



**Proposed Southland  
Water and Land Plan  
Part A**

3 June 2016

*Mai ea i te po i te tiMātānga.  
Mai ea ki nga hekenga kia Maku.*

*Otira, ka kii a ngā puna roi Mātā a Rangi,  
ko tona aroha kia Papatūānuku, kia kii  
ona puna hei oranga mona me ona  
Taonga e noho ake nei.*

*Ko tatou, ngā kaitiaki o tenei taonga tuku iho  
kia kaha i roto i te tapu, kia whai mana  
i roto i tona wehi, kia u tona wairua,  
ka whakanoa i muri ake nei.*

*From the void, through the regions of the night,  
through the steps of the evolution, eventually  
arriving at the dampness, indeed filling the pools  
of Rangi which overflow eventually as tears of love  
on Papatūānuku. In turn her bosom is filled  
with those tears and she disperses them evenly  
to everything that grows on her.*

*We Tāngata whenua and Te Taiao Tonga  
have the responsibility as protectors for this treasure  
handed down for use in its natural state  
with prestige, retaining its spiritual wellbeing so that  
we can continue to use it safely and wisely into the future.*

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### **Maps – separate volume**

## Preamble

This Plan forms part of a suite of planning instruments which manage Southland's water and land resources. It provides a regulatory tool for a variety of issues relating to these resources, with particular emphasis on the management of activities that may adversely affect the quality of the region's freshwater, much of which is deteriorating.

In Southland, water shapes the landscape, the economy and the region's way of life. Water is a taonga - *a treasure of the people and there is a collective responsibility to look after it now and into the future*. Southland also has a diverse range of highly productive land uses that contribute to the region's prosperity and will likely form the foundation of further growth and expansion. The ongoing intensification of land use, both urban and rural, brings challenges to the environment (including people), particularly in terms of maintaining those natural qualities of importance.

The Southland Regional Council (Environment Southland is the brand name of the Southland Regional Council) seeks to manage water and land resources in a way that encompasses the Ngāi Tahu philosophy of "ki uta ki tai" – *from the mountains to the sea*. This integrated approach recognises that water is important in a variety of ways, including for customary and recreation uses, mahinga kai, drinking water, agricultural production, irrigation, hydro-electricity generation, fisheries and tourism. This approach also recognises that Environment Southland is committed to managing the connections between land and all water, particularly the effects of water quality and quantity changes on the health and function of estuaries and coastal lagoons.

This Plan gives effect to the National Policy Statement for Renewable Electricity Generation 2011 and the New Zealand Coastal Policy Statement 2010, to the extent that they apply to this Plan. This Plan also gives effect to the National Policy Statement for Freshwater Management 2014, which will be further implemented through a time-staged implementation programme to set objectives and limits for all Freshwater Management Units in Southland.

## Te Mana o te Wai

This Plan recognises the national significance of Te Mana o te Wai, which puts the mauri (inherent health) of the waterbody and its ability to provide for te hauora o te tangata (the health of the people), te hauora o te taiao (health of the environment) and te hauora o te wai (the health of the waterbody) to the forefront of freshwater management. Te Mana o te Wai has three key functions:

1. it is a korowai (cloak) or overarching statement associating the values relating to a particular waterbody and freshwater management unit;
2. it provides a platform for tangata whenua and the community to collectively express their values for freshwater; and
3. it aligns management tools with values and aspirations to maintain and improve both water quality and quantity.

Te Mana o te Wai is influenced by five key factors:

1. the values that are determined for the waterbody and how they are weighed locally;
2. the current state of the waterbody;
3. the timeframes tangata whenua and the community establish to achieve defined objectives, and quality and quantity;
4. the mechanisms and tools used to achieve defined objectives, and quality and quantity states; and
5. the quality and availability of technical information.

The National Policy Statement for Freshwater Management 2014 provides a framework for recognising the national significance of freshwater and Te Mana o te Wai. Te Mana o te Wai is fundamental to the integrated framework for freshwater management in Southland. It provides a way of expressing Southland's aspirations for freshwater, now and into the future.

*Pursuant to Section 86B(1)(a) and (3) of the Resource Management Act 1991 all of the rules in the Proposed Southland Water and Land Plan take immediate legal effect from the date of notification.*

## **Introduction**

### **Purpose of this Plan**

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

### **Framework of this Plan and Freshwater Management Units**

The Southland Regional Policy Statement outlines the significant water management issues for the region, and how these issues should be managed. This includes directions to prepare, implement and administer a regional plan for the management of water quality and quantity, and protection of certain values of lakes, rivers and wetlands.

The National Policy Statement for Freshwater Management 2014 (NPS-FM) also sets out a framework for managing water quality and water quantity. It includes requirements to: protect the life-supporting capacity of water; maintain water quality and improve it where it is degraded; and avoid over-allocating water.

The NPS-FM includes a requirement to define the waterbodies to be managed, and set outcomes, limits, targets and other measures to achieve those outcomes. In accordance with this framework, the Southland region has been divided into five catchments, which stretch from the mountains to the estuaries and sea at the bottom of these catchments. These are the Freshwater Management Units (FMU) for the purposes of the NPS-FM.

This Water and Land Plan outlines objectives, policies and rules that apply to the whole of the region. Through the FMU limit setting process, objectives, policies and rules will be developed for each FMU. These will be tailored to respond to the pressures faced within each particular catchment. As the FMU limit setting process proceeds, the region-wide objectives, policies and rules in the Water and Land Plan may be added to or replaced by the objectives, policies and rules specific to each FMU. Environment Southland intends to complete its FMU limit setting programme by December 2025.

The New Zealand Coastal Policy Statement 2010 (NZCPS) also contains a number of policies that, while targeted to the coastal environment, have implications for water quality management throughout the region, due to the connection between freshwater and coastal waterbodies.

## Partnership between Environment Southland and Ngāi Tahu ki Murihiku

Ngāi Tahu are the tangata whenua of Southland/Murihiku<sup>1</sup>, and have occupied the area and used its natural resources for centuries. For Ngāi Tahu, the natural environment (including lands, coasts, water, air and biodiversity) and how they engage with it is a critical component of their identity as a people and in maintaining their culture.

Kaitiakitanga is central to Ngāi Tahu and is key to their mana whenua. By exercising kaitiakitanga, Ngāi Tahu ki Murihiku actively work to ensure that spiritual, cultural and Mahinga kai values are upheld and sustained for future generations. Kaitiakitanga in this context includes ensuring the protection, restoration and enhancement of the productivity and life-supporting capacity of mahinga kai, indigenous biodiversity, air, water, land, natural habitats and ecosystems, and all other natural resources valued by Ngāi Tahu ki Murihiku.

Ngāi Tahu have a tribal council, Te Rūnanga o Ngāi Tahu, which is made up of 18 papatipu rūnanga who hold the rights and responsibilities to defined areas of land and waters within the takiwā (area) of Ngāi Tahu. The following four papatipu rūnanga in Southland/Murihiku are the principal mana whenua and kaitiaki for the Southland region:

- Waihōpai Rūnaka;
- Te Rūnanga o Ōraka-Aparima;
- Hokonui Rūnaka;
- Te Rūnanga o Awarua.

Environment Southland and these four papatipu rūnanga have an enduring and legitimate relationship, established over many years. Environment Southland is an active participant and signatory to a Charter of Understanding – He Huaraki mā Ngā Uri Whakatupu in place between the southern councils and Ngāi Tahu ki Murihiku. The Charter sets out the basis and conduct of the councils and rūnanga in the context of the RMA and the agreed common goal of *"the sustainable management of the region's environment and for the social, cultural, economic and environmental wellbeing of the community, for now and into the future"*.

The Charter provides for an ongoing relationship to assist in developing the capacity of Māori to contribute to the decision-making processes. Additionally, the RMA has specific obligations for regional councils regarding kaitiakitanga, the principles of the Treaty of Waitangi, Māori in decision making and the relationship between Māori and their culture and their traditions with their ancestral lands, water, sites, wāhi tapu and other taonga.

For Ngāi Tahu, the management of the natural resources in the region is dealt with in a holistic way and the approach taken to the issues that are of significance to iwi in this Plan reinforces that approach. There is no specific or separate section in this document that deals with tāngata whenua matters. Rather, tāngata whenua themes and issues have been integrated through this Plan to reinforce the Ngāi Tahu philosophy of *kei uta kei tai*.

Water, and land, like all things in the natural world, are seen by Māori as having the spiritual qualities of mauri (life force) and wairua (spiritual dimension). The continued wellbeing of these qualities is dependent on the physical health of the water and land, which in turn affects the mana of the kaitiaki. These spiritual qualities can both be adversely affected by activities such as

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<sup>1</sup> Te Rūnanga o Ngāi Tahu Act 1996



taking and using water, discharges of contaminants to land and water, the diversion of water from one catchment to another, and the clearance of vegetation, wetlands and drains.

The principal elements identified as being of importance to tāngata whenua in relation to waterbodies and land include:

- ***Mauri and wairua*** - Protection of the mauri and wairua of rivers, lakes and wetlands;
- ***Mahinga kai*** - Adverse effects on mahinga kai and harvested aquatic species, including tuna (eel), kana kana (lamprey), inanga (whitebait), waikōura (freshwater crayfish), waikākahi (freshwater mussels) and wātakirihi (watercress);
- ***Wāhi tapu and other taonga*** - The protection of wāhi tapu and areas or resources associated with water and the beds of rivers and lakes that are of special significance;
- ***Special significance of particular waterbodies and Ngāi Tahu landscapes*** - Recognition of the special significance of particular rivers and lakes to iwi and the aspirations of iwi to develop, use and protect water.

Particular rivers, wetlands, springs, hāpua, estuaries and lakes have special significance to Ngāi Tahu as their identity is inextricably linked to those locations and surrounding lands and mountains. These areas accommodate and sustain specific uses and values that cannot be relocated to other locations.

## **Treaty of Waitangi**

The Ngāi Tahu Claims Settlement Act was passed in 1998 and put into effect the terms and redress package agreed to by Ngāi Tahu and the Crown to mitigate and remedy breaches of the Treaty of Waitangi. The Act includes several mechanisms specifically designed to be used in implementing other legislation such as the RMA and Fisheries Act 1996. These mechanisms legally recognise the importance of natural resources to Ngāi Tahu.

This Act sets out areas required to be recognised for various purposes when dealing with issues under the RMA and consequently this Plan. These areas are known as statutory acknowledgement areas, tōpuni features, nohoanga (campsites alongside specified rivers and lakes), mahinga kai, and taonga (treasured or valued) species of plants, and animals. Appendix B sets out the full details of each of these.

## **Mahinga Kai**

Mahinga kai is central to the Ngāi Tahu ki Murihiku way of life and a principal component of environmental management. Mahinga kai is about places, ways of doing things, and resources that sustain the people.

## **Whenua**

Ngāi Tahu cultural landscapes, nohoanga, tribal properties and Māori lands maintain continuity between the past, the present and the future, binding Ngāi Tahu to the whenua. Respect for the places that are important to Ngāi Tahu includes actively managing uses and activities on those lands. Reconnection with lands through access and customary use recognises the mana o Ngāi Tahu on the landscape, and restores the ability of Ngāi Tahu to give practical effect to kaitiaki responsibilities.

## **Mātaitai and taiāpure**

Mātaitai reserves and taiāpure are part of the suite of management tools created under Part IX of the Fisheries Act 1996. Mātaitai are designed to give effect to the Treaty of Waitangi Fisheries Claims Settlement Act 1992 by developing policies to help recognise use and management practices of Māori in the exercise of non-commercial fishing rights. The tools provide practical recognition of the rights guaranteed to tangata whenua under the Treaty of Waitangi.

While mātaitai are primarily in the coastal marine area, mātaitai in Southland comprise of coastal and inland areas within the Mātaitai Reserve, New Zealand's first freshwater mātaitai. Freshwater quality and quantity and land use have direct and indirect effects on the regulations of all mātaitai in Southland and Ngāi Tahu's execution of customary rights.

## **Statutory Context of the Plan**

This Plan fits within a framework of national, regional and local resource management policies. As such, the following documents have influenced the provisions of this Plan.

### **The Resource Management Act**

The purpose of the Resource Management Act 1991 (RMA) is to promote the sustainable management of natural and physical resources. The RMA requires that all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall:

- recognise and provide for the specified matters of national importance listed in Section 6;
- have particular regard to the other matters listed in Section 7; and
- take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

Under Sections 13, 14 and 15 of the Resource Management Act 1991, many activities involving the beds of lakes and rivers, water or waterbodies, and the discharge of contaminants into water can only occur if they are expressly allowed by a rule in a regional plan, or by a resource consent.

Section 30 of the RMA gives regional councils specific functions relating the control of the use of any land (including the beds of lakes and rivers) for the purposes of soil conservation, water quality, water quantity and the maintenance of ecosystems in waterbodies, the avoidance or mitigation of natural hazards, and the prevention or mitigation of effects from the use, storage, transport or disposal of hazardous substances. Regional councils also have functions relating to controlling the planting of plants in the beds of lakes and rivers, the maintenance of indigenous biological diversity and the integration of strategic infrastructure and land use.

## **National Policy Statements**

Under the Section 67(3) of the RMA, a regional plan must give effect to any operative national policy statement. There are currently three operative National Policy Statements:

- ***National Policy Statement for Freshwater Management 2014***

This National Policy Statement sets out objectives and policies that direct local government to manage water in an integrated and sustainable way, while providing for economic growth within set water quantity and quality limits. The national policy statement is a first step to improve freshwater management at a national level to address the over-allocation of water in catchments for abstraction or discharges. This plan, and the processes established for Freshwater Management Units, gives effect to this National Policy Statement.

- ***New Zealand Coastal Policy Statement 2010***

This National Policy Statement sets out objectives and policies which promote the sustainable management of the natural and physical resources of the coastal environment, including coastal land, foreshore and seabed, and coastal waters from the high tide mark to the 12 nautical mile limit. Given the physical geography of the Southland region, which includes an extensive range of estuaries, coastal lagoons, and coastal wetlands, the Coastal Policy Statement is highly relevant to this Plan. The provisions within the Water and Land Plan and the processes established for Freshwater Management Units seek to manage the water quality and quantity of the upstream waterbodies, to give effect to the Coastal Policy Statement.

- ***National Policy Statement for Renewable Electricity Generation 2011***

This National Policy Statement sets out objectives and policies for renewable electricity generation. It ensures a consistent approach to planning for renewable electricity generation in New Zealand. It gives clear government direction on the benefits of renewable electricity generation and requires all councils to make provision for it in their plans.

## Regional Policy Statement

Under the Section 67(3) of the RMA, a regional plan must give effect to the relevant regional policy statement.

- ***Southland Regional Policy Statement 2012***

The Southland Regional Policy Statement guides resource management policy and practice in Southland. It provides a framework on which to base decisions regarding the management of the region's natural and physical resources, gives an overview of the significant resource management issues facing Southland, including issues of significance to tangata whenua, and includes objectives, policies and methods to resolve any identified issues.

## National Environmental Standards

National Environmental Standards are regulations issued under Section 43 of the RMA and apply nationally. National environmental standards can prescribe technical standards, methods or other requirements for environmental matters. Each regional, city or district council must enforce the same standard. In some circumstances, councils can impose stricter standards. There are currently two National Environmental Standards relevant to the Water and Land Plan:

- ***National Environmental Standard for Sources of Human Drinking Water***

The purpose of the National Environmental Standard for Sources of Human Drinking Water is to reduce the risk of human drinking water sources becoming contaminated. It requires regional councils to ensure that effects of activities on drinking water sources are considered in decisions on resource consents and in regional plans.

- ***National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health***

The purpose of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health is to provide a nationally consistent set of planning controls and soil contaminant values. It ensures that land affected by contaminants in soil is appropriately identified and assessed before it is developed, and if necessary the land is remediated or the contaminants contained to make the land safe for human use.

This Plan should be read in conjunction with these documents, as well as the Southland Regional Coast and Air Plans, and the District Plans of Gore District, Invercargill City, and Southland District Councils.

The other National Environmental Standards relate to Air Quality, Electricity Transmission and Telecommunications facilities and are less relevant to this Plan.

## Water Conservation Orders

Water conservation orders recognise the outstanding amenity or intrinsic values of waterbodies, and are the strongest form of protection of water under the RMA. A water conservation order can prohibit or restrict a regional council issuing new water and discharge permits. Regional

policy statements, regional plans and district plans must not be inconsistent with the provisions of a water conservation order.

The approach taken in this Plan is not inconsistent with the Water Conservation Order (Mataura River) 1997 and the Water Conservation Order (Ōreti River) 2008. Plan provisions, where relevant, recognise the requirements of these orders. Plan users should refer directly to these water conservation orders if they propose to carry out any activities which may impact on the rates of flow in the Mataura or Waikaia River; to dam or affect fish passage in the main stem or tributaries of the Mataura, Waikaia or Ōreti Rivers; or discharge to any of these waters.

# Issues

## Water Quality

Water is a fundamental resource. The Southland economy is based on rural production and servicing, fisheries, tourism, energy production and industrial processing, all of which rely on the availability of good quality water. Water quality is a key factor in the ecological health of waterbodies, influencing which species are present. The mauri (spiritual essence or life force) of a waterbody is affected by water quality. Many people recreate in or near Southland's waterbodies, including swimming, white baiting, duck hunting, fishing, walking or tramping and boating activities.

Southland's main catchments end with estuaries, which are particularly sensitive to nutrient and sediment loads. Degraded estuary water quality and habitats are particularly difficult and expensive to reverse. This highlights the importance of maintaining good water quality in upstream rivers.

Adverse effects on water quality result from point source discharges and non-point source discharges. Over the past two decades, adverse effects from point source discharges have been reduced, largely through resource consenting processes for urban activities. However, they still contribute significant levels of contaminants to waterbodies and there is therefore a need for continuous improvement. The most significant point source discharges are the major industrial and municipal discharges to the Lower Maitai and Ōreti Rivers and tributaries, with a number of smaller point source discharges scattered around the more developed parts of the region.

Non-point source discharges, such as stormwater in towns and leaching of contaminants from rural activities, are generally caused by rainwater carrying contaminants over or through the ground to surface waterbodies or groundwater, or by stream bank and bed erosion. To date, there has been little management of non-point source discharges, particularly from rural activities, which cumulatively contribute significant amounts of contaminants to waterbodies. Despite some improvements being made, non-point source discharges from agricultural land are the most significant contributors of contaminants. Other types of land use, including industrial, urban, forestry, some landfills and horticulture also contribute contaminants.

Land use intensification also tends to increase the amount of contaminants entering water therefore requiring appropriate mitigations to be put in place to ensure water quality can be maintained or improved over time when intensification occurs.

## Water Quantity

Water has a range of values, both instream and for abstraction and use. Historically, Southland has had an abundance of water, with modest limits on use being appropriate. However, more recently there has been increasing demand for the use of water for a variety of activities, and an improved understanding of the linkage between water quantity and quality. The primary allocation thresholds in this Plan are therefore intended to be precautionary, with fixed allocation limits to be developed and implemented within the FMU sections of this Plan over time.

## **Surface Water**

Rivers, lakes and wetlands support a range of instream values that are largely sustained by a sufficient quantity and quality of water. Out-of-stream uses, such as the abstraction, damming and diversion of surface water, can reduce water quantity and alter flow regimes in waterbodies, which can have a number of adverse effects on instream values, including reducing water quality and aquatic habitat, diminishing natural character, amenity, aesthetic and landscape values and impacting on recreational and cultural values and fisheries and harvesting. These effects can be particularly significant during summer when rainfall is less, river levels are low, and the demand for water is at a peak. This can lead to a conflict between instream values and out-of-stream values, and between users.

In terms of surface water allocation, as at March 2015 more than 50% of the primary surface water allocation thresholds had been allocated in the majority of the region. The Waiau catchment is fully allocated as a result of the Manapōuri Power Scheme, which uses water in the Fiordland and Waiau catchments for the generation of renewable energy. The resulting flow regime is highly modified, particularly below the Manapōuri Lake Control Structure (Mararoa weir), whilst supporting a range of biological, recreational, landscape, amenity and other community values.

## **Groundwater**

Southland has considerable groundwater resources, occurring in aquifers over wide areas and at varying depths, both in shallow river gravel deposits and in deeper sedimentary rock.

Abstracting groundwater may result in a number of adverse effects including depleting aquifer storage volumes and reducing groundwater availability, interfering with existing bore yields, diminishing surface water flows, and collapsing coastal aquifers and sink holes. The significance of these effects depends on the volume and rate of abstraction and on the characteristics of the aquifer. In addition to abstraction, aquifer levels are influenced by changing land use, land drainage development and rainfall patterns.

Due to the hydraulic connection between ground and surface water resources, consideration of the impact of groundwater abstraction on surface water is important, particularly those waterbodies subject to a water conservation order.

As at March 2015, less than 50% of the groundwater primary allocation thresholds had been allocated in the majority of the region. Some aquifers are fully allocated in terms of the primary allocation thresholds or close to this point.

## **Soil Resources**

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

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

## River and Lake Beds

River beds (including beds of streams and modified watercourses) and lake beds have a wide variety of values, including natural, ecological, heritage, cultural and spiritual values, with rivers and lakes used for a range of recreational and cultural activities, including walking, fishing, boating, and food gathering. The use and development of river beds and lake beds also has value for economic, social and community health and safety reasons, which can be broken down into two main categories:

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

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

## Indigenous Biodiversity

Indigenous biodiversity covers native flora and fauna in both dryland and wetland environments. Southland contains a variety of ecosystems and habitats, including indigenous vegetation, wetlands, lakes, and rivers. Indigenous plants and animals are an integral part of the natural character values of the region, and in addition to their intrinsic value, plants and animals are significant for cultural, economic, scientific and educational reasons, biological diversity and provision of ecological services. The region contains a number of significant and distinctive ecosystems, including the network of culturally and ecologically significant river mouths, estuaries and lagoons, the largely unmodified alpine environments, particularly of Fiordland, extensive high country, and many lakes and wetlands that provide nationally and internationally significant bird habitat.

There continues to be substantial impacts on ecosystems and losses of significant indigenous biodiversity for a variety of reasons. The most significant losses in indigenous habitat and biodiversity have occurred in lowland and coastal environments where most of the original indigenous vegetation has been lost.

Ngāi Tahu as tāngata whenua have a significant interest in the protection, management and restoration of indigenous ecosystems and biodiversity. This stems from their close interaction with Southland's indigenous biodiversity over centuries of occupation and the importance of it in Māori culture, including its significance as mahinga kai and taonga species.

Wetlands are a vital link between land and water and include permanently and intermittently wet areas, shallow water, and margins that support a natural ecosystem of plants and animals adapted to wet conditions. They provide important hydrological functions and ecosystem services such as filtering contaminants from water and soils. They are also an important natural and cultural resource, rich in biodiversity and important sources of mahinga kai.



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

The Awarua Wetlands, comprising of Awarua Bay and Waituna Lagoon are one of the largest remaining wetland complexes in Southland and are important for their biological diversity and cultural values. The wetlands are officially recognised on the Ramsar Convention on Wetlands List of Wetlands of International Importance. The Awarua site includes four major wetland types: Coastal lagoons (notably Waituna Lagoon), freshwater swamps, extensive peatlands, and estuaries.

Each ecosystem is unique and maintained by different ecological processes. Awarua Wetlands is frequented by diverse trans-equatorial migrating and wading bird species, as well as threatened plants and insects including sub-alpine species.

# Physiographic Zones

Southland's physiographic zones have been developed to better understand our region's water, how it moves across the landscape and why water quality is better in some places than others.

Scientists have divided Southland into nine physiographic zones. Each zone represents areas of the landscape with common attributes that influence water quality, such as climate, topography, geology and soil type. Zones differ in the way sediment, microbes (e.g. *E.coli*) and nutrients, such as nitrogen and phosphorus, build up and move through the soil, aquifers (areas of groundwater) and into our rivers and streams.

## Alpine

The Alpine physiographic zone includes all land above 800 metres elevation, and is mainly found in northern and western parts of Southland. This zone is characterised by steep slopes with thin soils or bare bedrock. Its high elevation results in high snowfall and rainfall, which provides large volumes of pristine water to downstream physiographic zones. Overland flow (surface runoff) is the key transport pathway, however contaminant loss is limited due to low intensity of land use.

Key transport pathway for contaminants:

- ***Overland flow*** – nitrogen, phosphorus, sediment and microbes to streams.

## Central Plains

The Central Plains physiographic zone extends across flat to gently undulating terraces in the lower reaches of the Aparima and Ōreti catchments in Central Southland. This zone has many small streams and has an extensive underlying aquifer system. Soils are characteristically rich in clay, which means they swell when wet and crack when dry. When soils are wet, contaminants move quickly through artificial drainage networks to surface waterways. When soils are dry, cracks allow water and contaminants to rapidly drain down through the soil to groundwater.

Key transport pathways for contaminants:

- ***Artificial drainage*** – nitrogen, phosphorus, sediment and microbes to streams;
- ***Deep drainage*** – nitrogen to aquifers.

## Gleyed

The Gleyed physiographic zone extends across flat to gently undulating land across the plains of both northern and southern Southland. It is generally found in areas that were once wetlands, has a dense network of streams and has a high water table during winter. Soils are prone to waterlogging and have some denitrification ability, which reduces build-up of soil nitrogen. However, an extensive network of artificial drainage rapidly transports contaminants to surface water, particularly during heavy rain. The zone also has an overland flow or (o) variant, which means that in parts of the zone overland flow is also a key transport pathway for contaminants.

Key transport pathways for contaminants:

- **Artificial drainage** – nitrogen, phosphorus, sediment and microbes to streams;
- **Overland flow (in some parts of the zone - (o) variant)** – nitrogen, phosphorus, sediment and microbes to streams.

