive to nutrient and sediment loads.

11.103 Appendix Q reads:

*Sensitive waterbodies include all waterbodies referred to in Appendix A: Regionally and Significant Wetlands and those listed below:*

- Lake Te Anau;
- Lake Manapouri;
- Mavora Lakes;
- Lake Muribiku;
- Lakes on Stewart Island;
- Lakes in Milford Sound;
- The Reservoir (lake);
- Waituna Lagoon;
- New River Estuary;

<sup>830</sup> 210.97 DOC; 279.112 Forest and Bird; and 752.176 Fish and Game.

<sup>831</sup> 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.

- *Waimatuku Estuary.*

11.104 Appendix Q is linked to Policy 16 – *Farming activities that affect water quality*, which strongly discourages the establishment of new dairy farming or new intensive winter grazing activities close to sensitive waterbodies listed in Appendix Q. While there are no rules that refer to Appendix Q directly, it is relevant to Rules 22 and 23 about new or expanded dairy farming of cows, and intensive winter grazing.

11.105 The rationale for Appendix Q is encapsulated by the following comment from the section 32 Report:

*Southland's main catchments end with estuaries, which are particularly sensitive to nutrient and sediment loads. Degraded estuary water quality and habitats are particularly difficult and expensive to reverse. This highlights the importance of maintaining good water quality in upstream rivers<sup>832</sup>.*

11.106 Therefore, Appendix Q lists water bodies that are sensitive to certain farming activities that have more risk of generating direct run-off containing sediment and high nutrient loads.

11.107 Appendix I lists natural state waters outside National Parks and it appears that Appendix Q has been designed to avoid duplication within Appendix I.

## Submissions

11.108 There are eight submissions in total for Appendix Q.

11.109 Fish and Game, DOC and Forest and Bird request:

*Amend Appendix Q to include estuaries, all Lakes and wetlands in Te Wāhīpounamu South West New Zealand World Heritage Area, the Lower Waiau River Arm of Lake Manapouri, all lakes, lagoons, estuaries and all wetlands (where surface water enters the wetland) as follows: See submission on Appendix A above.*

11.110 J Bythell has requested the following be added:

- Waiau River lagoon
- Jacobs River Estuary
- Waikawa Estuary
- Haldane Estuary
- Toetoes (Mataura River) Estuary
- Lake George
- Lake Vincent
- Lake Brunton
- Lake Cook

11.111 The submission from Environment Southland staff requests deletion of the following text, 'Lakes in Milford Sound'. N McPhail requests clarification of the term 'lake' and Rimu Grasslands & Leicester Downs queries why the Waimatuku Estuary has been included. H Thys & S Tinneke requests that lagoons and estuaries are removed from Appendix Q, because they have different characteristics.

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<sup>832</sup> p. 28.

## Analysis

- 11.112 Appendix Q sets out to capture sensitive water bodies that have not been listed elsewhere in the Plan, in particular in Appendix A. Some of the additions proposed by J Bythell such as Waiau River Lagoon, Waikawa Estuary, Haldine Estuary, Toetoes (Mataura River), Lake George, Vincent and Brunton already sit within Appendix A and do not require inclusion in Appendix Q. Jacobs River Estuary is proposed by submitters to be added to Appendix A and if accepted would not need to be specifically included in Appendix Q. Lake Cook has not been recommended for inclusion in Appendix A. In my view there is not sufficient evidence at this time to justify its inclusion in Appendix Q.
- 11.113 Many of the additions proposed by DOC, Forest and Bird and Fish and Game are recommended to be added to Appendix A (see above) and if accepted for inclusion into Appendix A, would not need to be listed in Appendix Q. However, I do not recommend adding “the estuaries, and all Lakes and wetlands in Te Wāhipounamu South West New Zealand World Heritage Area” to Appendix Q based on the original intent of Appendix Q. This was to identify sensitive water bodies at risk of deterioration from new or intensive farming activities which have more risk of generating direct sediment and nutrient run-off.<sup>833</sup>
- 11.114 The addition of “the Lower Waiau River Arm of Lake Manapouri” is recommended for inclusion based on the fact “the area is essentially a shallow lake with very little flushing, which makes it prone to problems associated with intensification”.<sup>834</sup>
- 11.115 The phrase ‘Lakes in Milford Sound’ is a drafting error and I recommend it is deleted.
- 11.116 A lake is described in the RMA as a “body of fresh water which is entirely or nearly surrounded by land” and I do not see a need to repeat that definition within the pSWLP. Lagoons and estuaries, although different from lakes and rivers, as noted by another submitter, can still be sensitive receiving waters and have been included in the appendix for that reason. Finally, according to Council marine and freshwater scientist, J Dare, the Waimatuku Estuary has been included in the appendix because of its vulnerability to decline due to the combined influence of high catchment nutrient inputs, periodic mouth closures, and limited assimilative capacity (exacerbated by the highly modified and scarce vegetated terrestrial margin and saltmarsh).<sup>835</sup> But because it is already listed in Appendix A it need not be repeated in Appendix Q and should be deleted.
- 11.117 In summary, I recommend that everything listed in Q be deleted if it is already listed in A, or recommended to be listed in A. Hence, it is further recommended that Appendix Q is deleted altogether because everything listed in Q is either in Appendix A or recommended to be included. However, if submitters are dissatisfied with applying the pSRPS assessment criteria to this appendix, evidence is welcomed that justifies that Appendix Q should be maintained, with a different listing to Appendix A.
- 11.118 As a consequential change, I recommend changing the wording in Policy 16 to refer to Appendix A and the name of Appendix A be amended to *Regionally Significant Wetlands and Sensitive Waterbodies*. This will ensure that the anomaly of *Lower Waiau River Arm of Lake Manapouri* which is not technically a wetland is included in Appendix A, which I

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<sup>833</sup> J Dare Memorandum 21<sup>st</sup> December 2016 pg.1

<sup>834</sup> J Dare Memorandum 21<sup>st</sup> December 2016 pg.4

<sup>835</sup> Stevens and Robertson, (2012). as cited by J Dare in Memorandum dated 21<sup>st</sup> December 2016. p. 4.

also recommend. Finally, I recommend that maps be produced to visually represent the wetlands listed in Appendix A.

## Recommendations

11.119 Delete Appendix Q:

### ~~**Appendix Q – Sensitive Waterbodies**~~

~~*Sensitive waterbodies include all waterbodies referred to in Appendix A: Regionally and Significant Wetlands and those listed below:*~~

- ~~➤ *Lake Te Anau;*~~
- ~~➤ *Lake Manapouri;*~~
- ~~➤ *Mavora Lakes;*~~
- ~~➤ *Lake Muiribiki;*~~
- ~~➤ *Lakes on Stewart Island;*~~
- ~~➤ *Lakes in Milford Sound;*<sup>836</sup>~~
- ~~➤ *The Reservoir (lake);*~~
- ~~➤ *Waituna Lagoon;*~~
- ~~➤ *New River Estuary;*~~
- ~~➤ *Waimatuku Estuary.*~~<sup>837</sup>

11.120 Amend Appendix A as follows:

*Appendix A - Regionally Significant Wetlands and Sensitive Waterbodies*<sup>838</sup>

*Lower Waiau River Arm of Lake Manapouri*<sup>839</sup>

11.121 Amend Policy 16 as follows:

1. *Minimising the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) from farming activities by:*
  - (a) *strongly discouraging the establishment of new dairy farming or new intensive winter grazing activities in close proximity to Regionally Significant Wetlands and Sensitive Waterbodies identified in Appendix Q A*<sup>840</sup>;

...

## Indigenous Biodiversity

11.122 The RMA defines biological diversity as the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species and of ecosystems. Indigenous biodiversity encompasses the range of species and habitats that are naturally found in New Zealand. Southland has a range of important habitats for native plants and animals, some of which are considered significant because they are either threatened, rare or at risk of declining further. Other habitats are considered significant because they are representative of their type in the region, or are rare i.e. reduced to less than 20% of their former extent, have a high degree

<sup>836</sup> 247.34 Environment Southland.

<sup>837</sup> 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.

<sup>838</sup> 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.

<sup>839</sup> 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.

<sup>840</sup> 210.101 DOC; 279.126 Forest and Bird; and 752.193 Fish and Game.

of diversity, or contribute to an ecological function<sup>841</sup>. Because of this, significant species and habitats require protection, while all other indigenous biodiversity needs to be maintained. The policy framework that supports this is set out below.

## Policy Framework

11.123 Two main sections of the RMA govern how indigenous biodiversity is to be managed, they are:

Section 6 which states:

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*

*... (c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

and Section 30(1) which states:

*Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:*

*... (ga) the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity:*

11.124 Territorial authorities are also required by the legislation (section 31 of the RMA) to maintain indigenous biodiversity and this creates an overlap of responsibilities between councils.

11.125 To clarify this, and in accordance with section 62(1)(i)(iii) of the RMA, a regional policy statement is required to set out the responsibilities of local authorities for the maintenance of indigenous biodiversity. The pSRPS states that the Regional Council will be responsible for specifying the objectives, policies and methods for the control of the use of land for the maintenance of indigenous biodiversity in the coastal marine area, wetlands, and lakes and rivers and their margins. Territorial authorities, on the other hand, will be responsible for the maintenance of indigenous biodiversity on all land other than the coastal marine area, wetlands, and lakes and rivers and their margins.

11.126 On this basis, the pSRPS contains Chapter 6 – Biodiversity, with three main objectives; to *Understand and identify*, *Maintain and protect* and *Enhance* indigenous biodiversity. To achieve the maintenance and protection of indigenous biodiversity two main policies follow. Policy BIO.2 requires areas of significant indigenous vegetation and significant habitats of indigenous fauna to be protected and where appropriate enhanced. Policy BIO.4 requires the management of indigenous habitats and ecosystems to achieve a healthy functioning state and to ensure viable and diverse populations of native species are maintained, while making appropriate provisions for lawful maintenance and operation of existing activities. In other words, policies and regulations should protect significant vegetation and habitats, and also maintain other indigenous biodiversity.

11.127 The pSWLP follows the direction provided by the pSRPS. A good example of this is Objective 14, which reads:

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<sup>841</sup> Appendix 3, pSRPS.

### **Objective 14**

*The range and diversity of indigenous ecosystem types and habitats within dryland environments, river, estuaries, wetlands and lakes, including their margins, and their life-supporting capacity are maintained or enhanced.*

- 11.128 In forming this objective, direction has also been taken from the NPSFM. Water Quality Objective A1 requires the safeguarding of life-supporting capacity, ecosystem processes and indigenous species, including their associated ecosystems, of fresh water in sustainably managing the use and development of land, and of discharges of contaminants. Objective A2 requires that overall quality of water is maintained or improved while protecting significant values of outstanding freshwater bodies and wetlands.
- 11.129 Water Quantity Objective B1 aims to safeguard the life-supporting capacity, ecosystem processes and indigenous species, including their associated ecosystems, of fresh water in sustainably managing the taking, using, damming or diverting of freshwater. Objective B4 calls for the protection of significant values of wetlands and outstanding freshwater bodies.
- 11.130 Integrated management Objective C1 seeks to improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystem and the coastal environment.
- 11.131 Te Tangi a Tauira was developed by the four Runanga Papatipu o Murhiku to provide iwi direction on resource management in Murhiku (Southland) and is an iwi management plan recognised by the Southland Regional Council. Te Tangi a Tauira places a high value on the health and abundance of native plants, birds and fish, and on the land, lakes and rivers that provide habitat for these species. This knowledge is based on the belief that all resources are connected, from the mountains to the sea, and must be managed as such. Therefore, the importance of indigenous biodiversity is scattered throughout this document, although it is especially important for mahinga kai (section 3.4.12). Mahinga kai is not just about food, it encompasses the places for obtaining natural food, as well as the methods and cultural activities involved. It includes the ability to clothe, feed and provide shelter. The loss of mahinga kai is attributed to habitat degradation, resource depletion, barriers to access, changes in land use and tenure, and the introduction of pests and predators which reduce habitat and species diversity. For these reasons, Policy 3.4.12.4 aims to promote the protection, restoration and enhancement of indigenous biodiversity.
- 11.132 Direction taken from these documents to address either significant indigenous vegetation and habitats of indigenous fauna or indigenous biodiversity are evident in Objectives 1, 4, 9, 13, 14, and 17 and policies 13, 18, 20, 28, 29, 30, 32, of the pSWLP. Policy 32 – *Protect significant indigenous vegetation and habitat* is the most specific.

### **Policy 32**

- 11.133 Policy 32 reads:

*Protect significant indigenous vegetation and significant habitats of indigenous fauna to improve soil health, water quality, water quantity and ecosystem health.*

## Submissions

- 11.134 There are 16 submissions on Policy 32. Five submitters support the policy and request it be retained. Four submitters oppose the policy and request it be deleted. Six submitters request the policy is amended and SDC is neutral, but requests amendments to clarify why the policy refers to drylands when the rules only relate to wetlands. J Bythell and R Kempthorne also ask for clarification of the meaning of ‘significant indigenous vegetation’.
- 11.135 Ballance considers the policy is overly restrictive and confusing, and requests it be amended to read: *Protect significant indigenous vegetation and significant habitats of indigenous fauna so as to maintain ~~to improve~~ soil health, water quality, water quantity and ecosystem health.*
- 11.136 Both DOC and Forest and Bird consider that the words “to maintain indigenous biodiversity” should be added to the policy. M Taylor requests that the Plan “recognise that indigenous vegetation enhanced by landowners is not naturally occurring and therefore not subject to the same constraints/regulations as that naturally persisting”.
- 11.137 ICC seek deletion of the policy as it considers the issues around habitat and vegetation are covered by Policies 33 and 34. The NZTA, Pourakino CG and Three Rivers CG request deletion of the policy, as no areas of significant indigenous vegetation or habitats have been identified or listed in the Plan. As such they consider it is unclear what is significant and what is not.
- 11.138 Lastly, the SIEIA request the words “harvest values (including bioaccumulation of hazardous substance)” be added to the policy.

## Analysis

- 11.139 For the purposes of analysis submissions have been grouped as follows: maintain/improve; maintenance vs protection; clarification; drylands; and harvest values.

## Maintain/improve

- 11.140 Ballance state that the policy is “overly restrictive and confusing” and propose that the policy is amended to replace the word “improve” with the words “so as to maintain”. I agree that the policy is confusing in terms of what direction it is giving in relation to the management of significant indigenous vegetation and significant habitats of indigenous fauna. It is also my view that the policy aims ‘higher’ than some of the pSWLP objectives (particularly 9, 13, 14, and 17) in terms of directing improvement in soil health, water quality, water quantity and ecosystem health. By comparison, the objectives respectively refer to safeguarding, maintenance or enhancement or protection from inappropriate use and development. As I expand on further below, it is my view that the policy should be re-focussed so that it is clearer how significant indigenous vegetation and significant habitats of indigenous fauna are to be managed in the pSWLP (and so that it does not overlap with management of these in district plans) and to better align with the relevant objectives in the pSWLP and the direction in the pSRPS. I consider that these changes will address Ballance’s concerns.

## Maintenance vs protection

- 11.141 DOC suggests adding the words “and to maintain indigenous biodiversity” to the end of the policy. Forest and Bird request a similar type amendment that would delete the word “significant” and insert the words to “maintain indigenous biodiversity”. The submitters argue that protection of non-significant vegetation is needed to achieve the outcomes of this policy. ‘Protecting significant indigenous vegetation and significant habitats of indigenous fauna’ is a RMA section 6(c) matter, and different from ‘maintaining indigenous biodiversity’ as required by section 30(1)(ga) of the RMA. As such, significant indigenous biodiversity necessitates a higher level of management than that required to maintain general indigenous biodiversity.
- 11.142 The different management regimes are further emphasised in the pSRPS through Policy BIO.2 – *Protect significant areas* and Policy BIO.4 – *Maintain indigenous biodiversity*. I also note that the direction given in the pSRPS in relation to maintaining indigenous biodiversity is to ‘Maintain indigenous biodiversity by the use of regional and district plan provisions together with other appropriate regulatory and non-regulatory means’. In my view, what is sought by the submitters extends beyond this direction. In particular, requiring protection of all indigenous biodiversity conflates the issues of protection for significance, and maintenance of other indigenous biodiversity.
- 11.143 In my view, the policy is best focussed towards Method BIO.6 in the pSRPS, which relates only to significant indigenous vegetation and significant habitats of indigenous fauna and requires that regional plans include provisions that control the clearance or modification of such vegetation and fauna, associated with wetlands, and lakes and rivers and their margins.

## Clarification

- 11.144 ICC requests deletion of the policy as it considers that the issues around habitat and vegetation are covered by Policies 33 – *Adverse effects on wetlands* and 34 – *Restoration of existing wetlands and the creation of wetlands*. However, Policy 32 is broader than wetlands and responds directly to section 6(c) of the RMA, and to the direction in Method BIO.6 of the pSRPS. Others suggest the policy is deleted, or clarified, on the basis that it is unclear, what or where ‘significant indigenous vegetation and habitats’ are.
- 11.145 I recommend that the policy is amended to provide greater clarity and to better align with the direction in the pSRPS.

## Drylands

- 11.146 SDC queries why Policy 32 relates only to wetlands when Objective 14 refers to dryland habitats. I note that it is recommended that Objective 14 be amended to remove the words ‘dryland habitats’ from the objective. If this is accepted, then Policy 32 would be consistent with Objective 14. As such, I do not recommend any change to the policy to provide clarification with respect to dryland habitats.



## Harvest values

11.147 The SIEIA are concerned about the bioaccumulation of hazardous substances in eels, and how these are managed through the consenting process. The submitter requests adding the words underlined below:

*Protect significant indigenous vegetation and significant habitats of indigenous fauna to improve soil health, water quality, water quantity, harvest values (including bioaccumulation of hazardous substances) and ecosystem health.*

11.148 In my view this change is not required as this matter is covered in a broad sense in relation to both water quality and ecosystem health.

## Recommendation

11.149 Amend Policy 32 as follows:

*Protect significant indigenous vegetation and significant habitats of indigenous fauna associated with wetlands, and lakes and rivers and their margins to improve soil health, water quality, water quantity and ecosystem health<sup>842</sup>.*

## Glossary

### Existing definitions

#### Habitat

11.150 The term habitat is defined as:

*The place or type of place where an organism or population naturally lives.*

11.151 Fish and Game have requested that this term be retained. Ngāi Tahu are concerned that many habitats have altered to such an extent in Murihiku/Southland that species have adapted to living in unnatural habitats. Consequently, they propose the word 'naturally' could be deleted to accommodate this. S Wilson and A Wilson would like to see the word 'habitat' defined in relation to Policy 32.

11.152 Submitters S Wilson and A Wilson may have not seen the definition of habitat in the glossary and may be satisfied to note this.

11.153 Habitat within the pSRPS means:

*The area or environment where an organism or ecological community lives or occurs naturally for some or all of its life cycle or as part of its seasonal feeding or breeding pattern.*

11.154 My recommendation is to adopt the definition from the pSRPS which is more specific and takes into account Ngāi Tahu's concern over species living in a habitat that may not be natural.

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<sup>842</sup> Relates to 48.24 Ballance; 411.17 ICC; 614.7 NZTA; 640.23 Pourakino CG; and others

## Recommendation

11.155 Amend habitat definition as follows:

~~*The place or type of place where an organism or population naturally lives.*~~  
~~*The area or environment where an organism or ecological community lives or occurs naturally for some or all of its life cycle or as part of its season feeding or breeding pattern.*~~

## New Definitions

### Dryland habitat

11.156 Submitter D Diprose requests that an appropriate definition be provided for *dry land habitat*, however the submission from Environment Southland staff seeks to remove all references to dryland habitats and if this submission is accepted therefore there would be no need for such a definition.

### Naturally occurring wetland

11.157 The term “naturally occurring wetland” is used and defined in the RWP but it is not defined in the pSWLP. The three wetland definitions within the pSWLP are wetland, natural wetland and Regionally Significant Wetland. There is no need for the term “naturally occurring wetland” to also be used in the pSWLP as it would create confusion. Therefore, where the term ‘naturally occurring wetland’ arises within Rules 40, 41 and 51 I recommend, for consistency, that the word “occurring” is deleted and the term “natural wetland” is used. As there are no submissions on this particular point I recommend that this change be made through the Schedule 1 Clause 16(2) amendment under the RMA, as the change results in no practical difference in interpretation or application of these rules and is therefore a change of minor effect.

## Recommendation

11.158 Amend as follows:

*Rule 40*

...*(a)*

...*(v) no part of the silage storage facility is within:*

*(1) 50 metres of any surface waterbody or naturally occurring wetland, or any potable water abstraction point.*

*Rule 41*

... *(a)*

...*(ii) the discharge of silage leachate does not enter any surface water or naturally occurring wetland; and*

*Rule 51*

...*(b)*

...*(iii) the diversion of water is not from a Regionally Significant Wetland identified in Appendix A or any naturally occurring wetland.*

## Significant

11.159 Clarification on the definition for the term ‘significant’ is sought by J Bythell in relation to its use in Rule 70(a)(ii) where it refers to “significant de-vegetation of the bed and

banks...”. R Moseby requests a definition of significant in relation to Policy 32 *Protect significant indigenous vegetation and habitat*. Related to this A Wilson and S Wilson request a definition for “significant indigenous vegetation” and the SCB request a definition for “significant indigenous biodiversity”.

11.160 I note that the phrase ‘significant de-vegetation’ is already used in the RWP, and as such is not a new concept. Because the use of this phrase has not, to my knowledge, caused issues of rule interpretation, I do not consider that there is a need to define the term. Because significant indigenous vegetation is only referred to at a policy level within the pSWLP, it is my view that a definition of either “significant” or “significant indigenous vegetation” is not required. I note that the pSWLP only refers to “significant indigenous biodiversity” within the Issues section of the Plan, within a permitted activity standard in Rule 14 – Discharge of fertiliser and within Appendix N – Management Plan Requirements. My view is that no advantage is gained by including a definition in relation to the discussion in the issues section. The use of the term within Appendix N, which refers to areas identified within a District Plan, provides sufficient clarity without further definition. The use of the term within Rule 14 has been considered in section 7, with changes recommended that are intended to provide further clarity. Therefore, my view is that a definition for significant indigenous biodiversity is not required or appropriate.

### **Vegetation Clearance**

11.161 Fish and Game note that the glossary is silent on the definition of ‘vegetation clearance’, and request the following:

*The clearance or destruction of woody vegetation (exotic or indigenous) by physical, mechanical, chemical or other means, including: felling vegetation, spraying of vegetation by hand or aerial means, hand clearance and the burning of vegetation.*

11.162 Alternatively, Forest and Bird suggest:

*Means the removal, trimming, felling, or modification of any vegetation and includes cutting, crushing, cultivation, soil disturbance including direct drilling, spraying with herbicide or other substance, burning.*

*Clearance of vegetation includes the deliberate application of water or other substance, where it would change the ecological conditions such that the resident indigenous plant(s) are killed or threatened by competitive exclusion, or disease. Includes dry land cushion field species.*

11.163 Because the pSWLP does not propose to manage vegetation clearance in a general sense, my view is that a definition is not necessary.

## 12. Miscellaneous

12.1 This section of the report addresses five relatively disparate topics that do not sit well in other sections of this report. These topics are:

1. Financial contributions
2. Appendices to the pSWLP that are not closely associated with topics
3. Mapping changes
4. High country burning
5. Miscellaneous definitions

### Financial Contributions

#### Introduction

12.2 The financial contributions section of the pSWLP sets out, where Council grants a resource consent, the circumstances and amount of any financial contribution that may be required from the consent holder.

#### Submissions

12.3 The financial contributions section received 13 submissions with Fish and Game seeking to retain the section as notified. Forest and Bird supports the financial contributions section with amendments to delete “offset” and replace with “compensate”, as the submitter considers this term is used inappropriately.

12.4 Three submitters seek amendments to improve clarity. J M & K B Dale seek that the wording is clarified. Ludell seeks that the intention of the section needs to be clarified. Timothy Farms also seeks clarification of the use of “likely” and “will”, as tests in the headings for this part of the Plan. Timothy Farms seeks amendments to only have “will” as the submitter considers that there should not be financial contributions triggered by potential effects. Ernslaw One and P F Olsen oppose the ‘Landscaping or planting’ section and seek that it is deleted, as visual amenities are a district council matter.

12.5 Tulloch McNab Transport opposes the financial contributions section. However, the submitter states no specific decision is requested because of a lack of time.

12.6 K Clement seeks no financial contribution requirements for the five years because of the other costs on farmers that will occur as a result of this Plan. W Devine holds a neutral position regarding financial contributions and considers that “fees and levies must not be used to hinder lawful activities and to prevent progress within the rules.”

12.7 Fonterra opposes the financial contributions section. Fonterra seeks relief in four areas to restrict the financial contribution section to:

- only relate to those matters over which the regional council has jurisdiction;
- prevent “double dipping” with district council financial contributions;
- recognising the positive effect of activities when determining the amount; and
- the sum not be increased, based on the applicant’s ability to pay.

- 12.8 Fulton Hogan and Southern Aggregates seek specific amendments for example amending to ‘significant; adverse effects for protection, restoration or enhancement of river and lake beds. For public access Fulton Hogan and Southern Aggregates seek to only to apply to activities that will ‘permanently’ prevent public access.
- 12.9 Environment Southland’s staff submission seeks to delete the financial contributions section and replace it entirely, with the financial contributions section included in Appendix 1 of the submission.

