

**IN THE ENVIRONMENT COURT
AT CHRISTCHURCH
I TE KŌTI TAIAO O AOTEAROA
KI ŌTAUTAHĪ**

Decision No. [2026] NZEnvC 188

IN THE MATTER of the Resource Management Act 1991

AND appeals under clause 14 of the First
Schedule to the Act

BETWEEN SOUTHLAND FISH & GAME
COUNCIL

(ENV-2018-CHC-37)

ROYAL FOREST & BIRD
PROTECTION SOCIETY OF NEW
ZEALAND INCORPORATED

(ENV-2018-CHC-50)

Appellants

AND SOUTHLAND REGIONAL
COUNCIL

Respondent

Court: Environment Judge K G Reid
Environment Commissioner K Hardy
Mr J A Hodges (Special Advisor)

Hearing: at Christchurch on 21 to 23 October 2025

Appearances: S R Gepp KC for the appellants
P A C Maw and I F Edwards for the respondent
B S Carruthers KC and M C Buddle for Federated Farmers
Southland
K E Forward for Fonterra Co-Operative and Dairy NZ

Last case event: 1 July 2026



Date of Decision: 21 July 2026

Date of Issue: 21 July 2026

TENTH INTERIM DECISION OF THE ENVIRONMENT COURT

- A: We find that rule 24 will meet the requirements of s70(3) of the RMA.
- B: We find that amended rule 24 proposed by the Council is the most appropriate way to achieve the objectives.
- C: We find that amended rule 24 is within scope.
- D: Costs are not encouraged. Any party wishing to apply should make an application within 15 days of the date of this judgment. Any reply is due within the following seven days.

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PART A Introduction

Background

[1] This decision concerns proposed rule 24 of the Proposed Southland Water and Land Regional Plan (plan). Rule 24 would make discharges of certain contaminants to water that are incidental to farming a permitted activity provided the discharges comply with various other provisions in the plan.

[2] Before rule 24 is included in the plan we must be satisfied that the requirements of s70 of the Resource Management Act 1991 (RMA) have been met. That issue first came before the court in 2022 when the court made interim findings as to how s70 applied to rule 24. However, Parliament has recently amended s70. This decision addresses the amended requirement of s70.

Procedural History

[3] Rule 24 was considered along with other plan provisions, in the court's Fifth Interim Decision dated 23 December 2022 (Fifth Interim Decision).¹

[4] The relevant findings from the Fifth Interim Decision are summarised as follows:

- (a) many of Southland's water bodies are likely degraded with water quality falling below the national bottom line (NBL) or below the minimum acceptable state;²
- (b) the discharge of contaminants incidental to farming and other activities is resulting in significant adverse effect on aquatic life;³
- (c) it is highly likely that the discharges of contaminants (either by

¹ *Aratiatia Livestock Limited v Southland Regional Council* [2022] NZEnvC 265 (Fifth Interim Decision).

² Fifth Interim Decision at [4].

³ Fifth Interim Decision at [5].

themselves or in combination with the same, similar, or other contaminants), are firstly having significant adverse effects on aquatic life and secondly, the discharges include those that are incidental to farming (land use) activities;⁴

- (d) attributes that are below the NBL or minimum acceptable state, are causing significant adverse effects on aquatic life;⁵
- (e) taking into consideration the entirety of the policies, rules and methods the court would approve, the court accepted there would be improvement in water quality. However, the prediction that the thresholds for ecosystem health value would rise above the NBL or minimum acceptable state applicable, was not put to the expert witnesses;⁶
- (f) because the court was not satisfied that it was unlikely that significant adverse effects on aquatic life would result from the discharges, jurisdiction to include a rule permitting contaminant discharges was not established;⁷
- (g) given that the plan provisions were being continually revised up to and including closing submissions and given also the cogent reasons for the permitted activity classification, rather than finally deciding the issue the parties were given an opportunity to call expert evidence on the likelihood of effects and their significance for aquatic life;⁸
- (h) the court recorded that if it found that it did not have jurisdiction to include rule 24 in the plan, then its tentative view was that controlled activity status would be the appropriate classification.⁹

[5] DairyNZ Limited and Fonterra Co-operative Group Limited (the Dairy

⁴ Fifth Interim Decision at [265].

⁵ Fifth Interim Decision at [266].

⁶ Fifth Interim Decision at [270].

⁷ Fifth Interim Decision at [271].

⁸ Fifth Interim Decision at [272].

⁹ Fifth Interim Decision at [273].

Interests), Federated Farmers Southland Incorporated and the Council appealed the Fifth Interim Decision to the High Court in relation to rule 24. The Environment Court process for hearing evidence on the rule 24 and s70 issues signalled at [272] of the Fifth Interim Decision was suspended, pending the outcome of the appeal process.

[6] Following subsequent decisions by the High Court¹⁰ and the Court of Appeal,¹¹ s70 of the RMA was amended by the Resource Management (Consenting and Other System Changes) Amendment Act 2025 (Amendment Act 2025).

[7] The issues now before us pick up where the court left off in the Fifth Interim Decision following the decisions of the High Court, Court of Appeal and Parliament's legislative intervention. The Amendment Act 2025 substantially altered the version of s70 as considered by the High Court and the Court of Appeal. However, aspects of the higher courts' judgments remain relevant to our consideration as we come to in due course.

Amended s70

[8] The Amendment Act 2025 amended s70 as follows:

70 Rules about discharges

(1) Before a regional council includes in a regional plan a rule that allows as a permitted activity —

- (a) a discharge of a contaminant or water into water; or
- (b) a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water,—

the regional council shall be 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, or scums or foams:

¹⁰ *Federated Farmers Southland Incorporated v Southland Regional Council* [2024] NZHC 726.

¹¹ *Southland Regional Council v Southland Fish and Game Council* [2024] NZCA 499.

- (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.
- (2) Before a regional council includes in a regional plan 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, the regional council shall be satisfied that, having regard to—
- (a) the nature of the discharge and the receiving environment; and
 - (b) other alternatives, including a rule requiring the observance of minimum standards of quality of the environment,—
- the inclusion of that rule in the plan is the most efficient and effective means of preventing or minimising those adverse effects on the environment.
- (3) Despite subsection (1), a regional council may include in a regional plan a rule that allows as a permitted activity a discharge described in subsection (1)(a) or (b) that may allow the effects described in subsection (1)(d), (f), or (g) if—
- (a) the council is satisfied that those effects are already in the receiving waters; and
 - (b) the rule includes standards for the permitted activity; and
 - (c) the council is satisfied that those standards, or those standards in combination with any other provisions in the plan, will contribute to a reduction of those effects over a period of time —
 - (i) no greater than 10 years; and
 - (ii) commencing on the date that the rule becomes operative.

[9] For ease of reference, we refer to the effects in s70(3)(a) to (c) as “the s70(3) effects”.

Interpretation issues

[10] Section 70(3) requires:

- (a) that the court is satisfied that that the effects listed in s70(1)(d), (f) and (g) are already in the receiving waters; and
- (b) that rule 24 as proposed by the Council contains standards for the permitted activity; and
- (c) that the court is satisfied that those standards in combination with other provisions in the Plan will:
 - (i) contribute to a reduction of those effects;

- (ii) over a period of time no greater than 10 years;
- (iii) commencing on the date that rule 24 becomes operative.

[11] The word “satisfied” appears in s70(3)(a) and (c). In the present proceedings the Court of Appeal adopted the meaning of “satisfied” stated by the Supreme Court in the following terms:¹²

... Both parties accept that to be “satisfied” is the strongest decisional verb in the RMA. As stated by the Supreme Court, this means “to furnish with sufficient proof or information; to assure or set free from doubt or uncertainty; and to convince; or solve a doubt, difficulty”.

[12] Several issues of interpretation were referred to in submissions.

Meaning of ‘standard’ in s70(3)(b)

[13] The term ‘standard’ is not defined in the RMA, the Regional Policy Statement, the plan or the National Policy Statement for Freshwater Management (NPSFM). For the Southland Regional Council (SRC or the Council) Mr Maw cited the Collins Concise Dictionary definition of ‘standard’ as including, “an accepted or approved example of something against which others are judged or measured.” The Cambridge Dictionary defines ‘standard’ as: “a level of quality”.

[14] The permitted activity land use rules (rules 20, 20A, 20B, 25, 35A, 35B and 70) include conditions that specify both quantitative benchmarks for measurement and qualitative outcomes that must be achieved before an activity can be determined as permitted. Rule 24, whilst not containing any specific benchmarks for measurement or outcomes to be achieved that are unique to that rule, relies on the conditions set out in the permitted activity land use rules as the ‘standards’ that must be complied with before an incidental discharge is determined a permitted

¹² *Southland Regional Council v Southland Fish and Game Council* [2024] NZCA 499 at [19] adopting *Westfield (New Zealand) Limited v North Shore City Council* [2005] NZSC 17, [2005] NZRMR 337 at [52].

activity under rule 24.

[15] For example, rule 20: *Farming* includes quantitative conditions that limit the size of the landholding or limit the maximum number of cows, require the preparation of a Farm Environmental Management Plan (FEMP) in accordance with the requirements set out in Appendix N “Farm Environmental Management Plan Requirements”, and limit the maximum altitude of the farm above mean sea level. Similarly, all the permitted activity rules include quantitative limitations and criteria to meet the permitted activity status.

[16] Mr McCallum-Clark gave planning evidence for the Council and was the only witness to provide us with evidence on the planning framework and the use of the land use rules as standards in proposed rule 24. We received no expert planning evidence to dispute that approach.

[17] We are satisfied that the land use rules set out in the plan (rules 20, 20A, 20B, 25, 35A, 35B and 70) collectively meet the definitions of standards for the purposes of s70. We also find that Appendix N of the plan describes minimum specifications and requirements for FEMPs, which also meet the definition of standards.

“Contribution to a reduction” – interpretation of s70(3)(c)

Submissions

[18] The parties made submissions on the interpretation of s70(3)(c).

[19] The meaning of ‘reduction’ is not in the RMA. For the Council, Mr Maw referred to a number of dictionary definitions. ‘Reduction’ is defined in the Concise Oxford English Dictionary as: “the act or an instance of reducing”.

[20] The word ‘reduce’ is defined as: “to make or become smaller or less”.

[21] Similarly the Collins Concise Dictionary defines ‘reduce’ as meaning (so far as relevant): “to make or become smaller in size, number, etc”.

[22] Mr Maw submitted that what is required for the effects identified in s70(3) to reduce is for them to become smaller or less, or to diminish in size, amount, extent or number.

[23] Mr Maw submitted that to satisfy the requirements of s70(3) the court need only be satisfied that the plan will result in a contribution within 10 years to an ultimate reduction in significant adverse effects. That is to say s70 only requires that the contribution occur within 10 years. The reduction in adverse effects need not occur within this time frame. In support of this submission, Mr Maw referred us to the Collins and Oxford Dictionary definitions of ‘contribute’.

[24] The Collins Concise Dictionary definition of ‘contribute’ includes “to be partly responsible for”. The Concise Oxford Dictionary definition of ‘contribute’ includes “help to bring about a result”.

[25] Mr Maw submitted that inclusion of the phrase ‘contribute to’ has an ordinary meaning which is, to be partly responsible for, or to help bring about a result. On the plain and ordinary meaning of the section he submitted that it is the ‘contribution’ that must occur within the 10-year period, not the reduction itself. He said that if s70 was intended to impose a requirement for plans to achieve a reduction of significant adverse effects within 10 years, rather than a contribution to a reduction, Parliament would have said so.

[26] For Federated Farmers Mr Kyte gave evidence of efforts outside the plan that are underway to improve farm practices that would also contribute to better water quality outcomes. These included many catchment groups that have been set up to drive environmental improvements and the Thriving Southland initiative set up to support these catchment groups. Mr Kyte’s evidence was that the court can be satisfied that improvements are already underway and that further improvements will successfully occur within the next 10 years.

[27] Ms Forward for the Dairy Interests submitted that s70(3) does not require the elimination of significant adverse effects or achievement of NBLs within 10 years, it requires a contribution to a reduction. She considered that on a plain interpretation, there is no nuance that gives rise to the interpretation presented in Ms McArthur's evidence. Her submission was that as the term reduction is not defined in the RMA, it should be interpreted according to its ordinary meaning.

[28] Ms Forward relied on the Oxford English Dictionary which defines 'reduction' as "the action or fact of making something smaller or less in amount, degree, or size". This plain meaning supports a flexible and incremental approach. Section 70(3)(c) does not require that adverse effects be eliminated or reduced to a specific threshold, it merely requires that the permitted activity rule contribute to a reduction in those effects.

[29] She submitted that the inclusion of the word 'contribute' further confirms that the statutory test is not one of absolute achievement, but of directional improvement – consistent with the broader RMA and NPSFM frameworks which contemplate long-term environmental progress.

[30] Ms Gepp for Forest and Bird submitted that s70(3) requires a reduction in significant adverse effects on aquatic life, and that evidence of a reduction in inputs of contaminants is, by itself, insufficient. Relying on the evidence of Ms McArthur, Ms Gepp said the point was that while even a small reduction in contaminant inputs may lead to a progressive improvement in water quality, it does not necessarily translate to a discernible reduction in significant adverse effects on aquatic life. There needs to be enough of a reduction in inputs that it results in a change at an ecosystem level.

[31] She submitted that s70(3) uses the term 'contribute' because methods outside the plan may also contribute to a reduction in significant adverse effects.

[32] Despite the Council's position on the significance and meaning of 'contribute to' Mr Maw also submitted that Mr Norton's evidence was that a

reduction in adverse effects will occur within 10 years. In closing, Mr Maw submitted that should the court prefer the evidence of Mr Norton, then the court does not have to determine whether the Council's interpretation is correct, but if the court preferred the evidence of Ms McArthur, then a determination will be required. Forest and Bird agreed with the Council but submitted that it was desirable for the court to make a finding on this interpretation issue, given this matter is one of the first opportunities for the court to address s70 (as amended), and because the parties fully argued the issue.

Our interpretation of "contribute to a reduction"

[33] We find that 'contribute to' in the context of s70(3) means to be partly responsible for and to help bring about a reduction in adverse effects.

[34] We find that 'reduction' in the context of s70(3) is the action of making something smaller or less in amount, degree or size.

[35] As we come to in our discussion of the evidence, we are satisfied that there will be a contribution to a reduction in adverse effects within 10 years, with both the contribution and reduction occurring within 10 years. In that regard we rely on the evidence of Mr Norton but also our wider assessment of the evidence. On that basis we do not need to make a finding on the interpretation issue raised by the Council and set out at [22] – [23] and we decline to do so.

The principal matters to be determined in this decision

[36] We find that the substantive evidential issues to be determined in these proceedings are:

- (a) whether the court is satisfied that the effects listed at (s70(1)(d), (f) and (g)), (any conspicuous change in the colour or visual clarity, the rendering of fresh water unsuitable for consumption by farm animals and any significant effects on aquatic life) are already in the receiving

waters;

- (b) whether the permitted activity standards in proposed rule 24, in combination with other provisions, will contribute to a reduction in those effects within 10 years;
- (c) if we are satisfied that the requirements of s70 can be met, there are a number of different versions of rule 24, the court must consider which version is the most appropriate to achieve the objectives of the plan and is supported by the s32 and s32AA assessment;
- (d) the Council proposes several changes to rule 24, we must consider whether there is scope to make these changes.

[37] These issues turn on the technical evidence of the experts as to the state of the existing environment and the predicted effect of the plan “standards”, (collectively the plan rules already discussed) on water quality outcomes. Before turning to the technical evidence, we outline our understanding of the plan structure and provisions as they currently stand.

Retirement of Commissioner Hodges

[38] Environment Commissioner Hodges retired from the court on 20 April 2026. As we advised parties in our Minute dated 24 April 2026, we had reached the point where drafting of decision was well advanced and while Mr Hodges would remain as Special Advisor under s259 of the RMA, this decision was made by Judge Reid and Commissioner Hardy as a quorum.

PART B The Proposed Southland Water and Land Plan

Plan Structure

[39] The plan is a regional plan intended to direct and guide the sustainable use, development and protection of land and water resources in the Southland region.¹³ A long-term process of change is anticipated, commencing with an emphasis on the management of activities that may adversely affect the region's freshwater quality. The underlying objective of the plan is that water quality in each freshwater body is maintained where it is not degraded and improved where it is degraded by human activities.¹⁴

[40] Proposed rule 24 is the subject of this decision and is to be considered in the context of s70(3) and of the operative objectives, policies and rules, and the scope of the NPSFM.

[41] Mr McCallum-Clark explained that the plan was structured, as understood by the planners and in the expert witness conferencing, so that farming activities are managed by land use rules. The incidental discharges from those activities are to be managed under rule 24, but as a permitted activity that would not drive any standards of its own because all the elements that might influence those discharges are addressed through the land use elements of the rule package.

The National Policy Statement for Freshwater Management

[42] The NPSFM is relevant to the statutory context for preparation of the plan and the scope of the plan provisions, including proposed rule 24.

¹³ *Aratiatia Livestock Limited v Southland Regional Council* [2019] NZEnvC 208 (First Interim Decision) at [1].

¹⁴ First Interim Decision at [129], referring to Objective 6.

[43] The plan was prepared under the NPSFM 2014 (as amended in 2017)¹⁵ and gives effect to the objectives and policies of the NPSFM (as amended in 2017), aside from the policies subject to the Council's Progressive Implementation Programme which will be given effect to through a time-staged implementation programme¹⁶ to set freshwater objectives and limits for all Freshwater Management Units in Southland.¹⁷

[44] The policies excluded from the plan include *inter alia* those related to the setting of freshwater quality limits for all freshwater management units in the region, including specifying targets and implementation methods to give effect to the NPSFM objectives. The matter of setting targets and limits is intended to be addressed through a future statutory process comprising Plan Change Tuatahi¹⁸ and the Southland Regional Council's Progressive Implementation Programme.¹⁹ The plan therefore does not include any NBLs or any target attribute states.

[45] Plan Change Tuatahi was originally intended to be completed by December 2025²⁰ but was put on hold in accordance with amended s80A(4A) of the RMA, and a plan change giving effect to the NPSFM 2020 now must not be notified before a replacement for that NPSFM is notified or 31 December 2027, whichever is the sooner.

[46] In its Fifth Interim Decision the court found that:²¹

¹⁵ The NPSFM was subsequently replaced in August 2020. Amendments were made to the replacement NPSFM in January 2024. Consultation on further proposed amendments has been undertaken during 2025.

¹⁶ Being Policies A1, A2, A3, B1, B2, B5, B6, CA1, CA2, CA3 and CA4 of the NPSFM.

¹⁷ Southland Water and Land Plan (operative in part) dated May 2024 at Preamble.

¹⁸ Plan Change Tuatahi: a future plan change giving effect to the provisions of the NPSFM (s55(2B)).

¹⁹ Southland Water and Land Plan (operative in part) dated May 2024 at Region-wide Objectives, Note.

²⁰ Southland Water and Land Plan (operative in part) dated May 2024 at Introduction, including footnote 2.

²¹ Fifth Interim Decision at [19].

The proposed plan was notified prior to the commencement of the current NPS-FM 2020. The degraded state of many of the region's water bodies is such that the plan policies and methods are unlikely to fully implement any of the above objectives. This will remain the case until Plan Change Tuatahi is notified giving effect to the NPS – FM's National Objectives Framework.

[47] The court also found that it was beyond the scope of the plan to establish limits on resource use to achieve target attribute states or to support other environmental outcomes.²²

[48] It is within this context that we now consider the scope of the amendments to proposed rule 24 and the wider operative provisions of the plan.

The plan's objectives, policies and rules

Objectives

[49] The plan comprises a suite of objectives, policies and rules focused on managing activities with the potential to impact water quality and quantity, surface water, groundwater, soil resources, river and lake beds and indigenous biodiversity.

[50] The objectives of the plan are all now fully operative. They seek to achieve environmental protection and enhancement alongside economic, social and cultural outcomes.

Policies

[51] All but one of the policies are now operative.²³ Policy 16: *Farming activities that affect water quality*, policy 17: *Agricultural effluent management* and policy 18: *Stock exclusion from water bodies*, are all targeted at farming activities.

²² Fifth Interim Decision at [7].