## Bedrock/Hill Country

The Bedrock/Hill Country physiographic zone is the largest in Southland Region, covering half the mapped area (approximately 1.6 million hectares). It is characterised by rolling to steep land below 800 metres elevation. This zone has high rainfall due to elevation, which results in a dense network of streams that flow to lowland areas. This zone contains an overland flow or (o) variant, as well as an artificial drainage or (a) variant, which means that in some parts of the zone, overland flow is a key transport pathway, and in some parts variant which are areas within a zone where either overland flow or artificial drainage is the key contaminant transport pathway. This means that streams in developed areas of these variants are at risk of receiving contaminants from surface runoff and artificial drainage.

Key transport pathways for contaminants:

- **Overland flow (in some parts of the zone - (o) variant)** – nitrogen, phosphorus, sediment and microbes to streams;
- **Artificial drainage (in some parts of the zone - (a) variant)** – nitrogen, phosphorus, sediment and microbes to streams.

## Lignite-Marine Terraces

The Lignite-Marine Terraces physiographic zone is distributed along Southland's south coast and in areas of Eastern and Western Southland where the underlying geology has elevated organic carbon (such as lignite or coal). There is little nitrogen build-up in soils and aquifers due to high denitrification potential. Phosphorus build-up in soils is also low where lignite and marine sediments are close to the surface. Like Bedrock/Hill Country, this zone contains an overland flow or (o) variant, as well as an artificial drainage or (a) variant.

Key transport pathways for contaminants:

- **Overland flow (in some parts of the zone - (o) variant)** – nitrogen, phosphorus, sediment and microbes to streams;
- **Artificial drainage (in some parts of the zone - (a) variant)** – nitrogen, phosphorus, sediment and microbes to streams.

## Old Maitaura

The Old Maitaura physiographic zone is located on the older, high terraces in the Maitaura catchment. Soils and aquifers in this zone have high risk of nitrogen build-up due to low denitrification potential. The combination of flat land and well drained soils results in high rates of nitrogen leaching (deep drainage) to underlying aquifers. Groundwater in this zone discharges into springs, streams and aquifers in lower parts of the Maitaura catchment, adding to their contaminant levels.

Key transport pathway for contaminants:

- ***Deep drainage*** – nitrogen to aquifers.

## **Oxidising**

The Oxidising physiographic zone is located on intermediate terraces along the margins of major river systems. Many surface waterways draining this unit originate from headwaters in neighbouring physiographic zones. Soils and aquifers in this zone have high risk of nitrogen build-up due to low denitrification potential. The combination of flat land and well drained soils results in high rates of nitrogen leaching (deep drainage) to underlying aquifers. Like Bedrock/Hill Country and Lignite-Marine Terraces, this zone contains an overland flow or (o) variant, as well as an artificial drainage or (a) variant.

Key transport pathways for contaminants:

- ***Deep drainage*** – nitrogen to aquifers;
- ***Overland flow (in some parts of the zone – (o) variant)*** – nitrogen, phosphorus, sediment and microbes to streams;
- ***Artificial drainage (in some parts of the zone – (a) variant)*** – nitrogen, phosphorus, sediment and microbes to streams.

## **Peat Wetlands**

The Peat Wetlands physiographic zone was once extensive across Southland. However, today it accounts for is less than 2% of the total land area. This zone is characterised by highly acidic peaty soils and a naturally high water table. Developed areas have an extensive artificial drainage network, comprised of open and mole-pipe drains. There is little nitrogen build-up in soils and aquifers due to high denitrification potential. However, acidic conditions result in elevated concentrations of soluble phosphorus in both soils and aquifers.

Key transport pathways for contaminants:

- ***Deep drainage*** – phosphorus to aquifers;
- ***Artificial drainage*** – nitrogen, phosphorus, sediment and microbes to streams;
- ***Lateral drainage*** – microbes and phosphorus to streams.

## **Riverine**

The Riverine physiographic zone occurs along the margins of Southland's major river systems. Rivers and streams within this zone carry large volumes of pristine alpine water to the coast. However, river water in this zone also contains soil water drainage from adjacent land.

Soil water drains quickly through shallow, stony soils to underlying shallow aquifers, which are highly connected to rivers. This, combined with the low denitrifying potential of soils and aquifers, results in aquifers and adjacent rivers being at risk of nitrogen build-up from soil leaching (deep drainage). Therefore, nitrogen loss from aquifers can contribute significant nitrogen loads to downstream environments. Like Gleyed, this zone has an overland flow or (o) variant.

Key transport pathways for contaminants:

- *Deep drainage* – nitrogen to aquifers;
- *Overland flow (in some parts of the zone - (o) variant)* - nitrogen, phosphorus, sediment and microbes to streams.

# Region-wide Objectives

## Objective 1

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

## Objective 2

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

## Objective 3

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

## Objective 4

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

## Objective 5

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

## Objective 6

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

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

## Objective 7

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

## Objective 8

- (a) The quality of water in aquifers that meet both the Drinking-Water Standards for New Zealand 2005 (revised 2008) and any freshwater objectives, including for connected surface waterbodies, established under Freshwater Management Unit processes is maintained; and

- (b) The quality of water in aquifers that have been degraded by land use and discharge activities (with the exception of those aquifers where ambient water quality is naturally less than the Drinking-Water Standards for New Zealand 2005 (revised 2008)) is improved.

### **Objective 9**

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

### **Objective 10**

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

### **Objective 11**

Water is allocated and used efficiently.

### **Objective 12**

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

### **Objective 13**

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

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

### **Objective 14**

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

### **Objective 15**

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

**Objective 16**

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

**Objective 17**

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

**Objective 18**

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



## **Region-wide Policies**

The Policies of this Plan implement the Objectives and must be read in their entirety and considered together.

### **Ngāi Tahu Policies**

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

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

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

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

Any assessment of an activity covered by this plan must:

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

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

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

## **Physiographic Zone Policies**

### **Policy 4 – Alpine**

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

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

### **Policy 5 – Central Plains**

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

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

### **Policy 6 – Gleyed**

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

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

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

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

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

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

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

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

### **Policy 9 – Old Mataura**

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

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

### **Policy 10 – Oxidising**

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

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

### **Policy 11 – Peat Wetlands**

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

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

## **Policy 12 – Riverine**

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

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

## **Water Quality**

### **Policy A4 of the National Policy Statement for Freshwater Management 2014**

1. When considering any application for a discharge the consent authority must have regard to the following matters:
  - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of freshwater including on any ecosystem associated with freshwater; and
  - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on freshwater, and on any ecosystem associated with freshwater, resulting from the discharge would be avoided.
2. When considering any application for a discharge the consent authority must have regard to the following matters:
  - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with freshwater; and
  - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with freshwater resulting from the discharge would be avoided.
3. This policy applies to the following discharges (including a diffuse discharge by any person or animal):
  - (a) a new discharge; or
  - (b) a change or increase in any discharge of any contaminant into freshwater, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering freshwater.
4. Paragraph 1 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.
5. Paragraph 2 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 takes effect.

### **Policy 13 – Management of land use activities and discharges**

Manage land use activities and discharges (point source and non-point source) to land and water so that water quality and the health of humans, domestic animals and aquatic life, is protected.

### **Policy 14 – Preference for discharges to land**

Prefer discharges to land, rather than direct discharges to water.

### **Policy 15 – Maintaining and improving water quality**

Maintain and improve water quality by:

1. despite any other policy or objective in this Plan, avoiding new discharges to surface waterbodies that will reduce water quality beyond the zone of reasonable mixing;

2. avoiding point source and non-point source discharges to land that will reduce surface or groundwater quality, unless the adverse effects of the discharge can be avoided, remedied or mitigated;
3. avoiding land use activities that will reduce surface or groundwater quality, unless the adverse effects can be avoided, remedied or mitigated; and
4. avoiding discharges to artificial watercourses that will reduce water quality in a river, lake or modified watercourse beyond the zone of reasonable mixing;

so that:

1. water quality is maintained where it is better than the water quality standards specified in Appendix E “Water Quality Standards”; or
2. water quality is improved where it does not meet the water quality standards specified in Appendix E “Water Quality Standards”; and
3. water quality meets the Drinking-Water Standards for New Zealand 2005 (revised 2008); and
4. ANZECC sediment guidelines (as shown in Appendix C of this Plan) are met.

### **Policy 16 – Farming activities that affect water quality**

1. Minimising the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) from farming activities by:
  - (a) strongly discouraging the establishment of new dairy farming or new intensive winter grazing activities in close proximity to sensitive waterbodies identified in Appendix Q;
  - (b) strongly discouraging applications to establish new, or further intensify existing dairy farming of cows or intensive winter grazing activities where the effects on the quality of water, including cumulatively, of groundwater, waterbodies, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands cannot be avoided or fully mitigated or in areas where water quality is already degraded to the point of being over-allocated.
2. Requiring all farming activities, including existing activities, to:
  - (a) either implement a Management Plan, as set out in Appendix N, or be listed on the Environment Southland Register of Independently Audited Self-Management Participants;
  - (b) actively manage sediment run-off risk from farming and hill country development by requiring setbacks from waterbodies, riparian planting, limits on areas or duration of exposed soils and the prevention of stock entering surface waterbodies;
  - (c) manage collected and diffuse run-off and leaching of nutrients, microbial contaminants and sediment through the identification and management of higher risk physiographic zones on a regional scale, and critical source areas within individual properties.

### **Policy 17 – Effluent management**

1. Avoid adverse effects on water quality, and avoid as far as practicable other adverse environmental effects of the operation of, and discharges from effluent management systems.
2. Manage effluent systems and discharges from them by:
  - (a) designing, constructing and locating systems appropriately and in accordance with standards;

- (b) maintaining and operating effluent systems in accordance with best practice guidelines;
- (c) avoiding any surface run-off/overland flow, ponding or contamination of water resulting from the application of agricultural effluent to pasture;
- (d) avoiding the discharge of raw sewage and untreated agricultural effluent to water.

### **Policy 18 – Stock exclusion from waterbodies**

Reduce sedimentation and microbial contamination of waterbodies and improve river and riparian ecosystems and habitats by:

1. requiring progressive exclusion of all stock, except sheep, from all waterbodies, including artificial watercourses, on land with a slope of less than 16° by 2025, and the management of sheep in critical source areas;
2. requiring the adoption of management plans that set out methods and timeframes to achieve these outcomes;
3. encouraging the establishment and enhancement of healthy vegetative cover in riparian areas, particularly through use of indigenous vegetation;
4. ensuring that when stock access waterbodies, including artificial watercourses, this is managed in a manner that avoids significant adverse effects on water quality, bed and bank integrity and stability, mahinga kai, and aquatic, river and riparian ecosystems and habitats.

## Water Quantity

### Policy B7 of the National Policy Statement for Freshwater Management 2014

1. When considering any application the consent authority must have regard to the following matters:
  - (a) the extent to which the change would adversely affect safeguarding the life-supporting capacity of freshwater and of any associated ecosystem; and
  - (b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of freshwater and of any associated ecosystem resulting from the change would be avoided.
  
2. This policy applies to:
  - (a) any new activity; and
  - (b) any change in the character, intensity or scale of any established activity;

that involves any taking, using, damming or diverting of freshwater or draining of any wetland, which is likely to result in any more than minor adverse change in the natural variability of flows or level of any freshwater, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).
  
3. This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.

### Policy 20 – Management of water resources

Manage the taking, abstraction, use, damming or diversion of surface water and groundwater so as to:

1. avoid, remedy or mitigate adverse effects from the use and development of surface water resources on:
  - (a) the quality and quantity of aquatic habitat;
  - (b) natural character values, natural features, and amenity, aesthetic and landscape values;
  - (c) areas of significant indigenous vegetation and significant habitats of indigenous fauna;
  - (d) recreational values;
  - (e) the spiritual and cultural values and beliefs of tangata whenua;
  - (f) water quality, including temperature and oxygen content;
  - (g) the rights of lawful existing users;
  - (h) groundwater quality and quantity;
  - (i) historic heritage values;
  - (j) mātaihai, taiāpure and nohoanga;
  
2. avoid, remedy or mitigate significant adverse effects from the use and development of groundwater resources:
  - (a) long-term aquifer storage volumes;
  - (b) the reliability of supply for existing groundwater users;



- (c) surface water flows and levels, particularly in spring-fed streams, and aquatic ecosystems and habitats; and
  - (d) water quality;
3. ensure water is used efficiently and reasonably by requiring that the rate of abstraction and abstraction volumes specified on water permits to take and use water are no more than reasonable for the intended end use;
  4. recognise the positive effects resulting from the use and development of water resources.

### **Policy 21 – Allocation of water**

Manage the allocation of surface water and groundwater by:

1. determining the primary allocation for confined aquifers not identified in Appendix L.5, following the methodology established in Appendix L.6;
2. determining that a waterbody is fully allocated when the total volume of water allocated through current resource consents and permitted activities is equal to either:
  - (a) the maximum amount that may be allocated under the rules of this Plan, or
  - (b) the provisions of any water conservation order;
3. enabling secondary allocation of surface water and groundwater subject to appropriate minimum groundwater level cutoffs and/or seasonal recovery triggers, to ensure:
  - (a) long-term aquifer storage volumes are maintained; and
  - (b) the reliability of supply for existing groundwater users is not adversely affected.

### **Policy 22 – Management of the effects of groundwater and surface water use**

Manage the effects of surface and groundwater abstractions by:

1. avoiding allocating water to the extent that the base flow of any waterway is depleted, in order to protect the mauri of that waterway and mahinga kai or taonga species;
2. ensuring interference effects are acceptable, in accordance with Appendix L.3;
3. utilising the methodology established in Appendix L.2 to:
  - (a) manage groundwater abstractions with a daily volume exceeding 86 cubic metres per day on surface waterbodies; and
  - (b) assess and manage the effects of groundwater abstractions with a daily volume exceeding 86 cubic metres per day in groundwater management zones other than those specified in Appendix L.5.

### **Policy 23 – Stream depletion effects**

Manage stream depletion effects resulting from groundwater takes with a daily average rate of take exceeding 2 litres per second which are classified as having a Riparian, Direct, High or Moderate hydraulic connection, as set out in Appendix L.2, to ensure the cumulative effect does not:

1. exceed any relevant surface water allocation regime (including those established under any water conservation order);

2. result in surface water flows or levels less than prescribed minimum flows or levels or long-term baseflow.

### **Policy 24 – Water abstraction for community water supply**

Recognise the need for, and assign priority to, the provision of water for community water supply when allocating water:

1. provided that significant adverse effects on the following are avoided as a first preference, and if unable to be avoided, are mitigated:
  - (a) the quality and quantity of aquatic habitats;
  - (b) natural character values, natural features, and amenity, aesthetic and landscape values;
  - (c) areas of significant indigenous vegetation and significant habitats of indigenous fauna;
  - (d) recreational values;
  - (e) the spiritual and cultural values and beliefs of the tangata whenua;
  - (f) water quantity and quality;
  - (g) long-term aquifer storage volumes; and
  - (h) historic heritage values; and
2. provided that a water demand management strategy commensurate to both the scale of the activity and its potential effects is part of any application for:
  - (a) a new or replacement water permit for a community water supply; or
  - (b) an amendment to an existing water permit for a community water supply.

### **Policy 25 – Priority takes**

When issuing a water shortage direction, Environment Southland will give priority to water abstraction for the following uses:

1. reasonable domestic needs;
2. reasonable animal drinking needs;
3. fire-fighting purposes;
4. public health needs; or
6. animal welfare needs.

## **Activities that affect water quality and quantity**

### **Policy 26– Renewable energy**

Recognise and provide for the national and regional significance of renewable electricity generation activities (including the existing Manapōuri hydro-electric facilities in the Waiau catchment), and the national, regional and local benefits relevant to renewable electricity generation activities, when:

1. allocating surface water for abstraction, damming, diversion and use; and
2. considering all resource consent applications for surface water abstractions, damming, diversion and use.

### **Policy 27 –Bore construction and management**

Require minimum standards for the construction, operation and maintenance of bores and wells.

### **Policy 28 – Structures and bed disturbance activities of rivers (including streams and modified watercourses) and lakes**

Manage structures and bed disturbance activities in the beds of rivers and lakes, to avoid, remedy or mitigate adverse effects on:

1. water quality and quantity;
2. habitats, ecosystems and fish passage;
3. indigenous biological diversity;
4. historic heritage;
5. the spiritual and cultural values and beliefs of the tangata whenua;
6. mātaítai and taiāpure;
7. public access (except in circumstances where public health and safety are at risk) and amenity values;
8. natural character values and outstanding natural features;
9. river morphology and dynamics, including erosion and sedimentation;
10. flood risk;
11. infrastructural assets; and
12. navigational safety.

### **Policy 29 – Provide for the extraction of gravel**

Provide for the extraction of gravel to meet the needs of the community, in a way that avoids, remedies or mitigates adverse effects on rivers and their margins; and:

1. maintains or enhances aquatic and riparian habitat; or
2. ensures no long-term net loss of habitat in the river channel and floodplain; or
3. maintains or enhances flood protection, erosion control or the integrity of physical resources; and
4. does not adversely affect the cultural values associated with the river, including mahinga kai and taonga species habitat, mātaítai and taiāpure; and
5. does not adversely affect recreational values.

### **Policy 30 – Drainage maintenance**

In recognition of the community benefits of maintaining flood capacity and land drainage, ensure that drainage maintenance activities within artificial watercourses and the beds of modified watercourses are managed in a way that either:

1. avoids, remedies or mitigates significant adverse effects on the aquatic environment; or
2. maintains or enhances habitat value.

### **Policy 31 – Whitebait stands**

Restrict the allocation of space for whitebait stands in the beds of lakes, rivers, modified watercourses and streams to:

1. stands lawfully existing as of 1 June 2003; or
2. new stands used in lieu of previously lawfully existing stands, but as close as practical to the former site where that site can no longer be used because of either natural alterations to the course of the river, bank erosion or high-water mark alterations.

### **Policy 32 – Protect significant indigenous vegetation and habitat**

Protect significant indigenous vegetation and significant habitats of indigenous fauna to improve soil health, water quality, water quantity and ecosystem health.

### **Policy 33 – Adverse effects on wetlands**

Prevent the reduction in area, function and quality of wetlands, including through drainage and vegetation removal.

### **Policy 34 – Restoration of existing wetlands and the creation of wetlands**

Recognise the importance of wetlands and indigenous biodiversity, particularly the potential to improve water quality, through encouraging:

1. the maintenance and restoration of existing wetlands and the creation of new wetlands; and
2. the establishment of wetland areas, including on-farm, in subdivisions, on industrial sites and for community sewage schemes; and
3. offsetting peak flows and assisting with flood control.

### **Policy 35 – Discharge waste and cleanfill appropriately**

Ensure the discharge of contaminants as waste or cleanfill occurs at an appropriate site.

### **Policy 36 – Manage land contamination**

Require the best practicable option be adopted to prevent or minimise adverse effects from contaminated land or a discharge of a hazardous substance.

**Policy 37 – Climate Change**

Avoid or mitigate adverse effects on the environment arising from climate change by recognising and providing for the development and protection of the built environment and infrastructure in a manner that takes into account the potential effects of rising sea levels and the potential for more variable and extreme weather patterns in coming decades.

**Policy 38 – Natural hazards**

Reduce the susceptibility of the Southland community and environment to natural hazards by improving planning, responsibility and community awareness for the avoidance and mitigation of natural hazards.

## **Consideration of Resource Consent Applications**

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

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

### **Policy 39A – Integrated Management**

To improve integrated management of freshwater and the use and development of land in whole catchments, including the interactions between freshwater, land and associated ecosystems (including estuaries).

### **Policy 40 – Determining the term of resource consents**

When determining the term of a resource consent consideration will be given, but not limited, to:

1. granting a shorter duration when there is uncertainty regarding the nature, scale, duration and frequency of adverse effects from the activity or the capacity of the resource;
2. relevant tangata whenua values and Ngāi Tahu indicators of health;
3. the duration sought by the applicant, plus material to support the duration sought;
4. the permanence and economic life of any capital investment;
5. the desirability of applying a common expiry date for water permits that allocate water from the same resource or land use and discharges that may affect the quality of the same resource;
6. the applicant's compliance with the conditions of any previous resource consent; and
7. the timing of development of FMU sections of this Plan, and whether granting a shorter or longer duration will better enable implementation of the any revised frameworks established in those sections.

### **Policy 41 – Matching monitoring to risk**

Consider the magnitude of environmental effects and risk when determining requirements for auditing and supply of monitoring information on resource consents.

### **Policy 42 – Consideration of water permit applications**

When considering resource consent applications for water permits:

1. consent will not be granted if a waterbody is fully allocated, or to do so would result in a waterbody becoming over allocated or over allocation being increased;
2. consents replacing an expiring resource consent for an abstraction from an over-allocated waterbody may be granted with a lesser volume and rate or take proportional to the amount of over-allocation and previous use;
3. installation of water measuring devices will be required on all new permits to take and use water, and existing permits in accordance with the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010;
4. where appropriate, minimum level and/or flow cut-offs and seasonal recovery triggers on resource consents for groundwater abstraction will be imposed;
5. conditions will be specified relating to a minimum flow/level, in accordance with Appendix L, to all new or replacement resource consents (except for water permits for

community water supplies and waterbodies subject to minimum flow and level regimes established under any water conservation order) for:

- (a) surface water abstraction, damming, diversion and use; and
- (b) groundwater abstraction where there is Riparian, Direct or High degree of hydraulic connection in accordance with Policy 23 “Stream Depletion Effects” and the stream depletion effect exceeds two litres per second.

### **Policy 43 – Transfer of water permits**

1. Enable the transfer of water permits to take and use water provided the transfer occurs in the same surface water and groundwater management zone or aquifer, any other abstractor is not adversely affected, and the transfer is consistent with the provisions of this Plan, including the minimum flow and allocation regime.
2. Provide for transfer of water permits for groundwater abstraction between groundwater zones or aquifers in the same surface water catchment, provided the transfer does not increase cumulative stream depletion effects and effects of the new abstraction are consistent with the provisions of this Plan.

## Freshwater Management Unit Process Policies

### Policy 44 – Implementing Te Mana o te Wai

Te Mana o te Wai is recognised at a regional level by tangata whenua and the local community identifying values held for, and associations with, a particular waterbody and freshwater management unit.

Particular regard will be given to the following values, alongside any additional regional and local values to be determined in the freshwater management unit limit setting process:

- Te Hauora o te Wai/the health and mauri of water;
- Te Hauora o te Tangata/the health and mauri of the people;
- Te Hauora o te Taiao/the health and mauri of the environment;
- Mahinga kai/food gathering, places of food;
- Mahi māra/cultivation;
- Wai Tapu/Sacred Waters;
- Wai Māori/municipal and domestic water supply;
- Āu Putea/economic or commercial development;
- He ara haere/navigation.

### Policy 45 – Priority of FMU policies and rules

1. In response to Ngāi Tahu and community aspirations and local water quality and quantity issues, FMU sections may include additional catchment-specific objectives and policies. These FMU objectives and policies will be read and considered together with the region-wide objectives and policies. Any policy on the same subject matter in the relevant FMU section of this Plan prevails over the relevant policy within this Regional Policies Section, unless it is explicitly stated to the contrary.

As the FMU sections of this Plan are developed in a specific geographical area, FMU sections will not make any changes to the region-wide objectives or policies and will not deviate from the structure and methodology outlined in these Process Policies.

*Note: As the FMU sections are developed in a specific geographical area, it is unfair if changes are made to Region-wide objectives and policies, which apply in other parts of Southland, without the involvement of those wider communities.*

### Policy 46 – Identified FMUs

The FMU Sections of this Plan are based on the following identified Freshwater Management Units for Southland, as shown on Map Series 7: Freshwater Management Units:

- Fiordland and the islands;
- Aparima;
- Mataura;
- Ōreti; and
- Waiau.



## **Policy 47 – FMU processes**

The FMU sections will:

1. establish freshwater objectives for each catchment, having particular regard to the national significance of Te Mana o te Wai, and any other values developed in accordance with Policies CA1-CA4 and Policy D1 of the National Policy Statement for Freshwater Management 2014;
2. set water quality and water quantity limits and targets to achieve the freshwater objectives;
3. set methods to phase out any over-allocation, within a specified timeframe; and
4. assess water quality and quantity based on Ngāi Tahu indicators of health.

## Region-wide Rules

*Pursuant to Section 86B(1)(a) and (3) of the Resource Management Act 1991 all of the rules in the Proposed Southland Water and Land Plan take immediate legal effect from the date of notification.*

### **Rule 1**

Any activity must comply with all applicable rules within the Regional Rules Section of this Plan, unless it is explicitly stated to the contrary in any other applicable rule in this Plan.

### **Rule 2**

Any rule on the same subject matter in the relevant FMU section of this Plan prevails over the relevant rule within the Regional Rules Section, unless it is explicitly stated to the contrary in any applicable rule in this Plan.

### **Rule 3**

When considering applications for controlled activities or restricted discretionary activities, in addition to the matters over which:

- (a) control is reserved; or
- (b) exercise of discretion is restricted;

the decision-maker may also consider the lapse period sought, the duration of the resource consent sought, the review of the conditions of a resource consent, the need for a bond and the collection, recording, monitoring and provision of information concerning the exercise of a resource consent.

### **Rule 4**

Any activity that:

- (a) would otherwise contravene Sections 13(1), 14(2), 14(3) or 15(1) of the RMA; and
- (b) is not classified by this Plan as any other class of activity listed in Section 87A of the RMA;

is a discretionary activity.

***Note:** Nothing in this Plan exempts any person from meeting the requirements of a relevant district plan or other legislation.*

## **Discharge Rules**

### **Rule 5 – Discharges to surface waterbodies that meet water quality standards**

Except as provided for elsewhere in this Plan the discharge of any:

- (a) contaminant, or water, into a surface waterbody; or
- (b) contaminant onto or into land in circumstances where it may enter a surface waterbody;

is a discretionary activity provided the following condition is met:

- (i) the discharge does not reduce the water quality below any standards set for the relevant waterbody in Appendix E “Water Quality Standards” at the downstream edge of the reasonable mixing zone; and
- (ii) the discharge does not contain any raw sewage.

### **Rule 6 – Discharges to surface waterbodies that do not meet water quality standards**

Except as provided for elsewhere in this Plan the discharge of any:

- (a) contaminant, or water, into a surface waterbody; or
- (b) contaminant onto or into land in circumstances where it may enter a surface waterbody that does not meet the conditions in Rule 5;

is a non-complying activity.