### **Analysis**

- 12.10 The notified financial contributions section of the pSWLP has been ‘rolled over’ from the RWP.
- 12.11 The Environment Southland staff submission seeks substantial changes that further clarify the circumstances where financial contributions may be required. The changes requested by Environment Southland staff include a definition of ‘financial contributions’, and amendments to the circumstances, purpose and amount, primarily to remove repetition. The amendments are intended to streamline the section and reduce duplication where possible, whilst ensuring that the minimum requirements of the RMA are met. On this basis, I recommend these amendments be adopted.
- 12.12 The changes sought by Environment Southland staff generally provide the clarification sought by other submitters. The inclusion of the definition provides applicants with the certainty the definition of ‘financial contribution’ and clearly identifies the circumstances where financial contribution conditions are appropriate. The amendments also remove the areas where submitters highlighted overlap with district council functions, such as removing the landscaping or planting requirement and replacing it with ‘historic heritage, cultural and amenity values’.
- 12.13 The concerns with the overlap with district council functions are understood. However, the circumstances that the submitters are concerned about appear to be, at least in part, related to land clearance, land disturbance, and structures (activities also managed by the regional council) and offsetting the adverse effects of these activities. It is considered that there is no overlap as these activities are managed by the regional council and the pSWLP.
- 12.14 K Clement seeks to delay the implementation of the financial contributions. Similarly, W Devine is opposed to further cost on farmers. The purpose of financial contributions is to offset adverse effects by requiring a consent applicant to contribute money or land to offset the effects of their activities. It may be that the submitters have misunderstood the application of financial contributions, and the infrequent manner in which they are imposed. The changes requested in the Environment Southland staff submission help to clarify where financial contribution would be appropriate. No other changes are recommended.

12.15 Fonterra seeks to recognise the positive effects of activities when calculating an appropriate amount. The amendments requested in the Environment Southland staff submission more clearly outlines the determination of the amount, including the phrase:

*The amount will not exceed the actual and reasonable costs of measures required to offset the residual adverse effects likely to be caused by the activity that are not otherwise avoided, remedied or mitigated.*

12.16 Although this amendment doesn't relate to the positive effects an activity may have, it does refer to 'residual' adverse effects, and provides guidance that the amount will not exceed the actual and reasonable cost of offsetting adverse effects. I consider this will likely have a similar effect as that sought by the submitter.

12.17 In my opinion, taking into account the ability of the applicant to pay, either more or less, as identified by Fonterra, is inappropriate, as, if it were less, it may effectively leave it to the environment to "accept" the implications of a less financially able applicant. If that is the case, then it may be that the residual environmental effects would be unacceptable, or that the objectives of the NPS, RPS and this Plan would be less able to be achieved. I consider that the revised wording, set out below, would make the amount constant, irrespective of whether the applicant could pay more or less

12.18 In regards to Forest and Bird's submission, the use of the word "offset" is consistent with section 108 of the RMA. For this reason, no changes are recommended to the use of "offset".

## Recommendation

12.19 Delete the financial contributions and replace with the following:

### **Introduction**<sup>843</sup>

Where Environment Southland grants a resource consent under the rules in this Plan, it may impose a condition requiring that a financial contribution be made for the purposes specified in the Plan.

The term "financial contribution" is defined in section 108(9) of the RMA to mean a contribution of:

- (a) money; or
- (b) land, including an esplanade reserve or esplanade strip (other than in relation to a subdivision consent), but excluding Maori land within the Meaning of the Te Ture Whenua Maori Act 1993 unless that Act provides otherwise; or
- (c) a combination of money and land.

Under section 109(10) of the RMA a consent authority must not include a condition in a resource consent requiring a financial contribution unless –

- (a) the condition is imposed in accordance with the purposes specified in the plan or proposed plan (including the purpose of ensuring positive effects on the environment to offset any adverse effects);
- and
- (b) the level of contribution is determined in the manner described in the plan or proposed plan.

The following provisions reflect the requirements of the RMA and set out:

- (a) The purposes of financial contributions;
- (b) The manner in which the level of contribution will be determined; and

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<sup>843</sup> 247.26 Environment Southland

(c) Matters to be considered by Environment Southland when deciding whether to impose a financial contribution.

### **Purposes of financial contributions**

A financial contribution may be imposed as a condition of consent for the following:

#### **Public access to and along rivers and lakes**

A financial contribution may be imposed as a condition of consent for any type of activity that will restrict or prevent public access to or along a river or lake. The purpose of the financial contribution would be to provide for alternative public access in the vicinity of the activity or at another similar location or to otherwise compensate for the loss or reduction in access.

#### **River and lake beds**

A financial contribution may be imposed as a condition of consent for any type of activity that is likely to have adverse effects on river and lake beds in circumstances where such adverse effects will not be adequately avoided, remedied or mitigated.

The purpose of the financial contribution would be to offset the adverse effects by providing for the protection, restoration or enhancement of river and lake beds in the general area affected by the activity or, where this is not practical or desirable, in another location. This could include, but is not limited to, maintenance and planting of vegetation, sediment replenishment, erosion protection works and fencing.

#### **Aquatic ecosystems and habitats**

A financial contribution may be imposed as a condition of consent for any type of activity that is likely to have adverse effects on aquatic ecosystems and habitats, in circumstances where such adverse effects will not be adequately avoided, remedied or mitigated.

The purpose of the financial contribution would be to offset the adverse effects by providing for the protection, restoration or enhancement of aquatic ecosystems and habitats in the general area affected by the activity or, where this not practical or desirable, in another location.

#### **Historic heritage, cultural and amenity values**

A financial contribution may be imposed as a condition of consent for any type of activity that is likely to have adverse effects on amenity values, cultural values and historic heritage values.

The purpose of the financial contribution would be to offset the adverse effects by providing for the protection, restoration or enhancement of historic heritage, cultural and amenity values in the general area affected by the activity or, where this is not practical or desirable, in another location. This could include, but is not limited to:

- Protection, restoration or enhancement of a place, area, building or feature; and
- Landscaping or replanting to offset or compensate for the adverse effects of land clearance, land disturbance or the erection of structures.

#### **General environmental compensation**

A financial contribution may be imposed as a condition of consent for any type of activity that is likely to have adverse effects that will not be adequately avoided, remedied or mitigated, and where those effects can be offset or compensated for by positive effects elsewhere.

The purpose of the financial contribution would be to fund the works required to offset or compensate for the adverse effects.

### **Determination of Amount**

The amount of contribution will be determined by reference to the matters set out below and will be an amount that is determined by Environment Southland to be fair and reasonable in order to:

- Provide for alternative public access in the vicinity of the activity or at another similar location or to otherwise compensate for the loss or reduction in access. This may include the vesting of land or an interest in land, or the costs associated with the acquisition and vesting of land or an interest in land;
- Fund the works required to protect, restore or enhance river and lake beds, aquatic ecosystems and habitats, historic heritage, cultural and amenity values; or
- Otherwise fund the works required to offset or compensate for the adverse effects.

The amount will not exceed the actual and reasonable costs of measures required to offset the residual adverse effects likely to be caused by the activity that are not otherwise avoided, remedied or mitigated.

### **Matters to be Considered**

Environment Southland will take into account the following matters when making decisions about the imposition of financial contributions:

- (a) The purpose of the financial contributions is to offset or compensate for adverse effects likely to be caused by the activity and not otherwise avoided, remedied or mitigated by the consent holder.
- (b) The extent to which adverse effects will be otherwise avoided, remedied or mitigated.
- (c) The extent to which there will be positive effects of the activity which offset adverse effects.
- (d) Whether the adverse effects of the activity are such that to allow the activity would be contrary to the objectives and policies in the Plan, and the purpose of the RMA.
- (e) The circumstances and extent of any financial contributions previously imposed in relation to the activity.
- (f) Whether granting a resource consent and requiring a financial contribution would be more effective in achieving the objectives and policies of the Plan and the purpose of the RMA (including recognition of the economic, social and cultural benefits of the activity), than declining consent or granting a consent without requiring a financial contribution.
- (g) Financial contributions shall relate to the effects of the activity for which consent is granted.
- (h) Financial contributions may not be appropriate in every case, even where there are adverse effects.
- (i) Environment Southland does not intend that adverse effects must be fully offset or compensated in every case by way of a financial contribution.

## **Appendices**

### **Introduction**

12.20 The pSWLP contains several appendices that support the content of the pSWLP and provide guidance and further information. The analysis of submissions on the appendices is followed by requests for new appendices. In several cases, the submission summary, analysis and recommendation for an appendix are assessed in the relevant topic section. These include:

- Appendix A – Regionally Significant Wetlands in Southland – refer to Section 11 Wetlands and Indigenous Vegetation;
- Appendix E – Water Quality Standards – refer to Section 7 Water Quality;
- Appendix K – Surface Water Appendix - refer to 8 Water Quantity;
- Appendix L – Groundwater Appendix - refer to 8 Water Quantity;
- Appendix N – Management Plan Requirements – refer to Section 7 Water Quality;



- Appendix O - Reasonable and Efficient Use of Water – refer to 8 Water Quantity;
- Appendix P – Effluent Pond Drop Test methodology – refer to 7 Water Quality;
- Appendix Q – Sensitive Waterbodies- refer to Section 11 Wetlands and Indigenous Vegetation.

12.21 Appendix B, Appendix H, and Appendix M received submissions only in support. This support is noted and further analysis of these submissions is not provided.

### **Recommendation**

12.22 Retain Appendix B, Appendix H and Appendix M as notified.

## **Appendix C – ANZECC Sediment Guidelines**

### **Submissions**

12.23 Appendix C received three submissions. Forest and Bird and Fish and Game seek to retain Appendix C.

12.24 Hort NZ seeks to delete the appendix and remove references to it in the pSWLP. Hort NZ seeks to include specific sediment guidelines in the FMU sections of the pSWLP that reflect local circumstances and conditions, rather than use an international guideline.

### **Analysis**

12.25 In my opinion, the guidelines in Appendix C are based on a ‘standard’ that should apply to guide the assessment of contaminants in sediments throughout Southland, in advance of any specific FMU-based or industry-based standards. Removing this reference, in advance of a replacement will likely significantly reduce sediment controls in the interim period. Therefore, I do not support the requested amendments from Hort NZ. If certain catchments have specific qualities, they can be identified in the FMU process without deleting this appendix.

### **Recommendation**

12.26 Retain Appendix C as notified.

## **Appendix D – Good Spray Management Practices**

### **Submissions**

12.27 Appendix D received four submissions. Forest and Bird and Fish and Game seek to retain Appendix D. DHL seeks to delete Appendix D.

12.28 Hort NZ seeks to amend the introduction as follows:

1. Numbering the bullet point lists as A and B and require that these practices are complied with as permitted activity best management practices.
2. Label list A: Discharging agrichemicals over or into water.
3. Bullet point 4 should also include water taken for irrigation.

4. Amend bullet point 12: dilute spray solutions to concentrations of active ingredient as determined by ACVM<sup>844</sup> and HSNO.

## Analysis

- 12.29 I do not agree with the reasoning of DHL that good spray management practices should be removed from the pSWLP until other industry agreed GMP's are also developed and included within the pSWLP. A consistent theme of this pSWLP is that it is prepared in anticipation of work to come, particularly on FMU sections of the Plan. That said, the Good Spray Management Practices appendix is somewhat of an anomaly, being largely copied from various NZ Standards. An option may be to delete the Appendix, and refer to the appropriate Standards in policies and rules as necessary.
- 12.30 Appendix D is not referenced within the body of the notified pSWLP as part of a permitted threshold, so I do not agree with Hort NZ that the introduction should be amended to require that the practices set out form part of a permitted activity best management practice. As stated in the introduction, the purpose of Appendix D is for general public information and educational purposes. I agree with the suggested amendments to label list A and amend bullet point 12 to improve clarity. Hort NZ may wish to provide reasoning for adding 'irrigation' to bullet point 4, as the benefits and consequences of that change are not clear from the submission.

## Recommendation

- 12.31 Either delete Appendix D and include appropriate references to external standards within Rules 9 and 10, or amend the following parts of Appendix D by numbering the bullet point lists and amending to read:

...  
**Discharging agrichemicals over or into water**<sup>845</sup>  
*Any person discharging agrichemicals:*

- ...  
• *Should dilute spray solutions to ~~the proper~~ concentrations of active ingredient as determined by ACVM<sup>846</sup> and HSNO<sup>847</sup> for application;*

## Appendix F – Water Conservation Orders

### Submissions

- 12.32 Four submissions were received on Appendix F. Forest and Bird, Fish and Game and Ngāi Tahu seek to retain Appendix F without amendment.
- 12.33 Growplan seeks to retain the Matura Water Conservation Order in the pSWLP. Growplan's submission states that "it be would ideal if this was the approach taken with all of Southland's waterbodies".

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<sup>844</sup> This abbreviation is from the submission, I understand that this abbreviation is for the Agricultural Compounds and Veterinary Medicines Act 1997.

<sup>845</sup> 390.37 Hort NZ

<sup>846</sup> This abbreviation is from the submission, I understand that the abbreviation is for the Agricultural Compounds and Veterinary Medicines Act 1997.

<sup>847</sup> 390.37 Hort NZ

## Analysis

12.34 The inclusion of the Water Conservation Orders in the Plan is to provide information relevant to the Plan. Water Conservation Orders, as outlined in Part 9 of the RMA 1991, are to provide recognition of the outstanding amenity or intrinsic values of water bodies and are decided by the Minister for the Environment. Any person may apply to the Minister for the Environment for the making of a water conservation order. It would not be appropriate to mirror the approach taken to the Maitua via the Water Conservation Order for all other waterbodies as part of this pSWLP submission process, but the submitter's aspiration is understood.

## Recommendation

12.35 Retain Appendix F as notified.

## Appendix G – Popular Bathing Sites

### Submissions

12.36 Four submissions were received on Appendix G. Ngāi Tahu seeks to retain Appendix G. Fish and Game also support the Appendix and seeks to include “Maitua River at Maitua Bridge” in the list of popular bathing sites.

12.37 GDC seeks to amend Appendix G to identify that the popular bathing site in the Maitua River in Gore is at the Woolwich Street Reserve. GDC's submission identifies the specific areas.

12.38 W and T Holder seeks to include Branxholme Rail Bridge within Appendix G.

### Analysis

12.39 It is known that people swim at the three submitted sites so those sites should be included within this appendix. However, it should be noted that one implication of inserting a site into Appendix G is that the water quality standard, as set out in Appendix E, will increase. In particular, the relevant Appendix E criteria for *E. coli* 1km upstream from the site changes from 1,000 coliforms per 100 millilitres to 130 per 100 millilitres.

### Recommendation

12.40 Amend Appendix G as follows:

- ...
- Ōreti River at Winton Bridge
- Ōreti River at Wallacetown Bridge
- Maitua River at Gore Bridge
- Aparima River at Thornbury Bridge
- Waiau River at Tuatapere Bridge
- Waikaia River at Waikaia Bridge
- Maitua River at Riversdale
- Maitua River at Maitua Bridge<sup>848</sup>
- Ōreti River at Branxholme Rail Bridge<sup>849</sup>

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<sup>848</sup> 752.182 Fish and Game

- Mataura River at Woolwich Street Reserve<sup>850</sup>

## **Appendix I – Natural State Waters Outside National Parks**

### **Submissions**

12.41 Appendix I received four submissions. Forest and Bird, Fish and Game and Ngāi Tahu all support Appendix I and seek that it is retained as notified. While J Bythell seeks to include:

- Seaward Moss Conservation Area
- Toetoes Conservation Area
- Mokoreta Forest Conservation Area
- Waikaia Forest Conservation Area

### **Analysis**

12.42 The existing list of Natural State Waters outside of National Parks has been brought across from the RWP and was developed in consultation with DOC and with scientific input. I consider the the notified list to be valid. I suggest J Bythell could provide some evidence as to why these additional areas should be added to the list as Natural State Waters.

### **Recommendation**

12.43 Retain Appendix I as notified.

## **Appendix J – Drinking Water Protection Zones**

### **Submissions**

12.44 Six submissions were received on Appendix J – Drinking Water Protection Zones. Three submissions seek to retain Appendix J as notified.

12.45 Alliance seek to retain reference to Alliance’s water takes from the Oreti and Makarewa Rivers, but also include its takes from the Makarewa and Mataura River for its other plants and potable water requirements. Similarly, Fonterra seeks to include a number of bores at its Edendale Plant.

12.46 Environment Southland’s staff submission seeks to amend the co-ordinates in Appendix J to align with the co-ordinate reference datum used elsewhere in the Plan.

### **Analysis**

12.47 The change sought in Environment Southland’s staff submission is to use the NZTM 2000 datum for consistency with the rest of the pSWLP, the Council’s customer service

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<sup>849</sup> 381.28 T & W Holder

<sup>850</sup> 329.1 GDC

database (IRIS) and the council's GIS system (Beacon). I agree that a consistent approach to coordinates is appropriate.

- 12.48 Both Fonterra and Alliance seek amendment to include their takes in Appendix J.
- 12.49 Fonterra seeks to include abstractions from a network of groundwater bores at its Edendale plant (a total of six bores). Fonterra cite the importance of the Fonterra operation to the Southland economy and the importance of good quality water to the Edendale manufacturing plant.
- 12.50 Alliance seek to include all of its takes stating “all of these takes are priority takes which need to be of a high standard to be used in all facets of the meat processing plant as well as supplying potable water sources”.
- 12.51 The purpose of drinking water protection zones is to manage activities occurring close to potable water supplies that could have an adverse effect on the drinking water supply. I am generally supportive of the requests, but as both submitters have not addressed what implications protection zones may have on any existing discharges within the zones, I suggest Fonterra and Alliance bring evidence to the hearing before so that this may be considered. In the absence of this, no further amendments are recommended in the interim.

## Recommendation

12.52 Amend Appendix J as follows:<sup>851</sup>

<b>Operator</b>	<b>Catchment</b>	<b>Groundwater Zone</b>	<b>Source</b>	<b>Northing</b>	<b>Easting</b>	<b>Popln</b>
<i>Alliance Group Ltd</i>	<i>Oreti River</i>		<i>River</i>	<u><i>54203001236114</i></u>	<u><i>21459004858300</i></u>	<i>&gt;501</i>
<i>Alliance Group Ltd</i>	<i>Makarewa River</i>		<i>River</i>	<u><i>54192001238519</i></u>	<u><i>21483004857204</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>	<i>Knapdale</i>	<i>River/Bore</i>	<u><i>54521681285995</i></u>	<u><i>21957944890305</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>	<i>Knapdale</i>	<i>River/Bore</i>	<u><i>54522971285928</i></u>	<u><i>21957244890434</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>	<i>Knapdale</i>	<i>River/Bore</i>	<u><i>54504001286408</i></u>	<u><i>21962004888536</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>	<i>Knapdale</i>	<i>River/Bore</i>	<u><i>54503001286408</i></u>	<u><i>21962004888436</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>		<i>River</i>	<u><i>54505761286553</i></u>	<u><i>21963464888712</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Mataura River</i>		<i>River</i>	<u><i>54519481285399</i></u>	<u><i>21951954890083</i></u>	<i>&gt;501</i>
<i>Invercargill City Council</i>	<i>Oreti River</i>		<i>River</i>	<u><i>54244891237097</i></u>	<u><i>21468944862497</i></u>	<i>&gt;501</i>
<i>Southland District Council</i>		<i>Lintley Aquifer</i>	<i>Bore</i>	<u><i>54876331244564</i></u>	<u><i>21544664925736</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Waikana Stream</i>		<i>River</i>	<u><i>54377981282755</i></u>	<u><i>21925264875915</i></u>	<i>&gt;501</i>
<i>Gore District Council</i>	<i>Pluera Stream</i>		<i>River</i>	<u><i>54374651286578</i></u>	<u><i>21963454875590</i></u>	<i>&gt;501</i>

<sup>851</sup> 247.27 Environment Southland

<b>Operator</b>	<b>Catchment</b>	<b>Groundwater Zone</b>	<b>Source</b>	<b>Northing</b>	<b>Easting</b>	<b>Popln</b>
<i>Gore District Council</i>	<i>Mataura River</i>		<i>River</i>	<u>54394861282</u> <u>177</u>	<u>21949544877</u> <u>303</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53920001249</u> <u>296</u>	<u>21590004829</u> <u>996</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53944061251</u> <u>688</u>	<u>21613884829</u> <u>407</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53913271250</u> <u>182</u>	<u>21598834829</u> <u>324</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53916321250</u> <u>919</u>	<u>21606204829</u> <u>631</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53913641252</u> <u>451</u>	<u>21621504829</u> <u>364</u>	>501
<i>NZAS</i>		<i>Tivai</i>	<i>Bore</i>	<u>53912661253</u> <u>998</u>	<u>21636954829</u> <u>272</u>	>501
<i>Southland District Council</i>	<i>Morley Creek</i>		<i>River</i>	<u>54642741210</u> <u>668</u>	<u>21205794902</u> <u>284</u>	>501
<i>Southland District Council</i>	<i>Aparima River</i>	<i>Lower Aparima</i>	<i>River/ Bore</i>	<u>54409801213</u> <u>438</u>	<u>21233004878</u> <u>962</u>	>501
<i>Southland District Council</i>	<i>Aparima River</i>	<i>Lower Aparima</i>	<i>River/ Bore</i>	<u>54216651217</u> <u>611</u>	<u>21274264859</u> <u>627</u>	>501
<i>Southland District Council</i>	-	<i>Lower Aparima</i>	<i>Bore</i>	<u>1215783</u>	<u>4859557</u>	>501
<i>Southland District Council</i>	<i>Upukerora River</i>	<i>Te Anau</i>	<i>River/ Bore</i>	<u>55199001188</u> <u>566</u>	<u>20986004957</u> <u>972</u>	>501
<i>Southland District Council</i>	<i>Lake Te Anau</i>	<i>Te Anau</i>	<i>Lake/ Bore</i>	<u>55203701185</u> <u>870</u>	<u>20959404958</u> <u>439</u>	>501
<i>Southland District Council</i>	<i>Lake Te Anau</i>	<i>Te Anau</i>	<i>Lake/ Bore</i>	<u>55203301185</u> <u>840</u>	<u>20958804958</u> <u>399</u>	>501
<i>Southland District Council</i>	<i>Lake Te Anau</i>	<i>Te Anau</i>	<i>Lake/ Bore</i>	<u>55201781185</u> <u>766</u>	<u>20958054958</u> <u>246</u>	>501
<i>Southland District Council</i>		<i>Lower Waiau</i>	<i>Bore</i>	<u>54401501189</u> <u>060</u>	<u>20989604878</u> <u>081</u>	>501
<i>Southland District Council</i>		<i>Lower Waiau</i>	<i>Bore</i>	<u>54399441189</u> <u>273</u>	<u>20994724877</u> <u>842</u>	>501
<i>Southland District Council</i>		<i>Lower Oreti</i>	<i>Bore</i>	<u>54425271237</u> <u>485</u>	<u>21473464880</u> <u>559</u>	>501
<i>Southland District Council</i>		<i>Lower Oreti</i>	<i>Bore</i>	<u>54426001237</u> <u>669</u>	<u>21475004880</u> <u>633</u>	>501
<i>Southland District Council</i>	<i>Bowen River</i>		<i>River</i>	<u>56037001198</u> <u>112</u>	<u>21082005041</u> <u>740</u>	>501

### Submissions seeking new Appendices

12.53 There are four submissions seeking new appendices.

12.54 Forest and Bird seek a new schedule inserted identifying all overallocated water bodies that do not meet the bottom lines in the National Objectives Framework outlined in the NPSFM.

12.55 Further, Fish and Game seek two new appendices, the first seeks a new schedule identifying, as a minimum, where surface water and groundwater quality in Southland has been degraded by land use and discharge activities. The second seeks a new appendix

named “Allocation of surface water and groundwater quantity” which will identify the state of both groundwater and surface water allocation.

- 12.56 While I understand the aspiration of the submitters, to bring particular attention to allocation status and overallocated waterbodies, I suggest that reporting outside of the pSWLP framework is preferable. It is more able to be kept up-to-date, and the status of waterbodies amended as appropriate.
- 12.57 HNZ seek to include an appendix on legal requirements concerning archaeological sites.
- 12.58 A range of additional ‘notes’ have been recommended to be added to the policies and rules throughout the pSWLP, recognising the legal requirements under the Heritage New Zealand Pouhere Taonga Act 2014. In my opinion, this is a preferable response, as the note will be more likely to be looked at. However, I am open to the submitter bringing a contrary justification in evidence.