²³ Policy 42 relating to the consideration of water permit applications is still to be determined.

[52] Policy 16 specifically addresses farming activities that affect water quality and the circumstances where applications to establish new or further intensification of existing dairy farming of cows or intensive winter grazing activities will generally not be granted. It seeks to avoid where reasonably practicable, or otherwise minimise, any adverse environmental effects (including on the quality of water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries and salt marshes, and groundwater) from farming activities. It sets out the actions required to be undertaken and/or avoided to manage the effects of farming activities.

[53] The requirement to prepare and certify a FEMP is set out in policy 16, including reference to Schedule X which identifies all those water bodies determined as being degraded.

Farm Environmental Management Plans

[54] The requirement for FEMPs is the key method for giving effect to the plan objectives and policies in relation to farming activities. Appendix N of the plan sets out the requirements for preparation and certification of FEMPs. We address them further later in this decision.

Status of FEMPs

[55] The court explained in its Fifth Interim Decision that:²⁴

All parties are agreed on the use of Farm Environmental Management Plans as the key method for giving effect to the proposed plan's policies and objectives. The Management Plan adopts a risk management process which is appropriate ahead of a plan change giving effect to the National Policy Statement for Freshwater Management 2020, and given the current state of knowledge concerning some farming activities.

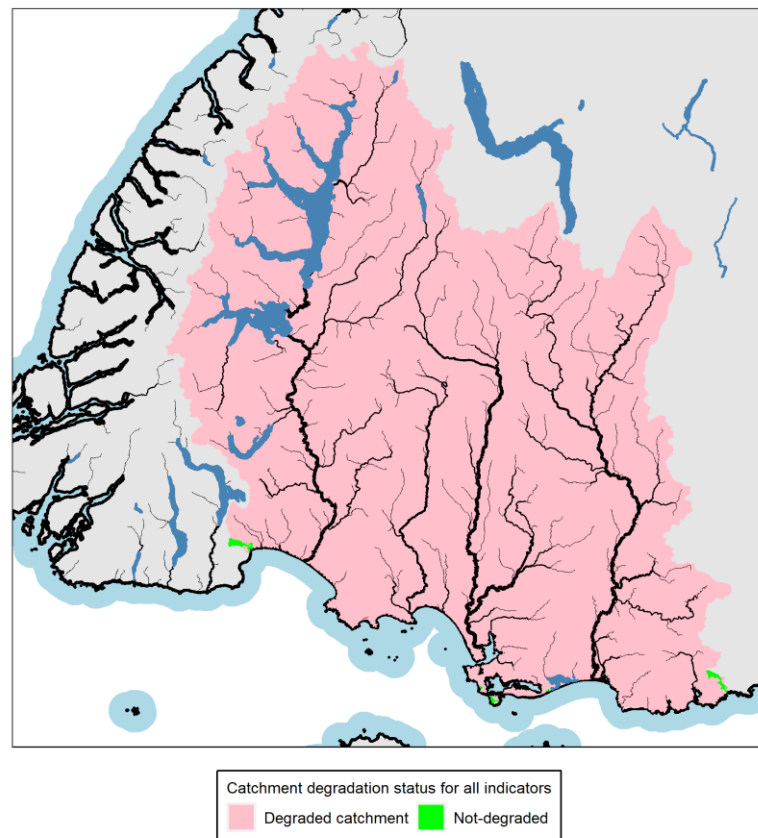
²⁴ Fifth Interim Decision at [9].

[56] Appendix N sets out the requirements for preparation and certification of FEMPs. We accept Mr Maw's submission that FEMPs are a regulatory requirement of the plan, not a non-statutory document that sits to the side of the plan. This is important as it provides regulatory certainty that FEMPs must be implemented.

[57] The Resource Management (Application of Part 9A – Freshwater Farm Plans Southland) Order 2024 commenced on 27 November 2024 and means Part 9A of the RMA applies to the Southland region. We further consider the current use, timeframes and general implementation of FEMPS in Parts D and F below.

Schedule X

[58] Schedule X confirms the “Catchments of degraded water bodies where improvement in water quality is required”. Policy 16 requires that where farming is occurring in a catchment of a water body identified in Schedule X, the adverse effects on water quality from the discharge of farming activities are to be reduced. The rules require that activities implement mitigation actions to reduce adverse effects on water quality within the catchment of those water bodies identified in Schedule X. The overall area of degraded catchments is show on the following map.



Land use rules

[59] The plan contains a suite of land use rules specifically aimed at managing farming activities and achieving the actions set out in Policy 16:

- (a) rule 20 Farming;
- (b) rule 20A Intensive winter grazing;
- (c) rule 20B Pasture-based wintering of cattle;
- (d) rule 25 Cultivation;
- (e) rule 35A Feed pads/lots;
- (f) rule 35B Sacrifice paddocks;
- (g) rule 70 Stock exclusion from water bodies.

[60] Each rule contains conditions comprising quantitative benchmarks for

measurement and qualitative outcomes that must be met before the farming activity can be determined a permitted activity. If the permitted activity criteria cannot be met, then the farming activity is either a restricted discretionary or discretionary activity and resource consent is required. Rule 70: *Stock exclusion from water bodies* includes some non-complying and prohibited activities related to regionally significant wetlands and the roosting and nesting areas of the black fronted tern and the black billed gull. Most farming activities are expected to be permitted, restricted discretionary or discretionary activities.

[61] All these rules relate to the use of land. Rules 20, 20A, 20B and 25 are identified as “Land Use Rules”. Rules 35A and 35B, while identified as the “wastewater, sludge and effluent rules”, both relate to the “use of land” for feed pads/lots and sacrifice paddocks.

[62] They all influence the scale and intensity of farming activities and determine the circumstances under which farming and specific farming related land uses can occur. They have been designed to control the scale and location of farming activities and in doing so manage the effects of the incidental discharges to land that arise from those activities.

[63] Rule 24 has been proposed specifically to permit the discharge of contaminants incidental to farming activities, provided that the conditions specified in the land use rules 20, 20A, 20B, 25, 35A, 35B and 70 are met. Whilst land use farming activities as specified within these rules may be permitted, discharge permits may also be required for the activities specified in the discharge rules and for any surface water discharges.

Discharge rules and proposed rule 24 “Incidental discharges”

[64] While the plan contains a number of discharge rules, the architecture of the plan is such that rules 20, 20A, 20B, 25, 35A, 35B and 70 have been developed specifically to capture all those land use farming activities that may result in incidental discharges to land. This avoids the need for an incidental discharge

consent provided the land use activity is authorised.

[65] Rule 24 sits amongst these land use rules and confirms the circumstances under which incidental discharges to land are a permitted activity. If the land use activity is authorised under rules 20, 20A, 20B, 25, 35A, 35B and 70 then an incidental discharge consent is not required.

[66] The specific discharge rules that may apply in addition to rule 24 include:

- (a) rule 5 Discharges to surface water bodies;
- (b) rule 6 Discharges to surface water bodies that do not meet water quality standards;
- (c) rule 8 Discharges to surface water;
- (d) rule 9 Discharge of agrichemicals onto or into surface water;
- (e) rule 10 Discharge of agrichemicals onto land where they may enter water;
- (f) rule 11 Discharge of vertebrate pest control poisons;
- (g) rule 12 Discharge of non-toxic dyes;
- (h) rule 13 Discharge from subsurface drainage systems;
- (i) rule 14 Discharge of fertiliser;
- (j) rule 15 Discharge of stormwater;
- (k) rule 16 Discharge of water from bores and wells for aquifer testing.

[67] These rules relate to discharges of potential contaminants, discharges to surface water bodies and discharges of water from bores and wells for aquifer testing.

[68] They must be complied with together with rule 24, noting that rule 24 addresses incidental discharges only.

PART C The existing aquatic environment

[69] We now turn to our assessment of the questions posed at [36(a) and (b)] above. In previous decisions the court has made findings that the effects as listed in s70(1)(d), (f) are already in the receiving environment. We consider the detail of those earlier findings and the evidence before us on all the effects listed in s70(1)(d), (f) and (g) before moving to our conclusions.

The court’s previous findings relating to the existing aquatic environment

[70] The Environment Court’s findings on the state of Southland water bodies extend over a number of interim decisions. In its First Interim Decision, the court referred to *Far North District Council v Te Rūnanga-Ā-Iwi o Ngāti Kabu*²⁵ where the Court of Appeal said that the ‘environment’ is not a static concept and that it “is constantly changing, often as a result of implementation of resource consents for other activities in and around the site and cannot be viewed in isolation from all operative extraneous factors”.²⁶ The First Interim Decision recorded that all parties and their experts agreed that water quality in many water bodies in Southland is degraded.

[71] Following the First Interim Decision the court directed expert conferencing on water quality, ecology and mātauranga Māori which extended over multiple conferences between 2019 and 2021.

[72] In its Fifth Interim Decision, the court recorded that science experts reported that the extent of effects of activities on the environment depends on many variables that are individually complex, and in combination highly complex.²⁷

[73] The experts identified attributes relevant to the (then operative) NPSFM

²⁵ *Far North District Council v Te Rūnanga-Ā-Iwi o Ngāti Kabu* [2013] NZCA 221.

²⁶ *Far North District Council v Te Rūnanga-Ā-Iwi o Ngāti Kabu* [2013] NZCA 221 at [80].

²⁷ Fifth Interim Decision at [45].

for ecosystem health and human health for recreation values, adopting the concept of the ‘national bottom line’, where specified, or ‘minimum acceptable state’.²⁸ They reported that for sites lacking monitoring data, models were useful in providing an overview of water quality and ecological state at a regional and sub-regional scale, but that the models also have large uncertainty at a local or river reach scale.²⁹

[74] Based on the expert evidence, the court approved the inclusion of a new Schedule X in the plan,³⁰ which is titled “Catchments of degraded water bodies where improvement in water quality is required”. It includes maps produced by Dr Snelder for the Council for the Macroinvertebrate Community Index (MCI), suspended fine sediments, *E. Coli*, Total Nitrogen and Total Phosphorus, together with a “Catchment Degradation Status for all Indicators” map.³¹ A copy of that map is included above.

[75] The court found that:³²

- (a) it was highly likely that the result of the discharges of contaminants (either by themselves or in combination with the same, similar, or other contaminants), were firstly having significant adverse effects on aquatic life and secondly, that the discharges include those that are incidental to farming (land use) activities; and
- (b) attributes that are below the national bottom line or minimum acceptable state, are causing significant adverse effects on aquatic life.

[76] In relation to Schedule X, the Fifth Interim Decision recorded that:³³

²⁸ Fifth Interim Decision at [46].

²⁹ Fifth Interim Decision at [48].

³⁰ Fifth Interim Decision at [77] – [80].

³¹ *Aratiatia Livestock Limited v Southland Regional Council* [2023] NZEnvC 158 (Eighth Interim Decision) at [47] – [48].

³² Fifth Interim Decision at [265] – [266].

³³ Fifth Interim Decision at [50] – [51], [75], and [78].

- (a) Schedule X was considered a method to implement policy revisions, particularly the extensive revision of policy 16. It was anticipated that different actions would be required of farming activities located within a Schedule X catchment. The parties' water quality scientists confirmed they could spatially identify degraded water bodies and recommended the catchments of water bodies above any degraded segments be identified in order to manage cumulative effects, contaminant loss risk, and the amount of contaminant loss;
- (b) the parties, including the Dairy Interests, accepted the planning advice that policies, rules and methods would implement objective 6 by differentiating farming activities based on location. However, as it transpired, a significantly larger area of Southland was identified for inclusion in Schedule X than had been anticipated by the planners at their expert conference in 2021;
- (c) Dr Snelder's evidence satisfied the court that there was an adequate evidential basis for inclusion of the identified catchments in Schedule X; and
- (d) farming activities located in the Schedule X catchment are to additionally reduce adverse effects on water quality.

[77] We considered the inclusion in Schedule X of both areas that are degraded and those areas above them which are not degraded but contribute contaminants to the degraded areas to be important in terms of the extent to which a contribution to a reduction in adverse effects will be achieved. Policy 16: *Farming activities that affect water quality*, requires avoidance where reasonably practicable, or to otherwise minimise any adverse environmental effects from farming activities, including by reducing adverse effects on water quality where the farming activity occurs within the catchment of a waterbody identified in Schedule X.

[78] In view of its importance to our determination, we wanted to ensure we had sufficient information to enable us to satisfy ourselves whether the s70(3) test is met or not in accordance with the Supreme Court's definition of "satisfied". As

noted above, the court's previous interim decisions relied on the evidence of Dr Snelder as the basis of defining Schedule X catchments.

[79] Ms McArthur noted that she had been involved in the Southland plan process as an expert witness for Forest and Bird since early 2019, has given evidence three times and has participated in nine expert conferences. Based on that involvement, she recapped how degraded water bodies were identified and mapped as Schedule X – based on the outcomes of expert conferencing for the Topic A and B hearings. She referred specifically to Dr Snelder's evidence dated 11 February 2022, which provided us with a helpful background. In that evidence, Dr Snelder recorded that:

- (a) during expert caucusing for Topic B (Science/Water Quality Joint Witness Statement (JWS) November 2021), it was agreed that mapping of all areas where water quality is degraded is required. Because land draining to a degraded water body potentially contributes to the degradation, mapping needs to show all catchment areas in Southland that are upstream of degraded water bodies;
- (b) the water quality experts defined 'degraded' and 'not-degraded' water bodies based on multiple attributes and did not declare that any one attribute had precedence or can be used as a proxy for the others; and
- (c) the entirety of the catchments that include the productive land in Southland are degraded.

[80] The fact that all farms in and contributing to currently degraded catchments must reduce their discharges of the primary contaminants to the smallest amount reasonably practicable within the term of the plan is an important consideration in our s70 evaluation.

The evidence relating to effects on aquatic life

[81] The parties were given the opportunity to call expert evidence on the likelihood of effects and their significance for aquatic life. The role and

significance of the MCI in assessing effects on aquatic life was the major point of difference between Ms McArthur and Mr Norton and we address that later in this decision. We also address matters relating to the effects of nutrients and sediments separately. We consider other aspects of the evidence from the two experts below.

[82] We note that the court sought only the provision of further evidence relating to aquatic life in its Fifth Interim Decision. That was the main focus of the new evidence provided by Ms McArthur and Mr Norton and we address that in Part D4. However, in the interim period, s70 was amended and, for the court to be satisfied that all the requirements of amended s70 are met, we must also address matters relating to conspicuous changes in colour or visual clarity and the rendering of existing freshwater bodies unsuitable for consumption by farm animals. We address those in Part D.

Ms McArthur's evidence

[83] Ms McArthur summarised water quality in Southland as follows:³⁴

Many of Southland's rivers, lakes, wetlands, lagoons and estuaries are in a poor state with respect to water quality, ecosystem health, and indicators of cultural health. Shallow groundwater is also affected in many areas. The state of water quality has been declining over the last two decades, and this is largely attributable to expansion and intensification of land used for dairying, winter feeding of stock and associated land management and drainage practices. Diffuse contamination of surface and groundwater is the primary source of contamination of Southland's aquatic ecosystems. Anthropogenic impacts are degrading freshwater values across multiple aquatic ecosystem types.

[84] This was based on her evidence for Topic B, 20 December 2021.³⁵ She also referred us to the Topic A evidence of Mr Rodway, Mr Ward and Mr Hodson for

³⁴ Statement of evidence of Kathryn McArthur dated 8 October 2025 at [30].

³⁵ Statement of evidence of Kathryn McArthur for Topic B dated 20 December 2021 at [15] and [16]; Statement of evidence of Kathryn McArthur for Topic A dated 15 February 2019 at [16] – [18], [23] – [39] and Appendix 1.

the Council and Dr Kitson for Nga Rūnanga and the May, September, October and November Ecology and Water Quality JWS (2019). As they formed the basis of her evidence, we reviewed them as forming part of her evidence and again, appreciate her providing this helpful background.

[85] We consider the following agreements reached by the 10 experts in water quality, ecology and mātauranga Māori at the May 2019 expert conference³⁶ cited by Ms McArthur³⁷ to be particularly relevant to our evaluation of effects on aquatic life:³⁸

- (a) ecosystem and human health need to consider water quality, physical habitat, habitat connectivity, flow quantity and variability, harvesting (fishing, water cress), invasive species, catchment characteristics, life history stage, parasites and disease, mahinga kai, periphyton, cyanobacteria, land use and drainage, hydrology, sedimentation, eutrophication and fish passage;
- (b) aggregation of multiple attributes may mask the effects of a single attribute;
- (c) in the absence of a repeatable methodology to aggregate multiple attributes to sites, the assessment of overall water quality is subjective. To develop such a framework would be a substantial and complex body of work requiring significant agreement across multiple disciplines;
- (d) water quality and ecology must be considered using a holistic, whole of catchment approach as well as site specific considerations. This requires consideration of historic and current land use, the quality and quantity of groundwater, rivers and streams, lakes, wetlands, estuaries and the sea on an integrated

³⁶ JWS Water Quality and Ecology (rivers and wetlands) dated 9 May 2019.

³⁷ Ms McArthur refers to the JWS in her Statement of evidence dated 8 October 2025 at [31] and [50].

³⁸ JWS Water Quality and Ecology (rivers and wetlands) dated 9 May 2019 at [23(a)], [23(b)], [25], [27], [29], [37].

- basis. As they are all inter-related the risk of drawing incorrect conclusions increases if considered in isolation of each other; and
- (d) the experts acknowledge that trend analysis has significant limitations. Some sites are degrading, some are improving, and caution must be used in trying to draw overall conclusions in relation to trends.

[86] Ms McArthur's evidence was that ecological assessment requires a holistic approach to understanding the relationships between organisms and their environment and also that in some cases, lake and estuarine ecosystems require greater reductions of nitrogen and phosphorus than what is needed to achieve the minimum acceptable state or NBL in rivers. She considered that trends in ecological indices can be useful to assess changes through time and that they should be considered broadly indicative as they are influenced by multiple factors, including climate cycles, going on to say that 10-year trends (with monthly sampling) are generally accepted as the minimum amount of data to reliably inform the direction of change in water quality.

[87] The above evidence is consistent with the integrated management purpose of the RMA and the concept of *ki uta ki tai* embodied in the plan and they form a useful starting point for our evaluation.

[88] In her February 2019 evidence and Appendix 1 on which the evidence before us was based, Ms McArthur stated that to better understand the state of water quality in Southland and to compare this with the national picture for river water quality she had undertaken an assessment of all 56 sites in Southland using the Land Air Water Aotearoa (LAWA) data platform. Results were reported as to whether the median is within the worst 25%, worst 50%, best 50% or best 25% of like-sites nationally. She stated that anthropogenic impacts are degrading freshwater values across multiple ecosystem types and highlighted sites with elevated concentrations of the four primary contaminants.

[89] We considered the results and other evidence before us in relation to the

state of and trends in water quality and ecology in some detail but it is not necessary to summarise it for the purpose of our s70 evaluation.

[90] Ms McArthur stated in her February 2019 evidence that:³⁹

The evidence of Council experts Mr Rodway, Mr Ward and Mr Hodson provides a thorough assessment of the state and trends in water quality and some aspects of ecosystem health across groundwater, lake, lagoon, estuary, and river ecosystems. This combined evidence provides a stark picture of the current state and trends of Southland's water resources. I do not intend to repeat that evidence here; instead I have drawn together and summarised the evidence across all aquatic ecosystem types at the regional level, drawing the Court's attention to specific issues pertinent to the management of freshwater resources via the SWLP.

[91] She stated that Southland's surface waters have a high degree of connectivity to groundwater and transport of contaminants from ground to surface water ecosystems is relatively rapid.

[92] Mr Ward gave evidence relating to estuarine and lake health on behalf of the Council. He summarised the main issues for estuaries as:⁴⁰

- (a) New River Estuary, Jacobs River Estuary and Toetoes (Fortrose) Estuary are all currently receiving sediment and nutrient inputs beyond their assimilative capacity and show signs of eutrophication and expansive degraded areas;
- (b) Waikawa Estuary and Haldane Estuary are currently in a moderate to good health state; and
- (c) Freshwater Estuary on Stewart Island is a near pristine system.