### **Rule 7 – Other discharges to water**

Except as provided for elsewhere in the Plan, the discharge of any contaminant or water into water is a discretionary activity.

### **Rule 8 – Discharges of surface water**

The discharge of surface water into a surface waterbody or artificial watercourse is a controlled activity provided the following conditions are met:

- (a) the discharge was lawfully established prior to 1 January 2010;
- (b) the lawfully established discharge point has not changed; and
- (c) at the downstream edge of the reasonable mixing zone, the discharge does not reduce the water quality of the receiving waters or give rise to any of the following effects in the receiving water:
  - (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
  - (ii) any conspicuous change in visual clarity;
  - (iii) the rendering of freshwater unsuitable for consumption by farm animals; or
  - (iv) any significant adverse effects on aquatic life, other than the target species.

***Environment Southland will restrict the exercise of its control to the following matters:***

1. the potential for flooding of any person's property, as a result of the discharge;
2. erosion of the bed or banks of the receiving surface waterbody or artificial watercourse, as a result of the discharge; and
3. actual or potential effects on existing water users and aquatic ecosystems.

**Rule 9 – Discharge of agrichemicals onto or into surface water**

The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agents and marker dyes, into surface water, is a permitted activity provided the following conditions are met:

- (a) the discharge is for the purpose of eradicating, modifying or controlling excessive growth of aquatic plants, and does not exceed the quantity, concentration or rate necessary, as recommended by the manufacturer;
- (b) the agrichemical is approved for aquatic use within New Zealand under the Hazardous Substances and New Organisms Act 1996;
- (c) all practicable measures are taken to minimise spray drift beyond the target area;
- (d) the discharge does not give rise to any of the following effects in the receiving water:
  - (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
  - (ii) any conspicuous change in visual clarity;
  - (iii) the rendering of freshwater unsuitable for consumption by farm animals;
  - (iv) any significant adverse effects on aquatic life, other than the target species;
- (e) there is no adverse effect on any water takes permitted by the RMA, this Plan or under a resource consent;
- (f) there are no recorded historic heritage sites in the surface waterbody or artificial watercourse, at the point of discharge or within 1 km downstream of the discharge point;
- (g) the discharge does not take place into water within natural state waters, or into waters subject to a water conservation order.

**Rule 10 – Discharge of agrichemicals to land where they may enter water**

The discharge of agrichemicals and any associated wetting, antifoaming and anti-drifting agents and marker dyes onto or into land where they may enter water is a permitted activity provided the following conditions are met:

- (a) the agrichemical is approved for use within New Zealand under the Hazardous Substances and New Organisms Act 1996, and the use and discharge of the substance is in accordance with all the conditions of the approval;
- (b) all practicable measures are taken to minimise spray drift beyond the target area<sup>2</sup>;
- (c) the discharge shall not be to natural state waters or to waters subject to a water conservation order.

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<sup>2</sup> Appendix D of this Plan contains an extract from New Zealand Standard 8409: 2004 (Management of Agrichemicals) providing guidance on minimising spray drift.

### **Rule 11 - Discharge of vertebrate pest control poisons**

The discharge of vertebrate pest control poisons, including sodium monofluoroacetate (1080), baits, pre-feed and deer repellent, into or onto land where it may enter water is a permitted activity provided the following conditions are met:

- (a) the agrichemical is approved for use within New Zealand under the Hazardous Substances and New Organisms Act 1996, and the use and discharge of the substance is in accordance with all the conditions of the approval;
- (b) the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J.

### **Rule 12 – Discharge of non-toxic dyes**

The discharge of non-toxic dyes for investigative purposes onto or into water other than within natural state waters is a controlled activity.

*Environment Southland will restrict the exercise of its control to the following matters:*

- (a) the type of dye used;
- (b) the amount of dye used and the rate of application;
- (c) any requirements for public notice of the test occurring;
- (d) duration of the test.

*An application for resource consent under Rule 12 will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

### **Rule 13 – Discharge from installed subsurface drainage systems**

- (a) The discharge of land drainage water to water from an on–farm subsurface drainage system, is a permitted activity, provided:
  - (i) there is no conspicuous change to the colour and/or clarity of the receiving waters at a distance of 20 metres from the point of discharge;
  - (ii) the discharge does not render freshwater unsuitable for consumption by farm animals;
  - (iii) the discharge does not cause or exacerbate the flooding of any other landholding;
  - (iv) the discharge does not cause any scouring or erosion of any land or bed of a waterbody beyond the point of discharge;
  - (v) for any new drains or the maintenance or upgrading of existing drains, the location of the sub-surface drains and outlet relative depth and position is mapped and provided to Environment Southland upon request; and
  - (vi) the discharge does not cause any significant adverse effects on aquatic life.
- (b) The discharge of land drainage water to water from an on–farm subsurface drainage system that does not comply with Rule 13(a), is a discretionary activity.

## **Rule 14 – Discharge of fertiliser**

- (a) The discharge of fertiliser in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:
- (i) there is no direct discharge of fertiliser into a surface waterbody, water in an artificial watercourse or into groundwater; and
  - (ii) there is no fertiliser discharged when the soil moisture exceeds field capacity; and
  - (iii) where any permanently flowing river, lake, lagoon, estuary, artificial watercourse or wetland:
    - (1) has riparian planting from which stock is excluded, fertiliser may be discharged up to the paddock-side edge of the riparian planting, but not onto the riparian planting, except for fertiliser required to establish the planting; or
    - (2) does not have riparian planting from which stock is excluded, fertiliser is not discharged directly into or within 10 metres of the bed or within 10 metres of a wetland boundary or any identified significant indigenous biodiversity site.
- (b) The discharge of fertiliser in circumstances where the fertiliser may enter water that does not meet the conditions of Rule 14(a) is a non-complying activity.

## **Rule 15 – Discharge of stormwater**

- (a) The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a surface waterbody, including an artificial watercourse, is a permitted activity provided the following conditions are met:
- (i) the discharge is not from a reticulated system;
  - (ii) the discharge does not originate from industrial or trade premises where hazardous substances are stored or used unless:
    - (1) hazardous substances cannot enter the stormwater system; or
    - (2) there is an interceptor system in place to collect stormwater that may contain hazardous substances and discharge or divert it to a trade waste system; or
    - (3) the stormwater contains no hazardous substances except oil and grease and the stormwater is passed through an oil interceptor system prior to discharge; and
  - (iii) the discharge does not contain any sewage, contaminants from on-site wastewater systems and mobile toilets, or agricultural effluent;
  - (iv) for discharges to a surface waterbody, the discharge does not result in:
    - (1) the production of any conspicuous oil or grease films, scums, foams or floatable or suspended materials;
    - (2) the rendering of freshwater unsuitable for the consumption by farm animals;
    - (3) significant adverse effects to aquatic life;
  - (v) except for the discharge of stormwater from a roof, road or vehicle parking area, the discharge is not into water within natural state waters; and
  - (vi) for discharges to land, the discharge does not cause flooding, erosion, or land instability to any other person's property.
- (b) The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a surface waterbody that does not meet one or more of the conditions in Rule 15(a), excluding condition (a)(iii) is a discretionary activity.
- (c) The discharge of stormwater onto or into land in circumstances where contaminants may enter water or into a surface waterbody that does not meet Rule 15(a)(iii) is a non-complying activity.

### **Rule 16 – Discharge of water from bores and wells**

The discharge of water from any bore or well into a surface waterbody or water in an artificial watercourse or onto or into land where it may enter a surface waterbody or water in an artificial watercourse, as a result of aquifer testing, is a permitted activity provided the following conditions are met:

- (a) the discharge does not cause flooding of any other person's property, erosion of the bed or banks of the receiving waterbody or land instability; and
- (b) where the discharge is to water, there is no conspicuous change to colour and clarity of the receiving waters at a distance of 20 metres from the point of discharge.

### **Rule 17 – Dust Suppressants**

(a) The discharge of a dust suppressant onto or into land in circumstances where a contaminant may enter water is a permitted activity, provided either of the following conditions are met:

- (i) the discharge is only of vegetable oil, or of new light fuel or new lubricating oil and is:
    - (1) applied in a manner that does not result in pooling or run-off, with a maximum application rate not exceeding 2 litres per square metre per day and 4 litres per square metre per annum; and
    - (2) not within 20 metres of a surface waterbody, the Coastal Marine Area, a bore or soakhole; or
  - (ii) the dust suppressant is approved under the Hazardous Substances and New Organisms Act 1996 and the use and discharge of the dust suppressant is in accordance with all conditions of the approval.
- (b) The discharge of oil as a dust suppressant onto or into land in circumstances where a contaminant may enter water that does not meet one or more of the conditions in Rule 17(a) is a restricted discretionary activity.

*Environment Southland will restrict the exercise of its discretion to the following matters:*

1. the actual and potential environmental effects of not meeting the condition or conditions of Rule 17(a).

### **Rule 18 – Discharge of water from purging of instruments at a water treatment plant**

The discharge of water containing contaminants from the purging of instruments at a water treatment plant onto or into land in circumstances where contaminants may enter water is a permitted activity, provided the following conditions are met:

- (a) the volume of water discharged does not exceed 3 cubic metres per day;
- (b) the concentration of chlorine shall not exceed 2 milligrams per litre;
- (c) the pH of the discharge shall be between 6 and 8; and
- (d) the discharge does not result in overland flow to surface water or beyond the landholding boundary, or ponding.

## **Rule 19 – Discharge of water associated with water treatment processes**

The discharge of water containing contaminants associated with water treatment processes from a water treatment plant onto or into land in circumstances where contaminants may enter water is a controlled activity, provided the following conditions are met:

- (a) the associated water take does not exceed 7,500 cubic metres per day;
- (b) the discharged volume of water containing contaminants does not exceed 8% of the daily water take;
- (c) the discharge does not give rise to any or all of the following effects in the receiving water:
  - (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
  - (ii) any conspicuous change in visual clarity;
  - (iii) the rendering of freshwater unsuitable for consumption by farm animals;
  - (iv) any significant adverse effects on aquatic life.

*Environment Southland will restrict the exercise of its control to the following matters:*

1. the assimilative capacity and drainage characteristics of the soil;
2. compliance with the ANZECC Guidelines for Fresh and Marine Water Quality (2000) and/or the WHO Guidelines for Drinking-water Quality (4<sup>th</sup> Edition 2011);
3. the separation distance of the discharge from surface waterbodies, artificial watercourses, subsurface drains, the coastal marine area, residential dwellings, landholding boundaries and drinking water sources;
4. management of the discharge, including discharge methods.



## Land Use Rules

### Rule 20 – Farming

- (a) The use of land for a farming activity on a landholding that is less than 20 hectares is a permitted activity.
- (b) Until 30 May 2018, the use of land for a farming activity in the Oxidising, Riverine or Peat Wetlands Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity.
- (c) Until 30 May 2019, the use of land for a farming activity in the Central Plains, Bedrock/Hill Country or Gleyed Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity.
- (d) Until 30 May 2020, the use of land for a farming activity in the Old Maitava or Lignite-Marine Terraces Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity.
- (e) Despite any other rule, from 30 May 2018 the use of land for the farming of sheep, deer or beef on a landholding that is between 20 hectares and 100 hectares in area is a permitted activity, provided the following condition is met:
  - (i) a Management Plan is prepared and implemented in accordance with Appendix N, but excluding part 4 (Nutrient Budget), which includes mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.
- (f) From 30 May 2018, the use of land for a farming activity in the Oxidising, Riverine or Peat Wetlands Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity, provided the following condition is met:
  - (i) a Management Plan is prepared and implemented in accordance with Appendix N, including mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.
- (g) From 30 May 2019, the use of land for a farming activity in the Central Plains, Bedrock/Hill Country or Gleyed Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity, provided the following condition is met:
  - (i) a Management Plan is prepared and implemented in accordance with Appendix N, including mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.
- (h) From 30 May 2020, the use of land for a farming activity in the Old Maitava or Lignite-Marine Terraces Physiographic Zones, other than dairy farming of cows or intensive winter grazing, is a permitted activity, provided the following condition is met:
  - (i) a Management Plan is prepared and implemented in accordance with Appendix N, including mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the

farming activity and the property on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.

- (i) From 30 May 2018, the use of land for a farming activity in the Oxidising, Riverine or Peat Wetlands Physiographic Zones, other than dairy farming of cows or intensive winter grazing, that does not comply with the condition of Rule 20(e) or Rule 20(f) is a discretionary activity.
- (j) From 30 May 2019, the use of land for a farming activity in the Central Plains, Bedrock/Hill Country or Gleyed Physiographic Zones, other than dairy farming of cows or intensive winter grazing, that does not comply with the condition of Rule 20(g) is a discretionary activity.
- (k) From 30 May 2020, the use of land for a farming activity in the Old Maitava or Lignite-Marine Terraces Physiographic Zones, other than dairy farming of cows or intensive winter grazing, that does not comply with the condition of Rule 20(h) is a discretionary activity.

### **Rule 21 – Existing dairy farming of cows**

The use of land for dairy farming of cows that existed as at 30 May 2016 is a permitted activity, provided the following conditions are met:

- (a) the dairy platform has a discharge consent for agricultural effluent that specifies a maximum number of cows; and
- (b) there is no increase in the number of cows, beyond that specified in Rule 21(a); and
- (c) a Management Plan is prepared and implemented in accordance with Appendix N, including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants; and
- (d) the activity does not occur in the Alpine physiographic zone.

### **Rule 22 – New or expanded dairy farming of cows**

- (a) The use of land for dairy farming of cows that did not exist as at 30 May 2016 or does not comply with Rule 21(a) or 21(b) in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones, is a discretionary activity, provided the following condition is met:
  - (i) a Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants.
- (b) The use of land for dairy farming of cows that did not exist as at 30 May 2016 or does not comply with Rule 21(a) or 21(b) in the Old Maitava, or Peat Wetlands physiographic zones is a non-complying activity.

- (c) The use of land for dairy farming of cows that does not comply with Rule 21(c) or Rule 22(a)(i) is a non-complying activity.
- (d) The use of land for dairy farming of cows in the Alpine physiographic zone is a prohibited activity.
- (e) Where new or expanded dairy farming of cows includes land in more than one physiographic zone, the rules for each physiographic zone shall apply to the land within that zone.
- (f) Despite Rule 22(e), where new or expanded dairy farming of cows includes land of less than 10 hectares in any one physiographic zone, the landholder may determine whether the physiographic zone for that area, or the prevalent physiographic zone for the landholding, applies to that area of the land.
- (g) Despite Rule 22(a) to (e) the use of land for dairy farming of cows is a restricted discretionary activity, provided the following conditions are met:
  - (i) the activity occurs on those parcels of land wholly contained with Computer Freehold Registers SL134/119, 307310, 307311, SL198/159, and SL151/191; and Lot 5 DP 376415 as contained in Computer Freehold Register 307305, and Lots 6 and 7 DP 376415 and Part Lot 8 DP 376415 as contained in Computer Freehold Register 307307;
  - (ii) the primary purpose of the activity is to contribute to publicly available research on the mitigation of environmental effects of dairy farming or wintering;
  - (iii) a Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland.

***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. the quality of and compliance with and auditing of the Management Plan;
2. the proposed research to be undertaken and associated environmental effects, including methods and timing of publication;
3. monitoring and reporting;
4. the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
5. the potential benefits of the activity to the community and the environment.

## **Rule 23 – Intensive winter grazing**

- (a) Until 30 May 2018, the use of land for intensive winter grazing is a permitted activity.
- (b) From 30 May 2018, the use of land for intensive winter grazing is a permitted activity, provided the following conditions are met:
- (i) a Management Plan is prepared and implemented in accordance with Appendix N, including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland upon request, or the farming activity and the landholding on which the activity is undertaken is listed on the Environment Southland Register of Independently Audited Self-Management Participants;
  - (ii) no intensive winter grazing is undertaken in the Alpine physiographic zone;
  - (iii) not more than 20 hectares of intensive winter grazing is undertaken on a landholding within the Old Maitaura, or Peat Wetlands physiographic zones;
  - (iv) not more than 50 hectares of intensive winter grazing is undertaken on a landholding within the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones;
  - (v) the area of land used for intensive winter grazing is recorded for each year and provided to Environment Southland on request;
  - (vi) the location of any sub-surface drains within the area of land used for intensive winter grazing, and their outlet position and relative depth, is mapped and provided to Environment Southland upon request;
  - (vii) a vegetated strip is maintained, and stock excluded from, the outer edge of the bed of any river, wetland, modified watercourse or artificial watercourse for a distance of:
    - (1) 3 metres from the outer edge of the bed on land with a slope<sup>3</sup> of less than 4 degrees; and
    - (2) 10 metres from the outer edge of the bed on land with a slope between 4 and 16 degrees; and
    - (3) 20 metres from the outer edge of the bed on land with a slope of greater than 16 degrees; and
  - (viii) the winter grazing does not occur within 100 m of the outer edge of the bed of any lake or the Coastal Marine Area;
  - (ix) overland flow of run-off water does not cause a conspicuous discolouration or sedimentation of any adjacent waterbody.
- (c) From 30 May 2018, the use of more than 20 hectares of a landholding for intensive winter grazing in the Old Maitaura, or Peat Wetlands physiographic zones or 50 hectares in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains or Lignite-Marine Terraces physiographic zone is a restricted discretionary activity, provided the following conditions are met:
- (i) the area of land used on the landholding for intensive winter grazing has not increased beyond the area of land used, averaged over the previous three years;
  - (ii) conditions (v) to (ix) of Rule 23(b) are met; and
  - (iii) a Management Plan has been prepared in accordance with Appendix N;

### ***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. the quality of, compliance with and auditing of the Management Plan;

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<sup>3</sup> Slope in Rule 23 is the average slope from the outer edge of the bed to a point 20 metres from the outer edge of the bed.

2. the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
3. the quantum of and timing of any reductions in the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
4. the potential benefits of the activity to the applicant, the community and the environment;
5. the potential effects of the land use on surface and groundwater quality and sources of drinking-water.

*An application for resource consent under Rule 23(c) will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

- (d) From 30 May 2018, the use of land for intensive winter grazing in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones that does not meet condition (i), or (v) to (ix) of Rule 23(b) or condition (i) to (iii) of Rule 23(c) is a discretionary activity.
- (e) From 30 May 2018, the use of land for intensive winter grazing in the Old Maitaura or Peat Wetlands physiographic zones that does not meet conditions (i) to (iii) of Rule 23(c) is a non-complying activity.
- (f) From 30 May 2018 and despite any other rule, the use of land for intensive winter grazing within the Alpine physiographic zone is a prohibited activity.
- (g) Despite Rule 23(a) to (f) the use of land for intensive winter grazing is a restricted discretionary activity, provided the following conditions are met:
  - (i) the activity occurs on those parcels of land wholly contained with Computer Freehold Registers SL134/119, 307310, 307311, SL198/159, and SL151/191; and Lot 5 DP 376415 as contained in Computer Freehold Register 307305, and Lots 6 and 7 DP 376415 and Part Lot 8 DP 376415 as contained in Computer Freehold Register 307307;
  - (ii) the primary purpose of the activity is to contribute to publicly available research on the mitigation of environmental effects of dairy farming or wintering;
  - (iii) a Management Plan is prepared and implemented in accordance with Appendix N including the mitigations relevant to the farming type being undertaken and relevant physiographic zone, and provided to Environment Southland.

***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. the quality of and compliance with and auditing of the Management Plan;
2. the proposed research to be undertaken and associated environmental effects, including methods and timing of publication.
3. monitoring and reporting
4. the proposed management practices to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land;
5. the potential benefits of the activity to the community and the environment.

## **Rule 24 – Incidental discharges from farming**

- (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.

## **Rule 25 – Cultivation on sloping ground**

- (a) The use of land for cultivation is a permitted activity provided the following conditions are met:
- (i) cultivation does not take place within the bed of a lake, river, natural wetland, modified watercourse or artificial watercourse and within a distance of:
    - (1) 3 metres from the outer edge of the bed on land with a slope<sup>4</sup> of less than 4 degrees (flat); and
    - (2) 10 metres from the outer edge of the bed on land with a slope between 4 and 16 degrees (rolling); and
    - (3) 20 metres from the outer edge of the bed on land with a slope of greater than 16 degrees (strongly rolling); and
  - (ii) cultivation does not occur above 700 metres above mean sea level, or mechanical cultivation on land with a slope greater than 20 degrees (moderately steep)<sup>5</sup>.
- (b) The use of land for cultivation, that does not meet the setback distances of Rule 25(a)(i), is a permitted activity provided the following conditions are met:
- (i) cultivation does not take place within the bed of a lake, river, natural wetland, modified watercourse or artificial watercourse and a distance of 3 metres from the outer edge of the bed; and
  - (ii) cultivation does not take place more than once in any five year period; and
  - (iii) cultivation is for the purpose of renewing or establishing pasture; and
  - (iv) cultivation does not occur above 700 metres above mean sea level.
- (c) The use of land for cultivation, which does not meet one or more of the conditions of Rule 25(a) or Rule 25(b) is a restricted discretionary activity.

### ***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. the management of sediment and other contaminants from critical source areas;
  2. risks to biodiversity and water quality and mitigation measures for addressing those risks; and
  3. monitoring, inspection and audit requirements.
- (d) Despite any other rule, the use of land for cultivation in the Alpine physiographic zone, is a non-complying activity.

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<sup>4</sup> Slope in Rule 25(a)(i)(1)-(3) is the average slope from the outer edge of the bed to a point 20 metres from the outer edge of the bed.

<sup>5</sup> Slope in Rule 25(a)(ii) is the average slope over any 20 metre distance.

## Wastewater, Effluent and Sludge

### Rule 26 – Discharges from on-site wastewater systems

- (a) The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from an existing on-site wastewater system is a permitted activity provided the following conditions are met:
- (i) the on-site wastewater system had been installed and was operational prior to 1 June 2016;
  - (ii) the discharge does not exceed 1,250 litres per day, averaged over a period of one month;
  - (iii) the discharge consists only of contaminants normally associated with domestic wastewater;
  - (iv) the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;
  - (v) there is no faecal contamination of any take of water for human consumption as a result of the discharge;
  - (vi) there is no discharge above the soil surface, or direct discharge to groundwater, surface water, an artificial watercourse or the coastal marine area, including discharge via tile drains, stormwater drains, artificial free draining areas such as soak holes and overland flow;
  - (vii) the inflow or infiltration of stormwater, other surface water and groundwater to the system is minimised;
  - (viii) the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J.
- (b) The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from a new on-site wastewater system or a replacement of an existing system is a permitted activity provided the following conditions are met:
- (i) the treatment and disposal system is designed and installed in accordance with Sections 5 and 6 of New Zealand Standard AS/NZS 1547:2012 – On-site Domestic Wastewater Management; and
  - (ii) the treatment and disposal system is operated and maintained in accordance with the system's design specification for maintenance or, if there is no design specification for maintenance, Section 6.3 of New Zealand Standard AS/NZS 1547:2012 – On-site Domestic Wastewater Management; and
  - (iii) the discharge does not result in wastewater being visible on the ground surface; and
  - (iv) the discharge does not contain any hazardous substance.
  - (v) the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;
  - (vi) the discharge is not within:
    - (1) 20 metres of any surface waterbody or artificial watercourse, excluding interception drains which benefit the on-site wastewater system;
    - (2) 50 metres of the coastal marine area or any natural state waters; or
    - (3) 50 metres of any bore or well used for potable or stock water supply;
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; or
    - (5) 20 metres of any tile drain.

- (c) The discharge of treated domestic wastewater, onto or into land in circumstances where a contaminant may enter water from an on-site wastewater system that does not meet the conditions of Rule 26(a) or (b), is a discretionary activity.
- (d) The discharge of septage onto or into land, in circumstances where a contaminant may enter water, and any associated discharge to air from an on-site wastewater system is a permitted activity provided the following conditions are met:
  - (i) the discharge occurs on the same landholding as the on-site wastewater system is located;
  - (ii) the discharge consists only of contaminants normally associated with domestic wastewater.
  - (iii) the on-site wastewater system is not used for the disposal of wastewater from chemical toilets;
  - (iv) there is no faecal contamination of any take of water for human consumption as a result of the discharge;
  - (v) the maximum depth of septage application is 7 mm;
  - (vi) no other effluent is discharged to the septage application area for 28 days before and 28 days after the septage application;
  - (vii) the discharge onto or into land does not occur at a location where overland flow will result in contaminants reaching surface water;
  - (viii) the discharge is not within:
    - (1) 20 metres of any surface waterbody or artificial watercourse;
    - (2) 50 metres of the coastal marine area or any natural state waters; or
    - (3) 100 metres of any bore or well used for potable or stock water supply;
    - (4) 100 metres of any landholding boundary;
    - (5) 200 metres of any school, marae, or residential dwelling other than residential dwellings on the landholding;
    - (6) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (ix) there is no direct discharge to groundwater, surface water, an artificial watercourse or the coastal marine area, including discharge via tile drains, stormwater drains, artificial free draining areas such as soak holes, and overland flow;
  - (x) the discharge does not result in any emission of odour that is offensive or objectionable at or beyond the boundary of the landholding ;
  - (xi) the discharge does not occur on a site less than 100 hectares in area.
- (e) The discharge of septage into or onto land from an on-site wastewater system, that does not meet the conditions of Rule 26(d), is a discretionary activity.
- (f) Despite Rule 26(a) to (e), the discharge of untreated domestic wastewater, raw sewage, or effluent from mobile toilets, into surface or groundwater is a prohibited activity.