## **Map Series**

### **Introduction**

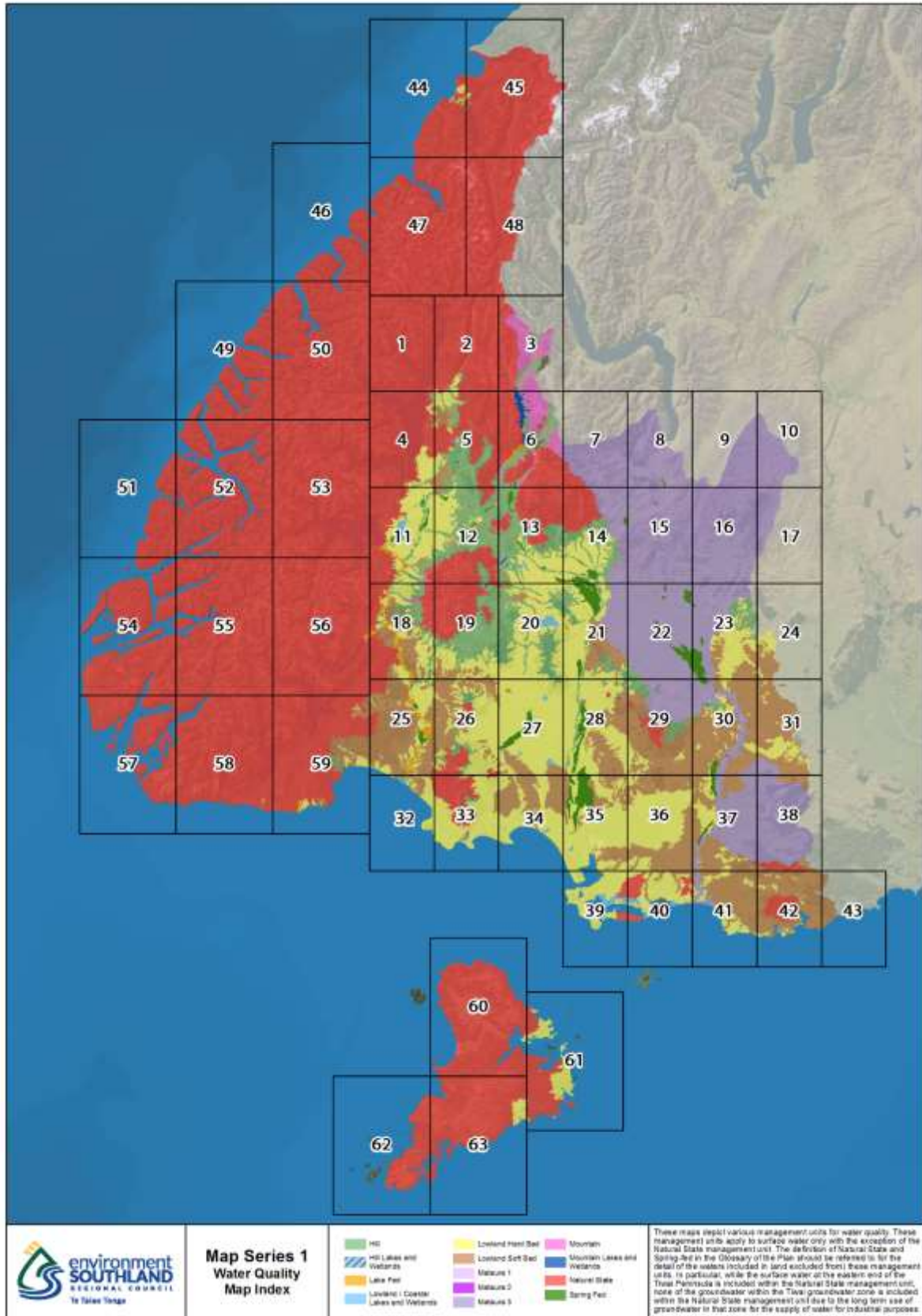
- 12.59 There are 32 submissions to the map series of the pSWLP, a large majority of the submissions requested that the physiographics maps be deleted from the maps series or a reclassification of the physiographic zoning in regards to specific properties. Some submitters, such as Springlands Group request the physiographic zones should sit outside the pSWLP until such time that they are be ground truthed.
- 12.60 There were a number of submissions that requested that more detailed maps be provided to to enable each property owner to fully understand the impact on their property. There was a request submitters including Growplan, S Hastie and G Bokser, who request that the maps be clarified and that property boundaries be displayed on the maps. David McKee Farms requests that more weight be given to the soil types observed in the Topoclimate mapping. Additionally, Enfield request that the physiographic maps be amended to be consistent with Terralink Soil Zoning map.
- 12.61 S Baker & W Shaw request that Grindstone Creek Catchment be recognised as a separate catchment. Environment Southland staff submission has requests that the index page for the Groundwater Management Zones be amended to correct a drafting error, additionally it has requested that Map 18 of the physiographic zone maps be inserted into the map series as this was inadvertently left out during notification. Robert Kempthorne has requested that the Waiau FMU map and all supporting documentation should be changed to reflect true catchment movement of water given that the Manapouri power scheme removes a large amount of water from the system.
- 12.62 L & M request that the spatial extent of the ‘Awarua Plan – Southland Estuaries’ identified as a Regionally Significant Wetland in Southland within Appendix A be mapped as part of this map series.

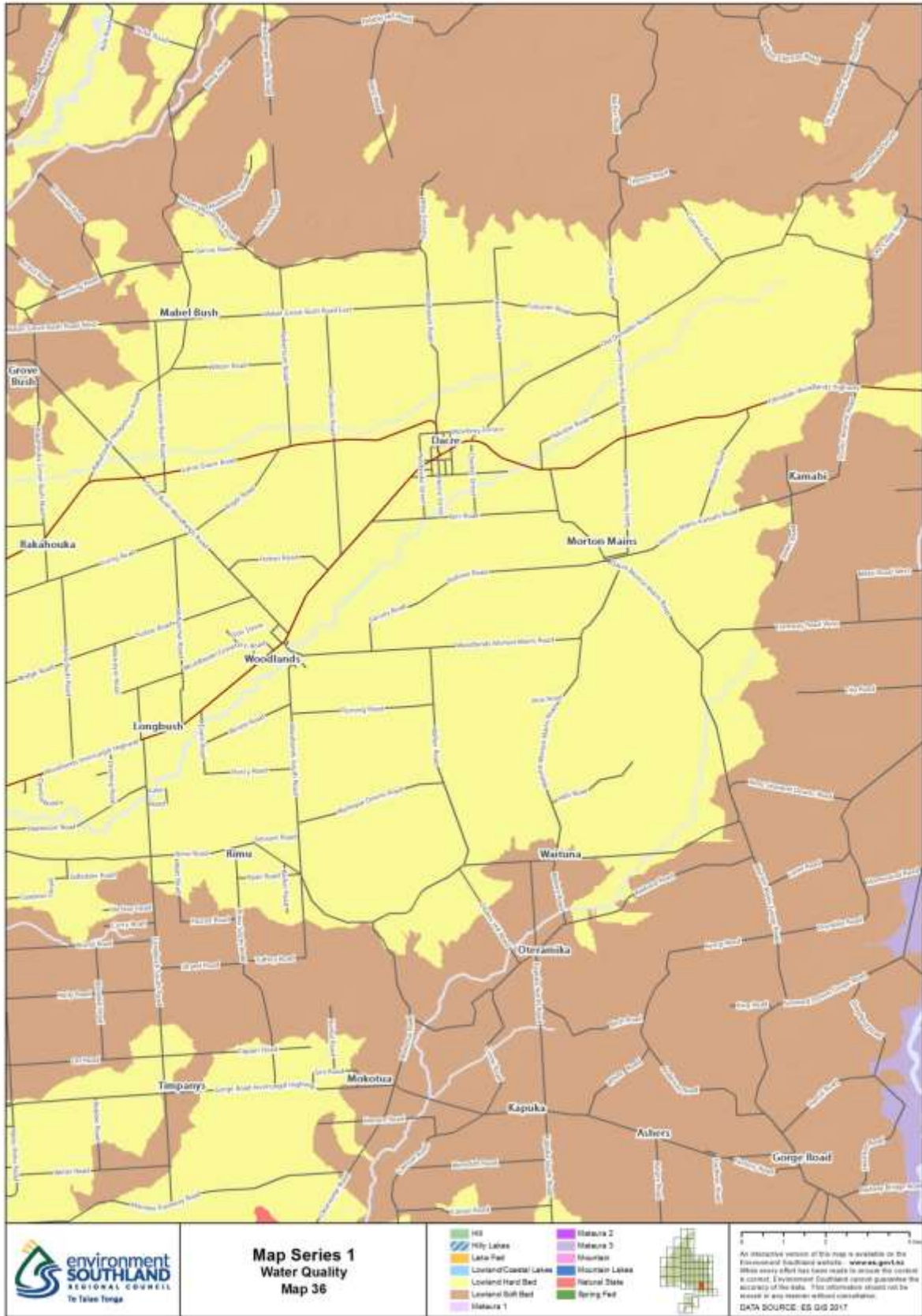
### **Analysis**

- 12.63 The submissions regarding the request to delete the physiographics and the requested reclassifications of physiographics have been addressed already within this report.

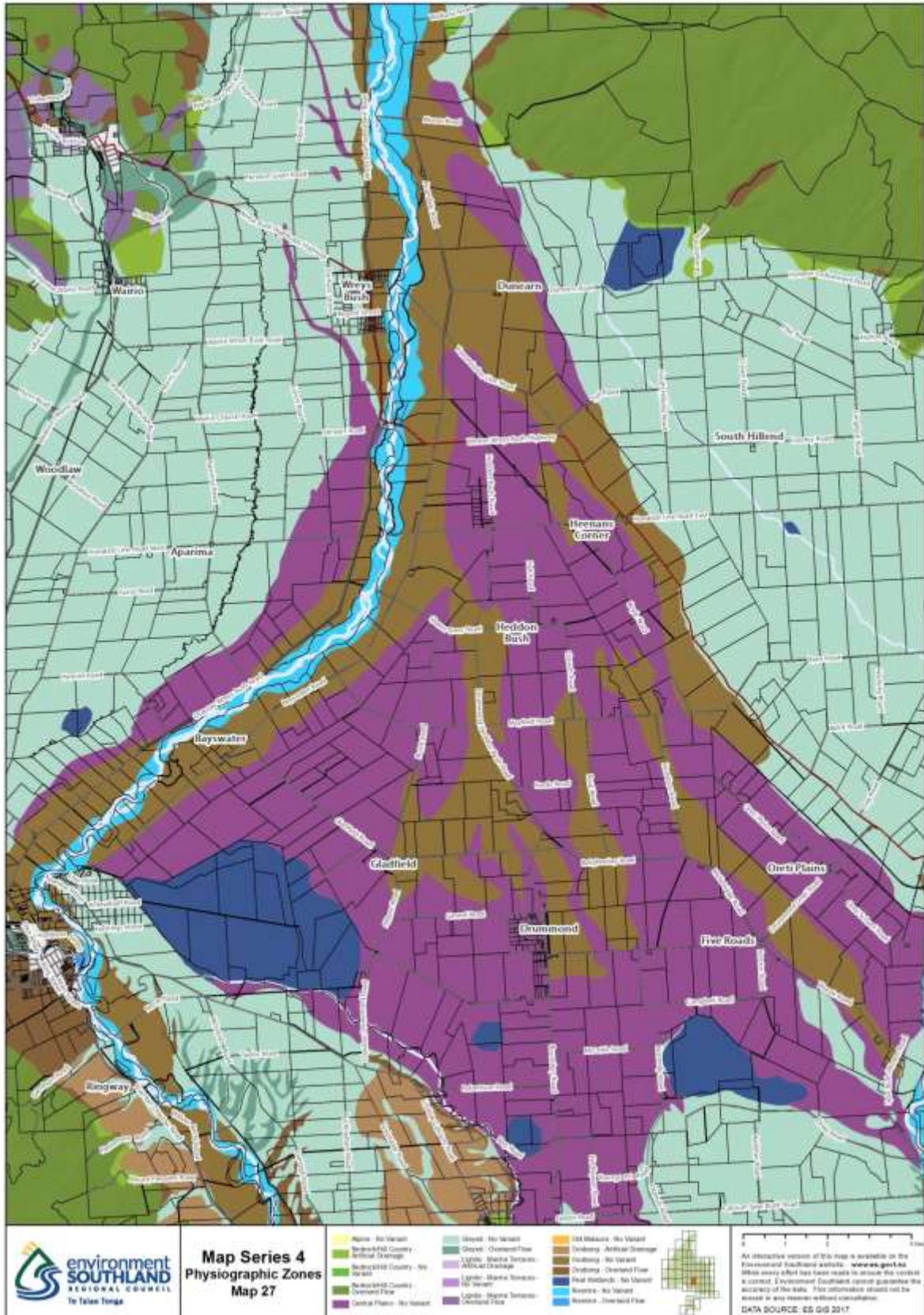
- 12.64 I agree with the submissions by the likes of Growplan, S Hastie and G Bokser that have requested more detailed maps that displayed property lines that would enable people to more easily identify their particular area of interest. Therefore, I recommend that both Map Series 1 and 4 be updated so that the developed areas of Southland are mapped at a more appropriate scale so that both property lines and smaller roads are displayed. This approach would be similar to the scale at which the district plan maps for SDC are displayed, which could result in greater clarity for users. This would result in 26 additional maps within the map series. Additionally, given the request for better maps, I consider it appropriate to also make display changes to two maps that are within part A of the Plan, namely the Ngāi Tahu Statutory Acknowledgement Area Map and the Oreti Conservation Order Map. I have provided examples below for the Hearing Panel to consider.
- 12.65 In consider the request by David McKee Farms as inappropriate as the physiographic map data sources have been developed using a number of data sets other than the topoclimate mapping, such as the underlying geological mapping. Therefore, I do not recommend adopting the submission by David McKee Farms. In regards to the submission by Enfield that want the physiographic maps to be amended to be consistent with Terralink Soil Zoning map, I am unsure what is meant by Terralink Soil Zoning map and the submitter may wish to clarify at a hearing as to what is meant by this.
- 12.66 In regards to the submission by L & M, as discussed elsewhere in this report the wetlands identified in Appendix A will now be displayed as part of a new map series. I consider the request by in the Environment Southland staff submission to amend the index page of Map Series 3 as appropriate given that it is correcting a drafting error. The request in the Environment Southland staff submission to insert a missing map 18 into Map series 4 has been addressed by the corrections to the map series as discussed above whereby new more detailed maps have been recommended to replace the current maps.
- 12.67 The submissions by S Baker & W Shaw and R Kempthorne have been addressed by the analysis of the FMU process policies.

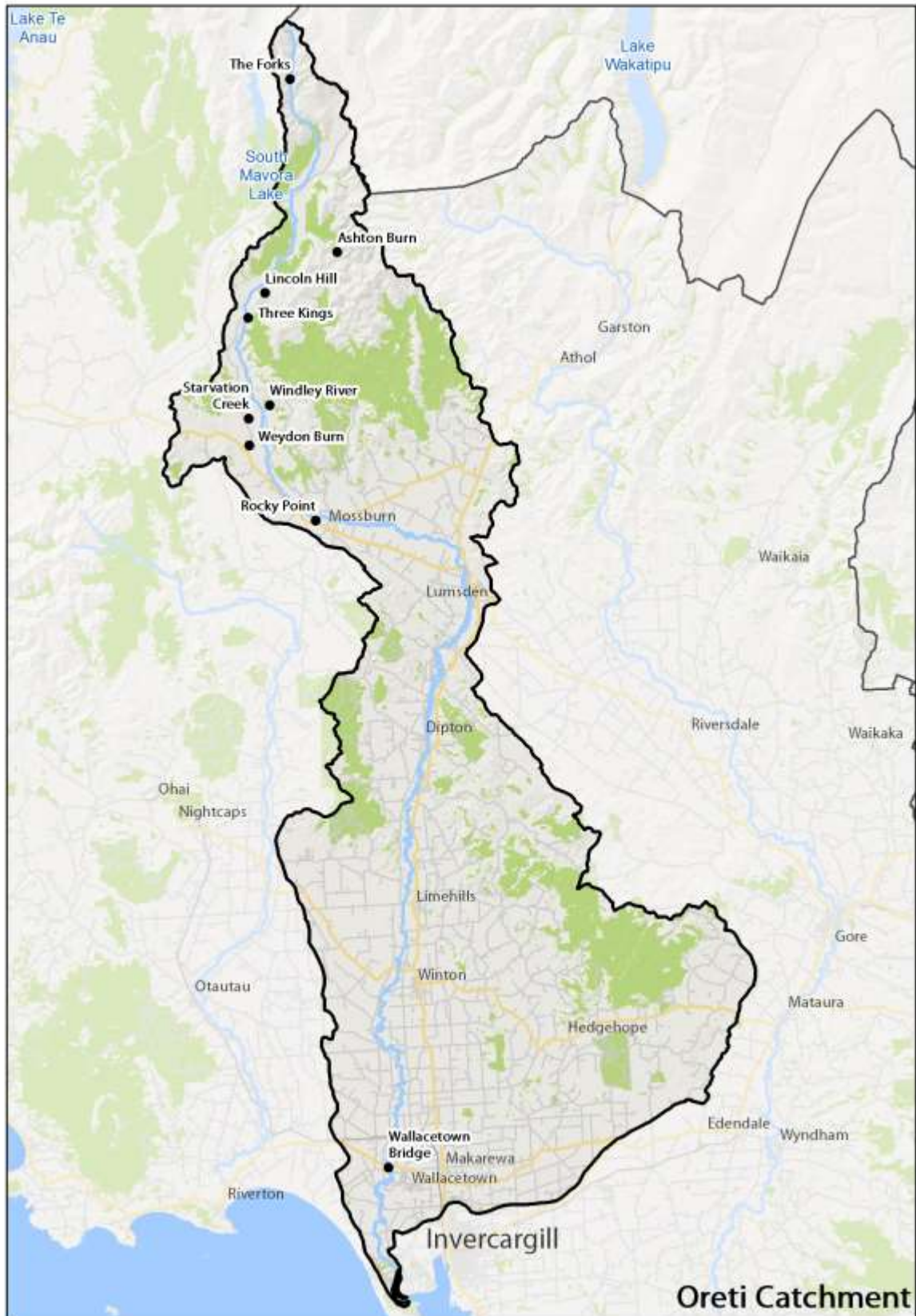














## High Country Burning

### Introduction

- 12.68 Burning was once a common tool used to develop and maintain parts of the Hill and High Country in Southland. However, burning was identified as one of the major causes of soil erosion in the Hill Country and its use as a management tool has been declining since. During the 1970s and 1980s approximately 10-15 consents for burning were issued per annum. As land management techniques have changed, and the majority of developable land has been developed, the use of burning as a tool has diminished significantly. Currently, there are four resource consents that have been granted for Hill and High Country burning, and it is mainly being used as a tool to control weed species on previously developed land. These resource consents differed to the ones that were issued in the 1970s and 1980s which were granted for one year durations, in that the current resource consents have terms of 10 years.
- 12.69 Rule 79 seeks to control erosion and sedimentation generated through poorly managed high country burning in some parts of the region. The rule originates in the Southland Regional Council Transitional Regional Plan (TRP), which was approved in October 1991, as an intermediary step, before the suite of Regional Plans were introduced. It is the sole remaining operative rule of the TRP. It is more efficient to have this rule located within the pSWLP to negate the need for the TRP altogether.

### Policy Constraints

- 12.70 Under section 30(1)(c)(i) of the RMA, regional councils are provided with the function of controlling the use of the land for the purpose of soil conservation.
- 12.71 There are two provisions within the RPS that relate to Rule 79, concerning biodiversity. Policy 2.1 seeks to protect indigenous biodiversity by encouraging the maintenance and enhancement of areas of significant biodiversity and Policy 2.4 seeks to avoid, wherever practicable, remedy or mitigate adverse impacts on biodiversity.
- 12.72 The pSRPS has a number of provisions in relation to soils conservation, protection of areas of significant indigenous biodiversity and the development of the rural land resource in Southland.
- 12.73 Policy RURAL.1 recognises the use and development of Southland's rural land resource to provide for their social, economic and cultural wellbeing. Policy RURAL.3 seeks to manage land development activities on steep, mid-altitude and high-altitude land to prevent or minimise the effects of erosion and sedimentation. Policy RURAL.5 states that rural land development shall be sustainably managed and good land management practices are encouraged to promote soil conservation. Additionally, it also seeks to maintain or enhance indigenous biodiversity.
- 12.74 Under the pSRPS statement of local authority responsibilities in respect of indigenous biodiversity, the Regional Council is responsible for specifying the objectives, policies and methods for the control of the use of land for the maintenance of indigenous biodiversity in wetlands, and lakes and rivers and their margins. On land outside of those areas, the territorial authorities are primarily responsible for the control of the use of land for the maintenance of indigenous biodiversity. Policy BIO.2 seeks to protect areas of

significant indigenous vegetation and significant habitats of indigenous fauna. Policy BIO.4 seeks to manage a full range of indigenous habitats and ecosystems to a healthy functioning state to ensure viable and diverse populations of native species are maintained. Method BIO.6 assigns the Regional Council with the responsibility of protecting areas of significant biodiversity that are located on the margins of wetlands and lakes and rivers and their margins, and Territorial Authorities are tasked with protecting areas outside the margins mentioned above.

- 12.75 Policy 32 of the pSWLP seeks to protect significant indigenous vegetation and significant habitats of indigenous fauna to improve soil health, water quality, water quantity and ecosystem health.
- 12.76 Section 3.4.7 of Te Tangi a Taurira seeks to manage the effects of clearance and burning, such as soil erosion and loss of biodiversity values that these activities can have.

### **Submissions**

- 12.77 There are 27 submissions on this rule and there is no consistent theme in those submissions.
- 12.78 Some submitters are concerned about the potential for indigenous vegetation to be burnt, to the point where it may be contrary to RMA, in particular Part 2. The Environment Southland staff submission suggests that biodiversity values be included in the matters over which it could exercise its control J Bythell also requested that burning should not be conducted above 800 meters.
- 12.79 Conversely, other submitters consider burning to be a valid land management tool that should not be subject to the pSWLP resource consent requirements, particularly where some other approval has been obtained, such as in relation to pastoral lease land.
- 12.80 Submitters also identify that there are incorrect elements in the rule, including that DOC no longer issues fire permits in Southland and that the rural fire authority is being amalgamated with the NZFS. These submissions also identify a lack of clarity in the dates for when restrictions apply in Zone A.
- 12.81 SCB seeks that Waituna-Awarua Wetland complex is included in this rule, by providing mapping of the whole region in relation to this rule, as fires have occurred there in the past and created issues.
- 12.82 Some submitters seek clarity within the map series associated with the rule.

### **Analysis**

- 12.83 The dates set out in Rule 76(c) only apply to the burning of vegetation in Zone B. The dates do not apply to the burning of vegetation in Zone A (i.e. Rule 79(c) requires resource consent to be obtained as a controlled activity for the burning of vegetation in Zone A at any time of the year, subject to compliance with the conditions in (c)). To avoid confusion over whether Zone A has a higher level restriction in the winter months (e.g. as a discretionary activity), I consider it appropriate to add two commas to clause (c) of the rule, in relation to Zone A, which makes it clearer that there is a requirement for resource consent for the burning of vegetation at any time of the year in Zone A.



- 12.84 Submissions also considered that there was lack of clarity regarding the mapping for the fire hazard zones. The mapping is able to be viewed at a property scale on the Councils website, which should resolve any residual mapping issues.
- 12.85 Zone C has no restriction in respect of the use of land for the burning of vegetation (i.e. it is a permitted activity in Zone C). Under section 9(2) of the RMA, the presumption is that the use of land is allowed unless it contravenes a rule in a regional plan. Accordingly, there is no need to display Zone C on the map series and the parts of the rule applying to Zone C can be deleted.
- 12.86 As stated earlier, this rule was developed to control erosion and sedimentation issues generated through poorly managed high country burning. However, a number of submitters have concerns that the rule does not consider the effects on indigenous vegetation. I agree with submitters that there is potential for indigenous vegetation to be burnt. I consider that the activity status in Rule 79(c) could be amended to restricted discretionary activity status, given that the effects of burning could potentially have significant effects on significant indigenous vegetation in the Hill and High Country. This could address some of the submitters concerns about indigenous vegetation being burnt. This activity status change should be accompanied by the insertion of another matter over which the Council will exercise its discretion, to help protect the sensitive biodiversity that can sometimes occur in the Hill and High Country. Additionally, a further condition limiting burning at higher altitudes is recommended, given the sensitive environment that exists at higher altitudes, in response to the submission by Jesse Bythell, however I recommend that the condition refer to the Alpine Physiographic zone rather than 800 meters for plan consistency as the Alpine Physiographic zone is land above 800 meters in Southland.
- 12.87 As stated earlier Method BIO.6 assigns the Regional Council with the responsibility of protecting areas of significant biodiversity that are located on the margins of wetlands and lakes and rivers and their margins and Territorial Authorities are tasked with protecting areas outside the margins mentioned above. Therefore, the Council can only manage any effects that may arise that could potentially effect indigenous vegetation in that is present in wetlands, lakes, rivers and their margins.
- 12.88 If the rule is to consider significant indigenous biodiversity that is in proximity to wetlands, and lakes and river and their margins, a controlled activity would only allow the imposition of conditions, but would not allow for the consent to be declined and prevent the vegetation being burned. It is therefore unlikely to provide adequate protection. There are other organisations such as rural fire that issue permits to for the burning of vegetation however their considerations are related to fire risk and spread rather the soil conservation.
- 12.89 I consider that these changes would give effect biodiversity Policies 2 and 4 of the pSRPS and will also give effect to Policy 32 of the pSWLP.
- 12.90 I agree that there also needs to be some changes to the permitting authorities in this rule, particularly the need for the removal of DOC as a fire permit issuing authority, given that it does not issue fire permits. Additionally, the Rural Fire Authority and the NZFS are in the process of being amalgamated, and it would also be helpful if the rule framework recognised this merger.

12.91 In relation to the inclusion of the Waituna-Awarua Wetland complex in this rule, I note that fires in this wetland area are managed by the SRFA and therefore including it within this rule would create duplication.

## Recommendation

12.92 Amend Rule 79 as follows:

- ~~(a)~~ ~~The use of land for the burning of vegetation in Zone C of the Fire Hazard Zones (Map Series 6) is a permitted activity.~~<sup>852</sup>
- ~~(ab)~~ The use of land for the burning of vegetation in Zone B of the Fire Hazard Zones (Map Series 6) between 1 May and 30 September in any one year is a permitted activity.
- ~~(bc)~~ The use of land for the burning of vegetation in Zone A<sup>2</sup> or in Zone B between 1 October and 30 April in any one year,<sup>853</sup> of the Fire Hazard Zones (Map Series 6) is a restricted discretionary<sup>854</sup> ~~controlled~~ activity provided the following conditions are ~~is~~<sup>855</sup> met:
- (i) one of the following has been obtained, which covers the proposed burning of vegetation on land:
- ~~(1)~~ ~~a permit for burning within 1 kilometre of land administered by the Department of Conservation,~~<sup>856</sup>
- ~~(12)~~ a permit for burning in the hill and high country from the Rural Fire Authority, or its successor,<sup>857</sup> or
- ~~(23)~~ a consent from the Commissioner of Crown Lands for burning on Crown pastoral leasehold land; or
- ~~(34)~~ a resource consent or permit for burning from the relevant territorial local authority as determined by their district plans and/or bylaws.
- ~~(ii)~~ the burning does not occur in the Alpine Physiographic Zone.<sup>858</sup>  
Environment Southland will restrict the exercise of its ~~control discretion~~<sup>859</sup> to the following matters:
- (i) Soil conservation and sediment control practices to be undertaken.
- ~~(ii)~~ Adverse effects on areas of significant indigenous vegetation and habitat that is in proximity to wetlands, and lakes and rivers and their margins<sup>860</sup>
- ~~(cd)~~ The use of land for the burning of vegetation within Zones A, or B ~~or C~~ of the Fire Hazard Zones that does not comply with Rule 79~~(bc)~~<sup>861</sup> is a discretionary activity.

## Definitions

### General

12.93 A number of submissions were received seeking a variety of new definitions be included in the Glossary, with a total of 73 new definitions sought by submitters.