[93] Turning to lakes located in proximity to stress from human activity, he

³⁹ Statement of evidence of Kathryn McArthur dated 15 February 2019 at [35].

⁴⁰ Statement of evidence of Nicholas Ward dated 14 December 2018 at [16].

summarised their condition as follows:⁴¹

- (a) the shallow lakes of Lake Vincent, The Reservoir, and Lake George are all in a state of moderate/high stress;
- (b) in respect of Intermittently Open and Closed Lakes and Lagoons (ICCOLs), Waituna lagoon is a stressed lagoon, which is showing clear signs of poor water quality and eutrophication via cyanobacterial and algal blooms; and
- (c) the two major deep glacial lakes (Lake Te Anau and Lake Manapōuri) have the highest ecological health score of all monitored lake types in Southland and are in a slightly modified to pristine condition.

[94] Mr Hodson gave evidence relating to the surface water quality of rivers and streams on behalf of the Council.⁴² His evidence also addressed the variability in the extent of degradation across the region. Referring to the state of the environment monitoring, seven of 33 Lowland sites had a median nitrate concentration below the Australia and New Zealand Environment and Conservation Council (ANZECC) 2000 lowland guideline and 26 sites had concentrations above the guideline. The LAWA 2018 five-year trend analysis for the time period ending December 2017 showed nitrate trends to be very likely to be improving at 14 of 51 sites, likely to be improving at 12 of 51 sites, indeterminate at 12 of 51, likely to be degrading at 8 of 51 sites and very likely to be degrading at 5 of 51 sites.

[95] Assessment of Dissolved Reactive Phosphorus (DRP) concentrations illustrated that at 25 of 55 sites, median concentrations were less than the respective ANZECC 2000 guideline, and 27 sites were above the guideline.

[96] Statistics quoted by Mr Hodson in relation to MCI included that the [then] national MCI quality classification of poor (defined as MCI <80) was exceeded at

⁴¹ Statement of evidence of Nicholas Ward dated 14 December 2018 at [20].

⁴² Statement of evidence of Roger Hodson dated 14 December 2018.

7 out of 52 sites and Regional Plan standards for MCI were not met at about 23% (19 of 81) sites in Southland.

[97] In terms of trends the LAWA 2018 trend analysis of MCI for the 10-year time period 2008 – December 2017 indicates that of the 36 sites assessed, four (11%) were very likely to be degrading, eight (22%) were likely to be degrading, 14 (38%) were indeterminate, seven (19%) were likely to be improving and three (8%) were very likely to be improving.⁴³

[98] Dr Kitson, on behalf of Ngā Rūnanga, stated that:⁴⁴

- (a) from 2001 to 2018 New River Estuary has lost 40% of its seagrass and grossly eutrophic areas have increased from 23ha to 428ha. Gross eutrophic conditions are likely to kill or displace most estuarine animals and shellfish;
- (b) from 2003 to 2016 gross eutrophic areas have increased in Jacobs River Estuary from <20ha to 145ha; and
- (c) the main drivers for the severe decline of New River Estuary and Jacobs River Estuary are nutrient enrichment, and nutrient enrichment in combination with sedimentation, respectively.

[99] Returning to other matters raised by Ms McArthur she stated in her executive summary that aquatic life will remain subject to significant adverse effects until measures of contaminants improve to at least above the minimum acceptable states and national bottom lines. She stated that sediment has a pervasive negative effect on aquatic life and once reductions in contaminant losses are implemented, there are often further lag-times before tangible improvements in aquatic life occur.

[100] In relation to lag times, she went on to explain that the time it takes for

⁴³ Statement of evidence of Roger Hodson dated 14 December 2018 at [60].

⁴⁴ Statement of evidence of Jane Kitson dated 15 February 2019 at [115] – [117].

reductions in contaminant losses from land and the time it may take until measurable improvements are seen in indicators of aquatic life are likely to operate on different temporal scales because of complexities in nutrient and sediment transport, nutrient cycling and storage, and ecological processing within aquatic environments. Nutrient and sediment loads have been discharged into Southland's water bodies for decades so there is potential for substantial internal storage within current aquatic systems.

[101] Her view was that a reduction in the concentration of a contaminant should not be conflated with a commensurate improvement in aquatic life.

Mr Norton's evidence

[102] Like Ms McArthur, Mr Norton has a very good understanding of the Southland aquatic environment.

[103] We address his evidence relating to MCI, conspicuous changes in colour or visual clarity and the rendering of fresh water unsuitable for consumption by farm animals and his evidence on key mitigations required by the plan separately in this decision.

[104] Mr Norton agreed with the court's earlier finding that significant adverse effects on aquatic life are occurring in large parts of the Southland region and he considered that farming activities are a major contributing source of the contaminants. He also considered that there will be a reduction in the s70 effects within 10 years.

[105] We sought clarification of a wide range of matters from Mr Norton in view of his work for the Council and his experience of the issues at play in Southland. In relation to significant adverse effects on aquatic life, he stated that he was not aware of information or more recent analysis that would alter the court's findings in its Fifth Interim Decision.

[106] We asked if he thought there might be benefit for sensitive macroinvertebrate EPT species (Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies)) from the reductions in contaminant discharges. He replied that it would only occur when the reductions have moved sufficiently and would depend on the threshold points, where a particular site was on the continuum of contaminant levels and the reductions achieved. It would be variable across Southland. At a very degraded site, which some sites in Southland are, it will take some time and there would only be incremental improvement to begin with.

[107] He considered that a reduction in sediment discharges would have benefit for more sensitive macroinvertebrate species. In terms of wider effects on aquatic life, he stated that nutrients were unquestionably the primary drivers of effects on phytoplankton in lakes and periphyton in rivers and he was confident that reductions in nitrogen and phosphorus would be expected to produce improvements in those species, which are at the bottom of the food chain.

[108] He considered that the expected reductions of 16% in nitrogen and 23% in phosphorus would be beneficial in terms of nuisance phytoplankton and nuisance periphyton. “For fish and birds, we’re getting further and further away from the contaminants, and it will become more and more tenuous to try and measure a discernible improvement.”⁴⁵ When we asked if there is more food because of the reduction in nutrients at the bottom level, it would go right up the chain, he replied “In simple terms, yes”.⁴⁶

[109] In response to a question about how much sediment is discharged from farming activities compared to all sediment discharged in the region, he replied:⁴⁷

⁴⁵ Notes of Evidence (NOE) at p 110, lines 19 – 21.

⁴⁶ NOE at p 110, lines 27 – 30.

⁴⁷ NOE at p 106, line 34 – p 107, line 15.

... It varies by catchment. There is – if it's of help there's definitely a substantial contribution of sediment to many waterways from headwaters that don't have any farming activities in them, there's a component that will be entirely natural and comes from landslides during weather events following earthquakes and then there's also a component that is coming from landscapes that are no longer natural, they've been cleared and they're now grassing but maybe not [i]n intensive farming or they're in forestry which is occasionally harvested... . . . so without a shadow of doubt there are other contributors than farming but there's little doubt at all in my mind that farming activities are a major contributor in the areas in that schedule X map.

[110] We asked him about how you could measure a change in colour and clarity over a whole region when storms vary from year to year. He replied that “is the reason that we don't see recent attempts to assess changes in colour and clarity at a regional scale.”⁴⁸ In relation to clarification we sought in relation *E. coli*, he stated:⁴⁹

... there are numerous sources of *E. coli*, any warm-blooded animal that defecates on the ground will produce *E. coli* so clearly farming activities over large areas with very large numbers of animals are a major contributor but they're not the only contributor. In all of our national [parks] and other forested areas deer, pigs, goats, possums, are also sources of *E. coli* so that we're dealing with in the context of this case is just that component of the load coming from farming activities. *E. coli* also of course comes from point source discharges from human waste water treatment plants, from dairy effluent treated dairy effluent discharge, from septic tanks There's all manner of possible causes ...

[111] We explored with him what he considered the court would need to consider before it could be satisfied that the s70 test would be met. Ms McArthur provided her view in her evidence.

[112] He explained that there are basically two ways to be satisfied that reductions will occur. One is to try and measure that once it has occurred, which would be

⁴⁸ NOE at p 106, lines 17 – 18.

⁴⁹ NOE at p 108, lines 12 – 24.

difficult and would require significant monitoring effort. The second is to make informed predictions based on the available science and modelling, which is the only method available today and the one he relied on. He explained that the Council process involved a very deliberately designed and implemented work programme that he co-designed and co-led over several years to feed into Plan Change Tuatahi and involved the work of a chain of contributors. The programme required significant resource and effort and he was confident that they provide the best estimate of the reductions that can be expected.

[113] He cautioned that it will be challenging to “tease out” changes in effects that have occurred in 10 years because there are so many other confounding contributors to the various indicators of aquatic life, some of which this plan has some control over such as:

- (a) water quantity;
- (b) water takes;
- (c) riparian margins and effort on riparian margins;
- (d) reconfiguring the meandering pattern of streams;
- (e) the number of pests that are in our native and forested vegetation;
and
- (f) the headwaters of catchments that are producing *E. coli*, landslides, weather patterns, global climate change.

[114] Other contributors included natural events, forestry and eroding land. His position was that there is no certainty that thresholds will be reduced and/or eliminated through actions only associated with farming activities.

[115] In his view there is a problematic belief in New Zealand resource management practice “that we might be able to measure our way out of the problem”.⁵⁰ His position was that “a lot of samples in a lot of places” would need

⁵⁰ NOE at p 120, line 8.

to be taken over a long period of time.⁵¹ He considered it would take longer than 10 years to pick up statistically meaningful trends and that it may be 30 years before meaningful trends are seen.

[116] However, he was confident that reductions of the s70(3) effects will occur, relying on his mechanistic understanding of the processes involved to say that everything is moving in the right direction if we do not have to quantify the reduction. We understand the mechanistic approach to be a bottom-up approach that considers individual elements of and processes within the aquatic environment, contaminant sources that affect them, and their interdependencies based on an expert's experience and professional judgement. We accept that as appropriate in the circumstances.

The role of the Macroinvertebrate Community Index in assessing effects on aquatic life

[117] To enable us to understand the role of the MCI, we first considered how three of the primary contaminants discharged by farming activities affect aquatic life generally. Both experts considered that nutrients and sediment are significant contributors to the degradation of water bodies.

[118] In her evidence-in-chief, Ms McArthur stated:

- (a) nitrogen and phosphorus contribute to nutrient enrichment and can cause eutrophication, nuisance growth of periphyton, phytoplankton, macroalgae and macrophytes (plants). Eutrophication also contributes to impacts on macroinvertebrate community health and ecosystem metabolism. Nutrient enrichment negatively affects aquatic ecosystem health beyond the influences of nutrients on algae and periphyton;
- (b) sediment has a pervasive negative effect on aquatic life. Whole-farm

⁵¹ NOE at p 120, lines 11 – 12.

sediment loss mitigations have not been adequately explored, and mitigations such as land retirement and tree planting are not explicitly driven by the plan or in FEMPs. Improvements to aquatic life as a result of these types of sediment mitigations will take a long time to become effective;

- (c) once reductions in contaminant losses are implemented, there are often further lag-times before tangible improvements in aquatic life occur. These lags result from variability in nutrient and sediment transport times, nutrient cycling and storage, and ecological processing within aquatic environments. Additionally, the dominance of pollution tolerant aquatic taxa can result in ecological resistance to improvement;
- (d) whilst a reduction in nutrient (and potentially sediment) losses might be achievable with mitigation actions, the ability to be certain about the direction of change in water quality will not be known for at least 10 years, if not more, and 10-year trends may in fact be an artefact of climate variability.

[119] In response to questions from the court relating to the results of monitoring of Southland rivers, Mr Norton's opinion was that a reduction in fine sediment cover will result in a corresponding reduction in effects on sensitive EPT species. He considered that nitrogen and phosphorus play an important role in terms of the abundance of phytoplankton species in water bodies, so a reduction in the discharge of those nutrients is important and will be beneficial in terms of reducing degradation and increasing abundance. In response to a more general question, he considered that a reduction in nutrient and sediment inputs will reduce the level of degradation.

[120] When asked what impact the predicted nitrogen and phosphorus reductions resulting from the plan provisions would have, he replied that it is a reduction in nutrients which are known to stimulate plant growth, phytoplankton and periphyton, and a reduction of that magnitude was sufficient to conclude that

it would be beneficial in terms of nuisance phytoplankton and nuisance periphyton. He thought they were significant in terms of reductions of the contaminants that contribute to MCI values.

Is the MCI the only attribute to be considered when assessing if there will be a contribution to a reduction in significant effects on aquatic life?

[121] The court found in its Fifth Interim Decision that the MCI was not suitable as the single attribute and proxy for assessing effects on ecosystem health.⁵² Aquatic life is one component of ecosystem health and our expectation would be that if the MCI was not suitable as an indicator of the whole of ecosystem health, it would not be suitable as an indicator of aquatic life, which includes other species than macroinvertebrates. Ms McArthur saw it differently and in view of the need for caution and to ensure we had sufficient information to remove any uncertainty and be satisfied, we summarise our review of the evidence below.

[122] In the first paragraph of her executive summary, Ms McArthur stated:⁵³

My analysis is premised on my expert ecological opinion that where an ecological state continues to be below minimum acceptable states or national bottom lines for aquatic life, it cannot be considered to be experiencing a reduction in significant adverse effects simply because there has been some level of reduction of contaminants entering the waterbody. In my opinion, aquatic life will continue to experience the same level of significant adverse effects until measures improve above the minimum acceptable states and national bottom lines in Southland's water bodies.

[123] In relation to the MCI under the heading "Defining a reduction in significant adverse effects", she stated that a numeric increase in an MCI score that remains below 90 is unlikely to represent any tangible improvement in aquatic life, and as such the significant adverse effects on that aquatic life will not have

⁵² Fifth Interim Decision at [67].

⁵³ Statement of evidence of Kathryn McArthur dated 8 October 2025 at [16].

changed.

[124] MCI was not addressed by Mr Norton in his evidence-in-chief and he produced rebuttal evidence in response to Ms McArthur’s evidence, in which he disagreed with Ms McArthur’s ecological interpretation. He stated:⁵⁴

Our statements of evidence largely rely on the same science literature and reach the same conclusions. However, there is one key exception – the interpretation of “reduction” of the existing significant adverse effects on aquatic life. I do not consider that “reduction” could be framed as it is in Ms McArthur’s evidence. The framing of what is meant by reduction in this context is crucial to our respective conclusions as to whether mitigations required by the Plan will reduce the identified effects on aquatic life in the context of Section 70.

[125] Mr Norton’s view is that degradation changes up and down on a continuum, albeit acknowledging that moving up takes longer than moving down.

[126] We asked him what the most appropriate way was for us to look at how to assess the significant adverse effects on aquatic life is. Is it the MCI in isolation or the MCI as one individual element with others including sensitive species, phytoplankton, plants, fish, et cetera, or the reductions in nitrogen, phosphorus, and sediment? He replied that it should be viewed as something that is very broad and is best estimated using the widest array of indicators that can be reasonably gathered, which includes phytoplankton, plants, fish, reductions in nitrogen, phosphorus and sediment and periphyton. His view was that MCI should not be solely relied on.

[127] When we asked Ms McArthur the same question, she replied that “if you’re looking at reduction in significant adverse effects on aquatic life then it is the periphyton, macroinvertebrates, the fish, the birds, the aquatic life component”.⁵⁵

⁵⁴ Statement of rebuttal evidence of Edward Norton dated 15 October 2025 at [8].

⁵⁵ NOE at p 193, lines 11 – 13.

[128] In her evidence-in-chief she stated that ecological assessment requires a holistic approach to understanding the relationships between organisms and their environment, noting that aquatic life is one of five core components of ecological integrity/ecological health, the others being physical habitat, water quality, water quantity and ecological processes. We note that these are identified in the NPSFM 2025, which states that it is necessary that all of them are managed.⁵⁶

[129] Of particular relevance, the court determined in its Fifth Interim Decision that there is no single attribute as a measure of the biophysical components of ecosystem health. By way of background, the decision records:⁵⁷

Dr Depree considers the macroinvertebrate community index (MCI) is a proxy for the aquatic life component of ecosystem health and therefore, in his opinion, it is the single most relevant attribute for this value. It is his thesis that the aquatic life component integrates the other four components of ecosystem health; indeed, he regards those other components as stressors on aquatic life. While recognising ecosystem health is more complex than macroinvertebrates, he said the MCI score is a ‘convenient (and the best) single indicator/measure for stream ecosystem health’.

While agreeing with him that MCI scores are a useful indicator of riverine ecological health, the suitability of a single attribute as a measure of the biophysical components of ecosystem health was contested by several experts. On this topic we prefer the evidence of Drs Canning, Snelder and J Kitson and of Ms K McArthur, and find no single metric is adequate and that focus on a single attribute has the potential to give rise to a misleading perception of an ecosystem’s health.

[references omitted]

[130] Based on that documented finding of the court, Ms McArthur did not agree with Dr Depree that MCI scores were appropriate as the single attribute as a measure of the biophysical components of ecosystem health. As noted above, aquatic life is one component of ecosystem health. The RMA definition of aquatic

⁵⁶ NPSFM 2025, Appendix 1A.

⁵⁷ Fifth Interim Decision at [66] and [67].

life is “any species of plant or animal life that, at any stage in its life history, must inhabit water, whether living or dead”.⁵⁸ The NPSFM defines aquatic life as the abundance and diversity of biota, including invertebrates, microbes, plants, fish and birds. Species of algae, periphyton and phytoplankton fall within the definition of aquatic life. Many of these cannot be assessed by reference to the MCI alone or at all.

[131] As noted above, Mr Norton stated adverse effects on aquatic life are best estimated using the widest array of indicators that we can reasonably gather. Ms McArthur said that in addition to macroinvertebrates, you need to consider periphyton, fish, birds, “the aquatic life component”.

[132] Just as the court found that the MCI is not suitable as the single attribute and proxy for assessing effects on ecosystem health, we find it is not suitable as the single attribute and proxy for assessing effects on aquatic life.

Is it necessary for water quality and ecology attributes to be above NBLs to satisfy the s70 test?

[133] As noted above, Ms McArthur stated that aquatic life will continue to experience the same level of significant adverse effects until measures improve above the minimum acceptable states and NBL in Southland’s water bodies. She addressed the MCI NBL in particular, and made limited reference to periphyton. In response to a question from Mr Maw, asking if she was saying that there can be no reduction in adverse effects in relation to MCI until the NBL is reached, she replied “I’ve said that it’s difficult for us to be able to discern the significant adverse effect in a degraded system and that we can discern that on the return of sensitive organisms into that system and that that occurs around 90”.⁵⁹

[134] As a preliminary observation, the plan does not require NBLs to be met

⁵⁸ RMA, s2, referencing s2(1) Fisheries Act 1996.

⁵⁹ NOE at p 166, lines 28 – 31.

within the 10-year term of the plan and the provisions were not developed with that as the intended outcome.

[135] The court stated in its Fifth Interim Decision that:⁶⁰

Given that the plan provisions were being continually revised up to and including closing submissions, and given also the cogent reasons for the permitted activity classification, rather than finally decide the issue now it is our view that procedural fairness requires that we give the parties the opportunity to call expert evidence on the likelihood of effects and their significance for aquatic life.

[136] We have considered the evidence relating to the MCI in that context, within a holistic ecological management framework, and on the basis that the MCI is one of a number of criteria to be considered when assessing effects on aquatic life.

[137] Ms McArthur stated there is little discernible difference between two macroinvertebrate communities each with MCI scores less than 90. She stated that “I have to apply a number, ... and we have to apply a national bottom line and there is a number that we have for Southland that says degraded is below that”.⁶¹ That said, she was clear that there is considerable “fuzziness” about what the actual number is, to use the description used by both Ms McArthur and Mr Norton; there is no way to physically monitor compliance; and the only way to check compliance is to rely on predictive modelling, which the court found in its Fifth Interim Decision has large uncertainty at a local or river reach scale.⁶²

[138] When questioned about testing more carefully and how you can assess significant effects on aquatic life, she replied that “in scientific terms we talk about significance with respect to statistical testing”.⁶³ However, she agreed with a considerable amount of what Mr Norton said about the difficulties of knowing

⁶⁰ Fifth Interim Decision at [272].