### **Rule 27 – Discharges from pit toilets**

- (a) Notwithstanding Rule 26 the discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from a pit toilet is a permitted activity provided the following conditions are met:
  - (i) the discharge does not exceed 320 litres per week;
  - (ii) the discharge comprises only contaminants normally associated with human excreta;
  - (iii) the pit toilet is not used for the disposal of wastewater from chemical toilets;
  - (iv) there is no faecal contamination of any take of water for human consumption as a result of the discharge;



- (v) the discharge is not within:
    - (1) 20 metres of any surface waterbody or artificial watercourse, excluding interception drains which benefit the pit toilet;
    - (2) 50 metres of the coastal marine area or any natural state waters; or
    - (3) 50 metres of any bore or well used for potable or stock water supply;
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
    - (5) a site that is zoned for residential, commercial or industrial purposes in any district plan;
  - (vi) there is no direct discharge above the soil surface, or to groundwater, surface water, an artificial watercourse or the coastal marine area, including discharge via tile drains, stormwater drains, artificial free draining areas such as soak holes, and overland flow;
  - (vii) the soil type does not comprise gravels, coarse/medium sands, fissured rock, or other such materials likely to permit free travel of contaminants away from the pit;
  - (viii) stormwater or other surface water is prevented from entering the pit toilet;
  - (ix) the discharge shall not accumulate within 500 millimetres of the land surface;
  - (x) for any new pit toilet that has been installed and was operational on 1 January 2016 or later, the bottom of the pit is not less than 900 millimetres above the mean seasonal high groundwater table;
- (b) The discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from a pit toilet that does not meet the conditions of Rule 27(a) is a discretionary activity.

### **Rule 28 - Discharges of liquid from waterless composting toilet systems**

- (a) Notwithstanding Rule 26 the discharge of liquid from a waterless composting toilet system onto or into land, in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:
- (i) the discharge occurs on the same landholding as the waterless composting toilet is located;
  - (ii) the volume of the discharge does not exceed 105 litres per week;
  - (iii) the discharge comprises only contaminants normally associated with human excreta;
  - (iv) there is no faecal contamination of any take of water for human consumption as a result of the discharge;
  - (v) the discharge is not within:
    - (1) 20 metres of any surface waterbody or artificial watercourse;
    - (2) 50 metres of the coastal marine area or any natural state waters; or
    - (3) 50 metres of any bore or well used for potable or stock water supply;
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (vi) there is no discharge above the soil surface, or direct discharge to groundwater, surface water, an artificial watercourse or the coastal marine area, including discharge via tile drains, stormwater drains, artificial free draining areas such as soak holes and overland flow;
  - (vii) no stormwater, other surface water or groundwater shall infiltrate the wastewater treatment unit; and
  - (viii) stormwater, other surface water or groundwater shall be directed away from the land application system area;

- (ix) for any land application system that has been installed and was operational on 1 January 2016 the system is designed so that:
  - (1) the soil beneath the soil infiltration surface is maintained as free draining to a depth of at least 600 millimetres; and
  - (2) the bottom of the soil infiltration surface is no less than 900 millimetres above the mean seasonal high groundwater table and any perched water.
- (b) The discharge of liquid from a waterless composting toilet system onto or into land, in circumstances where a contaminant may enter water that does meet one or more of the conditions of Rule 28(a) is a discretionary activity.

### **Rule 29 – Discharges of aerobically composted human excreta**

- (a) The discharge of aerobically composted human excreta onto or into land, in circumstances where a contaminant may enter water, and any associated discharge to air from a waterless composting toilet system is a permitted activity provided the following conditions are met:
  - (i) the discharge occurs on the same landholding as a waterless composting toilet system is located;
  - (ii) the discharge comprises only contaminants normally associated with human excreta;
  - (iii) the waterless composting toilet system is not used for the disposal of wastewater from chemical toilets;
  - (iv) there is no contamination of any take of water for human consumption as a result of the discharge;
  - (v) the material has been subject to aerobic composting decomposition for at least 12 months from the last addition of raw human excreta and is worked into the soil immediately following the discharge;
  - (vi) the material is not applied to any food crop for animal or human consumption unless the material has been subject to aerobic composting decomposition and storage for at least 24 months from the last addition of raw human excreta and is worked into the soil immediately following the discharge;
  - (vii) the discharge onto or into land does not occur at a location where overland flow will result in contaminants reaching surface water;
  - (viii) the working of the compost into the soil does not encounter any groundwater or perched water;
  - (ix) the discharge is not within:
    - (1) 20 metres of any surface waterbody or artificial watercourse;
    - (2) 50 metres of the coastal marine area or any natural state waters;
    - (3) 50 metres of any bore or well used for potable or stock water supply;
    - (4) 10 metres of a landholding boundary;
    - (5) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (x) the discharge does not result in any emission of odour that is offensive or objectionable at or beyond the boundary of the landholding;
- (b) The discharge of contaminants onto or into land, in circumstances where a contaminant may enter water from aerobically composted human excreta that does not meet the one or more of the conditions of Rule 29(a) is a discretionary activity.

### **Rule 30 – Discharges from mobile toilets**

The discharge of effluent from a mobile toilet into or onto land or into water is a prohibited activity.

### **Rule 31 – Dump stations**

The discharge of effluent into or onto land from an on-site wastewater system that receives wastewater from a dump station is a non-complying activity.

### **Rule 32 – Effluent storage**

- (a) The use of land for the construction of any effluent storage, including of waste-water, sludge or effluent from an industrial or trade processes or agricultural effluent, is a restricted discretionary activity provided the following conditions are met:
- (i) for agricultural effluent storage the design, and build process, is certified by a Chartered Professional Engineer as being in accordance with IPENZ Practice Note 21: Farm Dairy Effluent Pond Design and Construction (2013); and
  - (ii) the effluent storage is not within 50 metres of any surface waterbody, artificial watercourse or coastal marine area;
  - (iii) the effluent storage is not within 200 metres of any dwelling not on the same landholding, or 50 metres of the boundary of any other landholding; and
  - (iv) the effluent storage is not within 100 metres of any water abstraction point;

*Environment Southland will restrict its discretion to the following matters:*

1. the design and construction of the storage and ancillary structures;
  2. methods to be used to protect its embankments from damage by stock and machinery;
  3. the adverse effects of the effluent storage on: surface waterbodies, artificial watercourses, installed subsurface drains, groundwater, bores, registered drinking-water supplies, the coastal marine area, trees, stop banks, residential dwellings, places of assembly, urban areas, landholding boundaries and historic heritage;
  4. the height of the embankments and placement and orientation of the effluent storage relative to flood flows and stormwater run-off;
  5. the storage capacity of the effluent storage in relation to the volume and nature of the liquid that will enter;
  6. the quality of, and compliance with, an operational management plan, including operational procedures, emergency response, monitoring and reporting requirements, and installation of monitoring devices; and
  7. adoption and implementation of an Accidental Discovery Protocol.
- (b) The use of land for the construction of any effluent storage that does not meet the conditions in Rule 32(a) is a non-complying activity.

### **Rule 33 – Community sewerage schemes**

- (a) The discharge of effluent or bio-solids onto or into land, in circumstances where contaminants may enter water, from a community sewerage scheme is a discretionary activity, provided the following condition is met:
- (i) any pond, tank or structure used to store the effluent or bio-solids prior to discharge is certified by a Chartered Professional Engineer as:
    - (1) being structurally sound;

- (2) meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P.

Maximum Depth of Pond (m) excluding freeboard	Maximum Allowable Pond Level Drop (mm per 24 hours)
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

- (b) The discharge of effluent or bio-solids onto or into land, in circumstances where contaminants may enter water, from a community sewerage scheme that does not meet the condition of Rule 33(a) is a non-complying activity.

### Rule 34 – Industrial and trade processes

- (a) The discharge onto or into land, in circumstances where contaminants may enter water, of wastewater, sludge or effluent from industrial and trade processes, other than agricultural effluent, is a discretionary activity provided the following condition is met:
- (i) any pond, tank or structure used to store the waste-water, sludge or effluent prior to discharge is certified by a Chartered Professional Engineer as:
- (1) being structurally sound;
  - (2) meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P.

Maximum Depth of Pond (m) excluding freeboard	Maximum Allowable Pond Level Drop (mm per 24 hours)
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

- (b) The discharge onto or into land, in circumstances where contaminants may enter water, of wastewater, sludge or effluent from industrial and trade processes, other than agricultural effluent, that does not meet the condition of Rule 34(a) is a non-complying activity.

### Rule 35 – Discharge of agricultural effluent to land

- (a) The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided the following conditions are met:
- (i) the discharge is from;
- (1) a dairy shed servicing a maximum of 20 cows or 100 of any other animal; or
  - (2) piggeries with a maximum of 70 x 50 kg pig equivalents; or
  - (3) directly from feed lots and wintering pads that:
    - (a) until 31 December 2017 service no more than 100 adult cattle or 250 adult deer; and
    - (b) from 1 January 2018 service no more than 100 adult cattle or 250 adult deer where the feed lot or wintering pad:
      - (i) is not less than 20 metres from the nearest sub-surface (tile) drain, surface waterbody or wetland; and

- (ii) is the only feed lot or wintering pad on the landholding; or
  - (c) service no more than 10 adult cattle or 25 adult deer in any other circumstance; or
  - (4) stock underpasses; or
  - (5) holding tanks on stock trucks;
  - (ii) there is no discharge of agricultural effluent or water containing agricultural effluent to any surface watercourse, either directly or by overland flow, run-off, or via a pipe;
  - (iii) there is no overland flow or ponding of effluent, or application to land when the soil moisture exceeds field capacity;
  - (iv) the discharge is not within 20 metres of any surface waterbody, artificial watercourse, wetlands listed in Appendix A or the coastal marine area;
  - (v) the discharge is not within 200 metres of any place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding;
  - (vi) the discharge is not within 100 metres of any water abstraction point;
  - (vii) provided the soil moisture does not exceed field capacity, the maximum discharge depth of agricultural effluent or water containing agricultural effluent is 10 millimetres for each individual application;
  - (viii) the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year from agricultural effluent or water containing agricultural effluent;
  - (ix) the discharge system is operated and maintained so that there is no spray drift or offensive or objectionable odour beyond the landholding boundary; and
  - (x) the minimum return period for discharging agricultural effluent or water containing agricultural effluent onto or into the site is 28 days; and
  - (xi) the discharge does not occur within the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; and
  - (xii) the location of any sub-surface drains within the discharge area, and their outlet position and relative depth, is mapped and provided to Environment Southland upon request.
- (b) The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water, is a restricted discretionary activity, provided the following conditions are met:
- (i) the discharge is the replacement of a lawfully established discharge pursuant to Sections 124-124C of the RMA,
  - (ii) the existing discharge consent for agricultural effluent specifies a maximum number of animals from which the effluent is collected, and that number is not increasing; and
  - (iii) any pond, tank or structure used to store agricultural effluent prior to discharge is certified by a Chartered Professional Engineer as:
    - (1) being structurally sound;
    - (2) meeting the relevant pond drop level outlined below, when tested in accordance with the methodology in Appendix P.

<b>Maximum Depth of Pond (m) excluding freeboard</b>	<b>Maximum Allowable Pond Level Drop (mm per 24 hours)</b>
<0.5	1.2
0.5 to 1.0	1.4
1.0 to 1.5	1.6
1.5 to 2.0	1.8
>2.0	2.0

***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. application depth and/or rate, storage requirements, nutrient loading (in particular nitrogen) and size of the disposal area, timing, and contingency plans;
  2. the separation distance (beyond that required under conditions (i), (ii) and (iii) above) of the discharge from surface waterbodies, artificial watercourses, subsurface drains, the coastal marine area, residential dwellings, places of assembly, urban areas, landholding boundaries, water abstraction points and registered drinking-water supplies;
  3. other measures to avoid, remedy or mitigate adverse effects (including cumulative effects directly related to the discharge of farm dairy effluent) on water quality taking into account the nature and sensitivity of the receiving environment, including the physiographic zone that the discharge is located in;
  4. the duration of the discharge permit to be issued, in order to implement the outcomes of any Freshwater Management Unit Process to be undertaken in accordance with Policy 1;
  5. the adequacy of information provided to demonstrate that any pond, tank or structure used to store agricultural effluent prior to discharge does not leak; and
  6. the structural integrity of any pond, tank or structure used to store agricultural effluent prior to it being discharged.
- (c) The discharge of agricultural effluent or water containing agricultural effluent onto or into land, in circumstances where contaminants may enter water that did not exist as at 1 May 2016 or seeks to increase the number of stock provided for in the Riverine, Gleyed, Bedrock/Hill Country, Oxidising, Central Plains, or Lignite-Marine Terraces physiographic zones that does not meet one or more conditions of Rule 35(a) is a discretionary activity, provided the following conditions are met:
- (i) the discharge is not within 20 metres of any surface waterbody, artificial watercourse or the coastal marine area;
  - (ii) the discharge is not within 200 metres of any place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding;
  - (iii) the discharge is not within 100 metres of any water abstraction point.
- (d) The discharge of agricultural effluent or water containing agricultural effluent to land, in circumstances where contaminants may enter water, that does not comply with Rule 35(b) or Rule 35(c) is a non-complying activity.
- (e) Despite any other rule, the discharge of untreated agricultural effluent into surface or groundwater is a prohibited activity.

**Rule 36 – Horticulture wash-water**

The discharge of water containing contaminants from vegetable or bulb washing to land, where contaminants may enter water, is a permitted activity, provided that the following conditions are met:

- (a) the discharge does not exceed 20 cubic metres per day;
- (b) the rate of discharge does not result in any ponding of the contaminants or water containing contaminants;
- (c) the discharge only contains water and soil, and there are no measurable concentrations of chemical additives present in the discharge;
- (d) the discharge is not within:

- (i) 20 metres of any waterbody or wetland listed in Appendix A, excluding groundwater; or
- (ii) 20 metres of any landholding boundary; or
- (iii) 100 metres of any residential dwelling; or
- (iv) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;

### **Rule 37 – Agricultural dips**

The discharge of sludge from stationary agricultural dips, mobile sheep dips and spray dips onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided that the following conditions are met:

- (a) there is no discharge of agricultural dip effluent directly to water, including groundwater, or the coastal marine area;
- (b) the rate of discharge does not result in any ponding of the agricultural effluent;
- (c) the discharge is not within:
  - (i) 20 metres of any waterbody or wetlands listed in Appendix A excluding groundwater; or
  - (ii) 100 metres from any existing potable water abstraction point; or
  - (iii) 20 metres of any landholding boundary; or
  - (iv) 100 metres from any residential dwelling other than residential dwellings on the landholding; and
  - (v) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
- (d) the discharge of agricultural effluent from stationary agricultural dips, mobile sheep dips and spray dips occurs on the landholding where the dipping has taken place; and
- (e) the discharge is in accordance with any Hazardous Substances and New Organisms Act 1996 approval for the substances being discharged; and
- (f) a written record of the nature of the chemicals, volume and location of the discharge is kept and provided to Environment Southland on request.

### **Rule 38 – Animal and vegetative waste**

The discharge of solid animal waste (excluding any discharge directly from an animal to land), sludge or vegetative material containing animal excrement or vegetative material, including from a high intensity farming process, feed lot or wintering barn or industrial or trade process, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:

- (a) the material does not contain any hazardous substance or hazardous waste; and
- (b) the material does not include any waste from a human effluent treatment process;
- (c) the maximum loading rate of nitrogen onto any land area does not exceed 150 kilograms of nitrogen per hectare per year; and
- (d) the material is not discharged:
  - (i) onto the same area of land more frequently than once every two months; or
  - (ii) onto land where solid animal waste, or vegetative material containing animal excrement or vegetative material from a previous application is still visible on the land surface; or
  - (iii) onto land when the soil moisture exceeds field capacity; or
  - (iv) from 1 May to 30 September in any year; or

- (iv) within 20 metres of the landholding boundary, a bore used for water abstraction, the bed of a river, lake, or modified watercourse or the Coastal Marine Area; or
- (v) with a depth of material of greater than 10 mm on the land surface.

### **Rule 39 – Other agricultural effluent disposal**

The discharge of agricultural effluent, water containing contaminants from vegetable or bulb washing sludge, stationary agricultural dips, mobile sheep dips and spray dips onto or into land, in circumstances where contaminants may enter water, other than as provided for in Rules 32 to 38 is discretionary activity.

### **Rule 40 – Silage**

- (a) The use of land as a silage storage facility, and any incidental air discharge, is a permitted activity provided the following conditions are met:
  - (i) the activity does not cause any discharge that results in a noxious, dangerous, offensive, or objectionable odour beyond the boundary of the landholding on which silage is stored;
  - (ii) there is no overland flow of stormwater into the silage storage facility;
  - (iii) there is no discharge of contaminants from the silage storage facility to any surface or groundwater or naturally occurring wetland;
  - (iv) the activity does not modify, damage or destroy any recorded historic heritage site;
  - (v) no part of the silage storage facility is within:
    - (1) 50 metres of any surface waterbody or naturally occurring wetland, or any potable water abstraction point.
    - (2) 100 metres of any dwelling or place of assembly, on another landholding constructed or in use prior to the silage storage facility being lawfully established.
    - (3) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (vi) no part of the silage storage facility is on land classified as a HAIL site under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011; and
  - (vii) no part of the silage storage facility is located on land that is made permanently or intermittently wet by the presence of springs, seepage, high groundwater, ephemeral streams, or flows of stormwater.
- (b) The use of land as a silage storage facility that does not meet the conditions in Rule 40(a) is a restricted discretionary activity provided to the following conditions are met:
  - (i) no part of the silage storage facility is within:
    - (1) 20 metres of a surface waterbody;
    - (2) 50 metres of a dwelling, potable water abstraction point, or place of assembly, on another landholding;
    - (3) 50 metres of the main stems of the Waiau, Aparima, Ōreti or Mataura rivers, or inside flood banks of the main stems of these rivers (if present); or
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (ii) no part of the silage storage facility is within the Coastal Marine Area.



***Environment Southland will restrict the exercise of its discretion to the following matters:***

1. measures necessary to avoid, remedy or mitigate the discharge of silage leachate to water;
2. measures necessary to prevent noxious, dangerous, offensive, or objectionable effects beyond the boundary of the landholding on which silage is stored;
3. measures necessary to prevent inflows of stormwater, or infiltration from underlying seeps, springs, or groundwater;
4. the physical dimensions and location of the silage storage facility;
5. measures necessary to avoid adverse effects on historic heritage; and
6. methods of containing any silage leachate that may be emitted prior to application to land, including volume of storage.

*An application for resource consent under Rule 40(b) will be processed and considered without public or limited notification unless the applicant requests notification Environment Southland considers that special circumstances exist that warrant notification of the application.*

- (c) The use of land as a silage storage facility that does not meet one or more of the conditions in Rule 40(b) is a non-complying activity.

**Rule 41 – Silage leachate**

- (a) The discharge of silage leachate onto or into land, in circumstances where contaminants may enter water, is a permitted activity, provided the following conditions are met:
- (i) the discharge is via an agricultural effluent discharge system authorised under Rule 35; or
  - (ii) the discharge of silage leachate does not enter any surface water or naturally occurring wetland; and
  - (iii) any discharge is not within:
    - (1) 20 metres of a surface waterbody, artificial watercourse or the coastal marine area;
    - (2) 100 metres of a place of assembly or dwelling not on the same landholding, or 20 metres of the boundary of any other landholding; or
    - (3) 100 metres of a water abstraction point; and
    - (4) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
  - (iv) any discharge does not result in:
    - (1) overland flow or ponding of silage leachate,
    - (2) depth of application in excess of 10 millimetres for each individual application;
    - (3) a loading rate of nitrogen from the discharge of silage leachate in excess of 150 kilograms of nitrogen per hectare per year.
- (b) The discharge of silage leachate to land that does meet the conditions in Rule 41(a) is a discretionary activity.

## Landfills

### Rule 42 – Cleanfill sites

- (a) The discharge of cleanfill into or onto land at a cleanfill site in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:
- (i) the total amount of cleanfill discharged at all cleanfill sites on a landholding does not exceed 500 cubic metres;
  - (ii) the discharge does not occur within:
    - (1) the bed of a lake or river;
    - (2) 50 metres of a surface waterbody, artificial watercourse, the coastal marine area, or landholding boundary;
    - (3) the flood banks of the Waiau, Aparima, Ōreti or Mataura rivers, or 50 metres of these rivers where flood banks are not present;
    - (4) 100 metres of a water abstraction point;
  - (iii) the activity does not modify, damage or destroy any recorded historic heritage sites;
  - (iv) stormwater is directed away from the discharge site.
- (b) The discharge of cleanfill into or onto land at a cleanfill site in circumstances where contaminants may enter water that does not meet one or more of the conditions of Rule 42(a) is a restricted discretionary activity.

#### *Environment Southland will restrict its discretion to the following matters:*

1. prevention of inundation of any other person's landholding, sedimentation in any waterbody, erosion and land instability, or the restriction or diversion of flood flows or coastal water;
2. site selection and effects on sensitive receiving environments;
3. effects on historic heritage;
4. design, construction and management of the cleanfill site;
5. post-closure management practices and procedures;
6. information and monitoring requirements;
7. the quantity of cleanfill to be discharged.

*An application for resource consent under Rule 42(b) will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

### Rule 43 – Farm landfills

- (a) The discharge of contaminants into or onto land in circumstances where that contaminant may enter water at a farm landfill is a permitted activity provided the following conditions are met:
- (i) the discharge is derived from the same landholding on which the farm landfill is located;
  - (ii) the discharge does not include septic tank sludge, dairy farm sludge, liquids, carcasses, offal, or a hazardous substance;
  - (iii) the discharge does not occur within:
    - (1) the bed of a lake or river;
    - (2) 50 metres of a surface waterbody, artificial watercourse, or the coastal marine area;

- (3) the flood banks of the Waiau, Aparima, Ōreti or Mataura rivers, or 50 metres of these rivers where flood banks are not present;
  - (4) 100 metres of a water abstraction point, dwelling, place of assembly, or landholding boundary;
  - (iv) the activity does not modify, damage or destroy any recorded historic heritage sites;
  - (v) stormwater is directed away from the discharge site;
  - (vi) the farm landfill does not intercept an on-farm subsurface drain, or a spring or is not excavated below the seasonal mean groundwater level in that location;
  - (vii) as each section of the farm landfill becomes full or unused, the discharges are covered and the surface restored to a similar state as the surrounding land;
  - (viii) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
- (b) The discharge of contaminants into or onto land in circumstances where that contaminant may enter water at a farm landfill that does not meet one or more of the conditions of Rule 43(a) is a discretionary activity.

#### **Rule 44 – Dead holes (offal pits)**

- (a) The discharge of a carcass or offal into or onto land at a dead hole in circumstances where that contaminant may enter water is a permitted activity provided the following conditions are met:
- (i) the carcass or offal is derived from the same landholding on which the dead hole is situated or the activity is carried out by a local authority or government agency in the exercise of their statutory powers;
  - (ii) the discharge does not include any contaminant other than carcasses, offal, or a compost bulking agent;
  - (iii) the discharge of a carcass or offal does not occur within:
    - (1) the bed of a lake or river (including ephemeral streams), a gully, or a swale;
    - (2) 50 metres of a surface waterbody, artificial watercourse, or the coastal marine area, or 150 metres of a surface waterbody where the discharge is to loose gravels;
    - (3) the flood banks of the Waiau, Aparima, Ōreti or Mataura rivers, or 50 metres of these rivers where flood banks are not present;
    - (4) 100 metres of a water abstraction point other than a registered drinking water supply, or 200 metres where the discharge is to loose gravels;
    - (5) 100 metres of a dwelling, place of assembly, or landholding boundary;
  - (iv) the activity does not modify, damage or destroy any recorded historic heritage sites;
  - (v) stormwater is directed away from the dead hole site;
  - (vi) the dead hole does not intercept an on-farm subsurface drain, or a spring or is not excavated below the highest groundwater level in that location;
  - (vii) the carcass or offal does not contact naturally formed limestone rock;
  - (viii) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
- (b) The discharge of a carcass or offal into or onto land at a dead hole in circumstances where that contaminant may enter water that does not meet all one or more of the conditions in of Rule 44(a) is a discretionary activity.

- (c) Notwithstanding the provisions of Rule 44(a) and (b), the discharge of the carcass of, or offal from, a single animal into or onto land in circumstances where that contaminant may enter water is a permitted activity provided the following conditions are met:
- (i) the carcass or offal cannot be reasonably disposed of in accordance with the conditions in Rule 44(a);
  - (ii) the carcass or offal is derived from the same landholding;
  - (iii) the carcass or offal is buried in a shallow pit that has no water in it and is immediately and completely covered by soil or plant material so as to prevent discharge of odour to air, or other nuisance;
  - (iv) the carcass or offal burial does not occur within:
    - (1) 20 metres of surface water or a water abstraction point;
    - (2) 20 metres of a dwelling, place of assembly, or landholding boundary;
  - (v) the activity does not modify, damage or destroy any recorded historic heritage sites.
- (d) The discharge of the carcass of, or offal from, a single animal into or onto land in circumstances where that contaminant may enter water that does not meet one or more of the conditions of Rule 44(c) is a discretionary activity.

### **Rule 45 – Landfills**

Except as provided for elsewhere in this Plan, the discharge of contaminants into or onto land in circumstances where that contaminant may enter water at a landfill is a discretionary activity.

## Land Contamination

### Rule 46 – Land contaminated by a hazardous substance

- (a) The discharge of contaminants from land contaminated by a hazardous substance onto or into land in circumstances which may result in contaminants entering water is a permitted activity provided:
- (i) the hazardous substance in the discharge results from an activity authorised by a rule in this Plan or a resource consent; and
  - (ii) the discharge does not result in a breach of the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC) 2000 at the level of protection set in those guidelines for 80% of species, except for benzene where the level of protection is 90% of species (i.e. 1 milligram per litre), at the nearest of:
    - (1) 50 metres;
    - (2) the landholding boundary;
    - (3) any point immediately adjacent to a surface waterbody, artificial watercourse, or water abstraction bore (excluding monitoring bores); from the discharge; and
  - (iii) the discharge does not result in a breach of the Drinking Water Standards for New Zealand 2005 (Revised 2008) in any bore utilised for potable supply, except where the ambient water quality naturally breaches those Standards and the discharge does not result in any further degradation of the water quality.
- (b) The discharge of soil from land contaminated by a hazardous substance onto or into land in circumstances which may result in those contaminants entering water is a permitted activity provided:
- (i) the hazardous substance in the soil results from the application of a fertiliser or agrichemical to the land authorised by a rule in this Plan or a resource consent; or
  - (ii) the soil is being returned to the excavation or site from which it was taken.
- (c) The discharge of contaminants or soil from land contaminated by a hazardous substance onto or into land in circumstances which may result in those contaminants entering water that does not meet one or more of the conditions of Rule 46(a) or (b) is a discretionary activity.
- (d) The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil is a permitted activity provided the following conditions are met:
- (i) The site investigation is to be undertaken in accordance with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Ministry for the Environment, 2011) and reported on in accordance with the Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand, (Ministry for the Environment, 2011); and
  - (ii) The person or organisation initiating the site investigation provides a copy of the report of the site investigation to Environment Southland within two months of the completion of the investigation.
- (e) The use of land for a site investigation to assess concentrations of hazardous substances that may be present in the soil that does not meet one or more of the conditions in Rule 46(d) is a discretionary activity.