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<sup>852</sup> 749.77 SCB

<sup>853</sup> 746.1 SRFA

<sup>854</sup> 752.172 Fish and Game; 279.110 Forest and Bird; and 101.108 J Bythell

<sup>855</sup> Cl 16

<sup>856</sup> 746.1 SRFA

<sup>857</sup> 612.6 NZFS

<sup>858</sup> 101.108 J Bythell; 705.4 R Sallis

<sup>859</sup> 101.108 J bythell

<sup>860</sup> 752.172 Fish and Game

<sup>861</sup> Consequential amendment to 749.77 SCB

- 12.94 Several submitters seek the addition of definitions for terms that are already defined in the RMA, the NPSFM, or the term has already been defined or described elsewhere in the pSWLP, including “*Best practicable option*”; “*Coastal marine area*”; “*Contaminant*”; “*Deep drainage*”<sup>862</sup>; “*Discharge*”; “*Efficient allocation and use*”; “*Ephemeral waterway*”; “*Hazardous substance*”; “*Industrial or trade premise*”; “*Intensive*” (in relation to “*Intensive winter grazing*”); “*Lake/River/Pond and margins*”; “*Management Plan*”; “*Over-allocation*”; “*Structure*”; “*Waste*”; and “*Water*”.
- 12.95 Any term defined in the RMA or the NPSFM is not duplicated in the Glossary of the pSWLP and I do not see any reason to depart from this approach. Similarly, I consider that where a term has been defined or described elsewhere within the pSWLP, duplication should be avoided. I do not recommend submissions seeking the inclusion of the aforementioned terms in the Glossary are accepted.
- 12.96 A number of submitters also seek the inclusion of definitions for terms that have commonly accepted meanings, particularly where the common definition from the Oxford English Dictionary is applicable. Such definitions requested include “*Activities*”; “*Avoid/ed*”; “*Disturbance*”; “*Conspicuous change*”; “*Individual application*”; “*Fully mitigated*”; “*Managed stock exclusion*”; “*Material change*” (in relation to preparing a nutrient budget in accordance with Appendix N); “*Mitigations*”; “*Non-consumptive use*”; “*Nutrient Budget*” (in relation to the use of Overseer in Appendix N); “*Overseer*”, “*Point source discharge*”; and “*Significant*”. Given that each of these terms have a common meaning, I do not recommend submissions seeking the inclusion of these terms in the Glossary be accepted.
- 12.97 Some submitters seek the inclusion of definitions for terms that are not used within the provisions of the pSWLP, or are not recommended to be included in the provisions. I see no reason for including such terms in the Glossary and therefore recommend submissions seeking the addition of “*Calving pad*” “*Certified nutrient management advisor*”; “*Critical infrastructure*” “*Ecosystem services*”; “*High stocking rate*”; “*Nationally and regionally significant infrastructure*”; “*Natural watercourse*”; “*Nutrient User Group*”; “*Sports fish and game management plan*”; “*Stock Truck Effluent Disposal Site*”; “*Strategic facilities*” and “*Temporary military training facility*” to the Glossary be rejected.

## **Tangata whenua**

- 12.98 The definition of Tangata whenua states:

*In relation to a particular area, means the iwi or hapu, that holds mana whenua over that area, and for the Southland region this is Ngāi Tahu.*

## **Submissions and analysis**

- 12.99 S Wilson and A Wilson seek that the definition is amended to include all residents and people of Southland, not just iwi. I note that the use of the term “tangata whenua” in the context of the pSWLP only applies to iwi that holds mana whenua over the Southland region. It is my understanding that mana whenua does not extend to all residents or people in the Southland region and therefore do not recommend the definition is amended as requested.

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<sup>862</sup> Page 200 of the pSWLP.

## **Recommendation**

12.100 That the definition of “Tangata whenua” is retained as notified.

## **New definition: Life-supporting capacity**

12.101 Fish and Game seek that a new definition of “life-supporting capacity” is included in the pSWLP that is consistent with the definition used in the pSRPS. I note that “life-supporting capacity” is used in two objectives and policies in the plan and consider that adding a definition would assist in the efficiency of the provisions by providing additional certainty to plan users. However, I am unable to find the definition referred to in the submission of Fish and Game and therefore recommend the submission be rejected.

## **Recommendation**

12.102 That a new definition of “life-supporting capacity” is not included in Glossary:

## **New definition: Natural character**

12.103 Fish and Game seeks the addition of a new definition of “natural character” in the Glossary as follows:

*Natural character of rivers, lakes and wetlands may include such attributes and characteristics as:*

- a. natural elements, processes and patterns;*
- b. biophysical, ecological, geological, geomorphological and morphological aspects; and*
- c. the natural movement of water and sediment including hydrological and fluvial processes;*
- d. places that are wild and scenic; and*
- e. a range of natural character from pristine to modified.*

12.104 In its submission, Fish and Game state that the plan does not provide an adequate definition of these terms. I note that “Natural character values” is defined in the pSWLP and consider that this definition adequately covers all aspects of natural character, including that of rivers, lakes and wetlands. I do not recommend the submission from Fish and Game is adopted.

## **Recommendation**

12.105 That a new definition of “Natural character” is not included in the Glossary.

## **New definition: Ngāi Tahu indicators of health**

12.106 Ngāi Tahu seeks the addition of a new definition of “Ngāi Tahu indicators of health” as follows:

*Ngāi Tahu Indicators of Health*

*The Ngāi Tahu Indicators of Health is a tool being developed by Papatipu Rūnanga to facilitate monitoring and provide long term data that can be used to assess land, water and taonga species*

*health over time. The long term aspirations of the Indicators are linked to mahinga kai and the realisation of the Ngāi Tahu Treaty Settlement.*

*The indicators could include, but are not limited to, those provided on page 150 of Te Tangi Te Tangi a Turia Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008.*

12.107 In their submission, Ngāi Tahu states that the new definition will provide guidance to plan users as to the use of the term as it applies to a number of policies, noting that the definition is adapted from Te Tangi Te Tangi a Turia Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008. I agree that adding a definition would assist in the efficiency of the provisions by providing additional certainty to plan users. As such, I recommend the submission from Ngāi Tahu is accepted.

### **Recommendation**

12.108 That a new definition of “Ngāi Tahu indicators of health” is included in the Glossary as follows:

*Ngāi Tahu Indicators of Health*<sup>863</sup>

*The Ngāi Tahu Indicators of Health is a tool being developed by Papatipu Rūnanga to facilitate monitoring and provide long term data that can be used to assess land, water and taonga species health over time. The long term aspirations of the Indicators are linked to mahinga kai and the realisation of the Ngāi Tahu Treaty Settlement.*

*The indicators could include, but are not limited to, those provided on page 150 of Te Tangi Te Tangi a Turia Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008.*

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<sup>863</sup> 797.64 Ngāi Tahu

## **13. Appendices**

### **Appendix A – Qualifications and Experience of Reporting Officers**

#### **Monique Beyer**

I have worked for Environment Southland as a Contractor since October 2015. I hold a Bachelor of Science degree in Environmental and Process Engineering (Heilbronn University, Germany), a Master of Science degree in Environmental Engineering (Danish Technical University, Denmark) and a PhD in physical geography (specialization in groundwater characterisation) from Victoria University of Wellington, New Zealand.

I was involved in many groundwater related projects during my studies in Denmark, Greenland, Australia and New Zealand where I gained experience in using and developing a variety of sampling analytical and statistical techniques, and numerical modelling for assessment of groundwater quantity and quality.

My work at Environment Southland includes technical input for the Physiographics of Southland project aiming at understanding spatial variability in regional freshwater hydrochemistry and water quality in Southland. Further, I am currently collating information on groundwater resources in terms of quality and quantity to review and document the conceptual understanding of Southland's groundwater resources.

#### **Rex H Corlett**

I am the Principal Engineer (rural) with Opus International Consultants Ltd based in Christchurch. I am a Chartered Professional Engineer and a Fellow of the Institution of Professional Engineers New Zealand (IPENZ). I have a Bachelor of Science 1975 (Otago University), a New Zealand Certificate of Engineering (Civil) 1979 (Central Institute of Technology), and a Masters in Business Administration (Technology Management) 2002 (Deakin University).

During my 40 year career I have undertaken civil engineering consultancy work in Southland, Otago and Canterbury for a range of rural infrastructure clients with more recent specialisation into the dairy industry, particularly farm dairy effluent containment structures. I am the lead author for a number of dairy industry good practice documents, including IPENZ Practice Note 21 Farm Dairy Effluent Pond Design and Construction (PN21), and have delivered workshops around NZ attended by rural contractors, consultants and other suppliers to the industry.

#### **James Dare**

I have been the Freshwater and Marine Scientist at Environment Southland since 2013. I hold a Bachelor of Science (BSc) from Victoria University of Wellington, and a Postgraduate Diploma of Science (PGDipSci) and Masters of Science (MSc) from the University of Auckland. Previously I have worked as an Estuarine Ecology Technician at the National Institute of Water and Atmospheric Science (NIWA), and Science Officer at the Ministry of Fisheries (now MPI). My specialist areas include: limnology, aquatic ecology, estuarine ecology, estuarine processes, and wetland protection. I have been involved with Environment Southland's science programme since the focus switched from monitoring environmental state, to understanding and

characterising environmental systems to meet requirements of the National Policy Statement 2014.

### **Angela Fenemor**

I am a Senior Resource Management Planner employed by Incite. I hold a Bachelor of Science (Biology and Geography) from Canterbury University and have completed the Sustainable Nutrient Management in New Zealand Agriculture (Intermediate OVERSEER® Course) at Massey University in 2013. I have also completed the “Making Good Decisions” course from University of Auckland and the Ministry for the Environment.

I have over 10 years of experience in resource management and planning. Over this time I have worked on a range of regional plans, including the Canterbury Land and Water Regional Plan and Plan Changes 3 and 5 to that plan, prepared and lodged resource consents and prepared and presented section 42A reports for both resource consent and plan change hearings. I am an associate member of the New Zealand Planning Institute.

### **Gavin Gilder**

I have been employed by Environment Southland for 5 years, and hold the position of a Senior Policy Planner. I have 20 years resource management experience in the Southland region. I hold the qualification of Bachelor of Surveying from the University of Otago.

### **Erin Hawke**

I am a Policy Planner at Environment Southland. I hold a Bachelor of Arts in Economics from Otago University and a Masters of Resource and Environmental Planning from Massey University. I have worked as a planner and project manager for over 10 years. During this time, I have worked on numerous aspects of planning examples being the completion of the Draft Waitaki District’s Indigenous Biodiversity Strategy, preparing resource consent applications for environmental and natural resources and the preparation of applications for subdivision, earthworks, residential and commercial planning consents, wastewater and stormwater discharge permits.

### **Roger Hodson**

I have worked as an Environmental Scientist – Surface Water Quality since November of 2012. Prior to this I worked for 3 years as an Environmental Technical Officer for Environment Southland. I hold a Bachelor of Applied Science with a major in Environmental Management, with 1st Class Honours from the University of Otago. My work for Environment Southland includes: technical input to the Southland Water and Land Plan development process, running the Southland Regional State of Environment river water quality and ecosystem health monitoring programs as well as reporting on those same programs. I am or have been involved in national working groups to align river water quality, periphyton and macroinvertebrate monitoring protocols.

### **Brydon Hughes**

I am a consultant water resource scientist and director of LWP Limited. I hold a Master of Science in Engineering Geology from University of Canterbury and have worked in the field of water resource management for 23 years, both for local government and in private consultancy. Between 1999 and 2005 I was employed as an Environmental Scientist at Environment

Southland. During this time I was involved in the development and implementation of groundwater resource monitoring and investigation programmes across Southland, and had significant input into development of groundwater provisions for the Regional Water Plan. Over the subsequent period I have been involved with a wide range of hydrological and hydrogeological investigations both in New Zealand and overseas, and have provided technical input for resource consent, Environment Court, Water Conservation Order, Regional Plan and Commission of Enquiry processes.

### **Claire Jordan**

I am a Senior Policy Planner at Environment Southland. I hold a Bachelor of Science Majoring in Chemistry and First Class Honours in Environment Science from Canterbury University. I have worked as a Policy Analyst and an Environmental Scientist for six years, within Central and Regional Government and as a consultant.

### **Lawrence Kees**

I am Environment Southland's Environmental Scientist – Water Resources and have held this position since January 2012. I hold the qualifications of Bachelor of Science (Geography) from Canterbury University, Postgraduate Diploma of Science (Geography) from Canterbury University and Master of Science (Physical Geography) from Victoria University. I am the Project Leader for the Surface Water Resources State of the Environment monitoring network, which establishes how much surface water is available for allocation and the cumulative effects of allocation (consented and actual use) on rivers and stream ecology. I am also the Project Leader for the Fluxes and Flows component of the Southland Science Programme, which is a large, multi-year programme of work with GNS and NIWA to understand how much water is flowing where and when in Southland, the impact of water allocation under current and future hydrologic/climatic conditions and what these mean for nutrient transport and attenuation processes. I am a member of the New Zealand Hydrological Society and the regional council Surface Water Integrated Management (SWIM) special interest group.

### **Philip Maw**

I am a partner in the law firm Wynn Williams, and lead the firm's Resource Management and Local Government team. I hold a Bachelor of Laws and Bachelor of Science. I have over 10 years of experience and regularly appear before Councils, the Environment Court and the High Court for a range of clients.

I have particular expertise in freshwater management, having acted as lead counsel on the development of the Canterbury Land and Water Regional Plan and the Hurunui and Waiau River Regional Plan. I am a member of the Resource Management Law Association and was previously a member of the National Committee of the Resource Management Law Association.

### **Ben McCall**

I am a resource management consultant employed by Incite. I hold a Bachelor of Laws and a Bachelor of Commerce (Economics) from Otago University. I have been a resource management consultant since 2016 with experience drafting resource consent applications and assisting with section 32 reports and hearing processes. With nearly three years' previous experience practicing as a solicitor in private and construction law I have broad legal knowledge and wide-ranging experience in legal analysis, research and providing critical advice.



## **Matthew McCallum-Clark**

I am a resource management consultant and a director of the firm Incite. I hold a Bachelor of Laws from Canterbury University, a Bachelor of Commerce (Economics) from Otago University and have undertaken a postgraduate diploma in environmental auditing through Brunel University in the UK. I am also a qualified and experienced independent hearing commissioner, with chair endorsement.

I have been a resource management consultant for over 20 years. Over this time, I have worked on a range of district and regional plans, including the Canterbury Land and Water Regional Plan, prepared and lodged resource consents and notices of requirement, prepared and presented section 42A reports and acted as hearings commissioner for both resource consent and plan change hearings.

## **Sonya Nicol**

I am a Senior Policy Planner employed by Environment Southland. I hold a Bachelor of Resource Studies from Lincoln University and a Post Graduate Diploma in Resource Studies from Lincoln University. I have almost 15 years' experience in planning and resource management roles in local government and as a private consultant. Over this time, I have prepared and processed resource consent applications, and have worked with a range of district and regional plans including the proposed Southland Land and Water Plan.

## **Dr Clint Rissmann**

I am Senior Adjunct Fellow to the Waterways Centre at the University of Canterbury and the Director of Land and Water Science Ltd (LAWS). I hold undergraduate and post-graduate qualifications in soil pedology, geomorphology, biogeochemistry and environmental toxicology from Lincoln University; Masters of Science in hydrogeology and both aqueous geochemistry and isotope geochemistry from the University of Texas, and; a PhD in fluid chemistry (liquids and gases) and geology from the University of Canterbury. I have held positions as a Teaching Fellow at Lincoln University, The University of Texas and a Post-Doctoral position at the University of Canterbury. I have also worked as a Senior Scientist (hydrochemist) for GNS Science and am currently a Project Scientist for the National Science Challenge – Our Land and Water National Science Challenge. I am also a qualified secondary school teacher (Maths, Chemistry and Biology) and taught for 6 years. I worked at Environment Southland as a Scientist, Principal Scientist and for a period Science Manager. I specialise in identifying and conceptualising the controls over physical, chemical and biological process within the natural environment. This has included work and research on the controls over water composition and water quality, including the Southland physiographic project.

## **Bryan Scoles**

I am a Policy Planner at Environment Southland. I hold a Bachelor of Applied Science of Environmental Management from Otago University and a Post Graduate Diploma of Applied Science from Otago University. I have worked as a Policy Planner for two years on various aspects of regional planning. I am an associate member of the New Zealand Planning Institute.

## **Nick Ward**

I have worked as a Freshwater/Marine Science Leader for Environment Southland since November of 2013. Prior to this I worked as Coastal Scientist at Environment Southland for one year. I also worked in the contaminated land and the waste industry prior to this. I hold a Bachelor of Science (Honours) in Geology from the University of Leeds, UK, a Graduate Diploma of Biology and a Post Graduate Diploma of Marine Ecology from Victoria University of Wellington. I have specialised in Estuarine ecological health within a range of systems within Southland.

My work for Environment Southland includes technical input for the water plan, working in the science policy interface and running the regional ecosystem health monitoring programs. I am also involved in national programs to align and standardise estuarine monitoring approaches.

## **Karen Wilson**

I have been a Senior Science Co-ordinator for Environment Southland since March 2017. I hold a Bachelor of Science in Geography conferred by the University of Otago and have worked in the field of water resource management for 18 years, both for local government and in private consultancy. Between 1999 and 2013 I was employed by Environment Southland in a variety of roles, including Principal Scientist. During this time, I was involved in the development and implementation of groundwater and soil resource monitoring and investigation programmes across Southland, had significant input into the development of groundwater and discharge variations to the Regional Water Plan for Southland, and was the convener for science advisory groups including those involved in the Waituna emergency response. I was subsequently employed by Landpro Limited as a Senior Environmental Scientist/Technical Services Manager for three years and was involved in a range of hydrological, hydrogeological and water quality investigations in Otago and Southland, including providing technical input for resource consent processes.

## Appendix B – Appendices to Section 3

### Appendix B1 – Human Health: E. coli

B.1 Results for primary contact recreation monitoring sites are shown in Table 2. Table 3 shows results for secondary contact recreation monitoring sites.

**Table 2: Popular bathing sites and corresponding human health risk grading (adapted from Larkin, 2013)**

Site Name	ES RWP 2010 <i>E.coli</i> /100 ml compliance (5 year median (Hazen) from (Larken 2013)	SFRG (Larken 2013)	MFE 2014 NOF band (Primary contact recreation) (ES 2015)
Oreti River at Winton Bridge *	993	Very Poor	D
Oreti River at Wallacetown Bridge *	1764	Very Poor	D
Mataura River at Gore Bridge *	3289	Very Poor	D
Aparima River at Thornbury Bridge *	7270	Very Poor	D
Waiau River at Tuatapere Bridge *	3228	Very Poor	D
Waikaia River at Waikaia Bridge *	4050	Very Poor	D
Waikaia River u/s Piano Flat	1091	Poor	
Mataura River at Riversdale	3540	Very Poor	
Mararoa River at South Mavora lake	21	Very Good	
Lake Te Anau at Boat Harbour Beach	221	Very Good	
Lake Manapouri at Frazers Beach	28	Very Good	

\* Sites that are explicitly identified as Popular Bathing Sites in Appendix K of the RWP

**Table 3: *E.coli* compliance with the national bottom line and regional water plan standard of 1000 cfu<sup>864</sup>/100ml**

Site Name	2009 – 2014 median <i>E.coli</i> concentration (ES 2015)	2009 – 2014 NPSFM	2012-2016 (Hodson et al. 2017 in press)
Otautatau Stream at Waikouro	1500	D	D
Otautau Stream at Otautau Tuatapere Road	900	C	D
Opouriki Stream at Tweedie Road	1100	D	C
Winton Stream at Lochiel	1100	D	D
Otepuni Creek at Nith Street	1200	D	D
Mataura River 200m d/s Mataura Bridge	1400	D	D
Tussock Creek at Cooper Road	900	C	D

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<sup>864</sup> CFU stands for Colony Forming Unit. CFU is used to determine the number of viable bacterial cells in a sample per mL.

## Appendix B2 – Human Health: Toxic Algae

- B.2 Relatively little published information is available on the frequency of benthic cyanobacteria blooms in Southland Rivers.
- B.3 McAllister et.al. (2016) published a review article on the cyanobacteria species *Phormidium*. Figure 1 illustrates the rivers in Southland that have experienced *Phormidium* proliferations (greater than 20% coverage). Furthermore, McAlister et al. (2016) identify concentrations of toxins in the Oreti and Waikaia Rivers as the highest observed nationally.
- B.4 *Phormidium* proliferations have been observed in the main stem and some tributaries of the four main river systems in Southland; Waiau, Aparima, Oreti and Mataura.
- B.5 Heath and Wood (2010) found that over a summer survey, five out of five sites had high abundances of *Phormidium* mat cover for at least several weeks during the summer.
- B.6 Proliferations of benthic cyanobacteria mats have been publically notified during the summer period of several years (Kelly 2017, ICC 2015). During the 1998/99 summer dog deaths were recorded from the Mataura River (Hamill, 2001).



**Figure 1: Southland rivers where one (or more) sites have experienced *Phormidium* proliferations (greater than 20% coverage) on one (or more) occasion since 2009. Adapted from McAllister et al., 2016.**

### Appendix B3 – Human Health: E.coli in drinking water

- B.7 The Drinking Water Standards for New Zealand specify that *E.coli* should be < 1 cfu/100 ml of water utilised for potable supply to minimise the potential for adverse health effects (Ministry of Health, 2008).
- B.8 In 2015, median *E.coli* values were elevated above the drinking water threshold (> 1 cfu/100mL) at ca. 80 of around 300 groundwater sites, where median values could be determined (Daughney et al., 2015). This implies that less than 30% of regional groundwater sites showed presence of indicator bacteria *E.coli*, and were therefore unsuitable for drinking. In 2010, 23% of the groundwater bores showed presence of *E.coli* (Liquid Earth, 2010).
- B.9 Monitoring shows that although the number of instances of *E.coli* have overall increased since 2001 (Figure 2), the proportion of affected wells has decreased. Factors that could be contributing to this improvement include improved well construction and well-head protection.
- B.10 However, the general decline in groundwater quality (e.g. increased NO<sub>3</sub> concentration) over the past 10-15 years (Daughney et al., 2015) suggest that it is unlikely that the number of incidents caused by land use activities have been decreasing .

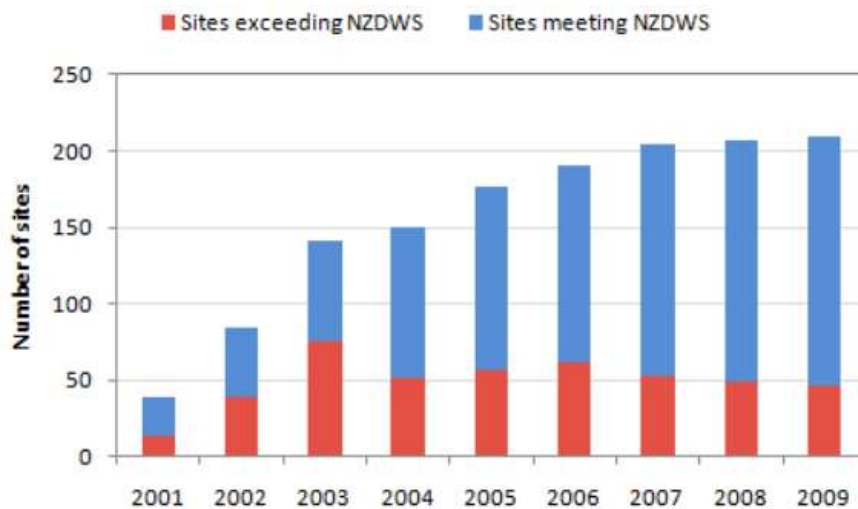


Figure 2: Number of monitoring bores showing presence of *E.coli* (Liquid Earth, 2010).

## Appendix B4 – Human Health: nitrate in drinking water

- B.11 The New Zealand drinking water standard for Nitrate is 11.3 mg/L NO<sub>3</sub>-N (Ministry of Health, 2008). Elevated NO<sub>3</sub>-N concentrations above 1 mg/L are indicative of contamination of groundwater by anthropogenic land use activities, and concentrations above 3.5 mg/L are considered indicative of moderate to high anthropogenic impacts (Daughney and Reeves, 2005; Morgenstern and Daughney, 2012; Rissmann et al., 2011 and 2012; Rissmann, 2012).
- B.12 However, low concentrations of NO<sub>3</sub>-N are not necessarily indicative of no/low anthropogenic inputs, as NO<sub>3</sub> is degradable under preferable subsurface conditions, e.g. in anoxic environments (McMahon and Chapelle, 2008). In these (nitrate) reduced groundwaters, other water quality parameters, such as phosphorous or *E.coli* can be indicative for human/landuse effects.
- B.13 In Southland, elevated NO<sub>3</sub>-N concentrations above 1 mg/L account for approximately 50 percent or 265,000 ha of the managed groundwater zones (Rissmann, 2012;
- B.14 Figure 3). The extensive nature of contamination of the shallow oxidised groundwater within the managed groundwater zones of Southland (
- B.15 Figure 3) reflects the high sensitivity of the majority of Southland aquifers to losses associated with intensive land use as defined by groundwater quality risk (Wilson and Hughes, 2007) and aquifer sensitivity mapping (Rissmann, 2011).
- B.16 Comparison of median NO<sub>3</sub>-N concentrations to water quality guidelines indicates that most of Southland's groundwaters are fit for human consumption, (i.e. have NO<sub>3</sub>-N concentrations < 11.3 mg/L) (Rissmann, 2012; Daughney et al., 2015). 58 of 334 bores (or 9%) of the sites for which median NO<sub>3</sub>-N concentrations could be determined (Daughney et al., 2015), account for 0.8% of the region's groundwater resources (on an area basis) (Rissmann, 2012).
- B.17 Increasing trends in NO<sub>3</sub>-N have been determined at about half of the regional SoE monitoring sites (Moreau and Hodson, 2015). Further intensification of land use would be expected to result in an expansion of elevated NO<sub>3</sub>-N concentrations, or NO<sub>3</sub>-N hotspots within the managed groundwater zones in the near future (Vibart et al., 2015 and, Snelder and Legard, 2014).