⁶¹ NOE at p 162, lines 19 – 21.

⁶² Fifth Interim Decision at [48], by reference to the Science and Water Quality JWS dated 24 – 26 November 2021 at [7].

⁶³ NOE at p 156, lines 8 – 9.

with certainty whether effects are increasing or reducing, due in part to the limited monitoring data available. She stated that when considering effects as a result of a shift up and an increase in the MCI number “One has to be more careful in terms of how you would statistically look at that change and then how you would interpret the results of that statistical analysis”.⁶⁴

[139] She accepted that there are a number of contributors to an MCI and that there are contaminants that will reduce an MCI score. She stated eutrophication (caused by nitrogen and phosphorus) also contributes to impacts on macroinvertebrate community health. She also considered that “as Mr Norton alluded to, we can’t tell you exactly what the mechanistic link between each contaminant and an MCI value will be because there are multiple drivers at play in an ecological system”.⁶⁵ She agreed with Mr Norton’s mechanistic approach but considered “there is a mechanistic approach to trying to understand this problem and there is an uncertainty at every level of that approach but it’s what we have to do that is the problem that’s in front of us”.⁶⁶ She agreed that predictive modelling is the only option available now.

[140] She acknowledged that a reduction of key contaminants of concern would contribute to an improvement in the aquatic environment “to the degree that we can know that yes. Notwithstanding they’re not the only drivers of change”.⁶⁷

[141] In response to questions from the court, Ms McArthur agreed that:

- (a) the purpose of the plan is to start the process to get everything above NBL, not to do it in the first 10-year term and it is not something that can realistically be achieved from this particular plan;
- (b) it will be necessary to get to that time at some stage in the future and

⁶⁴ NOE at p 162, lines 12 – 14.

⁶⁵ NOE at p 163, lines 15 – 18.

⁶⁶ NOE at p 164, lines 12 – 14.

⁶⁷ NOE at p 167, lines 18 – 19.

- to get to an MCI of 90 may take say 20 years, for example;
- (c) in the meantime, you are going quite some way towards achieving that in the first 10 years.

[142] When asked if she saw that as a contribution to reducing the effects, she replied “I see it as a contribution to reducing the contaminants which I think is very important to push your way towards that wider goal”,⁶⁸ she said “once you start to shift those sensitive animals in then you can say yes the significant adverse effects on MCI is an indicator of aquatic life are occurring, and I know that’s a trajectory and a long way to go and I don’t want to be taken for disagreeing [with] that this reduction is important and what the plan is trying to do to push towards that goal is important, because it is”.⁶⁹

[143] When then asked if it is still contributing to achieving that goal at some stage in the future, she replied “It’s absolutely part of that whole trajectory that we’ve been looking at throughout this plan ... and into the next plan”.⁷⁰

[144] For completeness, we record that Mr Maw also explored issues relating to periphyton in some detail with Ms McArthur. She explained:⁷¹

It’s slightly different to the relationship with macroinvertebrates, as Mr Norton said nitrogen and phosphorus are primary drivers of periphyton and once you’ve corrected for flow, which is the primary driver of periphyton communities, so the relationship is different to macroinvertebrates and periphyton is still a community of organisms and communities of organisms are tricky, they don’t give us nice clear responses very often.

[145] She agreed that that periphyton are sensitive to nitrogen and phosphorus and as levels increase, periphyton cover increases and that as levels decrease,

⁶⁸ NOE at p 195, lines 9 – 10.

⁶⁹ NOE at p 195, lines 14 – 19.

⁷⁰ NOE at p 195, lines 30 – 33.

⁷¹ NOE at p 169, lines 3 – 9.

periphyton levels decrease, “all things being equal”.

[146] Mr Norton disagreed that it was necessary to be above NBLs before there would be a reduction in existing significant adverse effects on aquatic life, giving two reasons:⁷²

- (a) My understanding of Section 70(3)(c) is that it now requires a reduction of the existing significant adverse effects on aquatic life ..., over a period of time no greater than 10 years. There is no mention of a quantum of reduction, absolute thresholds or a requirement to eliminate the existing adverse effects to the point that they are no longer significant, over that time period.
- (b) In my opinion, using national bottom lines (or minimum acceptable states) as a metric for the achievement of a contribution to a reduction in significant adverse effects is an approach that is difficult to reconcile with the fact that adverse effects decline and improve on a continuum. In this sense, there can be a reduction in significant adverse effects as a water body improves, even though it remains below the national bottom line.

[147] He concluded that he did not agree that aquatic life will experience the same level of significant adverse effects throughout lower and upper parts of the D-band. He stated “It is also my opinion that improvements (i.e., reductions) do not occur in a step-wise manner once the C/D Band threshold is met.”⁷³ He said that there can be a reduction in significant adverse effects as a water body improves, even though it remains below the national bottom line. Significant adverse effects would still be occurring, but to a lesser extent.

[148] He stated that Ms McArthur’s framing of what constitutes a “reduction” of the existing significant adverse effects on aquatic life appears to conflate the concept of progressive improvement through time (i.e., a reduction in the contaminants that contribute to significant adverse effects) with the concept of absolute thresholds nominated for management purposes (such as, desired end

⁷² Statement of rebuttal evidence of Edward Norton dated 15 October 2025 at [11].

⁷³ Statement of rebuttal evidence of Edward Norton dated 15 October 2025 at [21].

states or objectives in regional plans).

[149] During cross-examination, Ms Gepp referred Mr Norton to Exhibit 2, a paper introduced by Ms McArthur. The paper stated:⁷⁴

Overall, our results indicate a strong threshold effect of deposited sediment, as the invertebrate community shifts from a community dominated by mayflies and caddisflies to one characterised by non-insect invertebrates including microcrustaceans, molluscs and worms.

[150] He did not dispute those results.

[151] Ms Gepp then referred Mr Norton to a paragraph which said, to the effect that marked declines in pollution sensitive taxa leading to changes in community composition was strongly associated with sediment at a threshold of around 20% sediment cover, which he also did not dispute.

[152] In response, he stated that the latest state of the environment monitoring report for Southland showed that of 35 sites measured for percent cover tested against the threshold, 34 were less than 20% and one was above. He was sceptical that that paints the true picture of what is going on in Southland, but nonetheless it does not indicate “that we’re at the far right-hand bottom corner of the block currently, which is the point I want to make”.⁷⁵ This was the point at which particularly significant adverse effects occur.

[153] The court sought clarification of his responses to several different aspects of Ms McArthur’s evidence that were not clear from his rebuttal evidence. As one element, we asked for his views on the extent to which MCI represents the overall community health of a water body. He considered it to be “partial” and a very useful indicator of the status of macroinvertebrate community health but it is part

⁷⁴ Francis J. Burdon et al “Habitat loss drives threshold response of benthic invertebrate communities to deposited sediment in agricultural streams” (2013) 23(5) Ecological Applications 1036 – 1047 at 1041.

⁷⁵ NOE at p 96, lines 14 – 16.

of a wider suite of tools in addressing the question of overall aquatic ecosystem health or aquatic life. He described the boundaries between different MCI boundaries as “fuzzy”. He stated that we cannot measure and try and statically distinguish the change that is 10 years out.

[154] When asked how good modelling will be in terms of helping us understand changes in MCI value to be either above or below the NBL, he replied “fuzzy, fuzzier than the predictions of the response of plants, phytoplankton and periphyton to nutrients”.⁷⁶ We take that to mean there is a degree of ambiguity.

[155] Before setting out our findings, we consider the implications of that ‘fuzziness’ or ambiguity referred to by both experts, assessing changes in MCI values and what the available MCI monitoring data shows.

MCI ambiguity

[156] Both Mr Norton and Ms Arthur agreed that there is an element of ambiguity about what any individual measured MCI score actually means. To assist our understanding, we referred first to Exhibit 1, which is a Ministry for the Environment user guide for the MCI, prepared by Stark and Maxted, acknowledged by both experts as leaders in the field. The guide stated you should be flexible when interpreting the divisions between quality classes and that it is best to regard the boundaries between them as fuzzy by allowing ± 5 MCI units. We note that for an MCI of 90, the value could be between 85 and 95.

[157] It went on to say:⁷⁷

Fuzzy boundaries are desirable because there is always error when estimating biotic indices. Stark (1998) has shown that the MCI from a single hand-net sample has a precision of approximately $\pm 10\%$. For example, an MCI of 117 taken at face

⁷⁶ NOE at p 121, lines 31 – 32.

⁷⁷ John D Stark & John R Maxted “A User Guide for the Macroinvertebrate Community Index” prepared for the Ministry for the Environment, April 2007 at p 12.

value would assign a site to the “good” quality class, but given the $\pm 10\%$ error inherent in the index estimate, the true MCI could have been anywhere from 105 to 129.

[158] Based on the agreed evidence of both experts, it will not be possible to use monitoring to know across the region if the MCI is above or below whatever the “number” is and the only way to assess it will be to rely on predictive modelling. Based on the court’s previous finding, such predictions have large uncertainty at a local or river reach scale. In any event we find that neither monitored nor predicted MCIs would have sufficient certainty to provide a defensible or credible basis for monitoring regional changes in the aquatic environment.

Available MCI monitoring data

[159] Ms McArthur considered trends in ecological indices can be useful to assess changes through time but should be considered broadly indicative as they are influenced by multiple factors, including climate cycles. Generally, the longer the trend period, the more reliable an indicator of change. She stated, supported by the following Tables 1 and 2:⁷⁸

According to De Silva and Hodsden (2021) 44% of macroinvertebrate monitoring sites in Southland showed declining MCI trends for the 10 years to 2018, 60% showed declining trends over 15 years, and 78% of sites assessed over a 21-year period showed declining trends, indicating degrading aquatic life indicators at many locations across Southland. Table 2 shows ten and fifteen year trends found by De Silva and Hodsden (2021) for data up to 2018 and LAWA trends from data up to 2024. Again, these trends are indicative of broad patterns of change over time and have not been assessed against climate factors.

...

Rodway et al. (2023) compared the baseline state of freshwater attributes at 2017 (as per the NPS FM definition of baseline state) and the current state as of 2022,

⁷⁸ Statement of evidence of Kathryn McArthur dated 8 October 2025 at [47] and [49].

with draft target attribute states for Southland. A significant proportion of sites (37% baseline and 38% current) across Southland failed to achieve national bottom lines for MCI. Other attributes of water quality (nutrients, sediment and *E. coli*) show a similar pattern.

Table 1. Proportion of Southland macroinvertebrate sites in NPS FM (2020) bands for five-year median MCI. NB: De Silva and Hodsens (2021) sites n = 82; LAWA (2024) sites n = 94.

NPS FM (2020) Band	2014 – 2018 (De Silva and Hodsens 2021)	2019 – 2023 (LAWA)
Band A	<1%	0%
Band B	32%	27%
Band C	40%	40%
Band D NBL	27%	33%

Table 2. Ten and fifteen-year trends in macroinvertebrate community index (MCI) from De Silva and Hodsens (2021) – Environment Southland data “ES” and Land, Air Water Aotearoa “LAWA” data.

Trend direction	10-year trend ES (n = 43)	10-year trend LAWA (n = 83)	15-year trend ES (n = 37)	15-year trend LAWA (n = 41)
Very likely degrading	23% (10)	25% (21)	30% (11)	27% (11)
Likely degrading	21% (9)	28% (23)	30% (11)	20% (8)
Indeterminant	42% (18)	29% (24)	22% (8)	24% (10)
Likely improving	9% (4)	17% (14)	19% (7)	22% (9)
Very likely improving	5% (2)	1% (1)	0	7% (3)

Our findings relating to the role of MCI

[160] We are satisfied that it is not necessary for the MCI attribute state to be above the NBL before there will be reductions in significant adverse effects on aquatic life for the following reasons:

- (a) we find that the MCI is not suitable as the single attribute and proxy for assessing effects on aquatic life, and that it is necessary to consider a much wider series of attributes;
- (b) we find that a reduction of the key contaminants of concern (the primary contaminants) would be contributing to an improvement in the aquatic environment;⁷⁹
- (c) we find that periphyton are sensitive to nitrogen and phosphorus and as levels increase, periphyton cover increases and that as levels decrease, periphyton levels decrease;
- (d) we accept Mr Norton's evidence that degradation changes up and down on a continuum, including for MCI, which we accept as more reflective of changes that occur in aquatic life as a whole.

⁷⁹ NOE at p 167, lines 15 – 19.

**PART D Conspicuous changes in colour or visual clarity and rendering
of existing freshwater bodies unsuitable for consumption by
farm animals in existing water bodies**

Conspicuous changes in colour or visual clarity

[161] Mr Norton stated that it is likely that conspicuous changes in colour or clarity are occurring in at least some receiving waters at some times in the Southland Region. Ms McArthur did not address this effect.

[162] He provided an explanation of why he considered it likely in response to court questions above. He was not aware of any guidelines relating to these changes having been applied to diffuse discharges. He did not consider there will be any formal quantitative assessments of “conspicuous change in colour and clarity” resulting from incidental diffuse discharges of the primary contaminants in Southland and was not aware of any such assessments, either published or unpublished.

[163] Notwithstanding that, he was aware of qualitative information that strongly suggests conspicuous changes in colour or visual clarity are occurring at times in Southland, including that there have been visible brown sediment plumes entering waterways during and following significant rain events.

[164] He explained that erosion of sediment from land is a physical process that occurs naturally, for example when slips or landslides occur in indigenous forest such as exists in Fiordland National Park. However, there is little doubt that overland flow of sediment from farming activities (e.g., cleared and/or cultivated land or soil disturbed by winter grazing practices) at times exacerbates natural erosion and the size and intensity of sediment plumes in waterways in Southland. While he was not aware of formal assessments against conspicuous change criteria, he expected that this type of effect would on some occasions be considered a

conspicuous change if formally assessed.⁸⁰

[165] We accept Mr Norton’s evidence that conspicuous changes in colour or clarity are occurring in at least some receiving waters at some times in Southland and that this is exacerbated by sediment discharges from farming activities.

The rendering of existing freshwater bodies unsuitable for consumption by farm animals

[166] Mr Norton concluded that the waterways identified in the *E. coli* map in the plan’s Schedule X are unsuitable for consumption by farm animals. He stated this can be assessed by testing against absolute criteria for what might be considered “unsuitable”, as opposed to relative change, and that the revised Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2023) guideline is that drinking water for livestock should contain less than 100 cfu/100 mL (median value) of *E. coli*.⁸¹ As noted above, he explained in response to court questions that *E. coli* come from a range of different sources.

[167] Ms McArthur did not address this effect.

[168] We accept Mr Norton’s evidence.

⁸⁰ Statement of evidence of Edward Norton dated 17 September 2025 at [26] – [30].

⁸¹ Statement of evidence of Edward Norton dated 17 September 2025 at [33].

PART E Other evidence

Evidence of Mr Kyte

[169] The purpose of Mr Kyte's evidence was to describe the improvements that have been made over the last seven years and to provide detail about the work that Thriving Southland undertakes, the progress made by catchment groups generally and about the numerous and varied projects that catchment groups in Southland are carrying out. Thriving Southland is a community-led group with a vision to create a prosperous Southland, healthy people, and a healthy environment from the mountains to the sea. Its mission is to support and enhance the work of the catchment groups across Southland. It has a focus on delivering relevant science and support to catchment groups with a ground up model. At least 1500 farmers and community members are engaged across the 35 groups.

[170] In his conclusion, Mr Kyte stated that the farmer-led catchment groups in Southland are at the forefront of a grassroots movement to secure the long-term health of the region's waterways. Through a combination of scientific research, on-the-ground action, the adoption of innovative farming practices, and strategic collaborations with primary sector bodies, these groups are making tangible contributions to improving water quality. Their collaborative and community-focused approach ensures that solutions are both environmentally effective and practical for the local farming context.

[171] In his opinion the court can be satisfied that improvements in farm practices are already underway, and that further improvements will successfully occur in the next 10 years.

[172] We address improvements in farm practices later in this decision. We received no other evidence on this and accept the evidence of Mr Kyte. We are satisfied that improvements in farm practices are already underway.

Evidence of Mr McCallum-Clark

[173] Mr McCallum-Clark summarised the structure of the farming rules of the plan, including a range of matters relating to rule 24. He evaluated the technical evidence prepared by Mr Norton and the changes to rule 24 in s32 RMA terms. No other planning evidence was presented to challenge his evidence, and we accept it. We do not repeat the evidence, other than to note the following matters:⁸²

- (a) the intention behind rule 24(a) was to permit the incidental discharges associated with farming activities, provided those activities are either permitted land uses or are operating under a land use resource consent, under the relevant farming rules;
- (b) very small farms (under 20ha in area) are a permitted activity but are still subject to the activity-specific requirements. This is a pragmatic approach for these very small farms, which are most commonly of a lifestyle nature;
- (c) Mr Norton's evidence confirms what Mr McCallum-Clark understood to be the situation, that implementing the mitigations incorporated into the land use rules in the plan, along with the adoption of good management practices through the preparation and implementation of FEMPs will lead to a reduction in contaminant losses, and therefore effects, over a 10 year period.

[174] At the hearing, Mr McCallum-Clark produced a report titled "Estimating time lags for nitrate response in shallow Southland groundwater",⁸³ technical report dated April 2014 in response to a question raised by the court previously with Mr Norton. Mr McCallum-Clark acknowledged that he was not a geologist,

⁸² Statement of evidence of Matthew McCallum-Clark dated 17 September 2025 at [18], [24], [29].

⁸³ The report became Exhibit 6. Scott Wilson et al "Estimating Time Lags for Nitrate Response in Shallow Southland Groundwater" April 2014 (Exhibit 6).

but in his view, the report confirmed his understanding that Southland aquifers are predominantly shallow, unconfined aquifers which typically have a short residence time in the region of two to five years. In his view, it was important to recognise that in planning terms that means that responses in surface water or groundwater and consequently surface water occur relatively quickly in response to changes in contaminant inputs.

[175] In response to the court's questions, he confirmed that he understood that there are approximately 3,500 to 4,000 farms overall in Southland, which include approximately 1,000 dairy farms and the rest drystock. He suggested that most of them will be able to meet the permitted activity criteria provided they have a FEMP in place, with some over thresholds for intensive winter grazing. He agreed with Mr Kyte that dairying makes up about one-third of the farmed land area and drystock two thirds, unevenly distributed across the region. He also noted that Southland dairying has developed significantly over a more recent timeframe.⁸⁴

[176] He explained that a number of farms, which we understood to be mainly dairy farms, have been using FEMPs for a number of years and while he did not have detailed knowledge about their use, he considered that some amendments will be required to fully comply with the requirements of the plan. When asked how far along the mitigation pathway he thought farmers were, he replied that there is a spectrum with some people implementing a number of them. Others might be partway along that route and some may not be aware of them.⁸⁵

[177] When asked by Mr Maw about the relief sought by Forest and Bird to include new condition (a)(iA) in rule 24, which requires no discharge of the primary contaminants, Mr McCallum-Clark noted that Schedule X covers the whole of Southland and stated that in his view, it would be exceedingly difficult for any sized farm to show that it was not contributing one of the four primary contaminants. After considering the wording of the revised condition overall, it was his view that

⁸⁴ NOE at p 246, line 27 – p 247, line 29.

⁸⁵ NOE at p 249, lines 23 – 30.

most farms would then fall to a non-complying activity. He was not aware of any assessment of the efficiency and effectiveness of the provision.⁸⁶

[178] Mr McCallum-Clark agreed with Ms Gepp that there is a fair amount of discretion in rule 20 in terms of the time within which mitigation measures must be implemented. However, some mitigation measures are required under the rules, rather than under FEMPs, and innovation and other practices are occurring. He explained that in the Southland context there has been quite a lot of emphasis over the last few years on constructing wetlands as methods of reducing surface run off and nutrient enriched ground water reaching surface water bodies. Another method is the use of mixed sward pasture, such as plantain and a greater mix of pasture species.⁸⁷

[179] In response to a question from Ms Gepp about what s70 requires, he considered that in many of these environmental ecological type responses there are complexities that are sometimes beyond an individual, certainly beyond an individual discharge and cumulatively can be influenced by a range of things. He considered that contributing to it means that the relevant discharges are improving so that with all other things being equal there will be an improvement over time.⁸⁸

[180] In relation to the question of uncertainty raised with him by the court, he acknowledged that cause and effect considerations definitely have inherent uncertainties when dealing with natural ecosystems and responses. However, with regard to whether all rules will be complied with and that there is no further intensification, he replied:⁸⁹

In terms of implementation of those the permitted activity requirements, I feel that there is, there's a degree of certainty around that and council has, does take an active role particularly around more intensive activities like dairy and discharge

⁸⁶ NOE at p 218, line 7 – p 219, line 10.