## **Rule 47 – Closed landfills**

- (a) Despite Rule 46, the discharge of contaminants from a closed landfill onto or into land in circumstances which may result in those contaminants entering water is a permitted activity provided the following conditions are met:
  - (i) a risk assessment of the closed landfill is carried out in accordance with the risk screening system developed by Ministry for the Environment<sup>6</sup> which demonstrates that the environmental risk is low;
  - (ii) a copy of the risk assessment was lodged with Environment Southland prior to 1 November 2015.
  
- (b) Despite Rule 46, the discharge of contaminants from a closed landfill onto or into land in circumstances which may result in those contaminants entering water that does not meet one or more of the conditions of Rule 47(a) is a discretionary activity.

## **Rule 48 – Cemeteries**

- (a) The use of land for an existing cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant may enter water is a permitted activity.
  
- (b) The use of land for a new cemetery or an extension to an existing cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant or water may enter water, is a permitted activity, provided the following conditions are met:
  - (i) any new cemetery or an extension to an existing cemetery is not located:
    - (1) within 20 metres of a surface waterbody or the Coastal Marine Area; or
    - (2) within 50 metres of a bore used for water abstraction; or
    - (3) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then 250 metres of the abstraction point of a drinking water supply site identified in Appendix J;
    - (4) where the depth to groundwater exceeds 3 metres;
  
- (c) The use of land for a cemetery, and any ancillary discharge of contaminants into or onto land in circumstances where a contaminant or water may enter water, that does not meet one or more of the conditions in Rule 48(b) is a discretionary activity.

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<sup>6</sup> The current risk screening system for closed refuse disposal facilities <15,000 cubic metres MSW is contained in the document *Small Landfill Closure Criteria – Risk Assessment for Small Closed Landfills* (MfE, 2002) and for closed refuse disposal facilities >15,000 cubic metres MSW in the procedures set out in the document in *A Guide to the Management of Closing and Closed Landfills in New Zealand* (MfE, 2001).

## Taking and Using Water

*Note: Takes for drinking water supplies will also need to comply with other requirements including The National Environmental Standard for Sources of Human Drinking Water Regulations 2007 and the Health (Drinking Water) Amendment Act 2007.*

### Rule 49 – Abstraction, diversion and use of surface water

- (a) The take and use of surface water is a permitted activity provided the following conditions are met:
- (i) the volume of take does not exceed 2000 litres per day, plus 250 litres per hectare per day, up to a maximum of 40 cubic metres per landholding per day, or per facility per day on public conservation land managed as such under the National Parks Act 1980, Conservation Act 1987, or the Reserves Act 1977;
  - (ii) the maximum volume of take allowed under this rule and Rule 54(a) is not added. A maximum of 86 cubic metres of groundwater and surface water combined per landholding per day may be taken;
  - (iii) the volume of take does not exceed 30 percent of the naturalised instantaneous flow in the surface waterbody at the time of take;
  - (iv) the rate of take does not exceed 2 litres per second;
  - (v) fish are prevented from entering the reticulation system; and
  - (vi) the following details are supplied to Environment Southland upon request:
    - (1) farming type;
    - (2) stocking rate;
    - (3) point of abstraction;
    - (4) what the water was used for; and
    - (5) maximum rate of take.
- (b) Except as provided for in Rules 49(a), 50(a), 50(b), 51(a) and 51(b), the taking, diversion and use of water from any of the following sources is a restricted discretionary activity:
- (i) any surface waterbody or artificial watercourse where the total surface water allocation is within the secondary allocation specified in Policy 21(3); and
  - (ii) any surface waterbody or artificial watercourse where the total volume of water taken or diverted is returned within 100 metres of the take or diversion point; or
  - (iii) any surface waterbody or artificial watercourse where the total volume of water taken is less than 70 cubic metres per day.

#### ***Environment Southland will restrict its discretion to the following matters:***

1. the volume, rate, frequency and timing of water to be taken (including any water to be returned to the surface waterbody and the delay between the taking and returning of this water);
2. any effects on river and stream flows (including effects on minimum flows, flow variability and duration of flows), wetland and lake water levels, aquatic ecosystems, aquifer storage volumes, the availability and reliability of supply for existing users and water quality;
3. the location of the take or diversion;
4. the efficiency of water use;
5. the need for the installation of a water meter;
6. monitoring requirements;
7. methods to prevent fish from entering the reticulation system;
8. minimum flow and level requirements;
9. consistency with any water conservation order;

10. the degree of hydraulic connection to groundwater;
  11. any effect on a regionally significant wetland;
  12. the proposed method of take and delivery of the water; and
  13. any water storage available for the water taken and its volume.
- (c) Except as provided for in Rules 49(a), 49(b), 50(a), 50(b), 51(a), 51(b), ), and 51(c), the taking, diversion and use of surface water where the total surface water allocation is within the primary allocation specified in Appendix K is a discretionary activity.
- (d) Except as provided for in Rules 49(a), 49(b), 49(c), 50(a), 50(b), 51(a), 51(b), and 51(c), the taking, diversion and use of water is a non-complying activity.
- (e) Despite Rules 49(b), 49(c), and 49(d) the taking, diversion and use of water from the Cromel Stream, unless the application is for the replacement of an expiring water permit pursuant to Section 124 of the Act, and the rate of take and volume is not increasing, and use of the water is not changing, is a prohibited activity.

### **Rule 50 – Community water supply**

- (a) **Existing community water supply**
- (i) Notwithstanding Rules 49(d) and (e) and 53(c) and (d), the taking and use of water for a community water supply is a controlled activity provided:
    - (1) the application is for the replacement of an expiring water permit pursuant to section 124 of the Act, and the rate of take and volume, and use of the water is not changing; and
    - (2) a water demand management strategy is lodged as a part of the application.

#### ***Environment Southland will exercise its control over the following matters:***

1. The quality of and implementation of the water demand management strategy;
  2. the volume of water to be taken (including any water to be returned to the surface waterbody);
  3. any effects on river and stream flows (including effects on minimum flows, flow variability and duration), wetland and lake water levels, aquatic ecosystems, aquifer storage volumes,
  4. the availability and reliability of supply for existing users and water quality;
  5. monitoring requirements;
  6. minimum flow and level requirements;
  7. consistency with any water conservation order;
  8. the degree of hydraulic connection to other waterbodies.
- (b) **New community water supply**
- Except as provided for in Rule 50(a) and notwithstanding any provision of Rules 49 and 54 the taking of water for a community water supply is a discretionary activity.

### **Rule 51 – Minor diversions of water**

- (a) Despite any other rule in this Plan, the diversion of water within a river or lake bed is a permitted activity provided the following conditions are met:
- (i) the diversion is for the purposes of undertaking a permitted activity under Rules 55 to 79 or for the purposes of habitat creation, restoration and enhancement, hydrologic research and is carried out in accordance with the following conditions:
    - (1) fish passage shall not be impeded as a result of the activity;



- (2) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (3) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (4) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (5) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (6) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (7) there are no recorded historic heritage sites, at the site of the activity;
  - (8) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (9) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
  - (10) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.
- (ii) the diversion is carried out completely within a river or lake bed (i.e. no water is diverted outside of the river or lake bed);
  - (iii) the water is returned to its original course after completion of the activity, no later than one month after the diversion occurs;
  - (iv) the diversion does not compromise the ability of any other person to exercise a resource consent or undertake an activity permitted by this Plan; and
  - (v) the diversion does not result in a net loss of water from the catchment.
- (b) Despite any other rule in this Plan, the diversion of water for the purpose of land drainage is a permitted activity provided the following conditions are met:
- (i) the drainage and associated discharge does not cause erosion or deposition;
  - (ii) the drainage shall not cause flooding of downstream or adjacent properties;
  - (iii) the diversion of water is not from a Regionally Significant Wetland identified in Appendix A or any naturally occurring wetland.
- (c) Notwithstanding any other rule in this Plan, the diversion of water at the mouth of:
- (i) a drain known as the North Drain on the Tiwai Peninsula, at about Map Reference NZTopo50 CG10 463 308;
  - (ii) a drain known as the West Drain on the Tiwai Peninsula, at about Map Reference NZTopo50 CG10 457 302; and/or
  - (iii) a drain known as the South Drain on the Tiwai Peninsula, at about Map Reference NZTopo50 CH10 456 298
- is a permitted activity provided the following conditions are met:
- (1) the work is carried out under the direct control of the body or person responsible for the maintenance of the drain;
  - (2) machinery may only cross through the drains to the extent that it is necessary to obtain reasonable access to the side of the drain from which the work is to be undertaken;
  - (3) the opening is constructed at right angles to the line of the beach;
  - (4) any excavated spoil is removed or spread over non-vegetated areas;

- (5) the body or person responsible advises the Director of Policy, Planning and Regulatory Services, Environment Southland, of the details of the time and extent of the work to be undertaken, prior to the work commencing;
  - (6) in the event of a discovery, or suspected discovery, of a site of cultural, heritage or archaeological value, the operation shall cease immediately in that location and the Director of Policy, Planning and Regulatory Services, Environment Southland shall be informed. Operations may recommence with the permission of the Director of Policy, Planning and Regulatory Services.
- (d) Unless controlled by any other rule in this Plan, the diversion of water for the purpose of land drainage that does not meet Rule 51(a) to (c) is a discretionary activity:

### **Rule 52 – Water abstraction, damming, diversion and use from the Waiau catchment**

- (a) Except as provided in Rules 49(a), 49(b), 49(c), 51(a), 51(b) and 51(c) and the takes authorised by Section 14(3) of the Act, any take, damming, diversion and use of water from the Waiau catchment is a discretionary activity provided the following condition is met:
- (i) the application is for the replacement of an expiring water permit pursuant to Section 124 of the Act, and the rate of take and volume is not increasing, and use of the water is not changing.
- (b) Except as provided in Rules 49(a), 49(b), 49(c), 51(a), 51(b) and 51(c) and the takes authorised by Section 14(3) of the Act, any take, damming, diversion and use of water from the Waiau catchment that does not meet the condition of Rule 52(a) is a non-complying activity.

### **Rule 53 - Bores and wells**

- (a) The drilling or construction of any bore or well is a controlled activity provided the following conditions are met:
- (i) the bore or well design and headworks prevents:
    - (1) the infiltration of contaminants; and
    - (2) the uncontrolled discharge or leakage of water to the surface and between aquifers.
  - (ii) the bore is constructed in accordance with NZS 4411:2001 Environmental Standard for Drilling of Rock and Soil (including the recording and supply of bore logs and other records);
  - (iii) for bores to be used for the supply of water, the location of the top of the screened interval is a minimum of 10 metres below the mean water table depth (unconfined aquifers).

***Environment Southland will restrict the exercise of its control to the following matters:***

1. the proximity of the bore or well to surface water (including spring-fed streams), potential sources of groundwater contamination, existing bores and wells and historic heritage;
2. the design and depth of the bore or well;
3. the method of drilling and excavation;
4. the design and management of the bore head;
5. the use, maintenance and decommissioning of the bore or well;

6. the information and monitoring requirements;
7. adoption and implementation of an Accidental Discovery Protocol.

*An application for resource consent under Rule 53(a) will be processed and considered without public or limited notification unless the applicant requests notification or Environment Southland considers special circumstances exist that warrant notification of the application.*

- (b) The drilling or construction of any bore or well that does not meet the conditions in Rule 53(a) is a discretionary activity.
- (c) The use, maintenance and decommissioning of any bore or well is a permitted activity provided the following conditions are met:
  - (i) the bore or well design and headworks prevents:
    - (1) the infiltration of contaminants; and
    - (2) the uncontrolled discharge or leakage of water to the surface and between aquifers.
- (d) The use, maintenance and decommissioning of any bore or well that does not meet the conditions in Rule 53(c) is a discretionary activity.

#### **Rule 54 - Abstraction and use of groundwater<sup>7</sup>**

- (a) The take and use of groundwater is a permitted activity provided the following conditions are met:
  - (i) the rate and volume of abstraction does not exceed:
    - (1) a maximum of 86 cubic metres per day per landholding; and
    - (2) a maximum rate of 5 litres per second; and
    - (3) the point of abstraction is not within 50 metres of an existing lawfully established groundwater take;
  - (ii) the maximum volume of take allowed under this rule and Rule 50(a) is not added. A maximum of 86 cubic metres of groundwater and surface water combined per landholding per day is allowed;
  - (iii) the following details are supplied to Environment Southland upon request:
    - (1) farming type;
    - (2) stocking rate; and
    - (3) point of abstraction.
- (b) The non-consumptive take and use of groundwater is a permitted activity provided the following conditions are met:
  - (i) the rate and volume of take does not exceed:
    - (1) a maximum rate of 10 litres per second;
    - (2) a maximum daily volume of 750 cubic metres;
    - (3) if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is not Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;
    - (4) any interference effects are “acceptable” in accordance with Appendix L.3;
  - (ii) the same amount of water is returned to the same waterbody or aquifer within 250 metres of the point at which it was taken;
  - (iii) there is no significant delay between the taking and returning of the water.

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<sup>7</sup> **Advice note:** To determine the aquifer type and allocation volume for a proposed groundwater abstraction, Plan users should firstly refer to Map Series 3: Groundwater Management, to establish the relevant groundwater zone. Once the relevant groundwater zone has been established, Appendix L can be used to determine the aquifer type.

- (c) The take and use of groundwater for hydraulic testing and bore development purposes and any associated discharge of groundwater into water or onto or into land is a permitted activity provided the following conditions are met:
- (i) Environment Southland must be notified at least three days prior to test commencement;
  - (ii) the rate of take must not exceed 75 litres per second;
  - (iii) the duration of pumping does not exceed five consecutive days;
  - (iv) any discharge of water to water is consistent with water quality requirements of section 70 of the RMA;
  - (v) water discharged onto land must not contribute to flooding on any other landholding;
  - (vi) records of all pumping and recovery tests including the rate and duration of pumping, water levels in the pumped well and any water level observation wells and the time measurements are taken are provided to Environment Southland within one month of the completion of the test.
- (d) Other than that provided by Rule 54(a), groundwater takes from groundwater management zones listed in Appendix L is a discretionary activity provided the following conditions are met:
- (i) the total groundwater allocation is within the primary or secondary allocation limits established in Appendix L.5; and
  - (ii) if the degree of hydraulic connection, calculated in accordance with Appendix L.2 is not Riparian, Direct or High, the relevant surface water minimum flows and allocation limits are met;
  - (iii) any interference effects are 'acceptable' in accordance with Appendix L.3;
  - (iv) if the total groundwater allocation is within the secondary allocation limit, then minimum groundwater level cut-offs and seasonal recovery triggers are established in accordance with criteria outlined in Appendix L.6.
- (e) Other than that provided by Rule 54(a), the take and use of groundwater from a confined aquifer is a discretionary activity provided the following conditions are met:
- (i) total groundwater allocation is within the primary allocation limits (including minimum water level cut-offs and seasonal recovery triggers) established in Appendix L.5 or following the methodology outlined in Appendix L.6;
  - (ii) any interference effects are 'acceptable' in accordance with Appendix L.3;
- (f) Other than that provided by Rule 54(a), the take and use of groundwater outside groundwater management zones listed in Appendix L.5 is a discretionary activity provided the following condition is met:
- (i) any interference effects are 'acceptable' in accordance with Appendix L.3;
- (g) The take and use of groundwater that does not comply with Rules 54(b) to 54(f) is a non-complying activity.

## Structures in river and lake beds

### Rule 55 – Monitoring and sampling structures

- (a) The use, placement, erection or reconstruction (and any associated bed disturbance and discharge) of any equipment, measuring apparatus or similar device, in, on, under or over the bed of any river, modified watercourse, or lake for the purpose of carrying out inspections, surveys, investigations, tests, measurements, or taking samples, is a permitted activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vii) there are no recorded historic heritage sites, at the site of the activity;
  - (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (ix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xi) the structure or bed disturbance activity shall not cause significant erosion of, or deposition on, the surrounding bed or banks; and
  - (xii) any build-up of debris against the structure or bed disturbance activity, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable.
- (b) The use, placement, erection or reconstruction (and any associated bed disturbance and discharge) of any equipment, measuring apparatus or similar device, in, on or over the bed of any river, modified watercourse, or lake, that does not meet one or more of the conditions of Rule 55(a) is a discretionary activity.

### Rule 56 - Boat ramps, jetties and wharves

- (a) The placement, erection or reconstruction of any boat ramp, jetty or wharf, in, on or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a discretionary activity.
- (b) The use of any boat ramp, jetty or wharf in, on or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure is lawfully established;
  - (ii) fish passage shall not be impeded as a result of the activity;

- (iii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (iv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
  - (v) the structure shall be maintained in a state of good repair; and
  - (vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (c) The use of any boat ramp, jetty or wharf in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 56(b) is a discretionary activity.

## **Rule 57 – Bridges**

- (a) The placement, erection or reconstruction of any bridge in, on or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity is a permitted activity provided the following conditions are met:
- (i) there are no support structures (for example, piles) in the bed;
  - (ii) the bridge and its abutments shall not increase the risk of flooding to surrounding land;
  - (iii) the bridge and its bank abutments shall not impede the flow of water within the river channel;
  - (iv) the structure is not within any mātaimai, nohoanga, or taiāpure;
  - (v) fish passage shall not be impeded as a result of the activity;
  - (vi) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (vii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (viii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (ix) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (x) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xi) there are no recorded historic heritage sites, at the site of the activity;
  - (xii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xiii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xiv) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xv) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xvi) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xvii) the structure shall be maintained in a state of good repair.

- (b) The placement, erection or reconstruction and any associated bed disturbance of any bridge in, on or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity that does not meet one or more of the conditions of Rule 57(a) is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. the design and location of the bridge;
  2. effects on flood risk, river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitats, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, natural character and amenity values, and navigational safety;
  3. any conditions in Rule 57(a) that cannot be met.
- (c) The use of any bridge in, on or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure is lawfully established;
  - (ii) fish passage shall not be impeded as a result of the activity;
  - (iii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (iv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
  - (v) the structure shall be maintained in a state of good repair; and
  - (vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of any bridge in, on or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity that does not meet one or more of the conditions of Rule 57(c) is a discretionary activity.

**Rule 58 – Cables, wires and pipes**

- (a) The placement, erection or reconstruction of any cable, wire, pipe or pipeline (including any intake or discharge pipe or temporary gauging) and associated safety signs or markers in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity is a permitted activity provided the following conditions are met:
- (i) the structure shall not have any support structures (for example, stays or piles) in the bed (other than if it is attached to a pre-existing structure, such as a bridge);
  - (ii) the structure shall not cause a hazard to boating/navigation, or aircraft/aviation;
  - (iii) where the structure crosses over the bed, and is not a temporary structure, it shall not impede the flow of water within the river channel;
  - (iv) where the structure crosses over the bed, and is designed to carry contaminants, it shall comply with the relevant construction standards imposed by a territorial authority under the Building Act;
  - (v) where the structure crosses under the bed it shall be completely buried and remain buried, with the depth of burial being indicated on markers on either bank;
  - (vi) where the structure is an intake pipe, it shall have a screening device to prevent fish from entering the pipe;
  - (vii) where the structure is a discharge pipe, any discharge from the pipe shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (viii) the structure is not within any mātaimai, nohoanga, or taiāpure;

- (ix) fish passage shall not be impeded as a result of the activity;
  - (x) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (xi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (xii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (xiii) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (xiv) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xv) there are no recorded historic heritage sites, at the site of the activity;
  - (xvi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xvii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xviii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xix) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xx) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xxi) the structure shall be maintained in a state of good repair.
- (b) The placement, erection or reconstruction and any associated bed disturbance of any cable, wire, pipe or pipeline (including any intake or discharge pipe or temporary gauging) and associated safety signs or markers in, on, under or over the bed of any river, modified watercourse, or lake that does not meet one or more of the above conditions of Rule 58(a) is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. the design and location of the structure;
  2. effects on river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitats, the spiritual and cultural values and beliefs of the tangata whenua, historic heritage, taonga species, natural character and amenity values, navigation and aviation hazard, and public access and recreation values;
  3. any conditions in Rule 58(a) that cannot be met.
- (c) The use of any cable, wire, pipe or pipeline, and associated safety signs or markers in, on or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure shall not be used to store hazardous substances;
  - (ii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (iii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;



- (iv) the structure shall be maintained in a state of good repair; and
  - (v) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of any cable, wire, pipe or pipeline, and associated safety signs or markers in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 58(c) is a discretionary activity.

### **Rule 59 – Culverts and Sediment Traps**

- (a) The placement, erection or reconstruction of any culvert, including any associated inlet or outlet protection structure, or sediment trap in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the maximum diameter of any culvert shall be 1,200 millimetres;
  - (ii) any culvert is a single structure (i.e. it is not placed in combination with other culverts across the width of the river);
  - (iii) any culvert shall be positioned so that its alignment is the same as the river;
  - (iv) any culvert shall be designed to pass flood flows (either through, around or over the culvert) and shall not increase the risk of flooding to neighbouring properties;
  - (v) the invert (or bottom) of any culvert shall be installed to a depth of either 300 mm below the natural bed level or one-third of the diameter of the culvert, whichever is the lesser;
  - (vi) any culvert shall be purpose built for the passage of water (i.e. it shall not be a drum, container or other item not designed as a culvert);
  - (vii) any sediment trap is less than or equal to 2.5 square metres in surface area;
  - (viii) fill over any culvert shall not be greater than 4 metres;
  - (ix) any structure is not within any mātaihai, nohoanga, or taiāpure;
  - (x) fish passage shall not be impeded as a result of the activity;
  - (xi) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (xii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (xiii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (xiv) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (xv) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xvi) there are no recorded historic heritage sites, at the site of the activity;
  - (xvii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xviii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xix) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xx) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;

- (xxi) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xxii) the structure shall be maintained in a state of good repair.
- (b) The placement, erection or reconstruction and any associated bed disturbance of any culvert, including any associated inlet or outlet protection structure, or sediment trap, in, on, under or over the bed of any river, modified watercourse, or lake that cannot meet one or more of the conditions of Rule 59(a) is a controlled activity.

***Environment Southland will exercise control over the following matters:***

1. the design of the culvert;
  2. any effects on flood risk, river morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitat (including fish passage), taonga species, the spiritual and cultural values and beliefs of the tangata whenua, and historic heritage;
  3. any conditions in Rule 59(a) that cannot be met.
- (c) The use of any culvert including any associated inlet or outlet protection structure or sediment trap in, on or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (ii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
  - (iii) the structure shall be maintained in a state of good repair; and
  - (iv) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of any culvert including any associated inlet or outlet protection structure or sediment trap in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 59(c) is a discretionary activity.

**Rule 60 - Dams and weirs**

**Note 1:** *The Building Act 2004 specifies obligations on the owner of a dam as defined in the Act regarding classification, certification and other matters of safety. Plan users should contact Environment Southland to inquire as to the need to meet these requirements in each case.*

**Note 2:** *These rules manage dam and weir structures. Any associated take, diversion, use or discharge of water requires consent under other rules.*

- (a) The use, placement, erection or reconstruction of any dam or weir, in, on or over the bed of any lake, river, modified watercourse and the associated damming of water (either inside or outside the bed of a river or lake), and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) if the maximum height of the dam is 4 metres or less in height (measured from the crest of the dam to the bed), the impoundment volume shall be less than 20,000 cubic metres;
  - (ii) the design and construction of the dam or weir is certified by a suitably qualified and experienced engineer;
  - (iii) the dam or weir is located below a catchment area of less than 500 hectares;

- (iv) the dam or weir shall not be located upstream of any railway, formed public road, or residence, where these are likely to be affected by any failure of the structure;
  - (v) the dam or weir shall have a spillway, or an auxiliary spillway that is capable of conveying flood flows;
  - (vi) the dam or weir shall neither impound water nor adversely affect drainage beyond the landholding on which it is constructed, unless agreed to in writing by any affected landowner;
  - (vii) the discharge from the dam or weir shall be to the original channel, and shall not cause significant erosion of, or deposition on, the downstream bed or banks;
  - (viii) the dam or weir is not in the Mataura, Ōreti or Waikaia River;
  - (ix) For the purposes of Rule 60(a)(i) the height of a dam is the vertical distance from the crest of the dam and must be measured:
    - (1) in the case of a dam across a stream, from the natural bed of the stream at the lowest downstream outside limit of the dam; and
    - (2) in the case of a dam not across a stream, from the lowest elevation at the outside limit of the dam; and
    - (3) in the case of a canal, from the invert of the canal;
  - (x) the structure is not within any mātaītai, nohoanga, or taiāpure;
  - (xi) fish passage shall not be impeded as a result of the activity;
  - (xii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (xiii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (xiv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (xv) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (xvi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xvii) there are no recorded historic heritage sites, at the site of the activity;
  - (xviii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xx) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xxi) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xxii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xxiii) the structure shall be maintained in a state of good repair.
- (b) The use, placement, erection or reconstruction and any associated bed disturbance of any dam or weir in, on, under or over the bed of any lake, river, or modified watercourse that does not meet one or more of the conditions of Rule 60(a) and is not a non-complying activity under Rule 60(c) or a prohibited activity under Rule 60(d), is a discretionary activity.