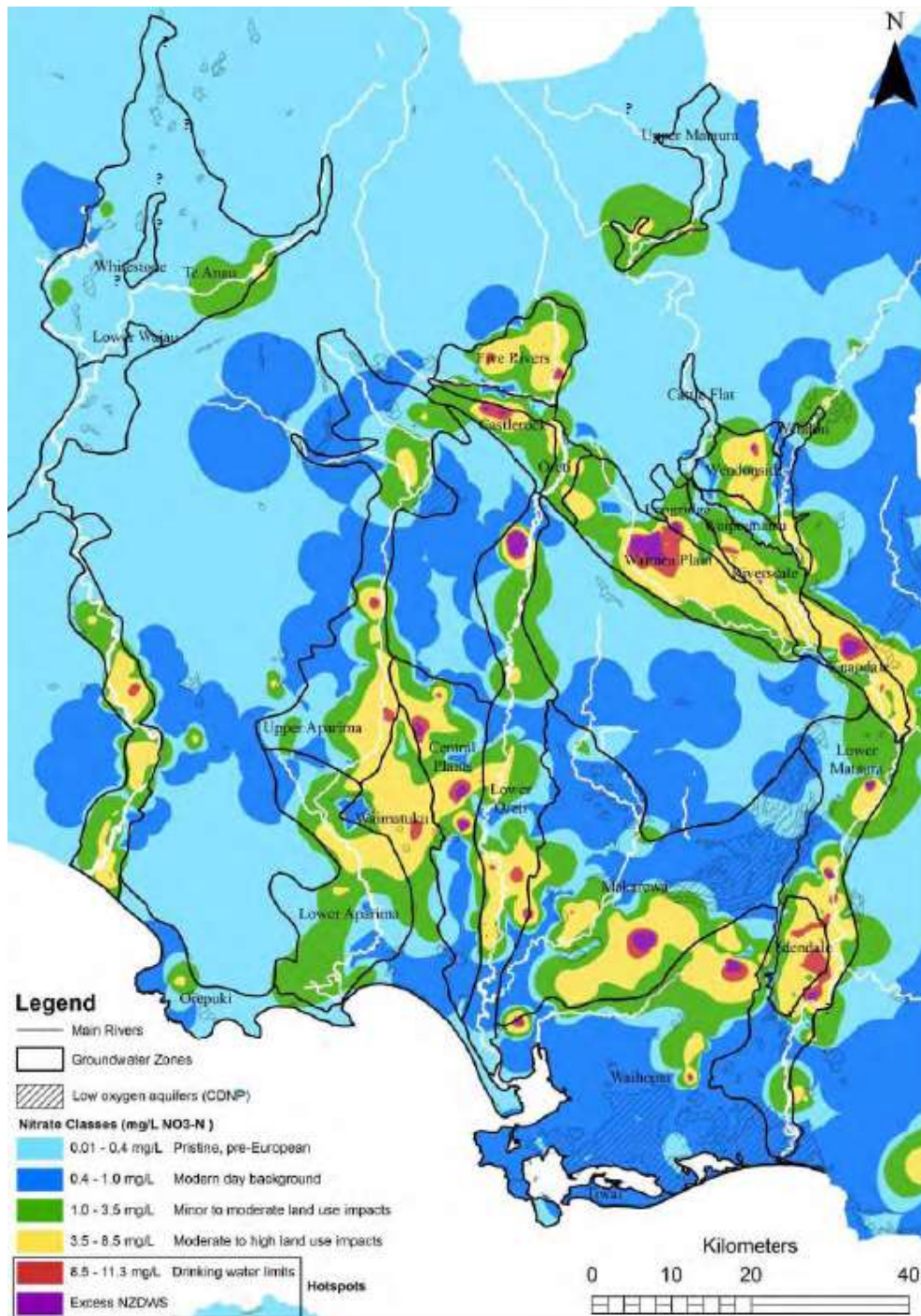


Figure 3: Classed NO<sub>3</sub>-N map for Southland's managed groundwater zones 2007 - 2012 (Rissmann, 2012). Note, that for some areas of Southland, NO<sub>3</sub>-N has not been determined in groundwater. These areas, although displayed as 'pristine' pre-European, may actually have elevated NO<sub>3</sub>-N concentrations (applicable for about 20% of the region's managed groundwater resources).



## Appendix B5 – Ecosystem Health: New River Estuary

- B.18 The ecology of the New River Estuary is suffering from the impacts of nutrient enrichment. The broad and increased coverage of macro-algae<sup>865</sup> is an indication of declining condition (Townsend and Lohrer, 2015).
- B.19 Eutrophication is most apparent in the Waihopai Arm where there seems to have been a long legacy of sedimentation (Robertson and Stevens, 2007). The areas of soft mud in this section of the estuary are commonly associated with dense macro-algae. Comparison of percentage cover of macro-algae from 2007 to 2014 (Figure 4) shows a marked increase in the area of dense (>50%) cover.
- B.20 Eutrophic areas of the estuary are in particularly poor ecological condition. Few species are able to persist in the sediment and conditions are so poor that macro-algae are unable to grow during summer months (Figure 5).
- B.21 Decomposing algae drives high sediment oxygen demand, leading to hypoxic/anoxic conditions. This results in the release of odorous gases from the sediment, particularly hydrogen sulphide. The estuary is displaying signs of severe hypoxia with sulphide complexes. Hydrogen sulphide gas emissions are readily smelt by people in the most impacted areas and are high enough to cause headaches and nausea (Townsend and Lohrer, 2015).

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<sup>865</sup> Macro-algae are large algae (aquatic plants) that are visible to the naked eye, as opposed to microalgae, which are microscopic.

a



b

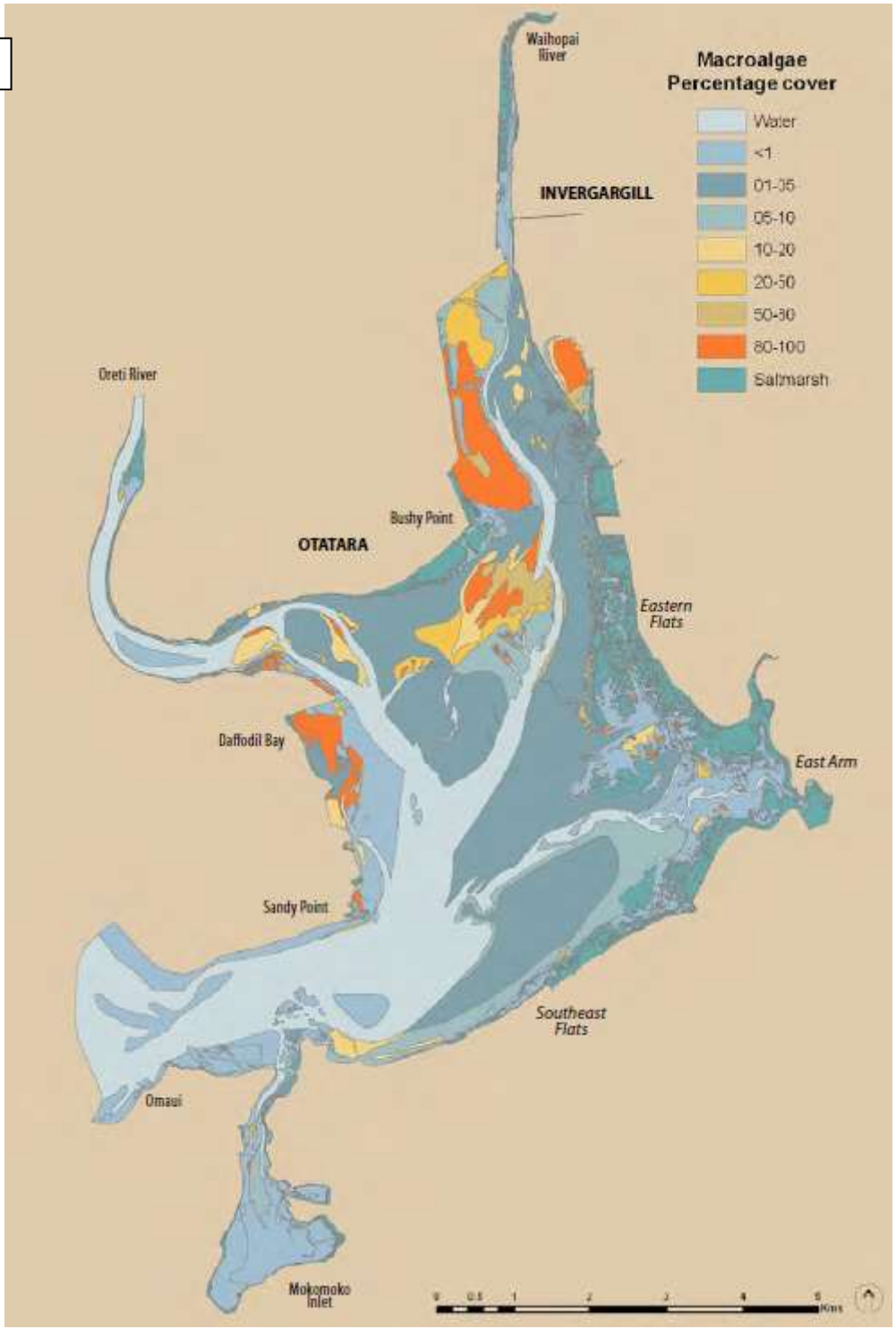


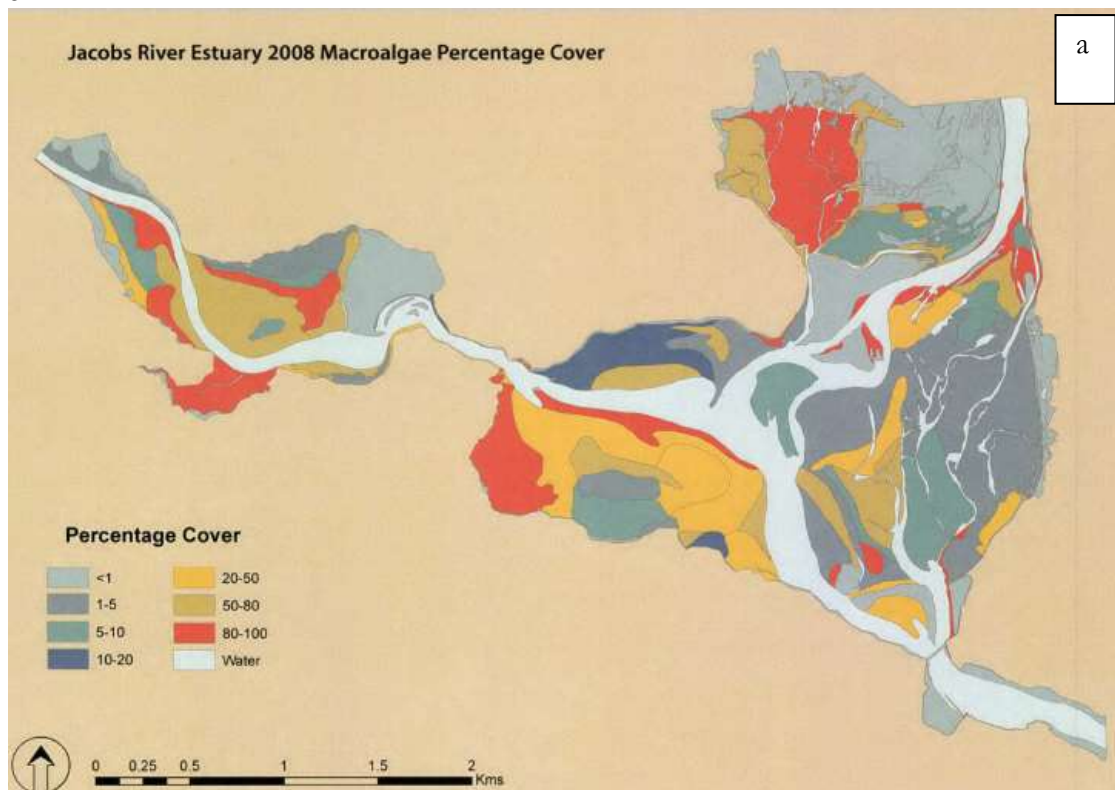
Figure 4: Changes in macroalgal coverage in New River Estuary, 2007(a) top and 2012(b) botom. Adapted from Robertson and Stevens (2007) and Robertson (2012).

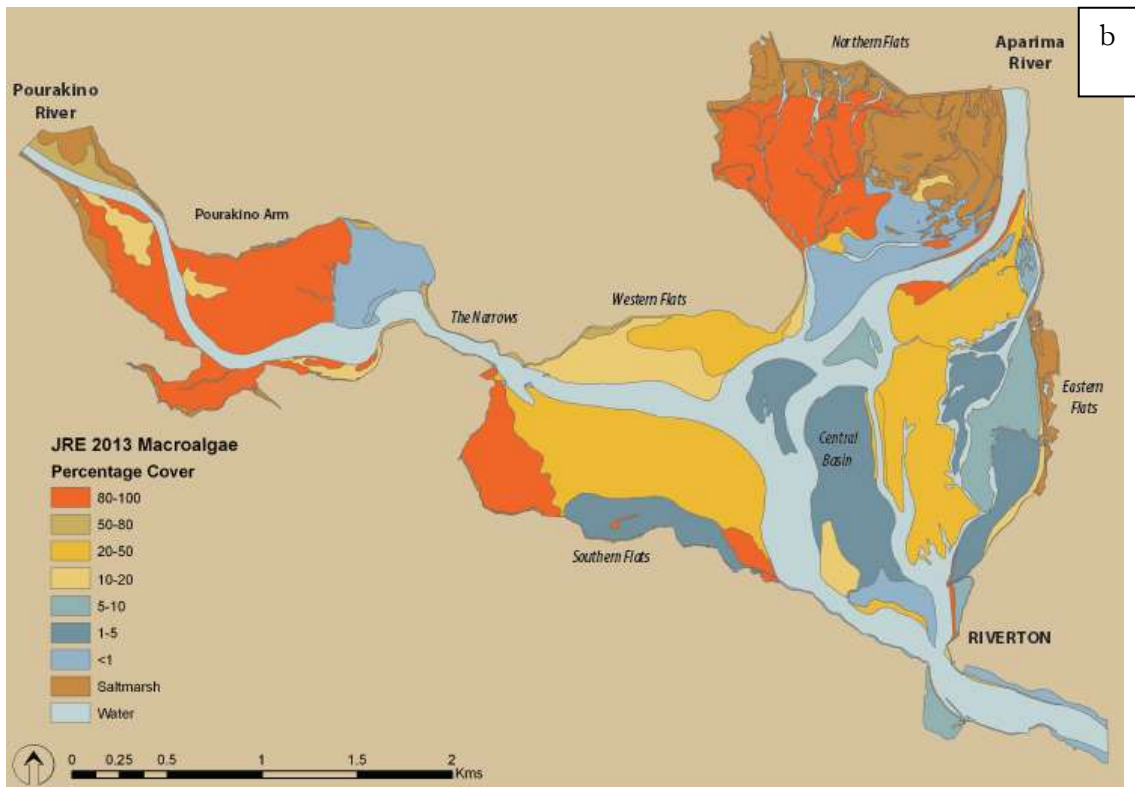


**Figure 5: An indication of the anoxic sediment surface in the Waihopai Arm of New River Estuary. Adapted from Townsend and Lohrer (2015).**

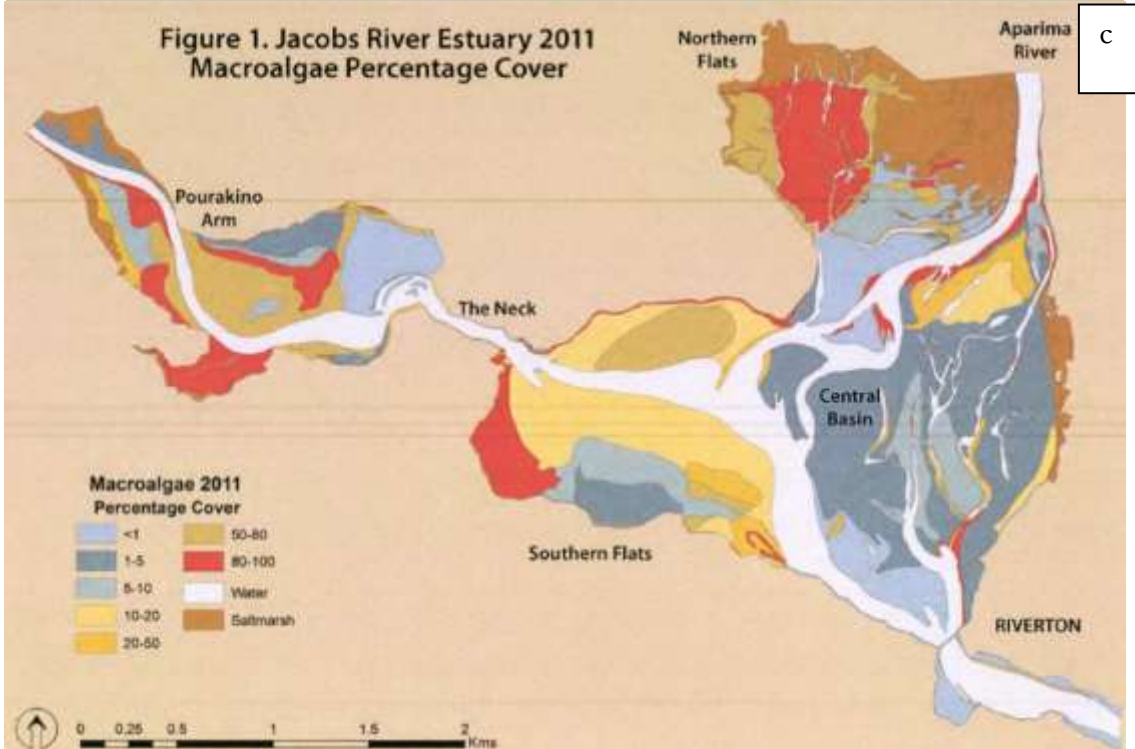
## Appendix B6 – Ecosystem Health: Jacobs River Estuary

- B.22 The ecology of Jacobs River Estuary appears to be suffering from the impacts of nutrient enrichment and sedimentation, with the broad and increasing coverage of macro-algae an indication of its declining health.
- B.23 The ecological health of the estuary contrasts between the central and lower sections of the harbour, which are in a good-moderate state and the large sections of the upper estuary, which are in a poor state of health due to nutrient and sedimentation issues.
- B.24 There is compelling evidence of large eutrophic areas in the Pourakino River arm and the upper flat by the Aparima arm (Townsend and Lohrer, 2015). 30% of intertidal flats are soft mud, which is associated with the areas of high macro-algae density. The changes from 2008 to 2013 (Figure 6) and observations in 2015 (Townsend and Lohrer, 2015) suggest the area of the estuary affected by eutrophication is expanding (Townsend and Lohrer, 2015 and Stevens and Robertson 2008, 2011 and 2013). There are ‘dead spots’ (areas with few infaunal species living, low oxygen content and poor sediment environment), which are left in the wake of expanding macro-algal mats.
- B.25 In summary, Jacobs River Estuary is severely compromised in certain parts, with no indications of improvement, and some evidence of further deterioration (Townsend and Lohrer, 2015).
- B.26





b



c

Figure 6: Changes in macro-algal coverage in Jacob's River Estuary over time. Adapted From Stevens and Robertson (2008(a), 2011(b) and 2013(c)).

## Appendix B7 – Ecosystem Health: Fortrose (Toetoes) Estuary

- B.27 Fortrose Estuary appears to be in a moderate state of ecological health with firm sandy and gravelly sediments dominating the environment. The physical and chemical properties suggest that the main stress is nutrient enrichment rather than sedimentation.
- B.28 The accumulation of fine sediments appears to be less of a problem than the expansion of coverage on intertidal areas of the macro-algae *Ulva*. *Ulva* has been expanding in coverage since 2004, and is now extensive (Figure 7).
- B.29 Macro-algal coverage appears to be driving low oxygen and sulphide rich conditions in parts of the estuary (Figure 8). Limiting nutrient loads from the catchment to the estuary may address this issue. Rapid reduction in *Ulva* coverage in intertidal areas would benefit resident macrofauna and shellfish populations and amenity values to humans (Townsend and Lohrer, 2015).



Figure 7: Macro-algal coverage in Fortrose Estuary



Figure 8: Anoxic sediment in Fortrose Estuary

## Appendix B8 – Ecosystem Health: Waikawa Estuary

- B.30 In Waikawa Estuary the central and lower sections are in a good state of ecological health in contrast to the upper estuary, which is moderately healthy. There is muddy sediment in the upper harbour however the extent appears to be reducing. The upper section is muddy underfoot and appears to be a depositional area, however it is not highly degraded ecologically. The sediment is reasonably well oxygenated and lacks a sulphide smell and macro-algae cover.
- B.31 However the sheltered conditions of the upper estuary and small changes in mud since 2004 suggest that residence time for the deposited mud is high, and that the estuary may remain muddy for an extended period even if sediment loads are well managed.
- B.32 Suitable management would prevent the upper estuary from further deterioration and would facilitate recovery over the longer term. The possible expansion of macro-algae as a response to increased nutrient loading in Waikawa should be a concern, given the estuary has sheltered sections and a prevalence of attachment substrate that could facilitate macro-algal expansion. Management of nutrient input is necessary to prevent a threshold change, particularly in the sandflats area. Overall, the estuary appears to be in good health (Townsend and Lohrer, 2015).



## Appendix B9 – Ecosystem Health: Lakes

### Shallow lakes

- B.33 A calibrated ecological health assessment for Southland lakes was developed by Kelly et al. (2016). This work combines measured parameters belonging to four key components; ‘nativeness’, ‘pristine’, ‘resilience’, and ‘diversity’, to provide an overall assessment of ecological health. This expands upon the traditional methods of measuring only water quality parameters to define lake state, i.e. ‘pristine’, and incorporates other factors that are central to community values.
- B.34 Results indicate that Lakes Calder and Sheila (on Steward Island) are in excellent overall condition (Band A), while the scores for the shallow mainland lakes were lower, with Lakes Vincent and George having an EI in the Excellent to Good range (band A-B). The Reservoir and Lake Murihiku had EI scores in the Good to Fair range (band B-C). Generally, reduced EI scores could be traced back to either degraded water quality (pristine) or incursion of non-native species, e.g. perch, trout, or non-native macrophytes.
- B.35 Kelly et al. (2016) carried out their assessment of ecological integrity with data that was available at the time, which for shallow coastal lakes was minimal and biased towards the summer period. Since then, Environment Southland has collected additional samples that provide a more robust representation of water quality in shallow lakes, throughout the entire year. These data were analysed against five attributes of the National Objectives Framework, phytoplankton, total nitrogen, total phosphorus, ammonia, and *E.coli*, in a report by Hodson et al. (2017).
- B.36 Polymictic<sup>866</sup> coastal lakes varied according to the attribute and lake. All polymictic lakes were deemed suitable for primary and secondary contact, based on available *E.coli* data. However, total nitrogen (TN) and total phosphorus (TP) concentrations scored in the ‘C’ band at a minimum, indicating high nutrient loads derived from anthropogenic inputs. Lake Vincent was of particular concern, with total nitrogen levels well in excess of the national bottom line at two sites. Seasonal patterns at Lake Vincent show elevated in-lake and inflow TN concentrations throughout the winter period (May-September), indicative of high loss winter management practices.
- B.37 The Reservoir breached the national bottom line for phytoplankton (chlorophyll *a*) concentrations, which generally is a manifestation of excess TN and TP; however, this lake scored in the ‘C’ bands for both of these attributes. This may indicate that this environment is particularly sensitive to nutrient loading, although further investigation is needed.

### Intermittently Open and Closed lakes and lagoons (Waituna Lagoon)

- B.38 Waituna Lagoon was not included in the calibrated ecological assessment by Kelly et al. (2016) described above for shallow lakes, due to this project being limited to permanently closed lakes. However, Waituna Lagoon was included in the analysis of state in Hodson et al. (2017). In this report, ICOLL data collected between 2012 and 2016 were split into open and closed periods, and analysed separately.

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<sup>866</sup> Polymictic lakes are too shallow to develop thermal stratification; therefore their waters can mix from top to bottom.

- B.39 Results show that most attributes were poorer when the lagoon was closed vs open, reflecting the role of marine flushing in removing nutrients from the system. Phytoplankton (chlorophyll *a*) concentrations varied spatially and were of less concern (bands A or B) when the lagoon was open to the sea, but scored in the 'C' band at all four monitoring sites when the lagoon was closed, indicating that "*Lake ecological communities are moderately impacted by additional algal and plant growth arising from nutrients levels that are elevated well above natural reference conditions*". This pattern was similar for TN concentrations, with better scoring sites (bands A or B) being situated closer to the sea-opening, while poorer scoring sites (band C) were closest to major freshwater inflows (Waituna Creek, Moffat Creek, or Carrrens Creek).
- B.40 All sites scored significantly lower for TN concentrations when the lagoon was closed, with two sites, Lagoon Centre and Lagoon West, breaching the national bottom line (D band). All closed sites and two open sites, Lagoon Centre and Lagoon South, rated in the 'C' band for TP concentration.
- B.41 The combination of high TN, sometimes in excess of the national bottom line, and moderately high TP suggest that there is considerable nutrient stress when the lagoon is closed, which could manifest in a shift from a clear water state to an algal dominated state if phosphorus loads increase further. The 'C' band score for all four sites when the lagoon was closed to the sea, or the recent algal bloom observed at the western end of the lagoon in 2016 (Waituna Partners' News, 2016), may be early warning signs of such a shift.
- B.42 Other lagoon attributes such as ammonia (NH<sub>3</sub>) toxicity and *E.coli* concentrations for secondary (wading) contact, were of less concern, with all sites (open or closed) scoring either an A or B.