⁸⁷ NOE at p 228, lines 15 – 31.

⁸⁸ NOE at p 237, lines 19 – 31.

⁸⁹ NOE at p 240, line 31 – p 241, line 2.

permits and intensive winter grazing in particular to try and ensure compliance.

So, the rule side of things I'm quite content with. ...

[181] In relation to the intensification of dairying activities, he acknowledged it was not a prohibited activity, but referred to restricted discretionary activity rule 20(b)(ii), which requires an assessment by a suitably qualified person that shows that the risk of the primary contaminants being discharged from the landholding will be no greater than the risk of contaminant discharge which was lawfully discharged on average for the five years prior to the application being made. Matters of discretion include, where the farming activity is being undertaken in the catchment of a waterbody identified in Schedule X, the mitigation actions to be implemented to reduce adverse effects on water quality in comparison to the activity currently occurring on the site.

[182] If that requirement is not met, the activity would be non-complying. Mr McCallum-Clark did not consider “you would get through the effects pathway” for a non-complying activity and in his view the objective and policy provisions are solid.⁹⁰

[183] When questioned about whether intensive winter grazing was a big part of most farms in Southland, particularly dairying, he said that with the intensification of dairying and often dairy farms being on land that is not so suitable for heavy stock, there have been areas where wintering is far more prevalent, and a lot of cows are wintered off on land that might be leased for three months. Those are more intensive winter farming operations. Over the last five to 10 years the concept of feeding with silage has become a far more prevalent wintering method in Southland. “So there’s a mix of things, there’s also a lot of feed pads and standoff pads and wintering barns”.⁹¹

[184] Mr McCallum-Clark explained that wintering operations in Southland can

⁹⁰ NOE at p 245, lines 23 – 25.

⁹¹ NOE at p 247, lines 20 – 31.

be quite intensive and can lead to quite high losses. When stock is wintered off-site, responsibility for managing winter nitrogen discharges and other diffuse discharges would transfer to the management of the off-site land. He said such activities would be permitted unless the activity exceeded area thresholds in the winter grazing rules. He also stated that the Council operates a number of fly-overs of the region throughout the intense winter grazing season to identify non-compliance and there is active compliance and monitoring of particularly the more intensive activities like dairy and dairy support. He anticipated that compliance was relatively high.⁹²

[185] We address the statutory timeframes for implementation of FEMPs at paragraph [202] below.

Evidence relating to groundwater

[186] Ms McArthur relied in part on the evidence of Mr Rodway dated 14 December 2018. Mr Rodway gave groundwater evidence on behalf of the Council. This is relevant background to our determination under s70 as groundwater is a significant mode of transporting contaminants from farms to surface water receiving environments. He stated in relation to groundwater flows that:⁹³

- (a) Southland has a mosaic of unconfined, shallow groundwater aquifers that exchange groundwater to surface water relatively quickly. Approximately 40-60% of all of the water in Southland streams is groundwater from these aquifers. However, it is highly variable;
- (b) across the region, lowland streams have a much higher proportion of groundwater than alpine streams; and
- (c) the mostly shallow groundwater table, relatively thin aquifer host

⁹² NOE at p 248, lines 1 – 23; p 251, lines 1 – 6.

⁹³ Statement of evidence of Kathryn McArthur dated 15 February 2019 at [36]; Statement of evidence of Ewen Rodway dated 14 December 2018 at [21] – [22].

geologies, and high hydraulic connection to surface waters means that groundwater within unconfined aquifers with hydraulic connection to surface waters is generally young, with an average residence time or age of less than 10 years.

[187] Mr Rodway stated that anthropogenic contamination of groundwater was widespread in Southland, with nitrogen and faecal contamination of primary concern. Nineteen of the 159 bores or wells (approximately 12%) regularly monitored between 2012 and 2016 recorded nitrate concentrations in excess of the drinking water standards. For the 17-year period 2000 to 2016, increasing trends in groundwater nitrate concentrations had been determined at 15 of the 23 regional State of the Environment monitoring sites with sufficient data for analysis, decreasing trends were detected at three of the sites, with trend direction at the remainder of sites being unable to be determined with confidence. Monitoring and modelling showed that one-fifth of the region's groundwaters may pose a risk to ecosystem health in streams, particularly those with a high proportion of groundwater sourced baseflow and during periods of low flow.⁹⁴

[188] For the purposes of our evaluation, groundwater is a primary mode of contaminant transfer from farm to surface water receiving waters, particularly for nitrogen and phosphorus, with direct overland flow being the other. Artificial drainage can be a third pathway but the evidence was that is not significant. We considered three main questions:

- (a) how long will the transfer take?
- (b) will any attenuation of contaminants occur during transfer? and
- (c) will there be a residual nitrogen load from previous land use changes that has not yet reached the surface water receiving environments and could increase concentrations in receiving environments (“nitrogen load to come”)?

⁹⁴ Statement of evidence of Ewen Rodway dated 14 December 2018 at [14].

[189] Mr Rodway stated that groundwater can transport significant amounts of nitrogen and phosphorus.⁹⁵ His statement that the average residence time or age of the shallow groundwaters is less than 10 years was based on a report titled “Hydrochemistry of the Southern Region” published in 2015.⁹⁶ In the absence of any contrary evidence, we accept Mr Rodway’s evidence relating to travel time, after considering the 2015 report as a prudent check. It is a comprehensive report which indicates that the travel time of around half of the farms can be expected to be between two and five years, which aligned with Mr McCallum-Clark’s understanding. Indicatively, from our review of the report, the average travel time from most farms is around three years.

[190] Exhibit 6, “Estimating Time Lags for Nitrate Response in Shallow Southland Groundwater” was introduced by Mr McCallum-Clark, who explained that he obtained it from the Council website. It presented a region-wide study to estimate the length of time it will take for changes in land practices to reach the groundwater table. It estimated the average travel time from the surface into shallow groundwater. While that is one component of overall groundwater travel time, it is not the total travel time from the farm to the receiving environment, which is what is relevant to our determination, and the approach taken was “quite generalised”.

[191] The study found that about 80% of the region has a vadose zone transit time of less than a year, and 90% has a transit time of less than two years. That was based on the mean results of two different modelling approaches that accorded well with reasonable estimates in the literature. While the finding does not conflict with Mr Rodway’s evidence, we were unable to place weight on the report because it did not address overall travel times to receiving environments

⁹⁵ Statement of evidence of Ewen Rodway dated 14 December 2018 at [23].

⁹⁶ C Daughney, C Rissmann, M Friedel, U Morgenstern, R Hodson, R van der Raaij, E Rodway, H Martindale, L Pearson, D Townsend, L Kees, M Moreau, and R Millar, “Hydrochemistry of the Southland Region” (2015) GNS Science Report 2015/24.

and the authors were not available for cross-examination questions from the court.

[192] In response to questions from the court, Mr Norton indicated that he had not recently looked at groundwater travel times in Southland but noted that it varied across Southland and would not be one number, (10 years) across the region. We explored with him how he considered we should provide for travel times in our s70 evaluation, including whether a travel time of four years from farms to receiving environments might be reasonable as an average.

[193] His initial response was “Yes, as a very coarse starting point and that’s for nitrogen.”⁹⁷ He added later that he was relying on his mechanistic understanding of the way those actions produce benefits faster and slower up take in various places. He said that an immediate response in some farms right next to a stream may well be less than four years.

[194] After reflecting on our questions, he advised that in general Southland has faster groundwater travel times than some other parts of the country. He said that he would not say there are not travel times, but that he would be very cautious about concluding that it is 10 years or using an average of four years. He said that he agreed with the conceptualisation of it for discussion purposes, but that in reality there would be places where benefits happened more quickly. In view of the short groundwater travel times, we do not consider that there will be any meaningful attenuation of nitrogen between the farm and receiving environment.

[195] One further matter it is necessary to consider is the potential for nitrogen discharges that occurred many years ago to continue to cause nitrogen levels to increase in receiving environments where travel times are longer (nitrogen load to come). This is an artefact of historical land use and that is unrelated to our determination of whether the plan provisions will contribute to a reduction of significant adverse effects on aquatic life. It is relevant to future monitoring of

⁹⁷ NOE at p 125, line 22.

those effects because increases in nitrogen concentrations in receiving environments as a result of load to come may mask the benefits of reductions in concentrations as a result of new mitigations required by the plan.

[196] We asked Mr Norton for his views on the significance of nitrogen load to come. He indicated that he had dealt with that issue in some detail in the past but there was no attempt to put a number to that in the Southland programme of work he was involved in. He explained that the reasons were similar to the reasons he gave in relation to travel times and that it was within the noise of the predictions and it is obviously going to be variable.⁹⁸

Our findings relating to groundwater evidence

[197] As Ms McArthur relied on Mr Rodway's evidence relating to groundwater quality as noted above, we also rely on his evidence relating to groundwater travel times. We were also guided by Mr Norton's response to and agreement with our conceptualisation of average groundwater travel times in Southland.

[198] Travel times will vary depending on how far a farm is from its receiving environment and for many farms, in the order of four years. For farms close to their receiving environments, travel times will be short as confirmed by Mr Norton and in our judgement within one to two years conservatively.

[199] For some farms furthest from their receiving environments, the effects of reductions in nitrogen and phosphorus from new mitigations may not reach their receiving environments sufficiently before the end of the 10-year term of the plan to contribute to a reduction in significant effects on aquatic life.

⁹⁸ NOE at p 128, lines 3 – 12.

Evidence on the time before the effects of reduced contaminant discharges at the farm boundary will reach receiving environments

[200] In addition to groundwater travel times from the farm boundary to receiving environments, other matters to be considered are the time before FEMPs must be certified and the time required for new mitigation measures to be implemented and become effective. We sought clarification on these matters from the experts.

[201] Further, existing mitigations needed to meet the plan provisions have already been implemented to varying degrees and the effects of the resulting reduced discharges are already occurring in receiving environments.

The time before FEMPs must be certified

[202] A regulatory amendment which came into force on 26 May 2026 has extended the timeframe for submitting FEMPs for the Southland region.⁹⁹ Under the amendment a FEMP for a farm in the Southland region must now be submitted to a certifier by the later of 27 November 2027 or 18 months after the date on which the farm meets the land use threshold under s217D of the RMA.

[203] The previous certification deadline was 27 May 2026 (being 18 months from the date of the Resource Management Act (Application of Part 9A – Freshwater Farm Plans: Southland) Order 2024. The effect of the amendment is that the deadline for submitting a FEMP for certification has been extended to 27 November 2027.

[204] In June 2026 we received submissions from the Council and Forest and Bird on the effect of these changes. The Council's position is that the extended certification deadline of 18 months does not alter the substance of Mr Norton's evidence that reductions would still occur within 10 years, given Mr Norton's

⁹⁹ Resource Management (Freshwater Farm Plans) Amendment Regulations 2026 (Amendment Regulations).

mechanistic understanding of how mitigations produce benefits.

[205] Forest and Bird's position remains that the court cannot be satisfied that rule 24, together with other provisions of the plan, will contribute to a reduction in significant adverse effects on aquatic life within 10 years. The change creates more uncertainty that reductions will occur within 10 years. Forest and Bird noted it was possible that the deadline may again be pushed out in the future.

[206] Both the Council and Forest and Bird considered the court can proceed based on the evidence before us, and we proceed on that basis.

[207] We turn to our assessment of the import of the change. The change to the certification of FEMPs does not materially affect our assessment under s70(3). As we go on to discuss the certification, implementation of FEMPs is one element of the suite of mitigations contained in the plan. We consider that there was always a degree of uncertainty about the timeframe for implementation of FEMP's but that many other plan provisions – including the various requirements of the land use rules need to be implemented in any event.

[208] We questioned Mr Norton during the hearing about the timeframe for implementation for the FEMPs. Our questioning proceeded on the basis that it could take two years (after rule 24 become operative) for FEMPs to be certified, he accepted the basis of this questioning. The two years to have FEMPs certified (and any required resource consents in place) reflected our recognition that there was uncertainty as to when this would occur and was, at the time, significantly more than the statutory requirement then in place under part 9A of the RMA. Our consideration proceeded on the basis of a two year assumption.

Existing mitigations

[209] Mr Norton stated that these things are going to take time but the “back drop to that is all of these actions are not things that are new now in 2025 and we're starting

from ground zero”.¹⁰⁰

[210] He went on to say that the farming community has been on a journey of progressively implementing these actions for quite some time and that quite a number of these actions are already being done by some farmers on the ground. However, there will be a whole range “from leaders who are already doing most of those things and are constantly looking for ways to do even better through to the laggards that couldn’t give a stuff about a regional plan”.¹⁰¹ He said that it will be challenging to move those that are lagging along through regulation alone.

[211] As recorded earlier in Part D, Mr Kyte gave evidence about the on-ground actions and the adoption of innovative farming practices that have occurred over the last seven years. When questioned about how far along the mitigation pathway he thought farmers were, Mr McCallum-Clark replied that there is a spectrum, with some people implementing a number of them, others might be partway along and some may not be aware of them.

[212] We are satisfied that reductions in contaminants are already occurring as a result of mitigations already implemented. In view of the short groundwater travel times, we are also satisfied that those reductions have already reached some receiving environments. The extent of reductions will increase as FEMPs are progressively certified and given effect to, and while increased reductions on some farms may take longer than three years, there will be a progressive increase in reductions over and above existing reductions starting at about that time.

Evidence relating to climate change

[213] There is increasing recognition that climate change must be considered when assessing potential future effects on the environment. As one example,

¹⁰⁰ NOE at p 124, lines 12 – 13.

¹⁰¹ NOE at p 124, lines 19 – 22.

policy 37 of the plan recognises the potential effects of climate change and states:

Avoid or mitigate increased risks on the environment arising from climate change, taking into account the potential effects of rising sea levels and the potential for more variable and extreme weather patterns in coming decades.

[214] Ms McArthur stated that trends in water quality should be considered broadly indicative as they are influenced by multiple factors, including climate cycles.

[215] Mr Norton identified weather patterns and global climate change as a confounding contributor to the various indicators of aquatic life.¹⁰²

[216] While the experts did not explain the basis for their opinions further, it illustrates that climate change is an issue to be considered when assessing s70 effects. The court found in relation to the Te Waikoropupū Springs Water Conservation Order that:¹⁰³

[317] In view of the major uncertainties as to when a water quality and ecology tipping point might be reached, the high variability in NO₃-N concentrations known to occur in the Springs and the potential for increased variability as a result of climate change, we find that any higher limit will place the undisputed outstanding values of Te Waikoropupū at an unacceptable level of risk.

...

[482] After completing our overall and more detailed evaluation of the evidence, we interpret the monitoring results as indicating that there were two contributing factors to changing NO₃-N loads to the Main Spring. The first is a repeating increasing followed by a decreasing trend over about ten-year periods that reflects the increases and decreases in flow. ...

¹⁰² NOE at p 120, line 1.

¹⁰³ *Re Ngāti Tama Ki Te Waipounamu Trust* [2023] NZEnvC 157.

[217] We are satisfied based on the above that climate variability affects water quality trends and can lead to misleading conclusions relating to changes in effects on aquatic life resulting from contaminant reduction.

Evidence relating to surface water quantity

[218] We received no evidence relating to surface water quantity, nor did we find any indication that it was addressed in any detail in evidence at earlier court hearings. Accordingly, we cannot consider it other than to observe that, in our view, there is broad acceptance in New Zealand generally that there has been greater frequency and intensity of storms, which appears likely to continue. As noted above, policy 37 recognises the potential for more variable and extreme weather patterns in coming decades. There is also the potential for longer droughts in parts of the country. These are relevant to any future assessment of the causes and effects on the aquatic environment.

[219] As noted in the section on groundwater evidence, direct overland flow of surface water is a primary mode of contaminant transfer from farms to receiving environments. In our view, this is a significant consideration in our s70 evaluation as it means that any reductions in contaminant discharges resulting from stream fencing and/or improved management of intensive winter grazing and/or critical source areas on farms traversed by streams will be observed soon after implementation in receiving environments.

PART F What mitigations can be achieved by the plan provisions?

General observations

[220] Farming activities are diverse and, based on the evidence of Mr Norton and Mr McCallum-Clark in particular, mitigations have been implemented for a number of years to varying degrees across Southland. The most appropriate form of mitigation for individual farms will need to be determined on a farm-by-farm basis in accordance with the FEMP requirements.

[221] Mr Norton also emphasised that mitigations will vary between farms and it is not possible to examine which actions will occur in relation to every individual farm in Southland. Instead, it is necessary to assume defined bundles of mitigations will occur on different types of farms and categories of land. Put another way, they cannot be predicted based on the information currently available, and we accept that.

[222] All parties agreed that FEMPs are the appropriate mechanism to define farm specific mitigation measures and that each FEMP must be independently certified by a Council approved certifier. That is consistent with Part 9A of the RMA and is consistent with practices in other parts of New Zealand. Having reviewed the plan's specific requirements, we are satisfied that FEMPs will contribute in the most appropriate way possible to the reduction of contaminant discharges from farming activities, which is fundamental to reducing the effects of farming activities on the environment.

The evidence

Nitrogen and phosphorus reductions

[223] Both Mr Norton and Ms McArthur referred to papers by McDowell *et al*¹⁰⁴ and Monaghan *et al*¹⁰⁵ that they had relied on in relation to mitigation measures required by the plan and the nitrogen and phosphorus reductions they were predicted to achieve. This information is fundamental to our determination of this case. To satisfy ourselves that we understood their findings, including the differences between established and developing mitigations, we referred to the source papers.

[224] The Monaghan paper analysed established mitigation and management practices that the authors considered had been broadly accepted as good management practices¹⁰⁶ or been implemented to some degree by the farming community.

[225] The paper then noted that “A companion paper (McDowell et al. 2020 (*sic*)) will focus on the potential of the full implementation of established and other, developing, measures that could in the future further mitigate farming’s impacts on water quality”.

[226] The paper addressed the issue of “off-paddock wintering of dairy cattle”, a matter raised by this court in questions to Mr McCallum-Clark. The paper

¹⁰⁴ RW McDowell, RM Monaghan, C Smith, A Manderson, L Basher, DF Burger, S Laurensen, P Pletnyakov, R Spiekermann and C Depree “Quantifying contaminant losses to water from pastoral land uses in New Zealand III. What could be achieved by 2035?” (2021) New Zealand Journal of Agricultural Research 64(3), 390-410.

¹⁰⁵ R Monaghan, A Manderson, L Basher, R Spiekermann, J Dymond, C Smith, R Muirhead, D Burger & R McDowell “Quantifying contaminant losses to water from pastoral land uses in New Zealand II. The effects of some farm mitigation actions over the past two decades” (2021) New Zealand Journal of Agricultural Research, 64:3, 365-89, DOI: 10.1080/00288233.2021.1876741.

¹⁰⁶ e.g. <https://www.dairynz.co.nz/environment/> and <https://beeflambnz.com/compliance/environment>

stated:¹⁰⁷

Of note in Table 1 is the inclusion of off-paddock wintering of dairy cattle, such as the use of barns and standoff pads, which has the potential to reduce N leaching (Cardenas et al. 2011; Christensen et al. 2012) (and probably losses of P, sediment and FMOs). Although questions remain about the feasibility and wider applicability of this general strategy due to issues around cost and perception, it is included here because surveys have shown that it has been implemented on some, albeit relatively few, New Zealand dairy farms.