- (c) The damming of water on the main stems of the Aparima River, downstream of the Aparima Forks at NZ Topo 50 CE09 051 299, and the Ōreti River, downstream of the forks at NZ Topo 50 CC09 245 832, is a non-complying activity.
- (d) The placement or erection of dams or weirs in the Mataura or Waikaia River, including the tributaries is a prohibited activity.

### **Rule 61 - Erosion control structures**

- (a) Notwithstanding any other rule in this Plan, the placement or reconstruction of rock rip rap or anchored or layered trees in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
  - (i) the work is not in a lake bed, national park, reserve or land in respect of which there is a covenant under the Conservation Act 1987, Queen Elizabeth the Second Trust Act 1977 or Reserves Act 1977;
  - (ii) any anchored or layered trees shall be anchored to the bed or banks so that they will not wash away in a 2% Annual Exceedance Probability flood event;
  - (iii) there shall be no planting of pest plant species as identified in the Regional Pest Management Strategy for Southland 2013 or Biosecurity NZ Register of Unwanted Organisms;
  - (iv) the structure is not within any mātaihai, nohoanga, or taiāpure;
  - (v) fish passage shall not be impeded as a result of the activity;
  - (vi) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (vii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (viii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (ix) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (x) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xi) there are no recorded historic heritage sites, at the site of the activity;
  - (xii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xiii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xiv) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xv) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xvi) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xvii) the structure shall be maintained in a state of good repair.

- (b) The placement or reconstruction of concrete in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the river is less than 3 metres wide on average over the area of construction;
  - (ii) the placement of the concrete shall be for the sole purpose of remedying or mitigating an erosion problem;
  - (iii) the work shall not be in a lake bed, national park, reserve or land in respect of which there is a covenant under the Conservation Act 1987, Queen Elizabeth the Second Trust Act 1977 or Reserves Act 1977;
  - (iv) any individual concrete piece shall have a minimum length of 300 millimetres;
  - (v) there shall be no concrete that has not set, or loose cement present;
  - (vi) the concrete shall not have been used in direct contact with chemicals that are toxic to aquatic life;
  - (vii) the concrete shall not contain asbestos pipe or asbestos cement mixtures;
  - (viii) no reinforcing steel shall protrude from the completed works;
  - (ix) fish passage shall not be impeded as a result of the activity;
  - (x) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (xi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (xii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (xiii) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (xiv) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (xv) there are no recorded historic heritage sites, at the site of the activity;
  - (xvi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xvii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xviii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xix) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xx) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xxi) the structure shall be maintained in a state of good repair.
- (c) The placement, erection or reconstruction of erosion control structures, debris traps, rail and mesh, rope retards, gabion baskets, drop structures, groynes, weirs, and pre-formed concrete in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, that does not that meet one or more of the conditions listed in Rule 61(a) or Rule 61(b) is a discretionary activity.

## Rule 62 – Fords

- (a) The excavation of the bed of any river, modified watercourse or lake for the purpose of constructing a ford is a permitted activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity;
  - (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vii) there are no recorded historic heritage sites, at the site of the activity;
  - (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (ix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xi) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xiii) the structure shall be maintained in a state of good repair.
- (b) The excavation of the bed of any river, modified watercourse or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, for the purpose of constructing a ford that does not meet the condition in Rule 62(a) or the placement and erection of any ford involving a structure such as a concrete pad in, on or over the bed of any river or lake, is a discretionary activity.
- (c) The use of any ford in, on or over the bed of any river, modified watercourse or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the ford is lawfully established (either before or after this Plan came into force);
  - (ii) where the ford is used as a vehicle crossing, the activity shall meet the conditions set out in Rule 62(a);
  - (iii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (iv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
  - (v) the structure shall be maintained in a state of good repair; and
  - (vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of any ford in, on or over the bed of any river, modified watercourse or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity that does not meet one or more of the conditions in Rule 62(c) is a discretionary activity.

### **Rule 63 - Moorings, navigational aids and signs**

- (a) The placement, erection or reconstruction of any mooring, navigational aid or sign in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the structure is located in Fiordland National Park (including lakes Te Anau, Manapōuri, Monowai and Hauroko);
  - (ii) in the case of a mooring, the mooring block shall be free of contaminants including oil and grease;
  - (iii) in the case of a mooring, the use of the mooring shall not interfere with the use of existing lawful moorings;
  - (iv) where the structure has been moved to the site from any other area, it shall be effectively cleaned to prevent the spread of pest species; and
  - (v) the structure shall be maintained in a state of good repair; and
  - (vi) the structure is not within any mātaimai, nohoanga, or taiāpure.
- (b) The placement, erection or reconstruction and any associated bed disturbance of any mooring, navigational aid or sign in, on, under or over the bed of any river, modified watercourse or lake, that does not meet one or more of the conditions of Rule 63(a), is a restricted discretionary activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vii) there are no recorded historic heritage sites, at the site of the activity;
  - (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (ix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xi) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xiii) the structure shall be maintained in a state of good repair.

***Environment Southland will restrict its discretion to the following matters:***

1. the location of the structure;
  2. any effects on natural character and amenity values, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, existing users and navigational safety, suitability of mooring for its purpose, and maintenance requirements;
  3. the use of the structure;
  4. where the structure has been moved to the site from any other area, the cleaning required to prevent the spread of pest species;
- (c) The use of any mooring, navigational aid or sign in, on, under or over the bed of any river, modified watercourse, or lake is a permitted activity provided the following conditions are met:
- (i) the structure is located in Fiordland National Park (including lakes Te Anau, Manapōuri, Monowai and Hauroko);
  - (ii) in the case of a mooring, the use of the mooring shall not interfere with the use of existing lawful moorings;
  - (iii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (iv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable;
  - (v) the structure shall be maintained in a state of good repair; and
  - (vi) no contaminants, shall be discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule or resource consent.
- (d) The use of any mooring, navigational aid and sign in, on or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 63(c) is a discretionary activity.

**Rule 64 - Temporary canoe gate or ski lane markers**

- (a) The use, placement, erection or reconstruction of any temporary canoe gate or ski lane marker in, on or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the structure shall remain in place not longer than two weeks<sup>8</sup>;
  - (ii) the structure shall not cause a hazard to boating/navigation;
  - (iii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (iv) there are no recorded historic heritage sites, at the site of the activity;
  - (v) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (vi) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (vii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;

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<sup>8</sup> The “two weeks” can include three consecutive weekends



- (viii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (ix) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (x) the structure shall be maintained in a state of good repair.
- (b) The use, placement, erection or reconstruction and any associated bed disturbance of any canoe gate or ski lane marker, in, on or over the bed of any river, modified watercourse, or lake, that cannot meet one or more of the above conditions, is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. the location of the structure;
2. any effects on natural character and amenity values, the spiritual and cultural values and beliefs of the tangata whenua, historic heritage, and navigational safety;
3. any conditions in Rule 64(a) that cannot be met.

**Rule 65 - Whitebait stands**

- (a) The use of any lawfully established whitebait stand in, on, under or over the bed of any river is a controlled activity provided the following conditions are met:
- (i) the stand is secure against fluvial and coastal processes;
  - (ii) the stand is located so that it does not deflect flow into the river bank or increase water velocities near the bank, if the stand is either on piles or is a floating pontoon construction;
  - (iii) no stand shall exceed more than one third of the width of the river at that place at that time;

***Environment Southland will exercise its control over the following matters:***

1. any effects on amenity values, river morphology and dynamics (including erosion and deposition), public safety and public access.
- (b) The maintenance and repair of any lawfully established whitebait stand in, on, under or over the bed of any river is a permitted activity provided the following conditions are met:
- (i) the nature, scale and dimensions of the stand are unchanged;
  - (ii) the bed beneath, above or beyond the structure is not disturbed or any disturbance is corrected within 24 hours;
  - (iii) no debris from maintenance of the structure enters the river or bed.
- (c) The alteration or reconstruction of any lawfully established whitebait stand on the existing site in, on, under or over the bed of any river is a permitted activity provided the following conditions are met:
- (i) the nature, scale and dimensions of the stand are unchanged;
  - (ii) the bed beneath, above or beyond the structure is not disturbed or any disturbance is corrected within 24 hours.
- (d) The removal of any whitebait stand in, on, under or over the bed of any river, or modified watercourse is a permitted activity provided all debris from the stand are removed from the bed.

- (e) The placement or erection of any replacement whitebait stand in, on or over the bed of any lake, river, or modified watercourse is a restricted discretionary activity provided the following conditions are met:
- (i) the original stand has been destroyed or it is necessary to move the stand due to natural alterations to the course of the river, bank erosion, or high water mark alterations;
  - (ii) the replacement stand complies with the conditions in Rule 65(b);
  - (iii) the replacement stand is erected a minimum distance of 20 metres from any existing stand;
  - (iv) the replacement stand is located on the same river as the original stand, as close as practicable to the former site;
  - (v) the original stand is removed in accordance with Rule 65(e).

***Environment Southland will restrict its discretion to the following matters:***

- 1. the location of the new stand; and
  - 2. any effects on amenity values, river morphology and dynamics (including erosion and deposition), public safety and public access.
- (f) The placement or erection of any replacement whitebait stand in, on or over the bed of any lake, river, or modified watercourse that does not comply with the conditions of Rule 65(e) is a prohibited activity.

**Rule 66 - Maintenance of structures**

- (a) Unless otherwise stated in this Plan, the maintenance of any structure in, on, under or over the bed of any river, modified watercourse, or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the structure was lawfully established;
  - (ii) fish passage shall not be impeded as a result of the activity;
  - (iii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iv) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (v) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (vi) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (viii) there are no recorded historic heritage sites, at the site of the activity;
  - (ix) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (x) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xi) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;

- (xii) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;
  - (xiii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xiv) the structure shall be maintained in a state of good repair.
- (b) Unless otherwise stated in this Plan, the maintenance and any associated bed disturbance of any structure in, on, under or over the bed of any river, modified watercourse, or lake that does not meet one or more of the conditions of Rule 66(a) is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. any conditions in Rule 66(a) that cannot be met; and
2. any effects on taonga species.

**Rule 67 – Alteration and/or extension of structures**

- (a) Unless otherwise stated in the Plan, the alteration or extension of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the structure is lawfully established;
  - (ii) the structure is not listed on the New Zealand Heritage List/Rarangi Korero, and was not constructed prior to 1920;
  - (iii) the alteration or extension shall not involve an increase in the number or area of any support structures in the bed of the river, modified watercourse, or lake;
  - (iv) fish passage shall not be impeded as a result of the activity;
  - (v) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (vi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (vii) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (viii) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (ix) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (x) there are no recorded historic heritage sites, at the site of the activity;
  - (xi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (xii) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xiii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level;
  - (xiv) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;

- (xv) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed or bank stability, shall be removed as soon as practicable; and
  - (xvi) the structure shall be maintained in a state of good repair.
- (b) Unless otherwise stated in this Plan, the alteration or extension of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, that does not meet one or more of the conditions of Rule 67(a) is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. any effects on the morphology and dynamics (including erosion and deposition) of the river, modified watercourse, or lake, natural character and amenity values, the spiritual and cultural values and beliefs of the tangata whenua, taonga species, and historic heritage; and
2. any conditions in Rule 67(a) that cannot be met.

**Rule 68 – Demolition and/or removal of structures**

- (a) Unless otherwise stated in this Plan, the demolition or removal of any structure in, on, under or over the bed of any river, modified watercourse, or lake and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the structure is not listed on the New Zealand Heritage List/Rarangi Korero, and was not constructed prior to 1920;
  - (ii) fish passage shall not be impeded as a result of the activity;
  - (iii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iv) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (v) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (vi) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (viii) there are no recorded historic heritage sites, at the site of the activity;
  - (ix) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (x) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;
  - (xi) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level; and
  - (xii) demolition or removal of the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks.
- (b) Unless otherwise stated in this Plan, the demolition or removal of any structure in, on, under or over the bed of any river or lake and any associated bed disturbance and

discharge resulting from the carrying out of the activity, that does not meet one or more of the conditions of Rule 68(a) is a restricted discretionary activity.

*Environment Southland will restrict its discretion to the following matters:*

1. any effects on the spiritual and cultural values and beliefs of the tangata whenua, taonga species, historic heritage, and natural character and amenity values;
2. any conditions in Rule 68(a) that cannot be met.

### **Rule 69 – Structures not covered by, or not complying with, rules**

Any use, erection, maintenance, reconstruction, placement, alteration, extension, removal or demolition of any structure in, on, under or over the bed of any river (including modified watercourses) or lake, and any associated bed disturbance and discharge resulting from the carrying out of the activity, that is not provided for by a rule in this Plan, or that does not meet one or more of the conditions set out by a rule, is a discretionary activity (unless the Plan specifically provides that an activity that fails to meet the conditions set out by a rule is a controlled activity or a restricted discretionary activity).

## Bed disturbance activities in river and lake beds

### Rule 70 – Stock exclusion from waterbodies

- (a) The disturbance of the bed of a lake, river, natural wetland, artificial watercourse or modified watercourse by stock and associated discharge through access by stock is a permitted activity provided the following conditions are met:
- (i) there is no discharge that gives rise to any conspicuous change in the colour or visual clarity in the receiving water;
  - (ii) there is no significant de-vegetation of the bed and banks, pugging, or alteration to the profile of the bed and banks, other than at fords or stock crossings;
  - (iii) there is no access by stock to roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iv) there is no access by stock to the area of tidally influenced river and adjacent riparian habitat;
  - (v) where a dedicated stock crossing point or ford is used, condition (ii) above may be disregarded, provided the crossing point is not more than 20 metres wide and aligns with a constructed track or raceway on either side of the crossing point;
  - (vi) despite (i) to (v), stock (excluding sheep and deer) are to be excluded from 1 May 2018 from: all rivers, natural wetlands, artificial watercourses, modified watercourses and lakes in the Peat Wetlands, Lignite-Marine Terraces, Gleyed, Oxidising, Old Maitaura, Central Plains, and Riverine physiographic zones; and in the Bedrock/Hill Country physiographic zone, from all rivers, natural wetlands, artificial watercourses, modified watercourses and lakes where the land, when measured over a width of 20 metres from the waterbody, has a slope of less than 16 degrees<sup>9</sup>.
  - (vii) despite (i) to (v), deer are to be excluded from 1 May 2020 from: rivers, natural wetlands, artificial watercourses, modified watercourses and lakes in the Peat Wetlands, Lignite-Marine Terraces, Gleyed, Oxidising, Old Maitaura, Central Plains, and Riverine physiographic zones; and in the Bedrock/Hill Country physiographic zone from all rivers, natural wetlands, artificial watercourses, modified watercourses and lakes where the land, when measured over a width of 20 metres from the waterbody, has a slope of less than 16 degrees.
- (b) The disturbance of the bed of a lake, river, natural wetland, artificial watercourse or modified watercourse by stock and associated discharge through access by stock, that does not meet one or more of conditions (vi) and (vii) of Rule 70(a) is a discretionary activity provided the following conditions are met:
- (i) a Riparian Management Plan has been prepared in accordance with Appendix N that shows how the stock exclusion required by conditions (vi) and (vii) of Rule 70(a) will be achieved by 1 January 2025 and is implemented.
- (c) The disturbance of the bed of a lake, river, natural wetland, artificial watercourse or modified watercourse and associated discharge through access by stock that does not comply with conditions (i)-(v) of Rule 70(a) or Rule 70(b) is a non-complying activity.

### Rule 71 – Channel realignment, widening or deepening

The excavation or disturbance of the bed of any river, modified watercourse, or lake for the purpose of realigning, widening or deepening any channel within the bed is a discretionary activity.

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<sup>9</sup> Slope in Rule 70 is the average of the slope from the outer edge of the bed to a point 20 metres from the edge of the bed.

## **Rule 72 – Dry cuts**

- (a) The excavation or disturbance of the bed of any river, modified watercourse, or lake for the purpose of making a dry cut is a restricted discretionary activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (iv) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (v) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vi) there are no recorded historic heritage sites, at the site of the activity;
  - (vii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (viii) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
  - (ix) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

### ***Environment Southland will restrict its discretion to the following matters:***

1. the design and location of the work;
  2. any effects on river, modified watercourse, stream or lake morphology and dynamics (including erosion and deposition), aquatic and riverine ecosystems and habitat, the spiritual and cultural values and beliefs of the tangata whenua, and historic heritage.
- (b) The excavation or disturbance of the bed of any river, modified watercourse, or lake for the purpose of making a dry cut that does not comply with the conditions of Rule 72(a) is a discretionary activity.

## **Rule 73 – Gravel extraction**

- (a) The excavation or disturbance of the bed of any river, modified watercourse, stream or lake for the purpose of extracting gravel is a restricted discretionary activity provided the following conditions are met:
- (i) the quantity of gravel removed is less than 120 cubic metres per year;
  - (ii) there shall be no extraction from flowing water or from below the Q95 level of the river;
  - (iii) no holes or pits shall be dug and the area shall be left level and tidy on completion of the activity;
  - (iv) fish passage shall not be impeded as a result of the activity;
  - (v) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (vi) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;

- (vii) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
- (viii) no fuel storage or machinery refuelling shall occur on any area of the bed;
- (ix) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
- (x) there are no recorded historic heritage sites, at the site of the activity;
- (xi) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (xii) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
- (xiii) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

***Environment Southland will restrict its discretion to the following matters:***

1. the quantity and location of the extraction;
  2. any effects on river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, taonga species, historic heritage and the spiritual and cultural values and beliefs of the tangata whenua.
- (b) The excavation or disturbance of the bed of any river, modified watercourse, stream or lake for the purpose of extracting gravel or aggregate for flood or erosion control or the protection of infrastructure is a restricted discretionary activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vii) there are no recorded historic heritage sites, at the site of the activity;
  - (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (ix) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
  - (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

***Environment Southland will restrict its discretion to the following matters:***

1. the location of the extraction;
2. the design of the works and the quantity of material extracted;



3. any effects on infrastructure, flood risk, river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, taonga species, historic heritage and the spiritual and cultural values and beliefs of the tangata whenua.
- (c) The excavation or disturbance of the bed of any river, modified watercourse, stream or lake for the purpose of extracting gravel that cannot meet the conditions in Rules 73(a) or 73(b) and is a discretionary activity.

#### **Rule 74 – Wetlands**

- (a) The use of land for the modification of a wetland for the purposes of maintaining and enhancing the wetland, or maintaining and enhancing pedestrian access to the wetland (including the construction, maintenance or upgrading of structures), is a permitted activity provided the following conditions are met:
- (i) the modification does not result in any destruction or removal of any indigenous vegetation unless that vegetation was planted;
  - (ii) the modification does not result in any reduction in the size of the wetland;
  - (iii) the modification does not result in any flooding or ponding on any land owned or occupied by another person; or
  - (iv) the modification does not result in any establishment of pest plant species that:
    - (1) is listed in the Regional Pest Management Strategy for Southland 2013;
    - (2) may damage existing biodiversity values of the wetland; or
    - (3) will form the dominant vegetation type in the wetland.
- (b) The use of land for the modification of a wetland for the purposes of maintaining or enhancing the wetland, or maintaining or enhancing pedestrian access to the wetland that does not comply with the conditions of Rule 74(1) is a discretionary activity.
- (c) The use of land for the modification of a wetland, including through the grazing by stock or drainage, that is not provided for as a permitted activity or a discretionary activity is a non-complying activity.

#### **Rule 75 – Vegetation flood debris<sup>10</sup> removal**

- (a) The removal of vegetation flood debris obstructing water flow from any river, modified watercourse, or lake bed and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the removal of the material is for the purpose of flood or erosion control or maintaining the integrity of infrastructure;
  - (ii) following the removal of material, the area of lake bed, modified watercourse or river which has been disturbed, shall be returned as near as practicable to its original channel shape, area, depth and gradient;
  - (iii) fish passage shall not be impeded as a result of the activity;
  - (iv) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (v) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discolouration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (vi) no fuel storage or machinery refuelling shall occur on any area of the bed;

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<sup>10</sup> Refer to the Glossary for the definition of “Vegetation flood debris”.

- (vii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (viii) there are no recorded historic heritage sites, at the site of the activity;
  - (ix) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (x) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
  - (xi) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.
- (b) The removal of vegetation flood debris obstructing water flow from any river, modified watercourse, or lake bed and any associated bed disturbance and discharge resulting from the carrying out of the activity that does not meet one or more of the conditions of Rule 75(a) is a restricted discretionary activity.

***Environment Southland will restrict its discretion to the following matters:***

1. any effects on flood risk, river, modified watercourse, or lake morphology and dynamics (including erosion or deposition), and aquatic and riverine ecosystems and habitat; and
2. any conditions in Rule 75(a) that cannot be met.

**Rule 76 – Vegetation planting**

- (a) The introduction or planting of any plant, or part of any plant, in the bed of any lake, river, or modified watercourse is a permitted activity, provided the following conditions are met:
- (i) the planting is undertaken pursuant to a Riparian Management Plan or a Management Plan prepared in accordance with Appendix N;
  - (ii) the planting is not production forestry;
  - (iii) no plants listed in the Regional Pest Management Strategy for Southland 2013 are introduced or planted.
- (b) The introduction or planting of any plant, or part of any plant, in the bed of any lake, river, or modified watercourse not provided for under Rule 76(a) is a restricted discretionary activity provided the following conditions are met:
- (i) fish passage shall not be impeded as a result of the activity;
  - (ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (v) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (vii) there are no recorded historic heritage sites, at the site of the activity;

- (viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
- (ix) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
- (x) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

***Environment Southland will restrict its discretion to the following matters:***

- 1. the location of the planting;
  - 2. the species of plant;
  - 3. any effects on flood risk, river morphology and dynamics (including erosion or deposition), taonga species, and aquatic and riverine ecosystems and habitat.
- (c) The introduction or planting of any plant, or part of any plant, in the bed of any lake, river, or modified watercourse not provided for under Rule 76(a) or (b) is a discretionary activity.

**Rule 77 – Vehicles and machinery**

- (a) The entry into or passage across the bed of any river, modified watercourse, or lake by any wheeled or tracked vehicle or machine and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) there shall be no alteration to the original profile of the bed;
  - (ii) the activity is necessary for the purposes of crossing over the bed, or carrying out another permitted or consented activity within the bed;
  - (iii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;
  - (iv) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;
  - (v) any bed disturbance shall be kept to the minimum necessary to undertake the activity and shall be returned as near as practicable to its original channel shape, area, depth, or gradient on completion of the activity (with the exception of revegetation);
  - (vi) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (vii) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (viii) there are no recorded historic heritage sites, at the site of the activity;
  - (ix) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of “pests” or “unwanted organisms” as defined by the Biosecurity Act 1993;
  - (x) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity; and
  - (xi) from the beginning of November until the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.
- (b) The entry into or passage across the bed of any river, modified watercourse, or lake by any wheeled or tracked vehicle or machine and any associated bed disturbance and discharge resulting from the carrying out of the activity, that does not meet one or more of the conditions of Rule 77(a) is a restricted discretionary activity

***Environment Southland will restrict its discretion to the following matters:***

1. the location, type of vehicle or machine, and frequency and duration of the activity;
2. any effects on water quality, river morphology and dynamics (including erosion or deposition), taonga species, and aquatic and riverine ecosystems and habitat; and
3. the conditions in Rule 77(a) that cannot be met.

**Rule 78 – Weed and sediment removal for drainage maintenance**

- (a) The removal of aquatic weeds and plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall and any associated bed disturbance and discharge resulting from the carrying out of the activity, is a permitted activity provided the following conditions are met:
- (i) the activity shall be undertaken solely to maintain or restore the drainage capacity of a modified watercourse that has previously been modified or maintained for drainage maintenance/restoration purposes at that location;
  - (ii) the activity shall be restricted to the removal of aquatic weeds and plants and/or sediment deposits for drainage maintenance/restoration purposes;
  - (iii) any incidental bed disturbance and removal of gravel shall be only to the extent that it is necessary to undertake the activity and shall be kept to the absolute minimum;
  - (iv) upon completion of the activity, fish passage shall not be impeded as a result of the activity;
  - (v) the operator shall take all reasonable steps to return any fish captured or stranded by the activity to water immediately;
  - (vi) between the beginning of June and the end of October, there shall be no disturbance of the spawning habitat of trout;
  - (vii) between the beginning of November and the end of May, there shall be no disturbance of banks within the tidal river habitat that floods at spring tide;
  - (viii) no fuel storage or machinery refuelling shall occur on any area of the bed;
  - (ix) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;
  - (x) there are no known archaeological sites or wāhi tapu in the bed, at the site of the activity. In the event of the discovery of a site of potential historical or cultural importance (for example, archaeological site or wāhi tapu), the activity shall cease and Environment Southland’s Director of Policy, Planning and Regulatory Services shall be informed immediately. The activity may not recommence without the permission of the Director of Policy, Planning and Regulatory Services;
  - (xi) before any equipment, machinery, or operating plant is moved to a new activity site from any other area it shall be effectively cleaned to prevent the spread of “pest” or “unwanted organisms” as defined in the Biosecurity Act, 1993;
  - (xii) all equipment, machinery, operating plant and debris associated with the bed disturbance activity shall be removed from the site on completion of the activity;
  - (xiii) where the modified watercourse is spring-fed, removal of aquatic weeds and plants shall be only to the extent that is necessary to undertake the activity and shall be kept to the absolute minimum.
- (b) The removal of aquatic weeds and plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall, and any associated bed disturbance and discharge resulting from the carrying out of the activity that cannot meet the above conditions is a discretionary activity.

## **Rule 79 – High country burning**

- (a) The use of land for the burning of vegetation in Zone C of the Fire Hazard Zones (Map Series 6) is a permitted activity.
- (b) The use of land for the burning of vegetation in Zone B of the Fire Hazard Zones (Map Series 6) between 1 May and 30 September in any one year is a permitted activity.
- (c) The use of land for the burning of vegetation in Zone A or in Zone B between 1 October and 30 April in any one year of the Fire Hazard Zones (Map Series 6) is a controlled activity provided the following condition is met:
  - (i) one of the following has been obtained, which covers the proposed burning of vegetation on land:
    - (1) a permit for burning within 1 kilometre of land administered by the Department of Conservation; or
    - (2) a permit for burning in the hill and high country from the Rural Fire Authority; or
    - (3) a consent from the Commissioner of Crown Lands for burning on Crown pastoral leasehold land; or
    - (4) a resource consent or permit for burning from the relevant territorial local authority as determined by their district plans and/or bylaws.