## Appendix B10 – Ecosystem Health: Groundwater

- B.43 Figure 9 shows a map of median Nitrate-nitrogen (NO<sub>3</sub>-N) concentrations measured during 2003-04, along with net gain and loss from the river (i.e. base flow discharge or seepage losses) interpreted from concurrent flow gauging measurements (Wilson, 2008).
- B.44 These data highlight areas where groundwater discharge makes a significant contribution to river flow base flow and nitrate levels during extended low flow. For example, NO<sub>3</sub>-N concentrations in the lower Waikaia River increase from 0.08 mg/L at Mahers Beach to 0.67 mg/L at Waipounamu Bridge Road over a reach with virtually no inflows from tributary streams. Given that the median NO<sub>3</sub>-N concentration in this aquifer system is 3.6 mg/L (Liquid Earth, 2010), the observed change in surface water quality is entirely consistent with groundwater base flow discharge being the primary source of NO<sub>3</sub>-N input to this section of the river system.
- B.45 Similarly for the Edendale, Waimea Plain and Waimatuku aquifers, the streams they provide recharge to have some of the highest surface water nitrate concentrations in the region (Table 4).

**Table 4: Nitrate concentrations in highly impacted aquifers and the respective streams discharging from the same aquifer system.**

Aquifer	Median <sup>867</sup> NO <sub>3</sub> -N mg/L	Stream receiving discharge	Median <sup>868</sup> NO <sub>3</sub> -N mg/L	Maximum <sup>869</sup> NO <sub>3</sub> -N mg/L
Edendale	4.9	Oteramika	1.5	4.74
Waimea Plain	6.1	Waimea	1.9	6.6
		Longridge	2.7	9.34
Waimatuku	5.7	Waimatuku	3.2	6.6

- B.46 Nitrate thresholds in groundwater with regards to ecosystem health have not been included in the pSWLP. To protect ecosystem health in regional streams at low flow conditions, Snelder et al. (2014) suggest that groundwater median concentrations should not exceed 3.5 mg/L NO<sub>3</sub>-N, equivalent to the B-band threshold, Ministry for the Environment (2014).
- B.47 According to Rissmann (2012), almost 20% (by area) of the managed aquifers have NO<sub>3</sub>-N concentrations in excess of 3.5 mg/L (
- B.48 Figure 3). This implies that a large proportion of the region's groundwaters pose a risk for ecosystem health in regional streams, particularly at low flow. Further, riparian aquifers, which are the most connected aquifers to surface waters, have on average 3.2 mg/L NO<sub>3</sub>-N - the highest nitrate concentrations of all aquifers (Liquid Earth, 2011).

<sup>867</sup> Liquid Earth, (2010)

<sup>868</sup> Wilson et al., (2012). Results for 2005-2010

<sup>869</sup> Wilson et al., (2012). Results for 2005-2010

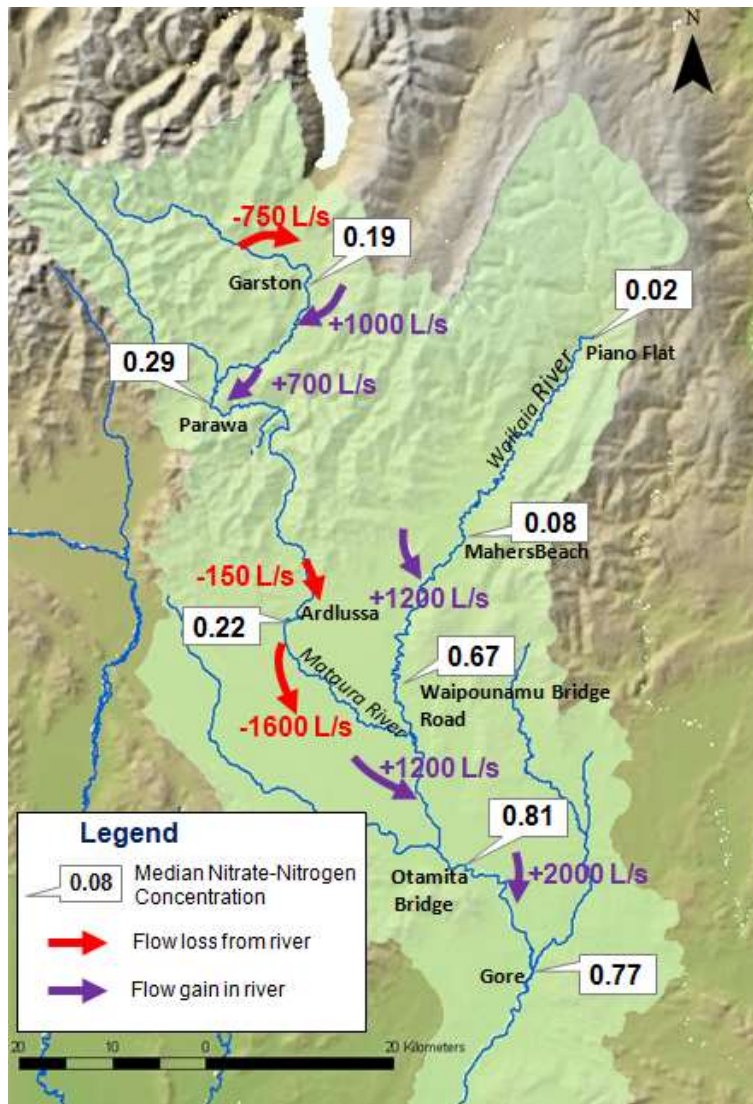


Figure 9: Median NO<sub>3</sub>-N concentrations recorded in the Maitai catchment upstream of Gore (2003-04) and indicative flow losses and gains due to groundwater recharge/discharge (Wilson, 2008)

## Appendix B11 – Ecosystem Health: Rivers

### Macroinvertebrate health

- B.49 The Macroinvertebrate Community Index scores (MCI) are widely used for environmental monitoring in New Zealand (Stark and Maxted, 2007). The MCI is a tolerance metric with scores potentially ranging from >150 (very good water quality) to as low as 20 (very poor water quality). National guidelines are commonly used to interpret MCI scores (Stark and Maxted 2007).
- B.50 The RWP and pSWLP include spatially differentiated standards for MCI scores, essentially setting higher standards for MCI in Mountains > Hill > Lowland Hard Bed, Lakes and Spring Fed > Lowland Soft Bed ( Table 5).

**Table 5: RWP and pSWLP MCI standards for Southland**

RWP management unit	Standard
Natural state	NA
Mountains	120
Hill	100
Lowland Hard Bed	90
Lakes	90
Spring Fed	90
Lowland Soft Bed	80

- B.51 Recent analysis of the relationship between MCI and environmental drivers by Clapcott and Goodwin (2014), suggests that MCI scores are related to land use via a complex chain of causality. Sediment and nutrients were identified as the most probable land use impact on MCI. However, the existence of multiple drives and interactions between drivers, including local habitat means that catchment scale management may not result in a positive MCI response without equal consideration of reach scale management.
- B.52 Snelder et al (2014), found a high level of non-compliance with RWP standards for Lowland hard Bed and Spring Fed sites. The national MCI quality classification of poor (defined as MCI <80) is exceeded at 7 out of 52 lowland sites included in Environment Southland, (2016b) and Kitto and Hodson, (2016). Note that only sites with both MCI data and water quality were included in this publication.
- B.53 Compliance with the RWP and pSWLP was assessed by Hodson and Akbaripasand (2016). Results for 2010 – 2014 showed 9% of sites were in a poor state with respect to invertebrate health, and that 20% of sites did not comply with the respective RWP or pSWLP standards (Figure 10).
- B.54 Hodson and Akbaripasand (2016) assessed trend for the period between 1996 and 2014, which showed that 26% of sites had strongly significant decreasing macroinvertebrate

health trends and a further 2.8% of sites had decreasing trend that was not statistically significant. No sites showed improving trends (Figure 11).

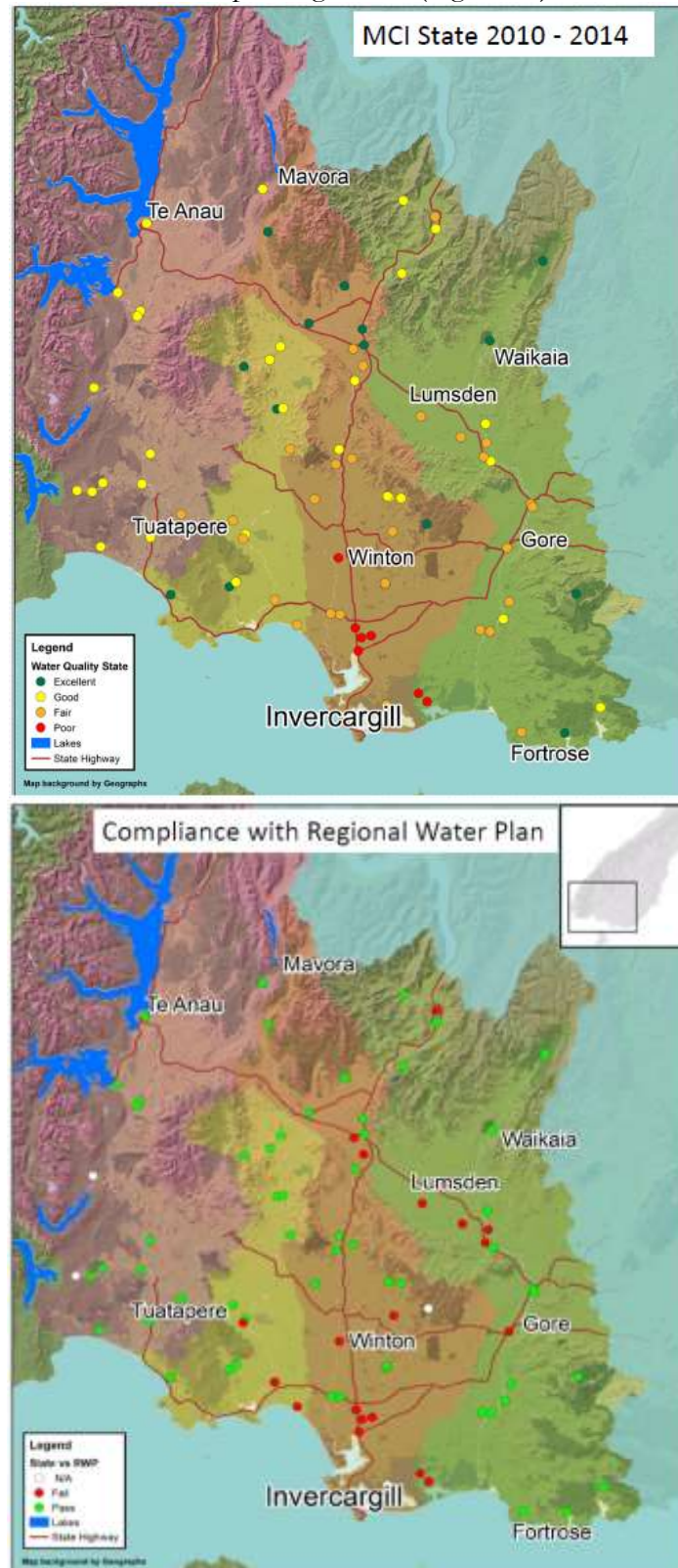


Figure 10: Compliance with Southland Regional Water Plan thresholds for the time period of 2010 – 2014, using median MCI scores (Stark and Maxted 2007). Adapted from Hodson and Akbaripasand (2016).

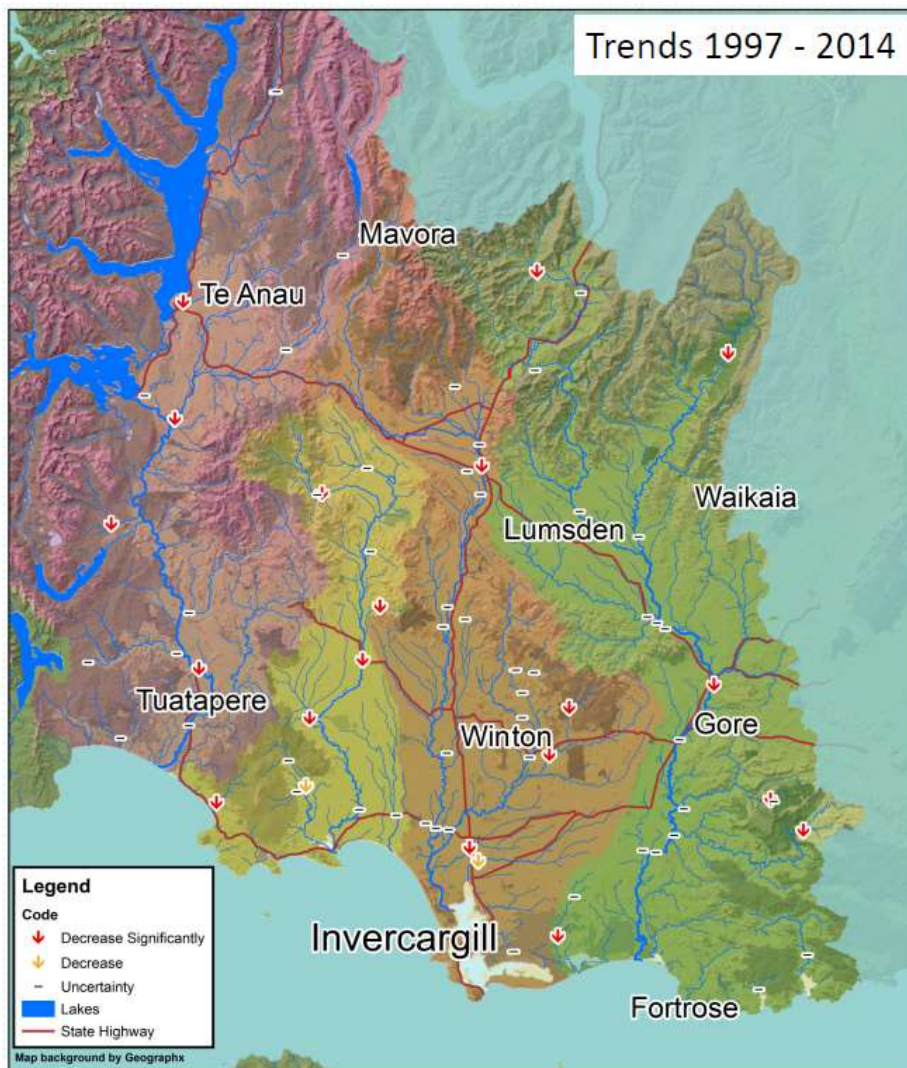


Figure 11: Trends in MCI scores 72 sites in Southland for the time period of 1997 – 2014. Adapted from Hodson and Akbaripasand (2016).

## Periphyton

- B.55 The NPSFM national objectives framework sets a national bottom line for benthic periphyton cover, of 200 mg/m<sup>2</sup>, and allows for frequency of exceedance to be used in the assessment. One exceedance per year (1 month in 12 is approximately 8% of the time) is allowed for, and two exceedances per year in productive classes.
- B.56 Snelder et al. (2014), used historical summer, (not monthly frequency) monitoring data to develop predictive models of periphyton cover and found that breaches of the national bottom line were likely to occur in the lower reaches of the main stem of the Mataura River and tributaries of the Aparima, Oreti, Waimatuku and Makarewa rivers.
- B.57 Kitto and Hodson (2016) and Environment Southland (2016b) used the Environment Southland annual summer data to assess likely periphyton compliance with the national objectives framework for periphyton using the method of Snelder et al. (2013). Eight sites were found to be likely to not comply with the periphyton bottom line (Table 6).

**Table 6: Sites not likely to meet the national bottom line for periphyton based on Kitto and Hodson (2016) and Environment Southland (2016b)**

Site Name
Mataura River at Seaward Downs
Mataura River 200 m ds Mataura Bridge
Waimea River at Mandeville
Waikaka Stream at Gore
Aparima River at Thornbury
Otautau Stream at Otautau Tuatapere Highway
Winton Stream at Lochiel
Makarewa River at Wallacetown



## Appendix B12 – Groundwater Management Zones

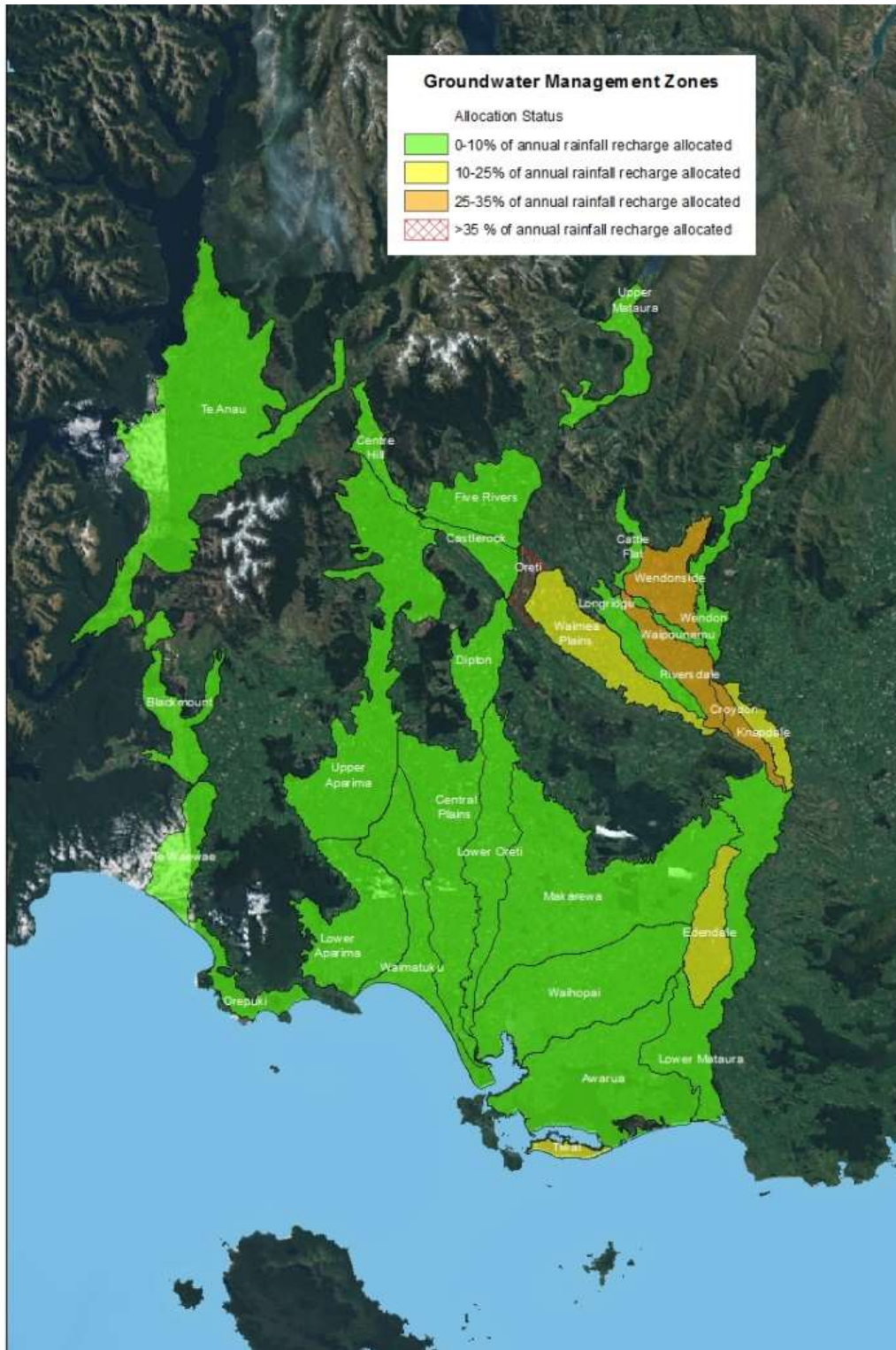


Figure 12: Allocation status of Groundwater Management Zones in Southland

## Appendix B13 – Surface Water Resource Zones

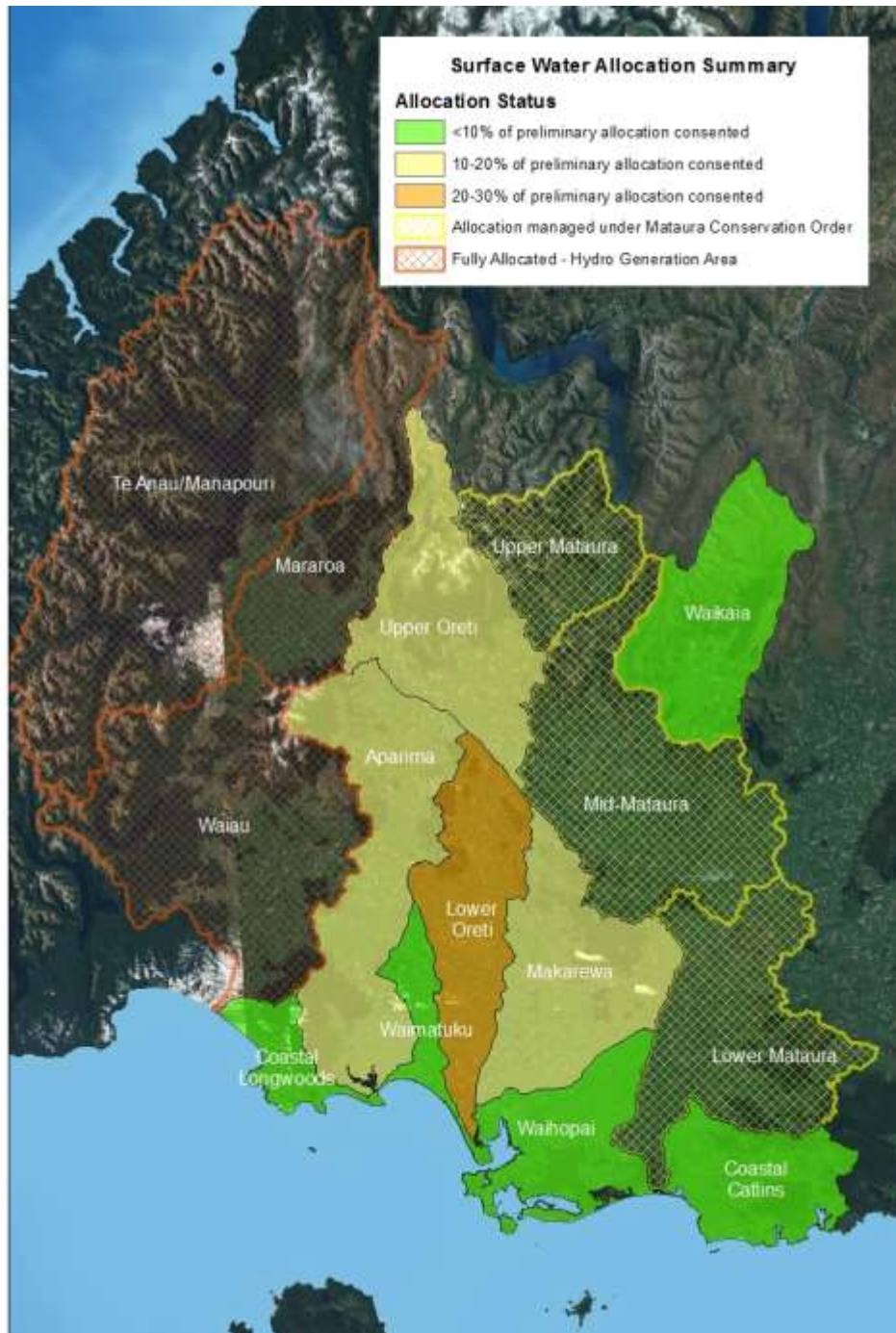
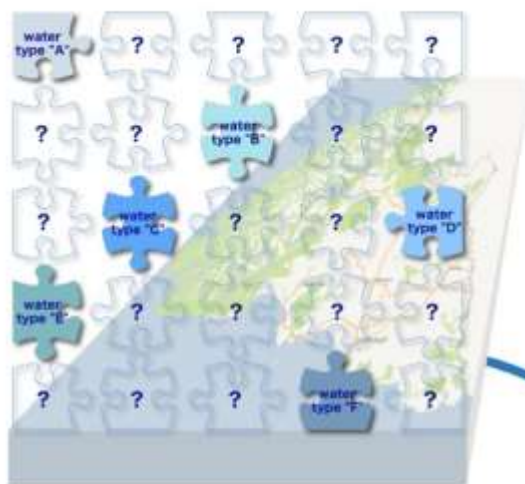


Figure 13: Allocation status of Surface Water Resource Zones

## Appendix B14



### Up to 2012

- monitoring showed that hydrochemistry and water quality varies across Southland
- **Why does variation exist?**
- patterns emerging but gaps in data recognised

### 2013

- revised sampling programme for ground- and surface water



### 2014

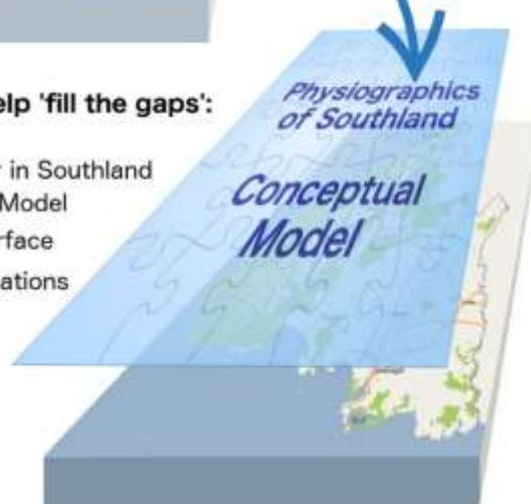
- developing understanding of why we see variation in water quality across Southland

### 2015

- 'drivers' of hydro-chemistry identified

### Conceptual Model developed to help 'fill the gaps':

- we can't monitor every body of water in Southland
- however, we can use the Conceptual Model to **'predict'** the hydrochemistry of surface water and shallow groundwater at locations all over Southland