[227] The McDowell paper built on that of Monaghan and both papers assisted our understanding of the complexities involved in predicting the extent to which different mitigations have been implemented, will be in the future and what contaminant reductions they will achieve by when. We note the following from the McDowell paper, in no particular order:

- (a) the aim of the study was to estimate the maximum load (kg) of contaminants that could be mitigated from current pastoral land uses if current (i.e. established) mitigation actions had been implemented, where suitable, by 2015;
- (b) the paper is a desktop, national scale analysis that makes many assumptions;
- (c) the diversity of landforms and climate, land use and practices vary considerably, resulting in a wide range of contaminant loss profiles;
- (d) research has shown that landowners must have confidence in the effectiveness of mitigation actions before they will be readily implemented;
- (e) developing actions have been less widely accepted and implemented by the farming community because their cost and effectiveness have

¹⁰⁷ Monaghan, A Manderson, L Basher, R Spiekermann, J Dymond, C Smith, R Muirhead, D Burger & R McDowell “Quantifying contaminant losses to water from pastoral land uses in New Zealand II. The effects of some farm mitigation actions over the past two decades” (2021) *New Zealand Journal of Agricultural Research*, 64:3, 365-89, DOI: 10.1080/00288233.2021.1876741 at p 369.

only been established in a handful of cases and national cost-effectiveness has yet to be established;

- (f) although dairy farms are generally considered to have higher yields of nutrient loss relative to other land use types, a summary of yields determined from catchments from c.1975 to 2007 found that Phosphorus losses for dairy farms could be both greater and lesser than drystock farms;
- (g) full implementation of established and developing actions (where applicable) will play an important role in mitigating contaminant losses to water from farms over the next two decades of New Zealand agriculture.

[228] The conclusions were set out as follows:

- (a) if all current established mitigation actions had been implemented by 2015, the potential percentage decreases in national loads of nitrogen and phosphorus would have been 16 and 23%, respectively;
- (b) a greater proportion of this could have been achieved from land under dairying (34% for N and 26% for P) because of its greater per hectare yield and the number of mitigation actions available;
- (c) if all developing mitigation actions were implemented by 2035 the national load of nitrogen, phosphorus and sediment from pastoral land could be decreased from 2015 baseline (i.e. estimated current state) by 34, 39 and 66%, respectively.

[229] Both Mr Norton and Ms McArthur referred to the 1 March 2023 memorandum from Dr Snelder to the Council.¹⁰⁸ We were provided with a copy of the memorandum by the Council. It referred to the use of catchment water

¹⁰⁸ Snelder, T., 2023. Memorandum: Does “good management practice” reduce nitrogen and phosphorus loads to levels that are required to achieve minimum acceptable states in Southland? A memorandum from Ton Snelder (LWP) to Karen Wilson (Environment Southland); 1 March 2023.

quality models to provide estimates of current Total Nitrogen and Total Phosphorus loads and to simulate reductions to those loads that will be achieved if the established and developing mitigation options are fully implemented. The results were expressed as a percentage of the current load. It was introduced as describing “reductions in nitrogen and phosphorus loads that could be achieved with good management practice (GMP) in the Southland region”.

[230] Figure 1 of the memorandum shows the 189 sub-catchments used in the modelling and subsequent maps indicated percentage reductions in Total Nitrogen and Total Phosphorus loads as proportions of the current load that were predicted to result from full implementation of a set of “established” mitigation actions, as of 2015; and also from full implementation of both established and “developing” sets of actions, anticipated for 2035.

[231] Mr Norton included Dr Snelder’s graphs of nitrogen and phosphorus reductions estimated to occur across Southland with full implementation of the “established” mitigations, which he said indicated that reductions were predicted to occur over much of the farmed area of Southland. Based on our own review of the Total Nitrogen graph, we are satisfied that while there are a small number of locations where no nitrogen reductions were predicted, there are an equal or greater number of locations where reductions of 20 to 40% were predicted. In the majority of locations, reductions between 0 and 20% were predicted. The Total Nitrogen graph with full implementation of both sets of mitigations showed the number of sites with 20 to 40% reductions increases significantly.

[232] The graphs for Total Phosphorus show similarly increased reductions with full implementation of both sets of mitigations.

[233] Mr Norton stated that when he compared the controls and practices required by the identified plan rules and FEMPs with the tables of modelled mitigation bundles, he was satisfied that the mitigations required by the plan are generally reflected in the “established” mitigations scenario. He did not find any

major assumed mitigations in the modelled “established” scenario that are not required by the plan. If anything, he considered that the mitigations required by the plan in some cases probably go a little further than the “established” scenario.

[234] For example, it appeared to him that the requirements of rules 20A: *Intensive Winter Grazing*, 25: *Cultivation* and 35A: *Feed pads/lots* will probably drive further reductions than the level of uptake of these actions assumed by in the McDowell paper (2021) in the “established scenario”.

[235] Overall, he considered that the approach and “established” mitigation actions provide a reasonable proxy for estimating whether the mitigations required by the plan will reduce losses of nitrogen and phosphorus from farms. He was not aware of a better way to address the question with currently available information. He stated that the results produced by Snelder (2023) show that significant reductions in loads of nitrogen and phosphorus are expected under the “established” mitigations scenario across Southland.

[236] Both Mr Norton and Ms McArthur agreed that the mitigation measures identified in the plan will reduce nitrogen and phosphorus discharges by 16% and 23% respectively. Under cross-examination by Mr Maw, Ms McArthur confirmed she accepted that the suite of mitigation packages in the plan would achieve these reductions. Mr Norton was comfortable that the figures were “about right” as a region-wide prediction and represented the best available information. We interpreted this to mean measured on leaving the farm.

[237] As both experts agreed, and there was no contrary evidence, we accept that nitrogen and phosphorus discharges will be reduced by 16% and 23% respectively with full implementation of the 2015 mitigation measures.

[238] In response to a question from Mr Maw, she replied “I can’t tell you that 16 and 23 are the numbers that will occur in 10 years but I can tell you that we would assume a reduction based on the provisions of the plan, and I would hope so because we spent a lot of time and effort trying to get those provisions as right

as we could”.¹⁰⁹

[239] Mr Norton considered that where there are reductions in contaminant discharges, it logically follows that adverse effects on aquatic life will accordingly also reduce. However, Ms McArthur stated that relationships between contaminants and indicators of aquatic life, for example, periphyton and macroinvertebrates, are not so simple.

Sediment reductions

[240] Mr Norton did not consider there will be any formal quantitative assessments of “conspicuous change in colour and clarity” resulting from incidental diffuse discharges in Southland and was not aware of any such assessments, either published or unpublished.

[241] He referred to modelling of sediment discharges that he had undertaken under an “Existing Rules and Regulations” scenario in 2021. In response to questions from the court he explained that there was a chain of contributors to the work “but at the bottom of the chain are the real experts in sediment modelling from Manaaki Whenua Land Care Research.”¹¹⁰

[242] The work estimated that across the whole region there would be a 6% reduction and there would be a range of between 2% and 50% sediment-load reduction in different major catchments. He concluded that mitigations required by the plan will reduce discharges of sediment and accordingly also reduce existing effects of conspicuous changes in the colour or visual clarity, over a period not greater than 10 years.

[243] Ms McArthur did not address sediment reductions that could be expected

¹⁰⁹ NOE at p 165, lines 20 – 23.

¹¹⁰ NOE at p 118, lines 26 – 28.

if the mitigations in the plan are implemented.

[244] Mr Norton's evidence and his predictions of reductions in sediment loss that will be achieved by the provisions were not challenged and we accept the predictions.

E. coli. reductions

[245] Mr Norton referred to there being a body of published literature describing how various actions can reduce losses of microbial contaminants from farms, particularly through the management of critical source areas, exclusion of stock and the provision of vegetated setbacks from water bodies, such as those required by the plan provisions. He referred to a 2021 review publication which concluded:¹¹¹

- (a) Reported values of stream fencing effectiveness covered a large range, from zero to 96%, with a median value of 62%.; and
- (b) This large range in effectiveness values indicated that while we are confident that stream fencing will improve microbial water quality in streams, we have very low confidence in predicting the actual percentage reduction values that can be expected.

[Mr Norton's emphasis]

[246] He stated that the plan rules require more restrictive stock exclusion than is currently required and, on that basis, he considered it is highly likely that the controls and actions required under the plan provisions will reduce the discharge of microbial contaminants from farms. Hence, he concluded that mitigations required by the plan will reduce existing effects of discharges in rendering water unsuitable for consumption by farm animals, over a period not greater than 10 years.¹¹² He did not attempt to quantify the likely reduction and we accept there

¹¹¹ Statement of evidence of Edward Norton dated 17 September 2025 at [67], referring to Muirhead, R.W., 2019. "The effectiveness of streambank fencing to improve microbial water quality: A review." *Agricultural Water Management* 223 (2019) 105684.

¹¹² Statement of evidence of Edward Norton dated 17 September 2025 at [68].

is no way that he could have.

[247] Ms McArthur did not address *E. coli*. reductions that could be expected if the mitigations in the plan are implemented.

[248] We had no other evidence to challenge Mr Norton's assessment and we accept that there will be reduction in *E. coli*. discharges.

Other relevant evidence

[249] Ms McArthur referred to a review by the land management/farm systems experts of what water quality improvements could be achieved through Appendix N FEMPs, noting:¹¹³

The experts were certain that the implementation of Appendix N would reduce losses of contaminants [phosphorus, sediment, microbial pathogens and nitrogen] but agreed the overall effect was dependent on how well all farms within a catchment can address these losses.

Overarching objectives and policies in the plan that will contribute to a reduction in contaminant discharges

[250] In accordance with s70(3)(c), we must be satisfied that the permitted activity standards, or those standards in combination with any other provisions in the plan, will contribute to a reduction of the s70 effects over a period of time no greater than 10 years and commencing on the date the plan becomes operative.

[251] Accordingly, our evaluation considers relevant provisions relating to activities requiring consent as well as those relating to permitted activities. All those provisions were determined by the court following extensive input from all parties, they were found by the court to be the most appropriate way to achieve

¹¹³ Statement of evidence of Kathryn McArthur dated 8 October 2025 at [64], referring to JWS Land management / farm systems 22 November 2021 and 6 December 2021 (update).

the objectives and are largely operative. We consider them on their face as part of our s70 evaluation.

[252] As already stated, objective 6 requires water quality to be improved where the water quality is degraded by human activities.

[253] Policy 16 relates to consents for new discharges of contaminants and for the consenting of existing discharges in circumstances where Appendix E Water Quality Standards or Appendix C ANZECC sediment guidelines are not met. It requires farming activities to avoid where reasonably practicable, or otherwise minimise any adverse environmental effects on water quality and to reduce them where the farming activity occurs within the catchment of a waterbody identified in Schedule X. Mr McCallum-Clark acknowledged that the intensification of dairying activities is not a prohibited activity, but he considered that the policy framework was “solid” in terms of controlling intensification.

[254] We are satisfied that provided the policies and provisions are implemented at face value, there is limited scope for the intensification of high-risk farming activities to cancel out the benefits of the mitigation measures.

[255] We are satisfied that the requirement “to avoid where reasonably practicable or otherwise improve water quality, particularly in degraded catchments”, is embedded throughout the policy and rule framework and we do not repeat the extensive array of relevant provisions in the decision. We consider policy 18(1), which requires the progressive exclusion of all stock, except sheep, from water bodies on land with a slope of less than 15 degrees by 2030 is particularly important.

[256] By way of a general finding, subject to the overarching objectives and policies, including the requirement to reduce discharges of the primary contaminants to the smallest amount reasonably practicable, being enforced and monitored, we are satisfied that they will contribute to a reduction in the s70 effects. In combination with the contributions to reductions resulting from other

provisions in the plan, we are also satisfied that there will be a reduction in the s70 effects.

Farm Environmental Management Plans

Current use of farm plans in Southland

[257] Mr McCallum-Clark stated that dairy farmers have some form of farm plan but others may not or may not be particularly far advanced, noting that the Council has worked with over 1,000 farmers on farm planning for a decade or so. Mr McCallum-Clark stated that existing farm plans are not Appendix N FEMPs.¹¹⁴

Timeframes for certification and audit of FEMPs

[258] There are no dates stated in Appendix N by which certification of and audit of FEMPs must be undertaken.

[259] Indicatively, certification must be completed within three months of receipt of a FEMP for certification or six months if a second certification is required. There is some discretion for the Council to extend the timeframes relating to a second certification.

[260] Five yearly recertification is required. Based on those timeframes, and subject to the Council having approved sufficient certifiers, we are satisfied that the majority of FEMPs can be expected to meet the necessary standards and receive certification within two years of rule 24 becoming operative.

[261] An audit of the FEMP must be arranged by the farm operator not later than 12 months after the first certification. The audit must be completed within approximately two months.

¹¹⁴ NOE at p 216, lines 25 – 32.

Timeframes for Implementation of FEMPs and times by which reductions in diffuse discharges on farm are likely to reach receiving environments

[262] The plan does not set time frames for implementation. However, clause (9) of Appendix N requires losses of the primary contaminants to be minimised, which requires them to be reduced to the smallest amount reasonably practicable. Neither the word “practicable” nor the phrase “reasonably practicable” are defined in the RMA but they were considered by the court in *Royal Forest and Bird Protection Society of New Zealand Inc v Whakatāne District Council*.¹¹⁵ The court referred to the definitions of “reasonably practicable” in the Health and Safety at Work Act 2015, noting that similar definitions are to be found in other legislation concerned with matters of health and safety. The court went on to say:¹¹⁶

These legislative examples are, perhaps unsurprisingly, consistent with well-established case law interpreting the meaning of “reasonably practicable”. It has been held that the phrase is a narrower term than “physically possible” and implies a computation of the quantum of risk against the measures involved in averting the risk (in money, time or trouble), so that if there is a gross disproportion between them, then extensive measures are not required to meet an insignificant risk. Where lives may be at stake, a practicable precaution should not lightly be considered unreasonable, but if the risk is a very rare one and the trouble and expense involved in precautions against it would be considerable but would not afford anything like complete protection, then adoption of such precautions could have the disadvantage of giving a false sense of security. “Practicable” has been held to mean “possible to be accomplished with known means or resources” and synonymous with “feasible”, being more than merely a possibility and including consideration of the context of the proceeding, the costs involved and other matters of practical convenience. Conversely, “not reasonably practicable” should not be equated with “virtually impossible” as the obligation to do something which is “reasonably practicable” is not absolute, but is an objective test which must be considered in relation to the purpose of the requirement and the problems

¹¹⁵ *Royal Forest and Bird Protection Society of New Zealand Inc v Whakatāne District Council* [2017] NZEnvC 51 from [45].

¹¹⁶ *Royal Forest and Bird Protection Society of New Zealand Inc v Whakatāne District Council* [2017] NZEnvC 51 at [51].

involved in complying with it, such that a weighing exercise is involved with the weight of the considerations varying according to the circumstances; where human safety is involved, factors impinging on that must be given appropriate weight.

[footnotes omitted]

[263] When determining what is reasonably practicable, it will be necessary to achieve a reasonable balance between benefits and costs if there is to be a positive collective response from the farming community as a whole. It will be necessary for Council approved certifiers of FEMPs to undertake an assessment for each farm and it will be important that the Council provides clear guidelines as to how this is to be done so that farmers, their advisors, certifiers and Council officers have a common understanding of what is required.

[264] This will require consideration of what is reasonably able to be done to reduce the risk of incidental discharges of the primary contaminants and reduce the risk of the s70 effects occurring taking into account “money, time or trouble”. The guidelines will need to be as clear on their face, certain, workable, practicable, enforceable and as equitable as possible and ensure that time is taken into account along with other considerations.

[265] Clause (9) also requires there to be a continual improvement in benchmarks on-farm nutrient and soil management practices and actions. The Council’s certification process must require that its approved independent certifiers ensure these requirements are reflected in the FEMPs and that audit processes ensure they are being implemented.

[266] Subject to those qualifications, we are satisfied that implementation of new mitigations can reasonably be expected to be underway within a year of certification and reductions in contaminant losses should start to reach some receiving environments soon after. While it is likely there will be “laggards”, to use Mr Norton’s words, his evidence was that the farming community has been on a journey of progressively implementing these actions for quite some time.

[267] We are satisfied there will be early benefits from stream fencing, increased buffer distances between high-risk farming activities and the adoption of the improved nutrient management and other good management practices required by the plan. Sediment, *E. Coli.* and possibly some phosphorus reductions will reach local streams soon after fencing and buffer distances are implemented because of proximity, and possibly starting within three years of rule 24 becoming operative.

[268] Overall, we are satisfied that contaminant losses at the farm boundary are already being reduced by existing mitigations as required by the plan provisions and the extent will increase progressively as new mitigations are implemented, indicatively starting within no more than three to four years of rule 24 becoming operative.

[269] Reductions in nitrogen discharges at the farm boundary from new mitigations will take longer to reach receiving environments because of groundwater travel times, as discussed earlier in this decision.

[270] Looking at the circumstances pragmatically, there is no alternative way forward that could increase what the plan already requires without revisiting the provisions, which would delay the time by which mitigations would take effect and mean reductions in s70 effects would be less.

Requirements of Appendix N of particular relevance to our determination

[271] The requirements of Appendix N were finalised after extensive expert conferencing and with inputs from all parties and are operative. They formed an important part of our determination of the case and we considered them in detail. We are satisfied that the requirements appropriately recognise and provide for the management of the risk of diffuse discharges of the primary contaminants from farming activities. We reviewed each of the requirements and are satisfied, subject to the matters raised in the following two paragraphs, that provided the plan is implemented in accordance with Appendix N, contaminant discharges will be reduced and that there will be a contribution to a reduction in the s70 effects. In

combination with other provisions in the plan, we are also satisfied that there will be a reduction in the effects within 10 years.

[272] For all landholdings over 20ha in area, Appendix N requires:

- (a) a nutrient budget (which includes nutrient losses to the environment) calculated using a model approved by the Chief Executive of Southland Regional Council); or
 - (b) a nutrient loss risk assessment undertaken using a nutrient loss risk assessment tool approved by the Chief Executive of Southland Regional Council;
- ...

[273] These are operative provisions that are not subject to any outstanding appeals. However, they place responsibility on the Chief Executive to be satisfied that the tools are fit for purpose and, in particular, that they provide sufficient certainty of contaminant loss reductions for use in a regulatory process, which will need to be exercised with care. Our evaluation is based on that premise.

Land use rules

[274] The land use rules also formed an important part of our determination of the case and we reviewed each of them in detail. They are operative and our evaluation focused on the extent to which they would contribute to a reduction in the s70 effects. We are satisfied that collectively, and together with other provisions of the plan, they include controls necessary to ensure there is a contribution to a reduction in the s70 effects and that there will be a reduction in these effects within 10 years. We do not comment on them individually, other than rules 20A, 20B and 70.

Rule 20A – Intensive winter grazing

[275] The effective control of intensive winter grazing, sacrifice paddocks and pasture-based wintering activities will be particularly important in ensuring the

requirements of s70(3) are met and these activities occupied much of the hearing leading up to the Fifth Interim Decision. Rule 20A is a new rule included in the plan with the support of all parties. Intensive winter grazing was confirmed by the court as having a disproportionately greater adverse effect on water quality compared to other farming activities.¹¹⁷ In view of the increased potential for adverse effects to arise from intensive winter grazing, we considered the issue particularly carefully.

[276] The intensive winter farming operations were addressed by Mr McCallum-Clark. He explained that wintering operations in Southland can be quite intensive and can lead to quite high losses. It was clear from his evidence that practices are evolving and that the Council takes an active role in managing higher-risk activities and seeking to ensure compliance.

[277] The court considers that that there is a need for caution when placing reliance on developing mitigation options as part of evolution, as expectations are not always realised. That is particularly the case where high costs are involved. The need for caution is evident from the findings of the McDowell paper discussed above. Nevertheless, the application of improved practices must inevitably involve elements of trial and error and provided there is effective monitoring to ensure improvements, innovation will be key to future success.

[278] Mr McCallum-Clark stated a lot of cows are wintered off-site and when that occurs, responsibility for managing winter nitrogen discharges and other diffuse discharges would transfer to the management of the off-site land. It will be important that the Council is satisfied that is the case because if it is correct, it will contribute to a reduction in the s70 effects. If not, it would be contrary to the plan requirements to minimise discharges of contaminants.

[279] We are satisfied, based on the findings of the court in the Fifth Interim

¹¹⁷ Fifth Interim Decision at [93] and [95].