### ***Environment Southland will exercise its control over the following matters:***

- (i) Soil conservation and sediment control practices to be undertaken.
- (d) The use of land for the burning of vegetation within Zones A, B or C of the Fire Hazard Zones that does not comply with Rule 79(c) is a discretionary activity.

# Financial Contributions

## Introduction

Where Environment Southland grants a resource consent under the rules in this Plan, it may impose a condition requiring that a financial contribution be made for the purposes specified in the Plan.

Environment Southland's responsibilities under the Act are:

*"A consent authority must not include a condition in a resource consent requiring a financial contribution unless –*

- (a) the condition is imposed in accordance with the purposes specified in the Plan or proposed plan (including the purpose of ensuring positive effects on the environment to offset any adverse effect); and*
- (b) the level of contribution is determined in the manner described in the Plan or proposed plan." (Section 108(10) RMA)"*

Financial contributions may be required for the purposes specified in Section 2.4.2 of the Plan.

All monies collected under the financial contributions regime of the Plan are collected by Environment Southland for use in reasonable accordance with the purposes for which the money was received. When deciding how those contributions should be levied, consideration will be given to matters contained in public submissions on a resource consent application.

The provisions which follow reflect the requirements of the Act and set out:

- (a) the circumstances when such contributions may be imposed;
- (b) the purposes for which such contributions may be required and used;
- (c) the manner in which the amount of the contribution will be determined; and
- (d) matters which Environment Southland will have regard to when deciding whether to impose a financial contribution, the type or types of contribution, and the amount of any contribution, and the general provisions that would apply.

## Circumstances, purpose and amount

Financial contributions may, in certain instances, be imposed on a resource consent in the circumstances and for the purposes set out below. Contributions of money to Environment Southland must be used in reasonable accordance with the purposes for which the contribution was taken.

The following provisions set out circumstances and purposes for which financial contributions may be imposed and used, and the manner in which the amount of the contribution will be determined is also set out. The determination of amount provides criteria to assist in deciding the actual quantum of the financial contribution to be required, rather than any arbitrary dollar amount or percentage of project value, neither of which may reasonably relate to the degree of adverse effects or the potential significance of the project.

- ***Maintenance or improvement of public access to and along rivers and lakes***

**Circumstances** – Where public access to or along rivers or lakes will be limited or prevented by the activity for which consent is granted.

(a) **Purposes** – To offset such effects by providing for public access to or along rivers or lakes through or around the area to which the consent applies.

**Determination of amount** – The amount of contribution will be determined by calculating the fair and reasonable costs inherent in the acquisition and vesting of land, or an interest in land, to give effect to alternative public access to a reasonably equivalent standard necessary to compensate for access that will be lost or reduced due to the proposed activity, or shall comprise the vesting of sufficient land, or the vesting or creation of a sufficient interest in land, to compensate for access that will be lost or reduced due to the proposed activity.

(b) **Purposes** – To offset or compensate for reduction or loss of access by contributing to the costs of, or providing, sufficient land, or a sufficient interest in land, for new or enhanced access to or along another part of the river or lake within the same general locality, or serving the same general community, to compensate for access that will be lost or reduced due to the proposed activity.

**Determination of amount** – The amount of contribution will be determined by calculating the fair and reasonable costs inherent in the acquisition and vesting of land to give effect to alternative public access to a reasonably equivalent standard necessary to compensate for access that will be lost or reduced, or shall comprise the vesting of sufficient land, or the vesting or creation of a sufficient interest in land, to compensate for access that will be lost or reduced due to the proposed activity.

- ***Protection, restoration or enhancement of river and lake beds***

**Circumstances** - Where the activity for which consent is granted is likely to cause or contribute to adverse effects on river and lake beds.

(c) **Purposes** – To offset the adverse effects of the activity by providing land, or an interest in land, for the purposes of protecting, restoring or enhancing river and lake beds or contributing to the cost of protecting, restoring or enhancing river and lake beds, including (without limitation) maintenance and planting of vegetation, sediment replenishment, erosion protection works, and fencing, and including contribution to such measures elsewhere in the same general locality.

**Determination of amount** – The amount of contribution will be determined by calculating the fair and reasonable contribution to the costs of maintenance and planting of vegetation, sediment replenishment, erosion protection works, fencing and/or river and lake bed protection appropriate to compensate for the adverse effects of the proposed activity on river and lake beds taking into account any positive effects of the proposed activity on the protection, restoration or enhancement of river and lake beds.

- ***Protection, maintenance or restoration of heritage values and of places, areas, or features of importance to Tāngata whenua***

**Circumstances** – Where the activity for which consent is granted will adversely affect places, areas, buildings or features of special historical, archaeological, architectural, scientific, ecological or intrinsic value (including trees or areas of vegetation with such

values) and places, areas or features of importance to tāngata whenua for spiritual, cultural or historical reasons.

- (d) **Purposes** - To offset such effects by protecting, maintaining or restoring the place, area, building or feature and/or to offset such effects by contributing to protection, maintenance or restoration of some alternative place, area, building or feature elsewhere in the same general locality.

**Determination of amount** – The amount of contribution will be determined by calculating the fair and reasonable costs of protecting or restoring such place, area, building or feature and/or contributing to the costs of protecting or restoring some alternative place, area, building or feature in the same general locality with the same or similar values to an extent appropriate to compensate for the adverse effects caused by the proposed activity.

- ***Landscaping or planting***

**Circumstances** – Where the activity for which consent is granted is likely to cause or contribute to adverse effects on visual amenities and/or involves land clearance or disturbance.

- (e) **Purposes** – To offset the adverse effects of land clearance, land disturbance and structures by landscaping or replanting in the general locality of the site in question.

**Determination of amount** – The amount of contribution will be determined by calculating the fair and reasonable costs of carrying out landscaping or replanting on land in the general locality of the site in question to an extent appropriate to compensate for the adverse effects on visual amenities arising due to clearance or disturbance of land or the erection of new structures

- ***Fencing or screening***

**Circumstances** – Where the activity for which consent is granted is likely to contribute to adverse effects on visual amenities, or conservation areas.

- (f) **Purposes** – To offset adverse visual effects by fencing or screening to protect and/or separate conservation areas; areas where vegetation has been removed; and areas on land or within lake and riverbeds used privately or publicly for recreational or residential purposes.

**Determination of amount** – The amount of contribution will be determined by calculating a fair and reasonable contribution to the costs of fencing or screening the visual amenities or conservation areas to compensate for the adverse visual effects on them caused by the proposed activity.

- ***General – mitigation works***

**Circumstances** – Where the activity for which consent is granted will cause or contribute to adverse effects on the environment which will not be adequately offset by any of the types of contribution described elsewhere in this section.

- (g) **Purposes** – To offset the adverse effects of the activity, including protection, and/or restoration of natural or physical resources.

**Determination of amount** – The amount of contribution will be determined by calculating a fair and reasonable level of contribution to the costs of undertaking works which are reasonably necessary to avoid, remedy or mitigate the adverse



effects of the activity on the environment, including where appropriate works to protect, and /or restore natural or physical resources.

- ***General – environmental compensation***

**Circumstances** – Where the activity for which consent is granted will have adverse effects which will not be adequately avoided, remedied or mitigated and those effects can be offset by positive effects elsewhere.

(h) **Purposes** – To provide positive effects to offset adverse effects of the activity on the environment by protecting, restoring and/or enhancing natural and physical resources and/or amenity values.

**Determination of amount** – The amount of contribution will be determined by calculating a fair and reasonable level of contribution to the costs of undertaking works to protect, restore and/or enhance natural and physical resources and/or amenity values which would have positive effects that would appropriately offset the adverse effects of the activity on the environment.

## **Matters to be Considered**

In deciding whether or not to impose financial contributions or the types of contribution or the amount of any contribution, Environment Southland will have particular regard to the following matters:

- (a) the purpose of the financial contribution is to offset or compensate the community or environment for adverse effects caused or contributed to by the activity and not otherwise avoided, remedied or mitigated by the consent holder;
- (b) whether adverse effects are likely to occur notwithstanding any avoidance, remedy or mitigation undertaken;
- (c) whether the adverse effects for which a contribution is imposed cannot be avoided, remedied or mitigated directly by project design or, in the case of a discharge, adoption of the best practicable option for preventing or minimising the effects;
- (d) whether the adverse effects are of such significance that to allow the activity (with or without a financial contribution) would be contrary to the purpose of the Act;
- (e) the circumstances and extent of financial contributions previously imposed in relation to the activity, either by this Council or any other consenting authority;
- (f) whether granting a resource consent and requiring a financial contribution would be more effective in achieving the purpose of the Act (including recognition of the economic and social benefits of the activity) and the objectives and policies of this Plan than declining consent or granting a consent without a condition requiring a financial contribution;
- (g) financial contributions shall relate to the effects of the activity for which consent is granted and be in reasonable proportion to the significance of any adverse effects caused or contributed to by the activity;
- (h) financial contributions may not be appropriate in every case, even where there are adverse effects;
- (i) Environment Southland does not intend that adverse environmental effects must be fully mitigated or fully compensated in every case by way of financial contributions.

## General Provisions

In imposing a financial contribution, the following general provisions will apply:

- (a) all financial contributions shall be GST inclusive;
- (b) where the financial contribution is, or includes, a contribution of land, it must be land, or an interest in land, that is owned by the applicant and which the applicant can transfer without requiring the consent or agreement of a third party. The applicant is not required to enter into third party access agreements in order to provide the financial contribution;
- (c) where the financial contribution is, or includes, a payment of money, Environment Southland may specify in the condition:
  - (i) the amount to be paid by the consent holder;
  - (ii) how payment is to be made, including whether payment is to be made by instalments;
  - (iii) when payment shall be made;
  - (iv) whether the amount of the payment is to bear interest and, if so, the rate of interest; and
  - (v) if the amount of the payment is to be adjusted to take account of inflation and, if so, how the amount is to be adjusted;
- (d) where the financial contribution is, or includes, land, the value of the land shall be determined by a valuation undertaken by a registered valuer unless Environment Southland and the parties otherwise agree;
- (e) where the financial contribution is, or includes, land Environment Southland may specify:
  - (i) the location and the area of the land; and
  - (ii) when and how the land is to be transferred to, or vested in, Environment Southland.

# Glossary

This glossary is included to assist in the understanding of terms used in this Plan. Other sources, where used, are indicated accordingly.

## **Abstraction**

Removing groundwater or removing water from a surface waterbody or artificial watercourse.

## **Agrichemical (from NZS 8409 Management of Agrichemicals)**

Any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used in any agriculture, horticulture or related activity, to eradicate, modify or control flora and fauna. For the purposes of this Plan, it includes agricultural compounds, but excludes fertilisers, vertebrate pest control products and oral nutrition compounds.

## **Agricultural effluent**

Effluent that is derived from livestock farming, but excludes excreta from individual animals, fertiliser application and non-point source discharges from normal farming practices.

## **Agricultural effluent storage**

A pond, tank or structure used for the containment, storage or treatment of agricultural effluent.

## **Allocation**

The provisions of this Plan or any Water Conservation Order relating to the quantities of water available for abstraction or diversion.

## **Aquifer**

Saturated rock or soil material capable of transmitting and yielding water in sufficient quantities for abstraction.

## **Artificial watercourse**

Means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and a farm drainage channel. It does not include natural or modified natural watercourses, or artificial swales, kerb and channelling or other watercourses designed to convey stormwater.

## **Biodiversity**

Means biological diversity.

## **Bore or well**

Any structure or hole, regardless of the method of formation, that has been constructed to provide access to groundwater, or which intercepts groundwater.

## **Catchment**

The land area that contributes the river's or stream's flow.

**Cleanfill**

Any material that when discharged into or onto land will have no or minimal adverse environmental effects, and includes virgin natural matter (e.g. clay, soil, sand, gravel or rock) and other inert products from construction or demolition activities (e.g. concrete or brick) that are free of:

- (a) combustible, putrescible, degradable, compostable or leachable components (e.g. animal carcasses, green/garden waste, timber, bark, cork, tree roots, new asphalt);
- (b) hazardous substances (e.g. coal tar, or asbestos);
- (c) products or materials derived from the treatment, stabilisation or disposal of hazardous waste; and
- (d) materials of risk to human or animal health (e.g. medical or clinical waste); and
- (e) liquid waste (including sludges).

**Cleanfill Site**

Land used for the permanent disposal of cleanfill and no other type of material but excludes earthworks on the same landholding, earthworks associated with any road, driveway or track, and any area within a road reserve containing a formed road that is used for the deposition of roading material.

**Closed Landfill**

A landfill containing 15,000 cubic metres or more of industrial or community waste that ceased to operate between 1970 and 2012 and remains closed but excludes farm landfills.

**Community Sewerage Scheme**

A scheme that collects and treats sewage from more than three sites which are predominantly residential housing, but may include a component of industrial and trade process effluent.

**Community water supply**

A permanent reticulated supply of potable water for use by 25 or more people for at least 60 days per annum.

**Composting Toilet**

A toilet system that uses a predominantly aerobic processing system that treats human excreta, typically with no water, via composting or managed aerobic decomposition which is often assisted by the addition of sawdust and straw or other carbon rich materials. The operation of some composting toilet systems may involve the transfer of the waste to a hot compost heap while other systems include a specially built tank in which waste is decomposed by aerobic bacteria.

**Confined aquifer**

An aquifer which is overlain by a low permeability or impermeable layer where water in the aquifer is under pressure.

**Crest**

In relation to a dam, means the uppermost surface of a dam, not taking into account any camber allowed for settlement, or any curbs, parapets, guard rails, or other structures that are not part of the water-retaining structure.

**Critical Source Area**

Areas of enriched nutrient or sediment sources and hydrological activity that occur in small parts of a catchment or farm, but contribute a disproportionately large amount of nutrient or sediment to the environment (e.g. steep hills, gullies or swales).

**Cultivation**

Preparing land for growing pasture or a crop by mechanical tillage or spraying (excluding spot spraying).

**Damming**

The impounding of all or part of the natural flow of any water that may involve an associated temporary or permanent structure.

**Deposition**

The laying down of solid material which has been carried by some natural agency (for example, rivers, wind, etc).

**Diadromous**

Fish that make migrations between the sea and freshwater. These migrations may be in either direction and not necessarily related to spawning.

**Diversion**

The redirecting of water flow from its existing direction of flow.

**Domestic Wastewater**

For the purposes of this rule, domestic wastewater is limited to effluent derived from dwellings, business buildings, institutions and the like, and consisting of toilet wastes and wash waters from kitchens, bathrooms and laundries, but excluding commercial laundry and commercial kitchen wastes.

**Drawdown**

The reduction in hydraulic head adjacent to a pumping bore or well that occurs in response to groundwater abstraction.

**Dry cut**

An artificial channel constructed on the dry bed of a river for the purposes of temporarily or permanently diverting water during a flood event.

**Dump Station**

A dump station is a facility designed to receive wastewater from mobile toilets.

**Ecosystem**

A dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functional unit.<sup>11</sup>

**Effluent**

A liquid that may include solid components discharged as a waste that originates from:

- (a) on-site wastewater systems and mobile toilets;
- (b) community sewerage schemes;
- (c) agricultural activities;

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<sup>11</sup> United Nations Convention on Biological Diversity, 1992

- (d) an industrial or trade process;
- (e) but excludes solid waste.

**Ephemeral waterbodies**

Waterbodies which typically only contain flowing and/or standing water following significant rainfall events or extended periods of above average rainfall.

**Erosion Control Structures**

Structures that control erosion for the purpose of preventing damage to people and their property and any significant adverse effects to the environment.

**Fertiliser**

Any substance (whether in solid or fluid form) that is described as or held out to be for, or suitable for sustaining or increasing the growth, productivity or quality of plants or animals through the application of the following essential nutrients to plants or soils: nitrogen, phosphorus, potassium, sulphur, magnesium, calcium, chloride, sodium as major nutrients; or manganese, iron, zinc, copper, boron, cobalt, molybdenum, iodine, selenium as minor nutrients or additives.

**Field Capacity**

Means the moisture content of soil when the addition of further water would result in saturation and/or drainage from the soil.

**Ford**

Any modification of the bed to establish a crossing by which any vehicle, livestock, or persons may traverse through any waterbody.

**Fractured rock aquifer**

Saturated rock strata containing crevices, joints and fractures in which water is stored in sufficient quantities for abstraction.

**Galaxiid**

Small freshwater fish including kōkopu and inanga. Many galaxiids spend their whole lives in freshwater but several species (diadromous species) spend part of their lives in the sea.

**Gravel**

Fluvial inorganic aggregate or river bed material of any size.

**Groundwater**

Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

**Habitat**

The place or type of place where an organism or population naturally lives.

**Headworks**

All materials used at the ground surface to complete the bore. Includes pipework, valves, gauges and access points, concrete pads and/or cellars.

**Intensive winter grazing**

Grazing of stock between May and September (inclusive) on forage crops.

**Interference effects**

The effect of a pumping bore or well on the drawdown and yield of neighbouring pumping bore and wells.

**Intermittent waterbodies**

Waterbodies which contain flowing and/or standing water for a majority of the year but which may occasionally dry out due to natural interaction with surrounding groundwater resources.

**Land Application System**

The system used to apply effluent from an on-site wastewater system into or onto the soil for further treatment and absorption or evaporation. [From AS/NZS 1547:2012 On-site domestic wastewater management].

Also known as a “disposal field”.

**Landfill**

A site that is used for the permanent disposal of waste but excludes a cleanfill site, earthworks associated with any road, driveway or track, and any area within a road reserve containing a formed road that is used for the deposition of roading material.

**Landholding**

- (a) For land subject to the Land Transfer Act 1952, land in:
  - (i) a single certificate of title; or
  - (ii) two or more adjoining certificates of title, with a common occupier.
- (b) For land not subject to the Land Transfer Act 1952, all contiguous land last acquired under one instrument of conveyance and occupied by a common occupier.

**Lawfully established**

Established in accordance and compliance with any relevant legislation at the time of establishment.

**Leaching**

Movement through soil of dissolved or suspended substances in water.

**Light Fuel**

Means Number 2, 3 or 4 Fuel Oil or diesel.

**Loading**

Amount of a substance entering the environment (soil, water, or air).

**Low flow**

Periods of reduced river flow, when potential ecological effects need to be assessed and managed. Generally they occur less than 5% of the time.

**Mahinga kai**

Areas from which food resources are gathered and/or propagated.

**Main stem**

The principal course of a river (i.e. does not include tributaries).

**Maintenance**

Work on a structure, necessary to maintain that structure in good order and repair, including repainting, that does not alter its dimensions.

**Mauri**

Essential life force or principle; a metaphysical quality inherent in all things, both animate and inanimate.

**Mean Seasonal High Groundwater**

The 95th percentile of the measured high groundwater table over the period of the available record.

**Median flow**

The flow that is exceeded fifty percent of the time(Q50).

**Method**

The practical action by which a policy is implemented. It is what can be done to put a policy into effect. Includes rules and non-regulatory methods.

**Minimum flow**

The flow at which the holder of any resource consent to abstract water must cease abstraction.

**Mitigate**

To reduce or moderate the severity of an effect.

**Mobile Toilet**

Includes portable toilets and those used on various forms of transport such as motor homes, campervans or boats.

**Modified watercourse**

A water carrying channel that was existing in some form prior to land development but has been modified or straightened for drainage or other purposes.

**Mooring**

Any weight, post or other structure placed in, or on, the bed of a river or lake for the prime purpose of securing a vessel, raft, aircraft or floating structure. It does not include the anchors of a vessel.

**National Park**

As defined by the National Parks Acts 1980.

**Natural character values**

The qualities of the environment that give it recognisable character. Embraces ecological, physical, spiritual, cultural, intrinsic and aesthetic values, and includes modified and managed environments.

**Natural mean flow**

The total flow<sup>12</sup> divided by the duration of the record.

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<sup>12</sup> Naturalised though the incorporation of the total volume of water allocated through current resource consents. It includes the stream depletion effect of each consented groundwater abstraction greater than 2 litres per second with a direct, high or moderate degree of hydraulic connection in accordance with Policy 23 "Stream Depletion Effects".



### **Natural state (for water quantity purposes)**

Water within conservation areas, reserves and national parks administered by, or on behalf of, the Department of Conservation for conservation purposes under the Conservation Act 1987, Reserves Act 1977 and National Parks Act 1980 with the exception of water within the Upper Waiau and Monowai Rivers and Lakes Te Anau, Manapouri and Monowai (these waterbodies are excluded due to their modified flow and level regimes resulting from the Manapouri and Monowai Power Schemes) and groundwater within the Tiwai groundwater zone (this groundwater zone is excluded due to its long term use for the supply of water for industrial purposes).

### **Natural state waters (for water quality purposes)**

Waters within:

- (a) areas defined as National Park managed under the National Parks Act 1980 (including land for the time being administered as if it was a national park pursuant to any statute or written agreement with the owners); and
- (b) public conservation land managed under the Conservation Act 1987 and the Reserves Act 1977 as detailed in Table 1 “Natural State Waters outside National Parks” in Appendix I “Natural State Waters outside National Parks” of this Plan.

### **Natural Wetland**

Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions, but excludes:

- (a) wet pasture, damp gully heads, or where water temporarily ponds after rain or pasture containing patches of rushes;
- (b) effluent ponds;
- (c) artificial storage facilities and detention dams;
- (d) artificial watercourses such as conveyance and drainage canals;
- (e) reservoirs for firefighting, domestic or community water supply; and
- (f) engineered soil conservation structures.

### **Non-point source discharges**

Water contamination derived from diffuse sources where there is no single identifiable discharge point.

### **Nohoanga**

Nohoanga entitlements are created and granted by the Crown for the purpose of permitting members of Ngāi Tahu Whānui to occupy temporarily land close to waterways on a non-commercial basis, so as to have access to waterways for lawful fishing and gathering of other natural resources. The Crown may create and grant to Te Rūnanga o Ngāi Tahu renewable entitlements over Crown-owned land in the Ngāi Tahu claim area which meets the criteria set out in Section 258 of the Ngāi Tahu Claims Settlement Act 1998, other than land in:

- (a) a national park;
- (b) a marginal strip;
- (c) a nature reserve;
- (d) an esplanade reserve;
- (e) a scientific reserve;
- (f) or that part of an unformed legal road (including a road reserve) within 20 metres of a waterway.

**Nutrient**

An element or compound essential for the growth and development of life forms. The major plant nutrients are nitrogen, phosphorus, potassium, sulphur, magnesium and calcium but there are also a number of minor nutrients which are required in small quantities.

**On-site Wastewater System**

The collection, treatment and disposal/reuse of wastewater from an individual home or commercial facility on the same property as it is generated. For the purposes of this definition, wastewater is limited to toilet wastes and wash water from kitchens, bathrooms and laundries.

**Organism**

Any living animal or plant including any bacterium or virus.

**Perched Water**

Perched water is a subsurface layer of water that is located above true groundwater. It occurs because of confining layers in the soil such as hard gravel pans. Perched water is nearly always periodic or seasonal.

**Periphyton**

Non-vascular plants forming crusts, films or filamentous mats on plants or beds of watercourses.

**Pest species**

Pest species as defined in a Regional Pest Management Plan.

**pH**

Value taken to represent the acidity or alkalinity of water.

**Pit toilet**

A toilet which discharges to a hole in the ground. Also known as a pit latrine, long-drop or privy.

**Physiographic zone**

The zones as depicted on Map Series 4: Physiographic Zones.

**Place of assembly**

Any building or land used for public and/or private assembly or meeting of people and includes libraries, churches, halls, marae, clubrooms, community centres, conference centres, recreational facilities, chartered clubs, premises with a club license, and other similar establishments.

**Point source discharges**

Discharges from specific and identifiable sources (such as pipes or drains) concentrated at a given point.

**Potable water**

Water suitable, on the basis of both health and aesthetic considerations, for drinking and food preparation.

**Potentiometric head**

The level to which water will rise in a bore or well penetrating a confined aquifer.

**Q95**

This is the flow that is exceeded 95% of the time during the year.

**Radius of Influence**

The calculated distance from a pumping well at which there is no lowering of the water table or potentiometric head.

**Raw sewage**

Sewage that has not undergone any chemical or biological changes prior to disposal. Raw sewage may have undergone some solids separation in a storage facility such as a pond or sump.

**Reasonable Mixing Zone**

When determining the size of the zone of reasonable mixing, minimise the size of the area where the relevant water quality standards are breached. The zone shall not be larger than:

- (a) for river and artificial watercourse locations with flowing water present at all times:
  - (i) no longer than 10 times the width of the wetted channel or 200 metres along the longest axis of the zone (whichever is the lesser), and
  - (ii) occupies no greater than two-thirds of the wetted channel width at the estimated Q95 for that location;
- (b) for river and artificial watercourse locations, with intermittent flows, no longer than 20 metres at times of flow and 0 metres at no flow;
- (c) when within a drinking water supply site identified in Appendix J, 0 metres.

**Receiving waters**

Bodies of water that receive run-off or wastewater discharges, such as rivers, streams, lakes, estuaries, and groundwater.

**Reconstruction**

The complete rebuilding or complete replacement of a structure to its original dimensions, on the same site.

**Recorded historic heritage sites**

Sites recorded on the New Zealand Heritage List/Rārangī Kōrero or on the New Zealand Archaeological Association (NZAA) Site Recording Scheme, or a historic heritage site, tree or building listed in an operative district plan.

**Reticulated system**

The means by which water is collected and delivered prior to discharge. In relation to stormwater discharge, a piped or channelled network for collecting stormwater from a number of landholdings with a single common discharge point.

**Rip rap**

Rock protection work along the bank of a river or lake.