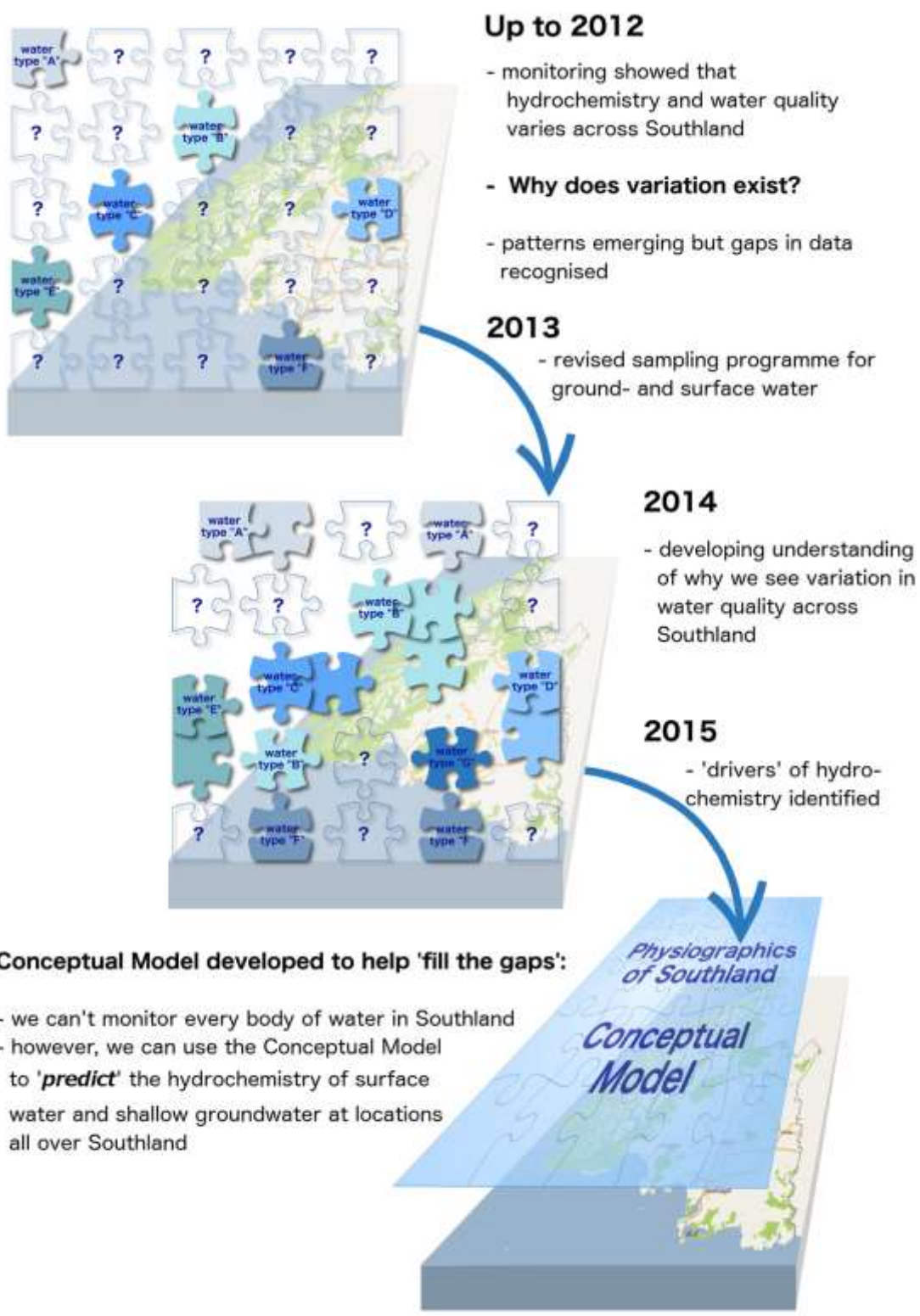
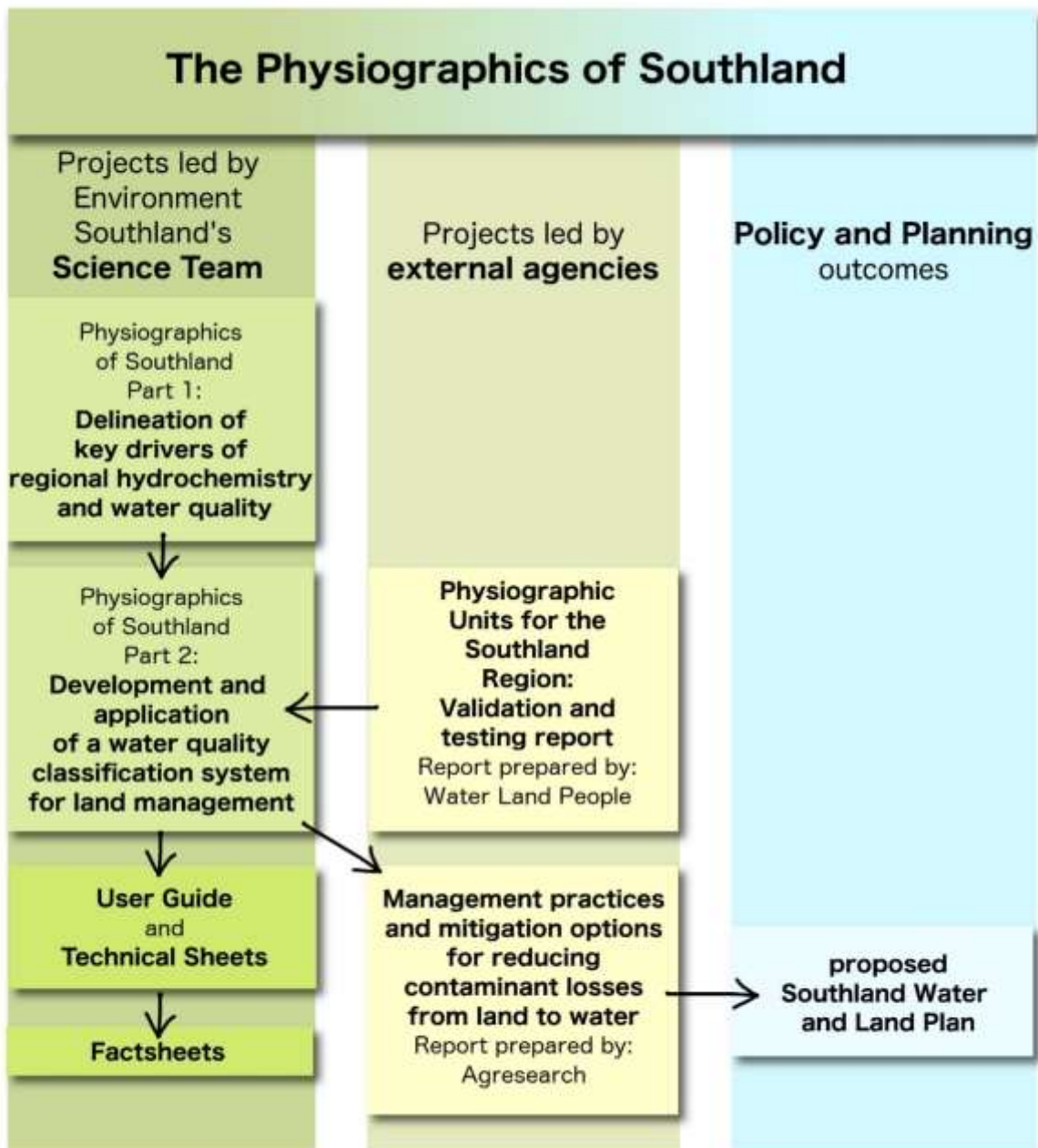


Figure 14: A 'monitoring and data' view of the evolution of the Conceptual Model, developed as Part 1 of the Physiographics of Southland project.

Appendix  
B15



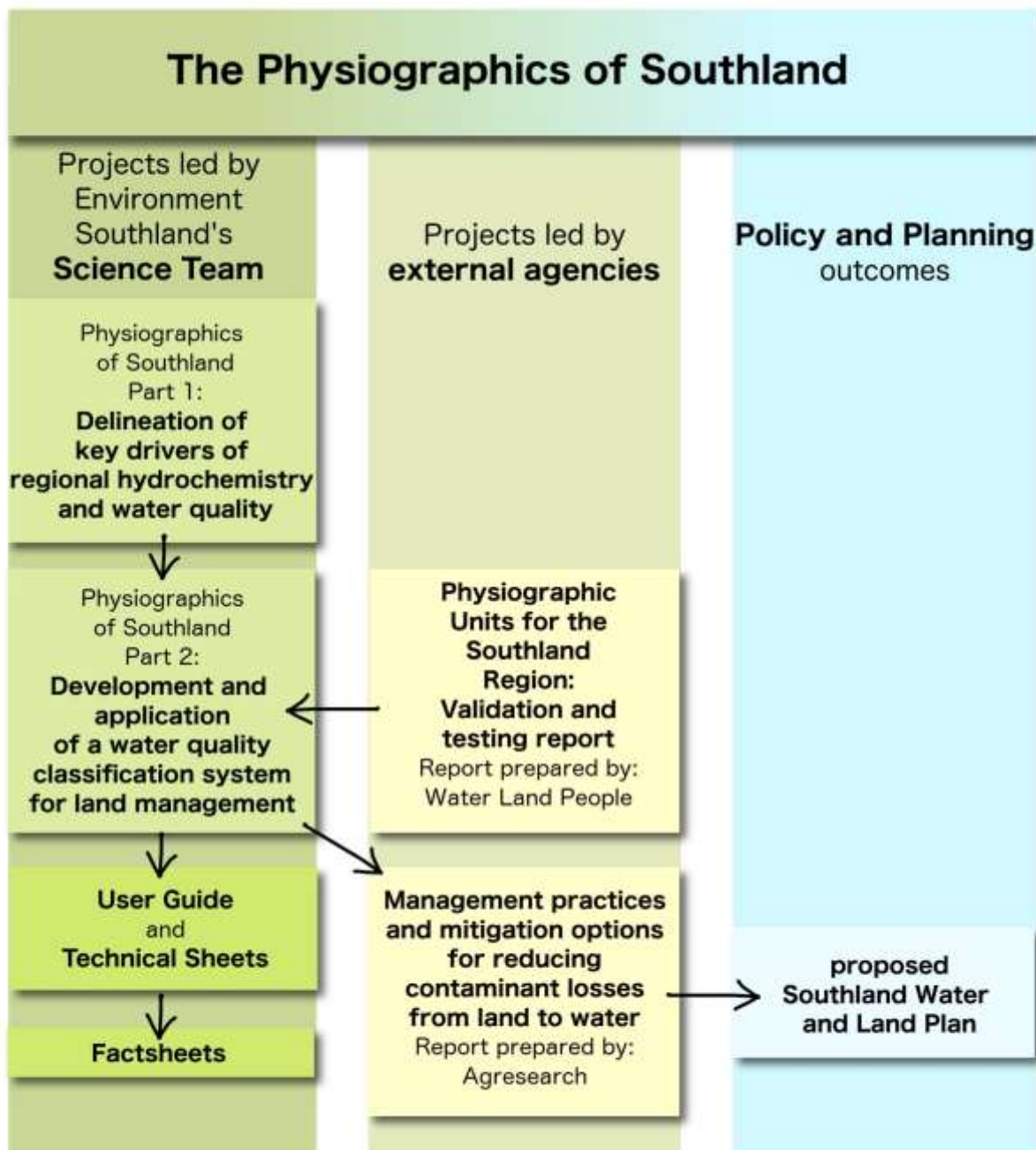


Figure 15: An outline of the projects led by Environment Southland's Science Team, those led by external agencies and how they feed into the proposed Southland Water and Land Plan.

Appendix B16

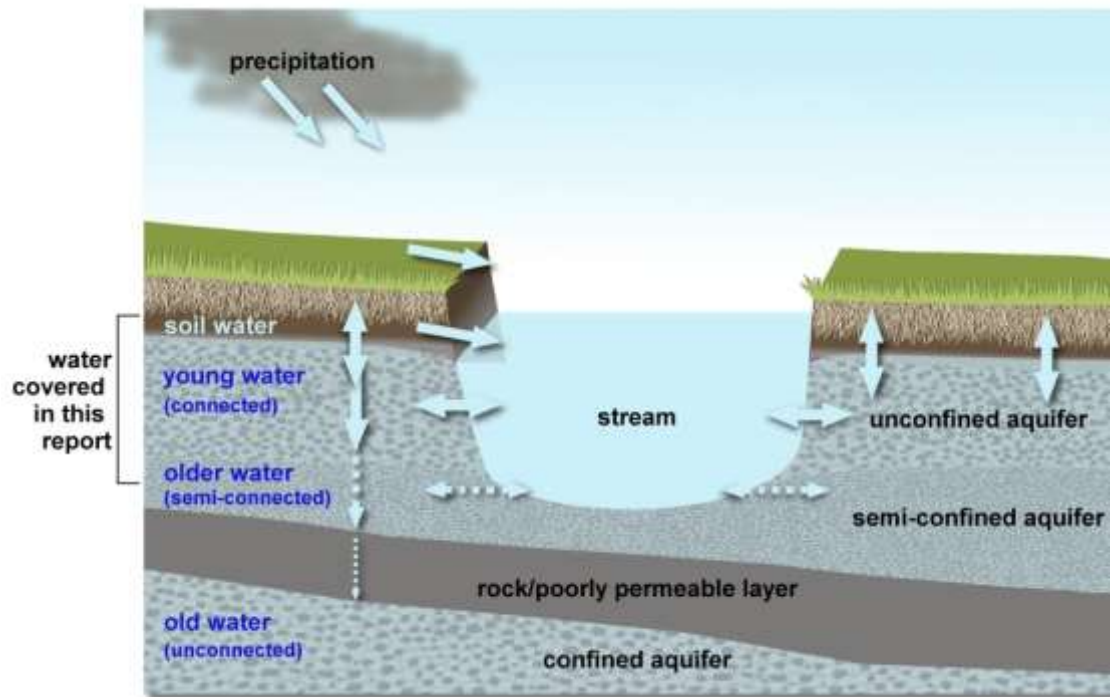


Figure 16: Water covered in the Physiographics of Southland project.

## Appendix B17

B.58 Assignment of water quality risk utilized a simple binary risk category of either 'high' or 'low' risk, for policy purposes (

B.59

B.60 Table 7).

**Table 7: Water quality risk assessment for nitrogen (N), phosphorus (P), sediment (S) and microbes (M). Note that the water quality risk associated with variants are in addition the risk assigned to the relevant physiographic zone.**

Physiographic Zone	Variant	Drainage pathways and contaminants				Water Quality Risk			
		Overland flow	Artificial drainage	Lateral drainage	Deep drainage	Nitrogen	Phosphorus	Sediment	Microbes
Alpine		N,P,S,M				High	High	High	High
Bedrock/Hill Country					N	Low*	Low	Low	Low
	Overland Flow	N,P,S,M				High	High	High	High
	Artificial Drainage		N,P,S,M			High	High	High	High
Central Plains			N,P,S,M		N	High	High	High	High
Gleyed			N,P,S,M			High	High	High	High
	Overland Flow	N,P,S,M				High	High	High	High
Lignite-Marine Terraces					N	Low*	Low	Low	Low
	Overland Flow	N,P,S,M				High	High	High	High
	Artificial Drainage		N,P,S,M			High	High	High	High
Old Maitaura					N	High	Low	Low	Low
Oxidising					N	High	Low	Low	Low
	Overland Flow	N,P,S,M			N	High	High	High	High
	Artificial Drainage		N,P,S,M		N	High	High	High	High
Peat Wetlands			N,P,S,M	P, M	P	High	High	High	High
Riverine					N	High	Low	Low	Low
	Overland Flow	N,P,S,M			N	High	High	High	High

\*Low risk due to high reduction potential (i.e. denitrification likely to occur)



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## Appendix C – Technical Memoranda

### Appendix C1

<b>Date:</b>	23 November 2016
<b>From:</b>	James Dare
<b>Subject:</b>	Direct application of pesticides to water

#### *Background*

On the 14<sup>th</sup> September, Bryan Scoles (Environment Southland Policy Planner) contacted me to seek advice on the application of pesticides to water. He was particularly interested in determining if direct application of monofluoroacetate (i.e. 1080), or anticoagulants (e.g. Brodifacoum) may breach section 70 of the RMA, which states that '*any discharge must not have any significant adverse effects on aquatic life*'. The following information has been gathered in response to this request, and has been split according to pesticide type. Much of this information in this memo came from the website [www.1080facts.co.nz](http://www.1080facts.co.nz), or McLeod and Saunders (2013) report 'Pesticides used in the Management of Vertebrate Pests in Australia: A Review'.

#### *Monofluoroacetate (1080):*

- 1080 is the 'salt' form of the naturally occurring toxin, fluoroacetate, found in several poisonous plants around the world (Fisher, 2008).
- The mechanism of toxicity for both naturally-occurring fluoroacetate and 1080 in bait is the same. The 'salt' form of this toxin is more water soluble, and so readily formed into bait products (Fisher, 2008).

#### **Trout**

- ◆ Research carried out by the Cawthron Institute showed that concentrations, typical to that of an aerial drop, were undetectable in water within 120hrs (Champeau *et al.*, 2014).
- ◆ Trout that were force fed 1080 concentration equivalent to that of 30 poisoned field mice, accumulated peak tissue concentrations 24 and 48h after ingestion, however no mortality occurred (Champeau *et al.*, 2014).
- ◆ The toxicological endpoint (i.e. the maximum 90-day concentration dosage that caused no toxicity) for Rainbow Trout is 0.075kg/kg bw/day. A high consumer of trout flesh with a body weight of 70kg, would ingest 1.88mg of 1080 poison, equating to about a third of the toxicological endpoint. This means that there is no direct threat to human consumption (Champeau *et al.*, 2014).

#### **Eels**

- ◆ Longfin eels do not actively seek out and consume 1080 baits (Lyver *et al.*, 2005).
- ◆ Consumption of poisoned possum carcasses did not result in mortality or adverse effects, although low concentrations of 1080 were found in the flesh of some eels shortly after they had eaten the poisoned possum gut meat (Lyver *et al.*, 2005).
- ◆ The concentrations of 1080 found in eels are so low that to risk death a 60kg person would need to catch and eat 5.5 tonnes of eel that had eaten 1080 contaminated possum (Lyver *et al.*, 2005).

## **Koura**

- ◆ A NIWA study of the effects of exposing koura (native crayfish) to 1080 baits showed that koura did not absorb 1080 from the water (Suren & Bonnett, 2006).
- ◆ The concentrations found in koura would require an 85kg adult to eat 2,840 small or 720 large koura tails to risk death. Given that koura are nocturnal, and noting that 1080 leaches rapidly from baits in water, the baits would need to be dropped very close to koura shortly before nightfall. This is highly unlikely in a 1080 operation, further reducing any potential risk (Suren & Lambert, 2006).

## ***Anticoagulants***

- Anticoagulants are absorbed through the gastrointestinal tract, skin and respiratory system (Petterino & Paolo, 2001, as cited in McLeod & Saunders, 2013).
- They work by inhibiting the vitamin K reductase, depleting the level of blood coagulation factors such as prothrombin, and disrupting the blood's ability to clot (Petterino & Paolo, 2001, as cited in McLeod & Saunders, 2013).
- Anticoagulants are a highly cumulative poison due to its high lipophilicity and extremely slow elimination rate (McLeod & Saunders, 2013).
- Brodifacoum has very low solubility in water, so leaching from soil is unlikely to occur (Tomlin, 2009, as cited in McLeod & Saunders, 2013).
- Brodifacoum is very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment (Tomlin, 2009, as cited in McLeod & Saunders, 2013).
- They tend to bind to organic particles and settle out relatively quickly, where they may persist for weeks to months (Tomlin, 2009, as cited in McLeod & Saunders, 2013).
- Brodifacoum was found to persist longer in marine invertebrates such as shellfish, mussels and paua, for up to 31 months after exposure (Primus *et al.* 2005, as cited in McLeod & Saunders, 2013).
- Cavanagh and Ward (2013) found detectable levels of coumatetralyl and bromadiolone in the livers of brown trout, eels, and yellow eye mullet in the lower Oreti catchment. The highest concentration (0.034 µg/g of bromadiolone) was found in the liver of a brown trout specimen from Otepuni Creek.
- Anticoagulants were also found in the sediment of two sites in New River Estuary (Cavanagh & Ward, 2013).

## ***Recommendations***

Based on the information above, my recommendations are twofold:

1. Deliberate application of anticoagulants to aquatic environments (e.g. transects across rivers) **should be avoided at all costs**. Occasional accidental contamination of very small amounts is probably harmless because it rapidly binds to sediment. However Cavanagh & Ward (2013) found traces of certain anticoagulants in the livers of aquatic organisms in the lower Oreti catchment, and bound into the sediment of New River Estuary. This means that these pesticides are already finding their way into the system, and any increase in contamination, by allowing application to or across water, may prove harmful to aquatic organisms or to any humans that may eventually consume them.
2. Monofluoroacetate (1080) breaks down quickly in water and usually undetectable within a few days. I recommend that **care be taken with application** of this poison, but accidental contamination is less of a concern than for anticoagulants.

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## Appendix C2

<b>Date:</b>	18 October 2016
<b>From:</b>	Rex Corlett
<b>Subject:</b>	Farm Dairy Effluent Storage

Thank you for the opportunity to provide a professional opinion to Environment Southland on the questions provided by you as best I can. They are all good questions and I trust my responses are sufficient. Should you wish to discuss these further, please advise.

What process CPEng certification might take for acceptance of effluent structures is a separate discussion and I would welcome the opportunity to be involved in making recommendations on this.

I will also send you separately a copy of our submission to Marlborough District Council on their recently released Environmental Plan. They are considering similar effluent storage related issues. Our submission supports their plan and offers some rule enhancement recommendations that are broadly in line with what Environment Southland is proposing.

### **Question 1**

**It has been raised that a pond drop test should be carried out following the construction of clay lined ponds (within 12 months) to ensure they have reached the desired level of hydraulic conductivity. I note in Practice Note 27 (page 79) it suggests field seepage testing on a newly constructed clay liner is difficult to undertake. Can you explain why this is? Further, do you consider there is a need for a PDT to be carried out following the construction of clay lined pond if they have been certified by a CPEng that they are in accordance with practice note 21?**

### **Response**

- 1.1 IPENZ Practice Note 21 (PN21) version 2, March 2013, Part 2: Clay Liners for Ponds, section 6.3 Seepage Testing, first paragraph on page 79 does state “field seepage testing on a newly constructed clay liner is difficult to undertake, and can be quite inaccurate”. Up until early 2013 the Pond Drop Test (PDT) generally relied on visual testing methods which at this time was not sufficiently accurate to confidently assess leakage other than for higher leakage rates, hence the basis for this comment.
- 1.2 Recently however, some rural industry companies with testing capability have adopted significantly improved technology using electronic measurement and data logging techniques to accurately measure changing Farm Dairy Effluent (FDE) pond surface levels over time. They have developed their own PDT methods and claim reading reproducibility of 0.8mm per day. However no standardised test method has yet been developed in NZ.
- 1.3 Because of the improved accuracy now available from the PDT test this will significantly lift the sealing standard of storage facilities constructed, especially for clay lined ponds which can be problematic, and limit the risk of farmers paying for sub-standard systems.
- 1.4 The current version of IPENZ PN21 only provides very general guidance on PDT’s (refer Part 1: Design and Construction Principles, Section 8.7 Drop Test (page 51)). PN21 is currently under review by IPENZ with a new version expected to be available in mid-2017. It will include improved guidance reflecting the new technologies now available.

Further it will recommend an Effluent Pond Drop Test methodology similar to that proposed in Appendix P of the Southland W&L Plan.

- 1.5 To certify a clay lined effluent pond a Chartered Professional Engineer (CPEng) will need sufficient evidence that seepage is within allowable limits. A PDT can directly measure the difference in pond surface level over time, and hence conformance to the W&L Plan rules. Further, if the pond dimensions are known, the actual seepage rate for a clay lined pond can be calculated. Engaging an experienced rural contractor, even with good QA and compaction testing in itself will not necessarily provide sufficient confidence a CPEng will be looking for. In comparison to clay lining, geomembrane liners are placed by specialist liner installers who have more rigorous testing procedures as part of their installation methodology and offer installation and materials guarantees, as well as producer statements.
- 1.6 A CPEng is personally accountable for their actions (and inactions) and signing off on a clay lined pond will not be easily given in the absence of sufficient credible supporting evidence. Moreover, CPEng's are professionals who have successfully completed a competence assessment. They are bound by a Code of Ethical Conduct which requires them to, amongst other things, take reasonable steps to safeguard health and safety, have regard to effects on environment, report adverse consequences and act competently.
- 1.7 A further comment - PN21 is not a standard but a good practice guidance document which allows some discretion by designers and constructors as to how they might achieve industry good practice outcomes.

## **Question 2**

**How applicable is the PDT to other dairy effluent infrastructure, e.g. sludge beds or weeping walls? I understand from Colin Young that this is not really necessary as they do not have the hydraulic head that ponds do?**

## **Response**

- 2.1 Ancillary effluent infrastructure can vary in size and depth. While ponds are generally deeper than other effluent infrastructure this is not always the case. Even low hydraulic head structures can excessively leak and is often related to their type of construction. A sludge bed formed by simply digging a trench into the ground will almost always fail to meet minimum leakage requirements.
- 2.2 The PDT could be used on all dairy effluent storage structures, but practically should depend on the maximum volume of FDE that they are designed to contain.

It is recommended that the proposed rule be amended so that it only applies to the main FDE storage pond(s), plus any other effluent retaining structures such as sludge beds, bunkers and holding tanks, but only if (individually) they have a maximum working capacity greater than 35 cubic metres.

This is consistent with the intent of the Building Act 2004, Schedule 1, Part 1 Exempted building work, Section 23(g) which allows a building consent exemption for tanks with a capacity of less than 35 cubic metres.

PN21 Part 1 Section 3.4.3 Building Consent Exemptions (page 12) provides some commentary and should be referred to in response to this question (and question 4).