Decision and our own review of the relevant evidence from the current and earlier hearings, that the intensive winter grazing provisions in the plan, including stock exclusion and fencing requirements, will reduce discharges of phosphorus and sediment and, potentially, by significant amounts, even allowing for the vagaries of topography in the natural environment.

[280] We are also satisfied that the reductions will contribute to a reduction in s70 effects and, being a close to source mitigation method directly alongside the receiving environments, the benefits of the contaminant reductions will be relatively immediate in terms of reducing adverse effects. In combination with the contributions to reductions resulting from other provisions in the plan, we are also satisfied that there will be a reduction in the s70 effects within 10 years.

Rule 20B – Pasture-based wintering of cattle

[281] The court stated in its Fifth Interim Decision:¹¹⁸

Given the Dairy Interests' anticipation that farmers may increasingly transition from intensive winter grazing to pasture-based wintering, and given also the potential for adverse effects to arise if not well managed, the activity will be managed under a bespoke rule in the plan

[footnotes omitted]

[282] In view of the potential for adverse effects, this is another rule we considered particularly carefully. We understand that pasture-based wintering is the supplementary feeding of stock that are grazing on pasture over winter. It is distinguished from intensive winter grazing, where stock graze on fodder crops as well as supplementary feed.

[283] We note that the primary method of control will be through winter grazing plans. The requirements for these plans are specified in Appendix N and are

¹¹⁸ Fifth Interim Decision at [206].

comprehensive. We also note that the available evidence about the extent of and current contaminant discharges arising from the current use of pasture-based wintering of cattle was limited, as was the extent to which practices will change in the future.

[284] Despite that, we are satisfied that the combination of setback provisions, avoiding the practice in critical source areas and the requirement to re-establish vegetation as soon as practicable, together with the need for winter grazing plans to be independently certified, will result in reduced discharges of sediment and phosphorus, in particular. It is not possible to estimate by how much they will be reduced, but we are satisfied that the reductions in discharges will contribute to a reduction in the s70 effects and, again, we would expect that the benefits of any reductions that do result, will be of relatively immediate benefit in terms of reducing the effects. In combination with the contributions to reductions resulting from other provisions in the plan, we are also satisfied that there will be a reduction in the s70 effects within 10 years.

Rule 70 – Stock exclusion from water bodies

[285] The disturbance of the bed of a lake, river modified watercourse, open drain, by cattle, deer or pigs is a permitted activity prior to specified dates for the listed land slopes after which time it is a discretionary activity. All of the specified dates have now passed, except for activities when the average stocking rate on the land directly adjacent to the water body is less than six stock units per hectare on land steeper than three degrees, which are permitted until 1 July 2030.

[286] Policy 18 of the plan addresses stock exclusion from water bodies, including:

Avoid where reasonably practicable, or otherwise remedy or mitigate, any adverse effects from the discharge of sediment or microbial contaminants to water bodies and improve river and riparian ecosystems and habitats by:

1. requiring progressive exclusion of all stock, except sheep, from lakes, rivers, natural wetlands, artificial watercourses, and modified watercourses on land with a slope of less than 15 degrees by 2030;
2. requiring the management of sheep in critical source areas and in those catchments where *E. coli* levels could preclude contact recreation;
- ...

[287] The RPS defines waterbody as “fresh or geothermal water in a river, lake, stream, pond, wetland or aquifer, or any part thereof, that is not located within the coastal marine area”. We are uncertain about the practicability of meeting the 2030 requirement as we did not receive evidence on the lengths of streams that have been and those that remain to be fenced. There is a need for caution when considering the exclusion of stock from all rivers and streams “or any part thereof” on up to 15 degree slopes as it may be difficult to achieve in such a short time frame. Despite that, we are satisfied that provided progress is made to the extent reasonably practicable and the rule 70 provisions are implemented effectively, they will contribute to a reduction in s70 effects. In combination with the contributions to reductions resulting from other provisions in the plan, we are also satisfied that there will be a reduction in the s70 effects within 10 years.

PART G Evaluation and findings

Context

[288] Section 70(3) cannot be considered in isolation of s32 or the wider framework of the RMA within which it sits, which in this case includes s70(2). While s70(3) is binary in that the court must be satisfied that the provisions either will or will not enable the required contribution to a reduction in effects to be achieved, it does not specify how the reduction is to be defined or the quantum that must be achieved. That must clearly require the exercise of discretion by the court to determine what quantum is appropriate and is practicably achievable, based on the purpose and context of the amended legislation and the particular circumstances of this case.

[289] That context includes that the provisions will apply to between 3,500 and 4,000 individual farms, each unique in terms of their farm type, size and scale, biophysical characteristics, farming practices, including mitigations required by the plan that have already been implemented or still available, contaminant discharges and levels of risk. Currently, there is no practical way to evaluate the effects of incidental discharges of the four contaminants from individual farms or the cumulative effects at a wider scale.

[290] The context also includes the large geographical area to which the plan provisions apply, with the court finding that the catchment areas contributing to degradation are extensive. The provisions will apply to all surface water bodies, including rivers, lakes, streams, ponds, wetlands, aquifers or any parts of them. The lengths of rivers is not stated in the plan or court decisions or in evidence before us but it is clear to us that they also are extensive. Annexure 3 of the Fifth Interim Decision lists eight estuaries and coastal lakes (ICOLLS), of which the court found four were degraded and four were not degraded. Ms McArthur stated that modelling shows degradation of lakes is likely to be more widespread but measured data is limited to seven Southland lakes.

[291] Being natural, albeit significantly modified by different human influences, the aquatic environment is subject to wide-ranging natural variations in soil types, weather patterns, seasonal variations and biodiversity. Climate change and the effects of climate cycles is an added variable that has been raised as a concern by experts¹¹⁹ and has been found elsewhere to result in cyclical variations in diffuse nitrogen losses from farms, which can be significant. The court found “The potential effects of climate change are a further consideration when setting a limit that could be in place for a substantial number of years”.¹²⁰

[292] The overall science required to provide a sound understanding of the state of the existing environment, its natural variations and the cause and effects of diffuse discharges is highly complex. The extensive nature of water bodies in Southland and the variable states of degradation in them, which we return to below, mean that there is no practical way to identify a single region-wide “state of the existing environment” or to determine at a regional scale the extent of any reductions in adverse effects that will result from the mitigations required by the plan.

[293] We note and share the following reservations expressed by Mander J in *Environmental Law Initiative v Canterbury Regional Council*:¹²¹

I have considerable reservations whether, in any practical sense, the statutory test imposed by s 70 could realistically be applied to a proposed “region-wide” permitted activity rule for diffuse discharges, or reasonably be assessed with any degree of confidence given the variable states of freshwater bodies across the whole region at the time, the range of factors that applied to each, and the acknowledged uncertainties attaching to the available science. ...

¹¹⁹ For example, statement of evidence of Kathryn McArthur dated 8 October 2025 at [46].

¹²⁰ *Re Ngāti Tama Ki Te Waipounamu Trust* [2023] NZEnvC 157 at [645].

¹²¹ *Environmental Law Initiative v Canterbury Regional Council* [2025] NZHC 4156 at [110]. The case involved an appeal against a decision of the Canterbury Regional Council relating to the adequacy of its consideration of the requirements of s70 (prior to its amendment) before including a permitted activity for diffuse discharges in the plan.

[294] By way of further context the evidence tells us that:

- (a) there is insufficient monitoring information and no definitive estimates available as to the total quantities of the primary contaminants discharged in Southland or by any of the 3,500 to 4,000 farming activities in Southland, individually or collectively;
- (b) there is no collated information on what mitigation measures have already been implemented by farming activities or further mitigation measures that remain to be implemented across the region, in addition to those already in place;
- (c) it is not possible to assess the effects of individual farm discharges on the environment;
- (d) there is no single metric that can be used to measure the effects of discharges on aquatic life, but we are satisfied that nutrients and sediment are significant contributors to these adverse effects;
- (e) the experts agree that monitoring of water quality and aquatic ecology will not provide a statistically certain means of determining changes in the effects on aquatic life;
- (f) the only alternative to monitoring is predictive modelling, which the court found in the Fifth Interim Decision to have large uncertainties at a local or river reach scale;
- (g) it will not be possible to quantify what, if any changes in effects on aquatic life will have occurred within the region in 10 years and it may be 20 years before reliable conclusions will be able to be drawn based on the average time to peak adoption of nitrogen actions.

Summary of our approach

[295] The starting point for our consideration was the determinations already made by the court and the largely operative provisions of the plan that are beyond appeal. We also took a systematic approach to considering the available evidence. This was necessary to enable us to first understand the uncertainties that exist in

almost every aspect of the case and then to satisfy ourselves, as defined by the Supreme Court, that the largely operative plan provisions will contribute to a reduction in the s70(3) effects within 10 years.

[296] In addition to the briefs of evidence before us, we considered the underlying references relied on by the experts in those briefs. We sought extensive clarifications from the Council witnesses in particular and the responses we received, which, in combination with Ms McArthur's responses to Mr Maw's cross-examination, provided particularly important expert opinions to assist our understanding.

[297] There are no currently available methods or tools that can provide certainty in a s70 evaluation for a region as large and diverse as Southland and we unavoidably had to rely on carefully reasoned judgement based on the evidence and consideration of case law from other cases relating to the incremental discharges of contaminants from farming activities. In exercising that judgement, we have relied on the plan requirements to minimise the discharges so that the residual effects are as low as reasonably practicable being enforced by the Council.

[298] To provide a complete basis for decision-making, as required by ss 32 and 70(2), we considered the only alternative to including permitted activity rule 24, which would be to require a resource consent for all farming activities that result in incidental diffuse discharges of the primary contaminants from farming activities.

Summary of findings on the extent of degraded water bodies in Southland and reductions in s70(3) effects that will result from implementation of the plan provisions (questions posed at [36(a) and (b)])

[299] In terms of the questions posed at [36(a) and (b)] above we are satisfied that:

- (a) the current state of water quality and effects on aquatic life ranges on

- a continuum from not degraded, and likely pristine in the headwaters of catchments, to significantly degraded lower in the catchments;
- (b) the extent of degradation resulting from the presence of the four primary contaminants both individually and collectively is highly variable across the extensive range of water bodies in Southland;
 - (c) the MCI is not suitable as the single attribute and proxy for assessing effects on aquatic life; it is necessary to consider a much wider series of attributes;
 - (d) based on Ms McArthur's evidence, just under 40% of monitored sites are degraded and just over 60% are not degraded in terms of MCI and do not require improvement;
 - (e) at individual degraded sites, the MCI will vary across the full range of values that reduce progressively from above the NBL to some number below it;
 - (f) as 34 of 35 sites monitored in Southland had a sediment cover of less than the 20%, at which marked declines in pollution sensitive taxa leading to changes in community composition occur, there does not appear to be a general requirement to reduce sediment discharges before MCI values start to increase;
 - (g) it can reasonably be expected that small reductions in contaminant discharges will be sufficient to restore the MCI to or above the NBL in reaches immediately below the point at which a water body is first degraded and increasingly greater contaminant reductions will be necessary and occur progressively over time lower in the catchment. This will result in a progressive reduction in adverse effects and an improvement in aquatic life;
 - (h) based on the evidence of Mr Rodway, as relied on by Ms McArthur, the relevant water quality components of concern, nutrients, sediment and *E. Coli.*, show a similar pattern, meaning that some sites are not degraded and do not need improvement for those contaminants;
 - (i) the same reasoning applies to the water quality contaminants, where small reductions will restore levels to be above the relevant NBLs just

below the point in a catchment where it is first degraded and progressively greater reductions will be required further down the catchment. This again will result in a progressive reduction in adverse effects and an improvement in aquatic life;

- (j) the state of lakes and estuaries ranges from pristine condition to slightly modified to various stages of degradation. We consider it unlikely that aquatic life in the more degraded water bodies will experience any significant reductions in adverse effects within 10 years but the reduction in incidental discharges will contribute as a first step in the reduction of adverse effects, without which no longer term reduction would be possible;
- (k) the mitigation measures identified in the plan will reduce nitrogen and phosphorus discharges by 16% and 23% respectively, which represent approximately one third and two thirds of the total reductions necessary to meet NBLs respectively, based on Ms McArthur's evidence. These are significant reductions that will contribute to a reduction in significant adverse effects on aquatic life;
- (l) across the whole region there would be a 6% reduction in sediment discharges and there would be a range of between 2% and 50% sediment load reduction in different major catchments, which also will contribute to a reduction in significant adverse effects on aquatic life and reduce conspicuous changes in colour and visual clarity, albeit of relatively minor extent;
- (m) mitigations required by the plan will contribute to a reduction in existing effects of discharges in rendering water unsuitable for consumption by farm animals. However, the evidence did not quantify the likely reductions and we accept that there is no way that is possible, but we consider that any reductions are unlikely to be much more than minor except, possibly, in localised areas;
- (n) some mitigations have already been implemented and reduced discharges are already occurring in some receiving environments as a result;

- (o) it is appropriate to account for these mitigations in our evaluation because, in essence, farms that have adopted them started complying with the plan provisions before they became operative and should not be penalised for having done so;
- (p) in addition to existing reductions in contaminant discharges already leaving farms, others will occur progressively as a result of new mitigations starting within three to four years of rule 24 becoming operative, bringing additional benefits from on-going stream fencing, increased buffer distances between high-risk farming activities, controls on critical source areas and the adoption of the improved nutrient management and other good management practices required by the plan.

[300] We are satisfied that reductions in significant adverse effects on aquatic life as a result of plan provisions will vary depending on the species of aquatic life, the current state of degradation, the reductions in contaminants and the sensitivity of the species to the contaminants. We are also satisfied that within the term of the plan, the reductions in discharges to some but not all water bodies will be sufficient to restore their health so that they will no longer be degraded, although it will be significantly more than 10 years before the extent of improvements will be able to be demonstrated.

[301] We are satisfied from our consideration of the evidence that the contribution to reductions that will result from the overarching objectives and policies in the plan, FEMPs and the land use rules, that in combination they will result in a reduction in s70 effects within 10 years. This confirms Mr Norton's opinion stated in his executive summary that there will be a reduction in the s70(3) effects over a period of time no greater than 10 years. While Ms McArthur was resolute in her evidence that there cannot be any reduction in significant adverse effects on aquatic life until the MCI is above the NBL, as noted earlier, we accept Mr Norton's evidence that changes occur on a continuum.

[302] It will be clear from this decision that there is no practical way to quantify the extent of reductions in s70 effects that will result from the plan provisions. Nevertheless, we are satisfied that the plan provisions will reduce the effects as a collective whole for the following reasons:

- (a) the evidence relied on and the extensive evaluation undertaken demonstrates to our satisfaction that the provisions will reduce the s70 effects sufficiently to enable permitted activities to be included in the plan in compliance with s70(3);
- (b) the reductions provide the foundation block on which all future steps must build and, without which, full or any restoration will not be possible;
- (c) they will reduce the s70 effects to be the lowest reasonably practicable within the 10 year term of the plan which is the best outcome possible recognising that is not on its own sufficient to satisfy s70;
- (d) in less degraded parts of the region, the reductions will be sufficient to mean that the s70 effects no longer occur;
- (e) we accept Mr Norton's evidence that there will be a reduction in s70 effects within 10 years.

[303] Our overall finding is that we are satisfied there will be both a contribution to and a reduction in significant adverse effects on aquatic life in catchments in those parts of the catchment downstream of where degradation of rivers and streams occurs.

[304] In view of the extent of existing degradation of water bodies in Southland, the reduction in effects will be relatively limited in extent overall but there will be a reduction.

Scope to make the proposed changes to rule 24

[305] The version of rule 24 proposed by the Council and considered above contains three amendments compared to the notified version. These are:

- (a) the inclusion of additional cross-references to rules 20A, 20B, 35A and 35B;
- (b) the substitution of the word “authorised” in place of the word “permitted” and rule 24(a)(2); and
- (c) the deletion of conditions responding to the previous requirements of s70 of the RMA from rule 24(a)(2).

[306] We address each of these proposed changes in turn.

Addition of cross-references

[307] Counsel submitted that the inclusion of additional cross-references is a consequential change arising from earlier decisions wherein the relevant additional rules being referred to were included in the plan. We agree that the proposed cross-referencing is a consequential amendment to earlier changes.

Substitution of “authorised” for “permitted”

[308] The substitution of the word “authorised” in place of the word “permitted” in rule 24(a)(2) was addressed by Mr McCallum-Clark in his evidence. The change is intended to ensure that all of rule 24(a) complies with s70 of the RMA and not just those elements that are permitted activities in the listed rules. Mr McCallum-Clark considers that the change would not make a material difference to how the rule is implemented in practice but would remove any potential for alternative interpretations.

[309] We accept Mr McCallum-Clark’s evidence that this change is by way of clarification only.

Deletion of conditions responding to the previous requirements of s70

[310] The issue of whether there is scope to make this amendment was disputed and the subject of submissions by the Council and Forest and Bird.

[311] The legal principles regarding the available scope on appeal to approve proposed changes to a rule was set out in Annexure 1 to the Fifth Interim Decision. We adopt and do not repeat the court’s legal summary here.

[312] In the present context the High Court set out the position on scope as follows:¹²²

The starting point is that any amendment sought by an appellant must be within the scope of a submission which was made on the proposed Plan at first instance. The rationale for this is procedural fairness. The purpose of notifying a plan, along with the submissions and further submissions process, is to inform everyone about what is proposed “[o]therwise the plan could end up in a form which could not reasonably have been anticipated resulting in potential unfairness”.

The scope of an appeal of the Environment Court is in turn determined by the notice of appeal. A shorthand way of describing the Environment Court’s scope on appeal is that it is an outcome which is in “the range between what was in the decision being appealed and the relief sought in the appeal”. Again the rationale for confining the Environment Court’s jurisdiction in this way is procedural fairness. Those who might seek to take an active part in the hearing before the Environment Court should have sufficient notice to know or be able to foresee what the Environment Court may do as the result of an appeal.

[footnotes omitted]

[313] Amendments made through an appeals process must be both within the scope of a submission on the plan and within the scope of an appeal.

[314] Turning to the first part of this test – whether the proposed amendment is within the scope of a submission on the plan. The plan as notified did not include any conditions responding to the requirements of (the previous version) s70. The conditions responding to s70 were included in the Council’s decision version of the rule in response to issues raised in submissions.

¹²² *Federated Farmers Southland Inc v Southland Regional Council* [2024] NZHC 726 at [41] – [42].

[315] The Hearing Panel made the following observations concerning this change:¹²³

Some submitters raised the issue of section 70 of the RMA. That section requires us to be satisfied that a permitted activity rule authorising discharges of contaminants will not give rise to a specified range of adverse effects on water quality. We consider that can be addressed by including in Rule 24 (which permits the discharge of contaminants from activities authorised under the Plan's land use rules for farming activities) a new condition that addresses the RMA section 70 matters. We note that clause 26 of the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017, which is a permitted activity rule for sediment originating from earthworks, takes a similar approach.

[316] With this background the Council submitted before us that the proposal to now delete the additions made in the Council decisions are within scope of the submissions as the alteration falls between the plan as notified and the decisions version of the plan. We accept that submission.

[317] Turning to the issue of whether the proposed amendment is within scope of any appeal, the Council relies on the appeal by Fish and Game for scope to make the amendment.¹²⁴ In its notice of appeal dated 17 May 2018 Fish and Game did not expressly seek the deletion of the conditions responding to the previous requirements of s70. However, the Council submits that scope is not limited by the express relief sought in the notice of appeal and the appeal must be read as a whole. The reasons for the appeal are relevant to the assessment of scope.

[318] Fish and Game's reasons for its appeal included, with respect to the effect on water quality, that the decisions version of the plan contained rules, including

¹²³ Report and Recommendations of the Hearing Commissioners dated 29 January 2018 at [200].

¹²⁴ Only two appeals on rule 24 were filed, one by Forest and Bird the other by Fish and Game.

rule 24 which:¹²⁵

permit the discharge of nitrogen, phosphorus, sediment or microbial contaminants that may result in a contaminant entering water. These rules do not accord with s.70 of the RMA (as the effects listed in s 70(1)(c)-(g) may arise) and are not considered appropriate.