2.3 However all structures of less than 35 cubic metres must still be sealed.

### **Question 3**

**A number of submissions have raised potential reluctance from CPEng's to certify somebody else's work is structurally sound. I understand from Colin Young there is a Producer Statement that outlines certification of existing structures. Can you briefly outline how this would be done for effluent storage?**

### **Response**

- 3.1 Not unreasonably, the Chartered Professional Engineer (CPEng) will want to be involved in both the design and construction of a structure from commencement until completion to provide confidence that they can personally certify the work. It would be unreasonable to expect a CPEng to give certification "after the event" when they did not have the opportunity to bring some input to the project. Professional engineer non-involvement does not occur with structures subject to CPEng producer statements as part of building consent signoffs, nor should it with rural effluent structures.
- 3.2 The assessment of structural soundness does not limit the landowner from using the professional services of persons who are not Chartered Professional Engineers (CPEng) to do the design and construction, but it does require their work to be approved, checked and signed-off by a CPEng. During construction many CPEng's would use more junior staff to be their "eyes and ears" and report their observations back as the project progresses. The Engineer will also want to see the results of a previously agreed QA testing programme implemented by the Contractor.
- 3.3 For the design and construction of effluent containment structures Chartered Professional Engineers can complete the standard IPENZ/ACENZ producer statement forms as they would for any other type of infrastructure they were certifying.
  - Producer Statement – PS1 – Design
  - Producer Statement – PS4 – Construction Review
- 3.4 While certification may add some costs to the landowner, it will also significantly lift the standard of storage facilities being built and avoid the risk of farmers paying a much greater cost for having to remediate or replace sub-standard systems in the future.

### **Question 4**

**Other effluent storage systems, for example community sewage, currently there is no requirement for certification from CPEng. I understand the Building Act provides direction of the design and construction of this storage, is there any other best practice direction around design i.e. around leakage?**

- 4.1 Effluent ponds, tanks and other containment structures fall under the meaning of a building as defined by the Building Act 2004 (refer Section 8(1)(a)) and are therefore subject to the Act.
- 4.2 This extract from PN21 Part 1: 3.4.1 Building Act - Overview (page 11) provides some background to relevant aspects of the Building Act as it relates to effluent retaining structures. Particularly pertinent points have been underlined.

*"The BCA does not require Building Consents in all cases. For containment structures which are considered to be dams under the BA, the proposed Building Amendment Act (No 4) 2011, Schedule 1,*

*Part 1, section 22 says “Building work in connection with a dam that is not a large dam” is exempt from a Building Consent. In general, FDE ponds are covered by this provision and do not generally require Building Consents.*

*However, two important BA sections need to be considered when structures (including ponds and tanks) are constructed or altered.*

*Section 7 states that building work includes “site work” and “design work relating to building work”. Therefore, in general terms no site work can be started until a Building Consent (if not exempted) has been approved for the proposed construction.*

*Section 17 states “All building work must comply with the Building Code to the extent required by this Act, whether or not a Building Consent is required in respect of that building work”. Therefore, regardless of the DC and RC requirement for (or not for) Building Consents, there is still a requirement for structures to meet the performance requirements of the Building Code.*

*When this Practice Note was being prepared it became clear that some building regulations are intended to relate to FDE buildings and structures. However, this is not as clearly expressed and understood as it could be. As a result, legislation and the resulting building regulations are not being universally applied.*

*Some DCs are choosing to enforce requirements to “the letter of the law” while other councils seem less rigid in their interpretation of the regulatory requirements.*

*Clarification should therefore be sought at an early stage in a project’s development as to the consents required from the relevant statutory authority.”*

- 4.3 While a Code Compliance Certificate (CCC) issued for a constructed tank or retaining structure under the Building Act confers structural soundness it should be noted that this does not also confer that any maximum leakage requirements has also been met, or that its capacity will be sufficient for the proposed system. Therefore, obtaining a CCC does not imply Council’s rules will automatically be complied with and that such structures should be therefore exempted from all Council’s certification rules.
- 4.4 I am not aware of any NZ regulatory or best practice guidance documents specifically around leakage from effluent structures, apart from PN21.

However the following documents may be relevant:

- *Technical Guidelines for Disposal to land (April 2016), WasteMINZ*  
<http://www.wasteminz.org.nz/pubs/technical-guidelines-for-disposal-to-land-april-2016/>  
*Section 5.7 Liner Systems* is of interest as it provides guidelines for; containment of leachate for collection and treatment/disposal, and minimisation of leachate leakage to groundwater. The rural industry acceptance criteria for dairy effluent containment is considerably lower than it is for landfills in NZ.
- *Principles of Design and Operations of Wastewater Treatment Pond Systems for Plant Operators, Engineers and Managers, Chapter 4 Physical Design and Construction, United States Environmental Protection Agency (USEPA)*  
<https://www.epa.gov/sites/production/files/2014-09/documents/lagoon-pond-treatment-2011.pdf>

Chapter 4 Physical Design and Construction is of general interest but care must be exercised in applying any criteria to the NZ context because of our different regulatory and environmental requirements.

As far as I am aware there is no requirement for certification from a CPEng for community sewage storage, although many local authorities would seek this from their engineering consultants to provide some guarantee as to the quality of their work.

## Appendix C3

<b>Date:</b>	28 November 2016
<b>From:</b>	Brydon Hughes
<b>Subject:</b>	Submissions on Appendix L and Appendix O

### Response to Submissions on the Proposed Southland Water and Land Plan

#### Appendix L.4 - Calculation of Seasonal Groundwater Allocation

HSV Dairy Limited -*Peak allocation of groundwater for dairy is 140 litres/head/day. Consider if this figure is relevant to 2016 and beyond*

Appendix L.4 lists nominal peak and average daily water use figures for a range of stock types. The listed figures are mainly derived from the Lincoln University Farm Technical Manual (2003)<sup>870</sup> and similar reviews of stockwater requirements (e.g. Aquas Consultants and Aqualinc Research Ltd, 2007<sup>871</sup>). The figure of 140 L/head/day for dairy use (stock drinking and shed washdown) has been utilised as a default estimate for establishing daily and seasonal volumes for dairy takes for some years and is in line with volumes in relevant references.

Water use compliance monitoring data held by Environment Southland indicate a figure of 140 L/head/day represents a reasonable estimate of peak water use for dairy supply in the Southland Region. While efficiencies may be gained by the use of 'smart' technologies<sup>872</sup> for washdown and plant cleaning, such systems are not universal so the nominal figure of 140 L/head/day remains the best estimate of 'reasonable' peak usage for dairy supply.

It is noted the annual average water use of 95 L/head/day represents a figure for establishing dairy water usage on an annualised basis which recognises diminished water usage outside the peak of the milking season.

Flaxwood South *Inclusion of a provision to apply stock drinking water volumes for surface waters (i.e. Table Y.3 to apply to surface water too)*

The submission raises a valid point that the figures listed in Table Y.3 apply to groundwater takes only. The Council may wish to consider amending Appendix L.4 so that the recommended peak and annual stock water volumes apply consistently to all water takes (groundwater and surface water).

<sup>870</sup> Lincoln University, 2003; *Farm Technical Manual*. P Fleming (Ed) Farm Management Group, Lincoln University

<sup>871</sup> Aquas Consultants and Aqualinc Research Ltd, 2007; *Reasonable Stock Water Requirements. Guidelines for Resource Consent Applications*. Technical Report prepared for Horizons Regional Council, December 2007

<sup>872</sup> E.g. <http://www.dairynz.co.nz/environment/water-use/smart-water-use-in-the-milking-shed/>

## Appendix O - Reasonable and Efficient Use of Water

Allocative efficiency is achieved when the maximum benefit is able to be derived from an available water resource (i.e. the entire allocation available is utilised for the greatest productive benefit). In terms of overall resource management, allocative efficiency is an outcome of the manner in which access to the available water resource is assigned to individual resource users.

One of the primary factors contributing to sub-optimal allocative efficiency is a situation where the rate and/or volume of water allocated to an individual user exceeds that actually used. Where water is allocated on this basis, it may result in a significant proportion of available allocation being held by users who rarely (if ever) utilise their full allocation. This process effectively 'ties up' water that could otherwise be accessed by other users, thereby reducing the overall productive benefit able to be derived from the available resource.

Establishing seasonal allocation which aligns with a realistic estimate of actual usage is also important in terms of managing cumulative effects of water abstraction on the environment. In the case of stream depletion (Appendix L.2), groundwater takes classified as having a high or moderate hydraulic connection are assessed on the basis of pumping scenarios which are determined on the basis of seasonal allocation. Where seasonal allocation is significantly higher than actual water use, calculated stream depletion effects may be significantly higher than those resulting from actual abstraction. Particularly where surface and hydraulically connected groundwater are managed on the basis of a proportional flow allocation (for example, under the Water Conservation (Mataura River) Order 1997), this can potentially result in a significant reduction in the reliability of supply for downstream water users and prevent other users from accessing the resource (due to low supply reliability).

Aside from hydropower in the Waiau catchment, irrigation is the largest consumptive water use in the Southland Region. Figure 1 shows a plot of the percentage of water actually used by irrigation resource consents supplying water use data to Environment Southland between the 2002/03 and 2015/16 irrigation seasons. The data indicate that seasonal water usage for irrigation averages just under 40 percent of cumulative seasonal allocation, with maximum usage of 56 percent of cumulative allocation recorded during the 2007/08 season<sup>873</sup>.

### **Figure 1. Recorded irrigation water usage as a percentage of cumulative allocation, 2002/03 to 2015/16**

These data indicate that a significant proportion of water allocated for irrigation in Southland is not actually used. Given constraints on water availability in many parts of the Southland Region, improving allocative efficiency is an important consideration to enable effective management of water resources.

Appendix O contains provisions which are intended to help improve allocative efficiency in the Southland Region. These provisions relate to irrigation, group or community water supply as well as other water uses and include a nominal figure of 300 mm/year for pasture irrigation as a default for establishing seasonal volumes for irrigation resource consents. The provisions also provide for seasonal volumes in excess of 300 mm where water use is assessed using a field-validated irrigation demand model<sup>874</sup> or using historical water use data.

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<sup>873</sup> For those consents supplying water use data to Environment Southland

<sup>874</sup> It is noted that a 'field-validated irrigation demand model' describes a model which is capable of simulating potential irrigation water demand under Southland conditions. As noted in Liquid Earth *et al.* (2011) and Liquid Earth (2011), irrigation demand during the October to November period in Southland often departs from that calculated on the basis of soil water balance modelling, possibly due to operational factors which are not accounted for in modelling. A 'field-validated' model should be able to incorporate such factors to provide a 'reasonable' estimate of water use under a range of Southland climatic conditions.

As outlined in Table 1, a review of historical water use data from over 40 irrigation consents indicates that irrigation water use rarely exceeds 300 mm/year. As a result, this figure is considered appropriate for establishing 'reasonable' seasonal allocation volumes which balance potential water irrigation demand against potential reductions in cumulative allocative efficiency associated with volumes in excess of this figure.

Hamish English - *Allocation in water balance models based on 350 mls annum in nine and ten*

As noted above, available data indicate irrigation water use in Southland rarely exceeds 300 mm/year and, as written. Based on the compilation of irrigation water use data spanning the period between 2002/03 and 2015/16 outlined in Table 1, water use exceeding 300 mm has only been recorded for individual resource consents on two separate occasions (out of a total of 325 annual records).

For example, during the 2007/08 irrigation season when recorded rainfall across the middle reaches of the Mataura River catchment was at a 1 in 10 year 3-month low (mid-November to mid-February), only one out of 20 consents supplying water use data to Environment Southland had an irrigation depth exceeding 300 mm. This suggests a figure of 300 mm may be appropriate for a majority of consents in a 1 in 10 year dry period.

Appendix O does not preclude irrigation volumes in excess of 300 mm/annum. It does however require justification of higher volumes on the basis of appropriate water demand modelling or historical water use data.

Flaxwood South *Ensure historical data is greater/longer than four or five years*

All water permits for irrigation abstraction in Southland granted in Southland since 2002 have had conditions requiring the supply of water use data to Environment Southland. Given a majority of consents have a term of 10 years, availability of water use data is dependant of water users complying with conditions of consent. However, in the absence of water use data, individual applications will be considered on a case-by-case basis through the resource consent process.

Hort NZ *Replace 80 percent (4 in 5 year) reliability with 90 percent (9 in 10 year reliability)*

Amendment of reliability criteria from 80% to 90% is supported as it will provide a higher standard of reliability for irrigators (equivalent to the volume required to meet irrigation water demand with a reliability of nine out of ten years based on analysis of long-term climate data). Provisional analysis of historical water use data indicates the 300 mm/year default will achieve this reliability in most areas of Southland.

*Add '...or farming system' to the second bullet point under (b)*

Inclusion of a reference to 'farming' system is supported as it will allow a range of factors (not just those related to the irrigation system) related to irrigation management to be taken into account when seasonal volumes are being established for replacement resource consents.



Irrigation NZ

- (a) *by use of a field-validated **daily time-step** irrigation demand model to calculate the annual irrigation volume to achieve ~~80 percent (4 in 5 year)~~ **90 percent (9 in 10 year)** reliability which takes account of:*

As per comment above, amendment of reliability of supply criteria from 80% to 90% is supported. Including reference to daily time-step modelling will provide useful definition of the resolution of modelling required.

***an irrigation application efficiency of 80%***

Addition of specific criteria for minimum irrigation application efficiency are supported. Such criteria provide a benchmark which can be assessed following relevant guidelines e.g. *New Zealand Piped Irrigation System Performance Assessment Code of Practice* (Irrigation New Zealand, 2015).

WaterForce Southland *Irrigation can easily be controlled with a GMP. If Appendix O is to stay in place a quantity of 4000 m<sup>3</sup>/ha will cover 9/10 seasons in most areas of Southland. Water abstraction for irrigation already requires consent appendix O (a) would be implemented as a GMP*

As noted above, a volume equivalent to 4,000 m<sup>3</sup>/ha (equivalent to an application depth of 400 mm) is higher than actual water usage by a majority of resource consents. Establishing this figure as a default for establishing seasonal allocation is likely to result in an even greater proportion of available allocation remaining unused and decrease overall allocative efficiency.

Although, Appendix O does not preclude application rates in greater than 300 mm/annum, it does require volumes in excess of this figure to be justified on the basis of irrigation demand modelling or historical water use. Appendix O is intended to provide guidance for regulatory controls (i.e. resource consent conditions) rather than non-regulatory management practices.

**Table 1. Application depth (mm) for selected resource consents in the Southland Region, 2002/03 to 2015/16 (calculated on the basis of recorded seasonal water use over the consented irrigation area)**

Consent Number	2002/03	2003/24	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
301359	41				176	125	217	168	124	181	229	173	147	236
301358		69		76	21	75	195	132	62	81	179	183	108	210
20168772									48	80	62	53	95	74
206958											138	92	74	108
302766				60	71			107	143	90	219	95	156	147
302193							79	138	86	131	167	14	117	140
20158006									162	169	286	165		
20147525			47	106	104	199	217	249	22	39	35	28	37	50
20146852			85		99	317	272	260	250	0	168		66	156
20146367			14	31	17	105	62	40	76	92	93	86	107	58
300942								62	108	140	76	87	135	158
204364							216	161	134	191	255	99	161	158
300869					77	166	205	195	82	80	190		151	255
20146901						133	98	98	83	102	111		23	174
20147481							113	115	117	129	130	117		138
20147096			101	131	126	287	202	189	138	0	180	157		
202207					6	6	33		19	27		27		30
20168770	42	44		9			21	21	7	6	6			
204511								52	72	26	139	110	14	44
301542								55	107	94	117	104	79	138
20146373			99	118	150	251	216	177	116	164	222	219	24	151
203270							18		29	3	20	4		

Consent Number	2002/03	2003/24	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	
300199	95	122	50	129	89	164	128	76	60	138	135	116	90	156	
201052						240			278						
20158075						71	280	65	184		161	308	209	162	257
300781			135	70	147	65		279	206	11	105	186	118	144	195
20147192									106	117	146				118
20158314															46
20147080				54	74	68	151	78	95	62	109	152	106	24	128
202868							284	168	173	216	203	249	199	0	49
301740					142	103	222	29	40	35	92		54	42	87
204204											272	237		96	
202867								87	25	49			29	30	39
205872									239	224	85	113	206	164	179
205956								80	204	254	53	131	231	181	206
20147062													140	14	62
202624						120	182	188	144	145	96	79		147	122
20147301						64	180	121	94	85	103	35			86
206311						185	202	212	222	224	148	122		227	188
302429									48	32	87	13			136
300855					116	68	215	24	75	60	184	134	84	71	96
<b>Average</b>		<b>59</b>	<b>93</b>	<b>65</b>	<b>95</b>	<b>88</b>	<b>189</b>	<b>134</b>	<b>130</b>	<b>107</b>	<b>106</b>	<b>144</b>	<b>114</b>	<b>96</b>	<b>131</b>
<b>Maximum</b>	<b>95</b>	<b>135</b>	<b>101</b>	<b>147</b>	<b>185</b>	<b>317</b>	<b>279</b>	<b>260</b>	<b>278</b>	<b>272</b>	<b>308</b>	<b>231</b>	<b>227</b>	<b>257</b>	

## Appendix C4

<b>Date:</b>	March 2017
<b>From:</b>	Brydon Hughes
<b>Subject:</b>	Groundwater

### Issues Section

#### Groundwater Allocation

Groundwater allocation is generally well below the allocation limits listed for a majority of aquifer systems in Southland. However, due to the interconnection between surface and groundwater across many parts of the region, groundwater allocation is restricted due to the potential for effects on hydraulically connected surface waterways, many of which are at or near full allocation. As a result, the availability of primary groundwater allocation is not always indicate that resource consent for groundwater abstraction would be granted at all locations within an individual groundwater management zone (i.e. in situations where there is a significant connection between groundwater and surface waterways with a high level of allocation, only groundwater classified as having a Low degree of hydraulic connection may be granted).

At the current time no further groundwater allocation is available from the confined North Range and Lumsden Aquifers in the Oreti Basin, so these aquifers are fully allocated. This situation may change over time if existing consents are not replaced or existing seasonal volumes are reduced through the resource consent process.

#### Policy 21 /Appendix L

##### Garvie Aquifer

When the original draft of the pWLP was prepared, the “Garvie Aquifer” was managed as a separate groundwater resource in the Wendonside Terrace area which was distinct from the overlying unconfined aquifer. This approach reflected a conservative approach to managing allocation consistent with the ‘staged management approach’ outlined in the RWP and reflected the limited information available to characterise the resource.

However, improved hydrogeological data from recent drilling and aquifer testing in the area now shows that the water-bearing layer previously referred to as the Garvie Aquifer is relatively ‘leaky’ so it is more appropriate to manage all groundwater in the Wendonside groundwater zone (regardless of depth) as a single resource for allocation purposes.

Reflecting this, the Environment Southland staff submission proposes that reference to the Garvie Aquifer (and associated minimum level cut-offs) is removed from the plan. As a result, bores located in what was previously referred to as the Garvie Aquifer are now managed as part of the Wendonside groundwater zone defined in the pSWLP.

#### Policy 23 and Rule 54

##### Groundwater takes with a Moderate hydraulic connection

The classification of groundwater takes with a Moderate hydraulic connection includes those abstractions which may result in more than minor effects on surface water which, due to a significant lag in response, cannot effectively be managed in terms of minimum streamflow cut-offs.

The proposed approach to managing groundwater takes with a Moderate hydraulic connection is to include the calculated stream depletion effect resulting from such takes within the allocation volume for the relevant surface waterbody. This means groundwater takes with a Moderate hydraulic connection can only be granted where surface water allocation is available from the relevant surface waterway.

However, minimum flow cut-offs are not required for takes with a Moderate hydraulic connection due to the fact they are not an effective means of mitigating effects on surface water (i.e. stream depletion effects persist for a significant time following cessation of pumping) so pumping regulation does not provide an effective means of mitigating environmental effects.

With reference to submissions by DOC and Fish and Game, under both the pSWLP and the RWP stream depletion effects are assessed in terms of the nearest surface waterway (Appendix L.2 provides guidance for assessment where a take is located adjacent to more than 1 stream), regardless of stream type. Therefore, management of cumulative effects on individual spring-fed streams is managed in the same way as they are on all other surface waterways. In this case, where allocation is available, Moderate groundwater takes will be granted on an unrestricted basis. Where allocation is not available, Moderate groundwater takes will not be granted. Avoiding any effects on baseflow in spring-fed streams resulting from groundwater abstraction would require there to be no groundwater takes with a Moderate or Low degree of hydraulic connection within the catchment area of such streams.

As noted in submissions by Fonterra and Landpro reference to base flow in Policy 22 (i.e. avoiding allocating water to the extent that the base flow of any waterway is depleted) is incorrect as:

*Baseflow is effectively the component of flow that is derived from groundwater, and therefore this policy would mean that groundwater abstractions can have no effect on surface water flows (Landpro submission)*

The literal wording of this policy would mean it is not possible to allocate groundwater which has a Moderate or Low hydraulic connection as all such allocation will have some effect on baseflow (however small). This highlights one of the challenges in managing surface and groundwater interaction that while takes with a lower degree of hydraulic connection have a reduced magnitude of effect on surface water flow, there is limited ability to manage such effects in a temporal way.

## **Rule 53**

### **Nominal bore depth**

Bores which do not adequately penetrate the aquifer increase the potential for interference effects to occur. Case law exists which states that groundwater abstraction cannot be restricted due to effects of inefficient bores (i.e. bores which are screened close to the water table which are therefore much more susceptible to drawdown effects from neighbouring bores). To avoid such effects it is typical for Regional Plans to require that bores ‘fully penetrate’ the source aquifer (the RWP contains such a provision).

However, practical problems have been experienced in determining the depth required for “full penetration” in Southland, so the proposed nominal screen depth is a compromise intended to provide certainty regarding what can be considered ‘adequate’ bore construction when assessing interference effects. It is however acknowledge that there may be some localised physical settings where it is not possible (or practicable) to screen bores 10 metres below the water table.

## **Appendix L**

### **Reference to primary allocation for confined aquifers**

For consistency with the figures in Appendix Y.5.1, reference to the allocation volumes listed in Appendix Y.5.2 should be changed from '*Annual Allocation*' to '*Primary Allocation*'

## Appendix C5

<b>Date:</b>	20 March 2017
<b>From:</b>	Brydon Hughes
<b>Subject:</b>	Groundwater Allocation Volumes

### **pSWLP Groundwater Allocation Volumes**

The Environment Southland Staff Submission on the pSWLP contains recommendations for allocation volumes for 30 groundwater management zones listed in Appendix L.5.

The recommended groundwater allocation volumes are based on 35 percent of the land surface recharge estimated for each groundwater management zone using figures calculated by Chanut (2014)<sup>875</sup>. Adoption of a figure of 35 percent of recharge as the primary allocation volume is consistent with the interim limits for groundwater allocation outlined in the Proposed Environmental Standard on Ecological Flows and Water Levels and other similar “first-order” approaches to groundwater allocation<sup>876</sup> in New Zealand.

The allocation volumes listed in the Proposed Plan (as notified) are preliminary figures included in early draft versions. It was intended that these initial figures would be replaced with the updated allocation volumes listed in the Staff Submission prior to notification. However, due to oversight during compilation of the final draft, this replacement did not occur. The Staff Submission therefore seeks to amend the allocation volumes for individual groundwater management zones to the correct figures that should have been included in the notified Plan.

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<sup>875</sup> Chanut, P., 2014. Seasonality of land surface recharge in Southland. Environment Southland Report, April 2014

<sup>876</sup> e.g. Aitchison-Earl, P., Scott, D., Sanders, R., 2004. Groundwater allocation limits - Guidelines for the Canterbury Region. Environment Canterbury Report U04/02, January 2004.

## Appendix C6

<b>Date:</b>	25 November 2016
<b>From:</b>	James Dare
<b>Subject:</b>	Bioaccumulation and Policy 32

This memorandum is in response to point 5 in the submission from the South Island Eel Industry Association (SIEIA), which relates to Policy 32 – ‘Protect significant indigenous vegetation and habitat’. The SIEIA states that they are very concerned about the bioaccumulation of hazardous substances in eels, and how these are managed through the consenting process. They recommend that the policy is changed to (amendments in bold italics): *“Protect significant indigenous vegetation and significant habitats of indigenous fauna to improve soil health, water quality, water quantity, **harvest values (including bioaccumulation of hazardous substances)** and ecosystem health.”*

Bioaccumulation refers to the accumulation and concentration of substances within the body of living things. This occurs because certain substances cannot be broken down or excreted, usually due to water-insolubility. These substances can magnify as top predators feed upon numerous small organisms that have built up non-lethal amounts of the substance in their bodies. Substances such as mercury and organochlorine pesticides are known to bioaccumulate in shellfish, eels, and fish that are present in contaminated riverine and estuarine systems.

Cavanagh and Ward (2014) investigated bioaccumulation in aquatic predators, as part of their study on contaminants in estuarine and riverine areas around Southland. These authors found accumulation of ΣDDTs and some anticoagulants in the livers of trout and fish that were not-detectable in sediment samples. Other contaminants such as arsenic, cadmium, copper, lead, mercury and zinc were also detectable in either the tissue or liver of fish and eels, or the flesh of cockles. While this is a concern, most contaminant concentrations were below the national food standard limits (FSANZ, 2005), with only one eel exceeding the standard for mercury. Further work calculated the margin of exposure (MOE) for median and 95<sup>th</sup> percentile consumption rates for different types of fish consumers (‘local’ consumers, average adult female consumers, and high energy consumers). Most consumers were well under the ‘elevated risk’ MOE score of 1.0 which suggests that there is minimal risk given the current levels of contamination and rates of consumption. However, some 95<sup>th</sup> percentile consumer types breached an MOE of 1.0 for arsenic and mercury, in eels, trout and cockles. High energy consumers of trout had a median MOE of 4.3 and a 95<sup>th</sup> percentile MOE of 8.1 for arsenic, indicating elevated risk to this contaminant under median, high-energy consumption rates.

The information above suggests there are enough contaminants in lowland Southland for bioaccumulation to occur; however, levels have not yet reached the point where consumption is hazardous to humans. Given Southland’s attachment to harvesting food from our natural resources, I think bioaccumulation of contaminants in predatory fish or shellfish species is of concern. Exceedances of New Zealand food standard limits may result in recreational bans, significantly affect cultural harvest values, and have implications for exports of these products.

I think the SIEIA is warranted in their concern for bioaccumulation of hazardous substances in Southland’s eel population.



## References

- Cavanagh, J., and Ward, N. (2013). Contaminants in estuarine and riverine sediments and biota in Southland. Landcare Research. 53p.
- FSANZ. (2005). Australia New Zealand Food Standards Code. <http://www.foodstandards.gov.au/code/Pages/default.aspx>

## **Appendix D – Wetland Mapping**

Separate volume