[319] Additionally, Fish and Game stated that the plan contained:¹²⁶

rules [including Rule 24] which fail the legal test for a valid permitted activity rule. For example, they: (1) do not include standards that control the actual and potential adverse effects on water that could arise from the discharges (required to ensure they are not contrary to s 70(1)(c)-(g)); and (2) include requirements, conditions and permissions (in respect of contaminant loss) which are not certain enough to ensure that compliance can be readily determined without reference to discretionary assessments.

[320] The Council submits that it was reasonably foreseeable that the conditions contained in rule 24 responding to the previous requirements of s70 of the RMA may be altered through amendment or replacement.

[321] In closing the Council also argued that the proposed deletion of the former s70 requirements was intended to ensure that rule 24 were sufficiently certain and capable of objective ascertainment as a permitted activity rule. The Council submitted that the proposed amendments responded directly to the certainty challenge levelled at the rule in the Fish and Game appeal.

Consideration

[322] Proposed rule 24 does not function in isolation. It is part of a suite of plan provisions including objectives, policies and rules. The interpretation of proposed rule 24 including its purpose and the outcomes anticipated is informed by that

¹²⁵ Notice of appeal on behalf of Fish and Game dated 17 May 2018 at [7(a)(xi)].

¹²⁶ Notice of appeal on behalf of Fish and Game dated 17 May 2018 at [7(a)(i)].

broader statutory planning context. In this case policy 16 is relevant and we note that it is particularly detailed in terms of the actions it requires farmers to take. Policy 16 states:

Policy 16 – Farming activities that affect water quality

1. Avoid where reasonably practicable, or otherwise minimise any adverse environmental effects (including on the quality of water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries and salt marshes, and groundwater) from farming activities by:
 - (a) ensuring that all farming activities:
 - (i) do not increase nitrogen, phosphorous, sediment or microbial contaminant discharges; and
 - (ii) minimise nitrogen, phosphorous, sediment or microbial contaminant discharges; and
 - (iii) reduce adverse effects on water quality where the farming activity occurs within the catchment of a waterbody identified in Schedule X; and
 - ...

[323] The requested changes to the wording of proposed rule 24 in the Fish and Game submission are also not stated in isolation and are to be interpreted within the broader submission context including the overarching reasons. They are part of a fulsome submission which in addition to the requested wording changes includes 15 broader reasons for the appeal. These reasons are comprehensive including of particular relevance:¹²⁷

- (a) the decision results in a plan (inclusive of all objectives, policies methods and all related commentary) that:
 - (i) will not manage land use activities and discharges to the extent required to maintain the quality of freshwater or to improve the quality of freshwater where it is degraded;

¹²⁷ Notice of appeal on behalf of Fish and Game dated 17 May 2018 at [7].

- (ii) includes a suite of methods that are not sufficiently certain or robust to effectively ensure that water quality is or can be maintained or improved where it has been degraded. The methods also create an inappropriate permitted baseline for discharges affecting water quality;
- (iii) includes a suite of objectives, policies and rules relating to land use activities that provide for activities which will cause further degradation of water quality and adverse effects on water bodies;
- (iv) contains rules which permit the discharge of nitrogen, phosphorous, sediment or microbial contaminants that may result in a contaminant entering water. These rules do not accord with s70 of the RMA (as the effects listed in s70(c)-(g) may arise) and are not considered appropriate;
- (v) contains rules which fail the legal test for a valid permitted activity rule. For example, they: (1) do not include standards that control the actual and potential adverse effects on water that could arise from the discharges (required to ensure they are not contrary to s70(1)(c)-(g)); and (2) include requirements, conditions and permissions (in respect of contaminant loss) which are not certain enough to ensure that compliance can be readily determined without reference to discretionary assessments;
- (vi) employs FEMPs as its primary mechanism for managing adverse effects of farming activities on the quality of freshwater.

[324] Given the broad nature of Fish and Game's submission on rule 24 we think that it was reasonably foreseeable that the conditions responding to the previous requirements of s70 may be altered as a result of the appeal through amendment or replacement.

[325] Accordingly, we accept the Council's submission that there is scope for the removal of the conditions contained in rule 24 responding to the previous requirements of s70 of the RMA based on Fish and Game's appeal.

PART H Is the proposed rule supported by the s32A and s32AA assessment?

[326] Mr McCallum-Clark was the only witness to provide a s32 and s32AA assessment.

[327] He concluded that the intention of rule 24(a) is unchanged and incidental discharges associated with farming activities will continue to be permitted activities. He found the costs and benefits of the changes to rule 24 to therefore be the same.

[328] Ms Gepp submitted that the effect of the amendments to s70(3) and the Council's proposed changes to rule 24, now allow significant adverse effects and that the Council's version of the rule has not been subject to an adequate s32 or s32AA assessment.

[329] Under cross-examination from Ms Gepp, Mr McCallum-Clark acknowledged that his s32AA evaluation could have been more fulsome.

[330] We have considered Mr McCallum-Clark's s32 and 32AA assessment and, whilst he acknowledged it could have been more fulsome, we find it to be commensurate with the scale of change to the rule and agree that the intent of the amended rule 24 remains unchanged. Diffuse discharges remain permitted activities provided the conditions and standards referenced in rule 24 are met.

[331] We find that the changes proposed by the Council are intended to manage the effects set out in s70(3). Rather than replicate the provisions of s70(3)(c)-(g) the rule now includes conditions requiring compliance with the standards contained in the land use rules developed specifically for the purpose of managing the effects set out in s70(3)(c)-(g).

[332] Whilst there is no material change to the permitted activity intent of the rule. The rule now provides greater certainty to farmers as to the standards they

are required to meet to confirm their permitted activity status and in turn greater certainty as to how the adverse effects of diffuse discharges will be reduced. Nevertheless, for the avoidance of any doubt we have further considered the changes to the rule against the requirements of s32 and s32AA.

Sections 32 and 32AA assessment

[333] Section 32AA requires a further evaluation of any changes to the provisions:

- (a) in accordance with s32(1) to (4); and
- (b) the evaluation must be undertaken at a level of detail that corresponds to the scale and significance of the changes.

Council proposed changes to rule 24

[334] The Council's proposed changes to rule 24 are that:

- (a) the original notified version of rule 24 was a permitted activity rule subject to conditions. The conditions required the farming activity to be operating under the relevant land use rules to meet the permitted activity status. At that time the rules were limited to rules 20, 21, 22 and 23;
- (b) the decisions version of the rule changed the rule references to rules 20, 25 and 70 and included the prohibitions listed in the then s70. The s70 prohibitions were inserted in response to the Council hearing process. The principal of a permitted activity rule subject to conditions and standards in the rules set out in the original notified version of the rule remained unchanged;
- (c) the current Council amendments to rule 24 propose changes to the notified version to address newly inserted s70(3) of the RMA, whilst retaining the principal of a permitted activity rule subject to conditions and standards within the framework of the plan (namely

rules 20, 20A, 20B, 25, 35A, 35B or 70). The changes also respond to the High Court decision that compliance is not achieved with s70 by simply reciting the s70(1)(c)-(g) requirements.¹²⁸

[335] The effect of inserting a new reference to rules 20A, 20B, 35A and 35B is that those rules in combination with rules 20, 25 and 70 (as already in the decisions version of the rule) contain standards intended to manage the effects of land use farming activities on the matters set out in s70(1)(c)-(g). Except for the effects of conspicuous grease, films, scums or foams in the receiving waters as that criterion remains explicit in rule 24(a)(2).

[336] An alternative method of achieving the same permitted activity objective would be to list the detailed standards in the rule itself, we find that in this particular case there is no benefit to that alternative approach.

Forest and Bird's submission on s32 and s32AA

[337] We do not accept Forest and Bird's submission that the effect of the Council's amendments is that rule 24 allows significant adverse effects. We find that the rule allows diffuse discharges provided there is a contribution to a reduction in adverse effects including significant adverse effects. We are satisfied that a contribution to and a reduction in adverse effects including significant adverse effects on aquatic life will occur within 10 years. We are satisfied that in combination with other provisions in the plan rule 24 will result in a catchment-wide reduction in effects.

[338] We are satisfied that the requirements of s70(2)(b) and s32 and s32AA are met. In relation to s32, Mr McCallum-Clark explained that in his opinion:

- (a) the intention behind rule 24(a) was to permit the incidental discharges associated with farming activities, provided those activities are either

¹²⁸ *Federated Farmers Southland Inc v Southland Regional Council* [2024] NZHC 726 at [91].

permitted land uses or are operating under a land use resource consent, under the relevant farming rules. The then s70 prohibitions were inserted in response to a concern from the Council hearing panel. During subsequent expert witness caucusing directed by the court, it was understood that this permitted framework would apply to farming activities;

- (b) with the changes to s70, it is appropriate to delete the superseded prohibitions from rule 24(a). In practice the intention of rule 24(a) is unchanged, and incidental discharges associated with farming activities will continue to be permitted. In his opinion, the costs and benefits are largely the same;
- (c) rule 24(a) is more certain without the conditions, given the difficulty in assessing compliance with the conditions, on a farm-by-farm basis. In his opinion, there is a lower risk of acting to remove these conditions, given the change to s70 enables the reduction in this uncertainty to those operating under the permitted activity framework of rule 24(a).

[339] Forest and Bird submitted in closing that it is artificial to now compare the Council's preferred wording of rule 24 with the version assessed in the original s32 report (which was prepared on 3 June 2016). The case cited by the Council¹²⁹ involves an agreement reached between the parties in a consent order, and is not authority for the proposition that the extent of changes made to the decisions version and subsequent versions of a plan provision should be ignored, and the change from the (nearly 10 year old) original s32 report assessed instead. It said that the effect of the amendments to s70(3) and the Council's proposed changes to the rule is that the rule now allows significant adverse effects. This is clearly a new effect of the rule, as accepted by Mr McCallum-Clark in cross-examination.

[340] Forest and Bird referred the court to an updated evaluation report dated

¹²⁹ *Pickett v Hamilton City Council* [2025] NZEnvC 332.

19 October 2018. It also referred to its cross-examination of Mr McCallum-Clark, where he agreed that the decisions version of the rule required that discharges of contaminants not give rise to significant adverse effects on aquatic life in receiving waters and that the proposed new rule does not require it. He also agreed that there is an effect on the environment that follows from implementation of the rule.¹³⁰

[341] The requirement to satisfy s70 was clearly at issue before the Council Hearing Panel. The Hearing Panel's Recommendation Report stated that s70 required it to be satisfied that a permitted activity rule authorising discharges of contaminants will not give rise to a specified range of adverse effects on water quality and considered it could be addressed by including in rule 24 a new condition that addresses the RMA s70 matters.¹³¹

[342] Subsequent events have shown that the Panel's interpretation of how to interpret and give effect to s70 was incorrect and the version of rule 24 in the Decisions Version did not satisfy the requirements of s70, so cannot be a starting point for our s32AA evaluation.

[343] We found that of the only two options available, the inclusion of permitted activity rule 24 is the most efficient and effective way to achieve the objectives in accordance with s32 of the RMA. We found that the Council's proposed amendment to sub-clause(a)(2) is the most appropriate of the two options to achieve the objectives. We found that the inclusion of Forest and Bird's new sub-clause (a)(iA) and proposed amendment to clause (b) would not be the most appropriate way to achieve the objectives and we would not direct the Council to prepare changes to the plan in accordance with s293.

[344] We found that, subject to the effective implementation of the provisions,

¹³⁰ Closing legal submissions on behalf of Forest and Bird dated 30 November 2025 at [27] – [30].

¹³¹ Report and Recommendations of the Hearing Commissioners dated 29 January 2018 at [200].

the requirements of s70(3) will be met by the largely operative provisions of the plan. We are satisfied, based on that determination, that the costs and benefits of the Council's amended rule 24 will be largely the same as those that would have been achieved by the notified version of the rule.

[345] We find that sufficient evidence has been provided to enable us with confidence and certainty to confirm the s32 and s32AA requirements have been met, namely that:

- (a) proposed rule 24 will be efficient and effective in achieving the plan objectives to:
 - (i) enable land use farming to continue as a permitted activity subject to conditions and standards; and
 - (ii) to minimise the adverse effects on the environment.
- (b) the scale of the change is not significant as the permitted activity status remains subject to conditions and standards;
- (c) the environment will continue to benefit from a contribution to a reduction in adverse effects including significant adverse effects on aquatic life;
- (d) amended rule 24 provides greater certainty to farmers by referencing the relevant rules and the standards that they need to satisfy to achieve permitted activity status.

[346] We are also satisfied that the costs and benefits of the Council's amended rule 24 will be significantly positive compared to those that would be achieved by Forest and Bird's proposed rule because:

- (a) farming retains its permitted activity status subject to conditions and standards;
- (b) it avoids the potential for consents to be refused on applications in accordance with s107, which could involve potentially significant additional costs for any farms that could not be legally authorised,

- both financial and personal;
- (c) it minimises the delay in making a start on reducing contaminant discharges, and hence making a start on reducing the s70(3) effects on receiving environments, because of the additional time required to obtain consents.

[347] Provided the Council implements the plan in accordance with its duties under s30 of the RMA, we are satisfied that reliance on permitted activity rules will, in the circumstances of this case, be the most appropriate way to achieve the objective. We find that the level of evaluation undertaken satisfies the requirements of s32AA RMA.

PART I The alternative to permitted activity status

[348] The only alternative would be to require the activities to apply for resource consents. As a preliminary observation, currently there are no practical methods available to assess the effects of individual farming activities on the environment. Further, it has been established that conspicuous change in the colour or visual clarity has already occurred and fresh water has been rendered unsuitable for consumption by farm animals over much of the Southland region. As a result, the Council would have to decline all such applications and any other applications for consents to discharge the primary contaminants in the Region under ss 107(d) and (f).

[349] The implications for all farms in the Southland area being unable to operate lawfully in accordance with the RMA because they could not operate as permitted activities or obtain resource consents would be extremely serious. While this possibility was not discussed in these proceedings, it was a significant issue at a recent hearing before a different division of the court in relation to Manawātū-Whanganui Regional Council Plan Change 2. There is also the potential increased cost of borrowing for farmers and restrictions on farmers ability to sell their farms as referred to in *Te Rūnanga O Raukawa v Manawātū-Whanganui Regional Council*.¹³² The court is aware that the implications could well result in increased stress for affected farmers.

[350] If that situation were to apply to all farms in Southland, in our view, the effects would be of national significance.

Outcome

[351] We find that rule 24 will meet the requirements of s70(3).

[352] We find that amended rule 24 as proposed by the Council is within scope.

¹³² *Te Rūnanga O Raukawa v Manawātū-Whanganui Regional Council* [2025] NZEnvC 398 at [255].

[353] We find that amended rule 24 proposed by the Council is the most appropriate way to achieve the objectives and satisfies the requirements of ss 32 and 32AA.

[354] Costs are not encouraged. Any party wishing to apply should make an application within 15 days of the date of this judgment. Any reply is due within the following seven days.

For the court:



K G Reid
Environment Judge

Attachment 1

The different versions of rule 24

[1] Notified Version

- (a) The discharge of nitrogen, phosphorus, sediment and or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene Section 15(1) of the RMA is a permitted activity, provided the following condition is met:
 - (i) the land use activity associated with the discharge is authorised under Rules 20, 21, 22 or 23.
- (b) The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances 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 is a non-complying activity.

[2] Decisions Version – 4 April 2018

- (a) The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA is a permitted activity, provided the following conditions are met:
 - (i) the land use activity associated with the discharge is authorised under Rules 20, 25 or 70 of this Plan; and
 - (ii) any discharge of a contaminant resulting from any activity permitted by Rules 20, 25 or 70 is managed to ensure that after reasonable mixing it does not give rise to any of the following effects on receiving waters:
 - (1) any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
 - (2) any conspicuous change in the colour or visual clarity; or
 - (3) the rendering of fresh water unsuitable for consumption by farm animals; or

(4) any significant adverse effects on aquatic life.

- (b) The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA and that does not meet one or more of the conditions of Rule 24(a) is a non-complying activity.

[3] Amended rule proposed by the Council in closing – 13 November 2025

- (a) The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA is a permitted activity, provided the following conditions are ~~is~~ met:

1. the land use activity associated with the discharge is authorised under Rules 20, 20A, 20B, 25, 35A, 35B or 70 of this Plan; and

2. any discharge of a contaminant resulting from any activity authorised ~~permitted~~ by Rules 20, 20A, 20B, 25, 35A, 35B or 70 is managed to ensure that after reasonable mixing it does not give rise to ~~any of the following effects on receiving waters:~~

~~(1) any conspicuous oil or grease films, scums or foams in the receiving waters; or floatable or suspended materials; or~~

~~(2) any conspicuous change in the colour or visual clarity; or~~

~~(3) the rendering of fresh water unsuitable for consumption by farm animals; or~~

~~(4) any significant adverse effects on aquatic life.~~

- (b) The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA and that does not meet one or more of the conditions of Rule 24(a) is a noncomplying activity.

[4] Amended rule 24 proposed by Forest and Bird in memorandum dated 6 November 2025:

- (a) The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA is a permitted activity, provided the following conditions are met:
 - (i) the land use activity associated with the discharge is authorised under Rules 20, 20A, 20B, 25, 35A, 35B or 70 of this Plan; and
 - (iA) the discharge is not contributing nitrogen, phosphorus or sediment to a catchment identified in Schedule X as being degraded and in need of improvement with respect to that contaminant or contaminants; and
 - (ii) any discharge of a contaminant resulting from any activity authorised by Rules 20, 20A, 20B, 25, 35A, 35B or 70 is managed to ensure that after reasonable mixing it does not give rise to any of the following effects on receiving waters:
 - (1) any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
 - (2) any conspicuous change in the colour or visual clarity; or
 - (3) the rendering of fresh water unsuitable for consumption by farm animals; or
 - (4) any significant adverse effects on aquatic life.
- (b) The discharge of nitrogen, phosphorus or sediment onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA and that does not meet condition (iA) of Rule 24(a) is a discretionary activity. The discharge of nitrogen, phosphorus, sediment or microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene section 15(1) of the RMA and that does not meet condition (a)(i) or (ii) of Rule 24(a) is a non-complying activity.

Attachment 2

Abbreviations used in the decision

Amendment Act 2024	Resource Management (Freshwater and Other Matters) Amendment Act 2024
Amendment Act 2025	Resource Management (Consenting and Other System Changes) Amendment Act 2025
ANZECC 2000 guideline	These water quality guidelines were prepared in 2000 as part of Australia's National Water Quality Management Strategy (NWQMS) and relate to New Zealand's National Agenda for Sustainable Water Management. They provided governments and communities at the time with a set of tools for assessing and managing ambient water quality in natural and semi-natural water resources.
Attribute	A measurable characteristic (numeric, narrative, or both) that can be used to assess the extent to which a particular value is provided (NPSFM).
cfu	Colony-forming units
Council	Southland Regional Council
EPT	Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies)
FMU	Freshwater Management Unit
FWO	Freshwater objectives as defined in the National Policy Statement for Freshwater Management
ICOLLS	Intermittently Closed and Open Lakes and Lagoons
JWS	Joint witness statement from a conference of experts
LAWA	Land Air Water Aotearoa

Minimise	To reduce to the smallest amount reasonably practicable
MCI	Macroinvertebrate Community Index
NBL	National Bottom Line of minimum acceptable state determined by the court
NOE	Notes of evidence of the October 2025 hearing
NPSFM	National Policy Statement for Freshwater Management 2020
Plan	Proposed Southland Water and Land Regional Plan
Primary contaminants	Total Nitrogen, Total Phosphorus, sediment and <i>E. Coli</i> , as an indicator of microbial contaminants
RIS	Regulatory Impact Statement: Managing discharges under s70 of the Resource Management Act
Section 70(3) effects	The effects in s70(3)(a) to (c) of the RMA
Section 70(3) requirements	That the permitted activity standards, or those standards in combination with any other provisions in the plan, will contribute to a reduction of the effects in s70(1)(d), (f) and (g) effects over a period of time not greater than 10 years
Thresholds	Numeric values indicating degradation ¹³³
2025 mitigations	A set of “established” mitigation actions that were assumed to exist and to be implementable as of 2015
2035 mitigations	Both established and “developing” sets of actions that were anticipated to exist and be implementable by 2035.



¹³³ Fifth Interim Decision at [46].