**Riparian area/margins**

Land situated along the bank of a lake, river, wetland or other waterbody.

**RMA**

The Resource Management Act 1991 (including any amendments thereto), unless expressly stated.

**Septage**

The pumpout contents of a septic tank (or primary compartment of an aerated wastewater treatment system) during desludging operations, which includes scum, sludge, and tank liquid.

**Sewage**

The contents of sewers carrying the waterborne wastes of a community. This is sometimes called “wastewater” or “foul sewage” to distinguish it from stormwater.

**Silage**

Silage is any plant material harvested while green for fodder and kept succulent by partial fermentation, but does not include baleage or hay.

**Silage Leachate**

Silage leachate refers to the liquids generated from the biological processes that occur when wilted grass is preserved as silage, or when soluble components are dissolved out of silage by percolating or infiltrating rainwater, surface water or groundwater. Leachate that results from the making of baleage or hay is not considered silage leachate for the purpose of this plan.

**Silage Storage Facility**

Silage storage facility refers to land or structures on which silage is stored, processed or directly utilised. Bales of plant material completely encapsulated in plastic are not considered a “silage storage facility”.

**Significant de-vegetation**

Means any farming activity that results in the exposure of bare ground and/or pugging of the soil.

**Sludge**

The solid residues from effluent.

**Soil Infiltration Surface**

The surface where effluent from the land application system passes into soil. In the case of land application systems comprising of trenches or beds which include distribution aggregate or filter cloth the soil infiltration surface is the bottom of that material. In the case of land application systems comprising of distribution pipes such as shallow subsurface drip emitters which are laid directly on soil the soil infiltration surface is the pipe invert.

**Spring-fed**

In addition to surface waterbodies that are classed as spring-fed on Map Series 1: Water Quality, a surface waterbody is spring-fed if it:

- (a) has a mean annual flow less than 2,000 litres per second; and
- (b) always has an instantaneous flow greater than or equal to 5 litres per second, at a point immediately before the first downstream confluence; and

- (c) meets one or more of the following conditions as measured by Environment Southland:
- (i) the ratio of the December to March median flow to the mean annual low flow is less than or equal to 1.5; or
  - (ii) in July, the mean monthly water temperature is at least 1.5°C higher than the mean monthly water temperature in a nearby run-off dominated stream; or
  - (iii) in July, the mean monthly water temperature is at least 2°C higher than the mean monthly ambient air temperature in the vicinity.

**Stock**

Farm animals kept for use or profit such as horses, dairy cows, cattle, deer, pigs, goats and sheep.

**Stock crossing**

A place, which forms part of the stock access system of tracks and races on a farm, at which stock cross the bed of a lake, river, modified watercourse or stream. Stock crossings involve the crossing of stock through water. Culverts and bridges are not stock crossings.

**Stormwater**

Surface water run-off subsequent to precipitation.

**Subsurface drainage systems**

An artificial permeable subsurface conduit constructed for the purposes of draining agricultural soil water/moisture. An installed subsurface drainage system includes tile, mole, concrete and clay drains, wooden box drains and plastic subsurface drainage pipes. Stormwater systems, drainage by use of sumps, and foul water drainage systems are not included in this definition.

**Surface waterbody**

Freshwater or geothermal water in a river, lake, stream, pond, or wetland or any part thereof that is not located within the coastal marine area but excludes water in an artificial watercourse.

**Tāngata whenua**

In relation to a particular area, means the iwi or hapu, that holds mana whenua over that area, and for the Southland region this is Ngāi Tahu.

**Total groundwater allocation**

The total volume of water allocated at the date a resource consent application for a new take is lodged. This includes the water that is allocated through current resource consents, the water that is proposed to be taken under consent applications that have been lodged and the additional water proposed to be taken by the consent applicant. It excludes the stream depletion effect of each groundwater take greater than 2 litres per second with a direct, high or moderate degree of hydraulic connection in accordance with Policy 23 “Stream Depletion Effects”.

**Total surface water allocation**

The total volume of water allocated at the date a resource consent application for a new take is lodged. This includes the water that is allocated through current resource consents, the water that is proposed to be taken under consent applications that have been lodged and the additional water proposed to be taken by the consent applicant. It also includes the stream depletion effect of each groundwater take greater than 5 litres per second with a

direct, high or moderate degree of hydraulic connection in accordance with Policy 23 “Stream Depletion Effects”.

**Toxicity**

The inherent potential or capacity of a material to cause adverse effects in a living organism.

**Unconfined aquifer**

An aquifer with no upper confining layer so the system is not under pressure, and its water table levels fluctuate both seasonally and from year to year.

**Untreated animal effluent**

Animal effluent that has not undergone any chemical or biological changes prior to disposal. Untreated effluent may have undergone some solids separation in a storage facility such as a pond or sump.

**Unwanted organisms**

As defined by the Biosecurity Act 1993.

**Values**

The worth, desirability, or utility of a thing, or the qualities on which these depend.

**Vegetation flood debris**

Vegetation, including entire trees that have been dislodged during flood, or storm events.

**Waahi taonga (Wāhi taonga)**

Treasured resources.

**Waahi tapu (Wāhi tapu)**

Sacred place. Typically includes burial grounds and sites of historical importance to the tribe.

**Water demand management strategy**

A water demand management strategy is a document required to accompany a water permit application for a community water supply. It must contain the following information in sufficient detail to enable Council to be reasonably informed on the nature and extent of the activity and any effects of that activity on the environment:

- (a) a description of the water supply system including:
  - (i) system operation;
  - (ii) distribution extent;
  - (iii) level of service;
  - (iv) water use measurement methods;
  - (v) maintenance and asset management procedures;
- (b) an assessment of existing and future demand for water to meet:
  - (i) reasonable domestic needs;
  - (ii) public health needs;
  - (iii) the responsibilities of municipal water supply authorities under the Local Government Act 2002 with respect to the supply of water;
  - (iv) the needs of other users, including rural, commercial and industrial needs; and
  - (v) any increase in allocation that may be sought during the term of the water permit to met these demands;
- (c) water conservation and efficiency measures including:
  - (i) regulatory or non-regulatory methods;

- (ii) a plan to implement methods identified;
- (iii) performance targets to measure the effectiveness of the methods implemented; and
- (iv) a timeframe for review of the actions and implementation plan;
- (d) any existing or proposed water pricing procedures and any linkages with wastewater pricing or management;
- (e) plans and management measures to minimise water losses from the water reticulation network as far as practicable;
- (f) plans to mitigate the potential impacts of climate change on the community water supply;
- (g) an assessment of alternative water sources available or alternative means of sourcing water, including both general water harvesting and roof water harvesting, seasonal storage or water reclamation;
- (h) a drought management plan that includes:
  - (i) methods to reduce consumption during water shortage conditions particularly consumption by non-essential<sup>13</sup> agricultural, residential, industrial or trade processes;
  - (ii) public education programmes;
  - (iii) enforcement procedures;
- (i) any external auditing or benchmarking procedures that have been adopted;
- (j) any consultation undertaken and the outcomes of such consultation;
- (k) details of a strategy review process, including consultation.

### **Wetland**

Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions. [See also definition of “Natural Wetland”].

### **Wetland Boundary**

The point in the transition from wetland to dryland where wetland plant species occur at more than four times their ungrazed height apart. Wetland edge has a similar meaning.

### **Whitebait Stand**

Any structure used in association with whitebaiting.

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<sup>13</sup> For all uses of water that are considered to be essential refer to Policy 24. In this context, “non- essential” is considered to be water uses for all other purposes.

## **Appendix A - Regionally Significant Wetlands in Southland**

Awarua Plain - Southland Estuaries including:

- Waituna Scientific Reserve
- Seaward Moss
- Wetlands adjoining Awarua Bay
- Wetlands adjoining Bluff Harbour
- Wetlands adjoining New River Estuary
- Fortrose Harbour (including lower Mataura River)

Bayswater Bog

Big Bay - Waiuna

Borland Mire

Castle Downs (Hamilton Burn)

Drummond Peat Swamp (Isla Bank)

Fiordland National Park (World Heritage site) including:

- Back Valley
- Grebe Valley
- Lower Hollyford
- Sutherland Sound

Five Mile Swamp (wetland in ancient Lake Wakatipu lake outlet)

Freshwater Valley including:

- Freshwater Flats
- Ruggedy Flat

The following wetlands in the Garvie Mountains:

- Blue Lake wetland
- Gow Lake wetland
- Scott Lake wetland

Haldane Estuary and reservoir

Lake George

Lake Vincent, near Fortrose

Lake Brunton, Otara

Mount Tennyson string bog

Redcliff Reserve

So Big Swamp

Silver Lagoon



Table Hill

Te Anau Basin wetland complex including:

- Kepler Mire
- Dome Mire - Dismal Swamp
- Dunton Swamp
- Tekaro Wetland
- Amoeboid Swamp
- Kākāpō Swamp
- Snowdon Forest
- Dale Lake
- Lake Luxmore
- Lagoon Creek

Toetoes Flats

Waiau River - Te Waewae Lagoon

Waikawa Estuary

Waimatuku wetland

Wairaki Lagoon (Waiau River)

Waterloo (Aparima)

## **Appendix B - Ngāi Tahu Statutory Acknowledgement Areas**

### **Information for Plan users, and resource consent applicants**

#### ***Introduction***

Ngāi Tahu Claims Settlement Act 1998 (the Settlement Act) gives effect to the Deed of Settlement signed by the Crown and Te Rūnanga o Ngāi Tahu on 21 November 1997 to achieve a final settlement of Ngāi Tahu's historical claims against the Crown.

The Settlement Act includes a new instrument called a Statutory Acknowledgement. Statutory Acknowledgements recognise Ngāi Tahu's mana in relation to a range of sites and areas in the South Island, and provide for this to be reflected in the management of those areas. Statutory Acknowledgements impact upon Resource Management Act 1991 (RMA) processes concerning these areas.

#### ***What are Statutory Acknowledgements?***

A Statutory Acknowledgement is an acknowledgement by the Crown of Ngāi Tahu's special relationship with identifiable areas, namely Ngāi Tahu's particular cultural, spiritual, historical, and traditional association with those areas (known as statutory areas). The statutory areas are named on the map (printed on the reverse).

#### ***What are the Purposes of Statutory Acknowledgements?***

The purposes of Statutory Acknowledgements are:

- to ensure that Ngāi Tahu's particular association with certain significant areas in the South Island are identified, and that Te Rūnanga o Ngāi Tahu is informed when a proposal may affect one of these areas; and
- to improve the implementation of RMA processes, in particular by requiring consent authorities to have regard to Statutory Acknowledgements when making decisions on the identification of affected parties.

#### ***Who may be Affected by Statutory Acknowledgements?***

You may be affected by a Statutory Acknowledgement if you are applying for a resource consent for an activity that is within, adjacent to, or impacting directly upon a statutory area.

#### ***What happens when you apply?***

If you are applying for a resource consent for an activity within, adjacent to, or impacting directly upon a statutory area:

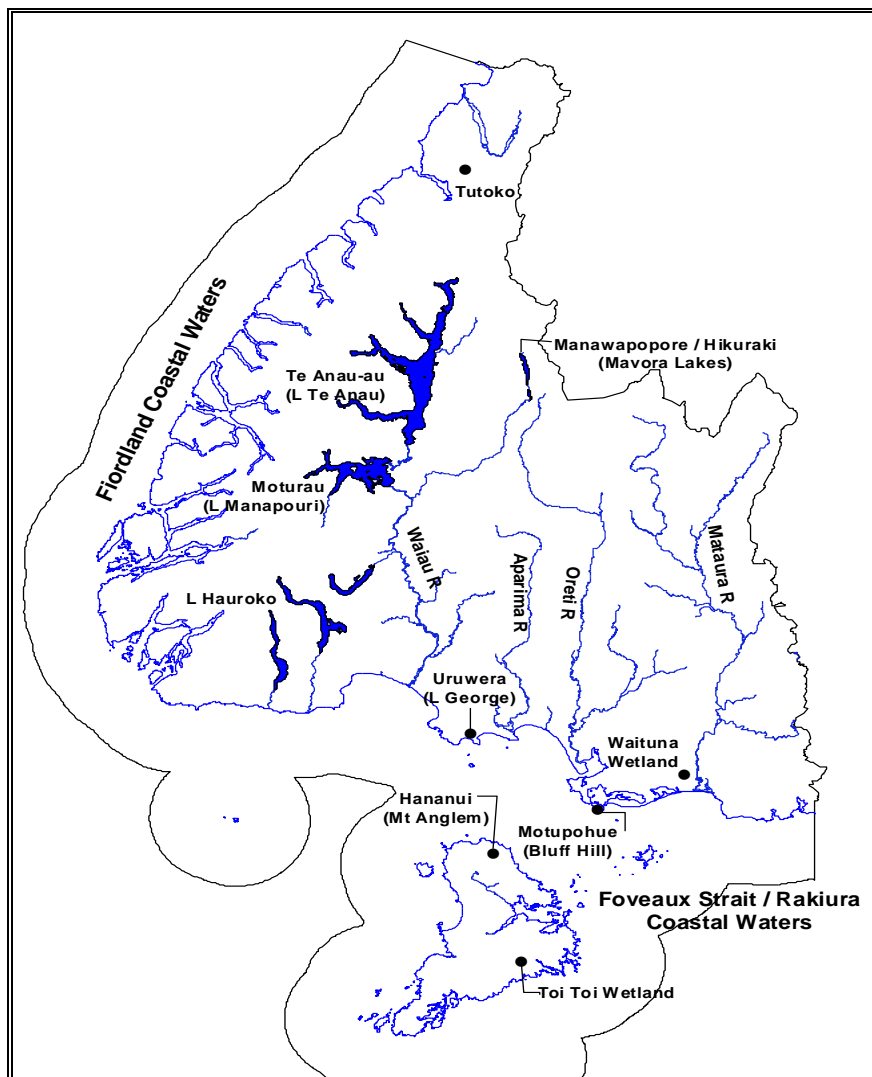
- the Council must send a summary of your resource consent application to Te Rūnanga o Ngāi Tahu; and
- the Council must have regard to the Statutory Acknowledgement in going through the process of making a decision on whether Te Rūnanga o Ngāi Tahu is an affected party in relation to the resource consent application.

#### ***More Information***

The following pages set out the Statutory Acknowledgements as they relate to the Southland region. You can obtain further information on Statutory Acknowledgements from:

- Policy and Planning Division, Environment Southland, Cnr Price Street and North Road, Private Bag 90116, Invercargill 9840
- Kaitiaki Taiao (Natural Resources) Unit, Office of Te Rūnanga o Ngāi Tahu, PO Box 13-046, Christchurch 8141

- Te Ao Mārama Inc, PO Box 7078, South Invercargill 9844
- Ministry for the Environment, PO Box 1345, Christchurch 8140.



## **Statutory Acknowledgement for Aparima River**

*(From Schedule 15 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the river known as Aparima, the location of which is shown on Allocation Plan MD 126 (SO 12265).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to the Aparima River, as set out below.

### **Ngāi Tahu Association with the Aparima River**

The mouth of the Aparima was the site of a permanent settlement, with associated urupā nearby. Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected by secret locations.

The river was an important source of mahinga kai, with shellfish, mussels, paua, tuna (eels) and inaka (whitebait) all being taken from the river and its estuary. An eel weir was constructed at the narrows where the Pourakino River enters the Aparima, and was an important source of tuna.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka (landing places), places for gathering kai and other taonga, ways in which to use the resources of the Aparima, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mouth of the Aparima was a tauranga waka, from which sea voyages were launched to and from a variety of locations in and around Te Ara a Kiwa (Foveaux Strait), Rakiura and the tītī islands. A carved tauihu (canoe prow) found in the estuary of the river attests to this.

The tūpuna had an intimate knowledge of navigation, river routes, safe harbours and landing places, and the locations of food and other resources on the Aparima. The river was an integral part of a network of trails which were used in order to ensure the safest journey and incorporated locations along the way that were identified for activities including camping overnight and gathering kai. Knowledge of these trails continues to be held by whānau and hapū and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the river.

The mauri of the Aparima represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.

## **Statutory Acknowledgement for Hananui (Mount Anglem)**

*(From Schedule 18 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the area known as Hananui (Mt Anglem), as shown on Allocation Plan MS 264 (SO 12249).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Hananui, as set out below.

### **Ngāi Tahu Association with Hananui**

As with all principal maunga (mountains), Hananui is imbued with the spiritual elements of Raki and Papa, in tradition and practice regarded as an important link to the primeval parents.

The name Hananui is derived from an event involving the tūpuna (ancestor) Rakitamau, a chief of Te Taumutu, and son of Tū Te Kawa. Rakitamau became a widower through the unfortunate death of his wife. Rakitamau journeyed to Motunui (as Rakiura was called then) seeking the hand of a tribally renowned wahine (woman) to take her place, as in his view she would increase his standing due to her mana, reflected in her connections to the land and important people of Rakiura.

On his arrival at her village, Rakitamau asked for the woman by name, only to be told by a laughing group of women she was tāpui (betrothed or set apart). At this, Rakitamau blushed deeply. When he then asked for her sister the people laughed loudly, as they told him she was tāpui also. This news made him blush further so that his cheeks flamed. He left the island never to return and the women were so amused that they named the highest point on the island Hananui, referring to the great glow of Rakitamau, in memory of the event. Rakiura itself takes its name from the glowing skies of this region, the aurora lights.

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Pūtātāra was an old settlement under the lee of Hananui, a place to which an Otago rangātira (chief, Tukiauau, retired to seek refuge.

The mauri of Hananui represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with Hananui.

## **Statutory Acknowledgement for Lake Hauroko**

*(From Schedule 29 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Lake known as Hauroko, the location of which is shown on Allocation Plan MD 41 (SO 12258).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Lake Hauroko, as set out below.

### **Ngāi Tahu Association with Lake Hauroko**

Hauroko is strongly associated with urupā in the immediate vicinity, including one on an island in the lake, known to Pākehā as Mary Island. In particular, Ngāti Rakiāmoa and Ngāti Ruahikihiki have several traditions about their dead laying in this region.

Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected by secret locations. It is because of its proximity to these urupā that Hauroko is considered tapu by Ngāi Tahu.

The mauri of Hauroko represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the lake.

## **Statutory Acknowledgement for Manawapōpōre/Hikuraki (Mavora Lakes)**

*(From Schedule 39 – refer to Sections 205 and 206)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Wetland known as Manawapōpōre/Hikuraki (Mavora Lakes), the location of which is shown on Allocation Plan MD44 (SO 12235).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Manawapōpōre/Hikuraki, as set out below. Ngāi Tahu Association with Manawapōpōre/Hikuraki Manawapōpōre and Hikuraki are part of one of the most significant catchments in Murihiku (Southland). The wetland also lies in the path of the important trail from the mouth of the Ōreti River onward, via the Greenstone

Valley, to the head of Whakatipu-wai-Māori (Lake Wakatipu), or alternatively continuing along the Greenstone Valley and out via the Hollyford to the West Coast. These were important trading routes, to gather pounamu for exchange with northern iwi for materials and foods unavailable in the south.

The wetland area was, therefore, an integral part of a network of trails which were used in order to ensure the safest journey and incorporated locations along the way that were identified for

activities including camping overnight and gathering kai. Knowledge of these trails continues to be held by whanau and hapū and is regarded as taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the area.

In addition, the trails were part of summer time pursuits such as kai-hau-kai, whānaungatanga (the renewal and strengthening of family links) and arranging marriages with hapū from the neighbouring region of Otago and further afield.

Such strategic marriages between hapū strengthened the kupenga (net) of whakapapa and thus rights to use the resources of the area. Manawapōpōre (Lower Mavora) is noted for eel weirs, which were constructed on the lake edges for catching eels, utilising flat stones, built in a loop out from the lake edge, with gaps at either end and one in the middle. Construction of the eel weir recreates the type of environment that eels like to congregate in, hence reliable catches are made.

The tūpuna had considerable knowledge of such techniques, places for catching and gathering kai and other taonga, ways in which to use the resources of the area, the relationship of people with the area and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mauri of Manawapōpōre/Hikuraki represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the area.

## **Statutory Acknowledgement for Mataura River**

*(From Schedule 42 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the River known as Mataura, the location of which is shown on Allocation Plan MD 125 (SO 12264).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to the Mataura River, as set out below.

### **Ngāi Tahu Association with the Mataura River**

The area of the Mataura River above the Mataura Falls was traditionally used by the descendants of the Ngāti Mamoe chief, Parapara Te Whenua. The descendants of Parapara Te Whenua incorporate the lines of Ngāti Kuri from which the Mamaru family of Moeraki descend. Another famous tūpuna associated with the river was Kiritekateka, the daughter of Parapara Te Whenua. Kiritekateka was captured by Ngāi Tahu at Te Anau and her descendants make up the lines of many of the Ngāi Tahu families at Ōtākou

For Ngāi Tahu, histories such as these reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

The Mataura was an important mahinga kai, noted for its indigenous fishery. The Mataura Falls were particularly associated with the taking of kanakana (lamprey). The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other

taonga, ways in which to use the resources of Mātaura, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mauri of the Mātaura represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.

## **Statutory Acknowledgement (Bluff Hill) For Motupōhue**

*(From Schedule 44 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the area known as Motupōhue (Bluff Hill), as shown on Allocation Plan MS 8 (SO 12233).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Motupōhue as set out below.

### **Ngāi Tahu Association with Motupōhue**

The name Motupōhue is an ancient one, brought south by Ngāti Mamoe and Ngāi Tahu from the Hawkes Bay region where both tribes originated. The name recalls a history unique to the Ngāi Tuhaitara and Ngāti Kuri hapū that is captured in the line, 'Kei korā kei Motupōhue, he pāreka e kai ana, nā tō tūtae' ('It was there at Motupōhue that a shag stood, eating your excrement').

Oral traditions say that the Ngāti Mamoe leader, Te Rakitauneke, is buried upon this hill. Te Rakitauneke's saying was: 'Kia pai ai tāku tūiro ki Te Ara a Kiwa' ('Let me gaze upon Foveaux Strait'). Some traditions also place another Ngāti Mamoe leader, Tū Te Mokohu, on this hill.

For Ngāi Tahu, histories such as this represent the links and continuity between past and present generations, reinforce tribal identity and solidarity, and document the events which shaped Ngāi Tahu as an iwi. The mauri of Motupōhue represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with Motupōhue.

## **Statutory Acknowledgement for Moturau (Lake Manapōuri)**

*(From Schedule 45 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Lake known as Moturau (Lake Manapōuri), the location of which is shown on Allocation Plan MD 40 (SO 12257).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Moturau, as set out below.



## **Ngāi Tahu Association with Moturau**

Moturau (or Motu-ua) is one of the lakes referred to in the tradition of 'Ngā puna Wai Karikari o Rakaihautu' which tells how the principal lakes of Te Wai Pounamu were dug by the raNgātira (chief) Rakaihautu. Rakaihautu was the captain of the canoe, Uruao, which brought the tribe, Waitaha, to New Zealand. Rakaihautu beached his canoe at Whakatū (Nelson). From Whakatū, Rakaihautu divided the new arrivals in two, with his son taking one party to explore the coastline southwards and Rakaihautu taking another southwards by an inland route. On his inland journey southward, Rakaihautu used his famous kō (a tool similar to a spade) to dig the principal lakes of Te Wai Pounamu, including Moturau. Rakaihautu named the lake Motu-ua, a reference to the persistent rain which troubled his party here.

Tamatea and his party passed this way in their journey back to their homeland after their waka, Takitimu, broke its back at the mouth of the Waiau River. It was Tamatea who named the lake Moturau (possibly a woman's name but more likely to relate to the many islands found in the lake). Tamatea's party established a camp on the edge of the lake, which is probably under water now, and called it Whitiaka-te-rā (the shining of the sun), indicating that they enjoyed a very different experience of the lake from Rakaihautu. Other traditional names associated with the lake include Te Māui (North Arm), Te Tukeroa (Beehive), Manapōuri (north-eastern reach), Wairoa River (upper Waiau River), Te Rakatū (Garnock Burn), Te Konuotu-te-Makohu (Monument), and Huatea (South Arm).

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

A number of wāhi taonga and nohoanga associated with the lake are now under its waters. Eel weirs have been found at the Monument and Hope Arm of the lake, and there was a canoe manufacturing site at Pigeon Island. Such wāhi taonga are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna.

As a mahinga kai, the lake was important for the fowling it offered Murihiku coastal settlements in summer. The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka (landing places), places for gathering kai and other taonga, ways in which to use the resources of Moturau, the relationship of people with the lake and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mauri of Moturau represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the lake.

## **Statutory Acknowledgement for Ōreti River**

*(From Schedule 50 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the River known as Ōreti, the location of which is shown on Allocation Plan MD 123 (SO 12262).

## **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to the Ōreti River, as set out below.

## **Ngāi Tahu Association with the Ōreti River**

The Ōreti River traverses a significant area of Murihiku, stretching from its mouth at Invercargill almost to the edge of Whakatipu-wai-Māori (Lake Wakatipu). As such, it formed one of the main trails inland from the coast, with an important pounamu trade route continuing northward from the headwaters of the Ōreti and travelling, via the Mavora or Von River Valley, to the edge of Wakatipu and onto the Dart and Routeburn pounamu sources. Indeed, pounamu can be found in the upper reaches of the Ōreti itself.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Ōreti, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The kai resources of the Ōreti would have supported numerous parties venturing into the interior, and returning by mōkihi (vessels made of Raupō), laden with pounamu and mahinga kai. Nohoanga (temporary campsites) supported such travel by providing bases from which the travellers could go water fowling, eeling and catching inaka (whitebait), and were located along the course of Ōreti River.

There were a number of important settlement sites at the mouth of the Ōreti, in the New River estuary, including Ōmāui, which was located at the mouth of the Ōreti, where it passes the New River Heads. Ōue, at the mouth of the Ōreti River (New River estuary), opposite Ōmāui, was one of the principal settlements in Murihiku. Honekai who was a principal chief of Murihiku in his time was resident at this settlement in the early 1820s, at the time of the sealers. In 1850 there were said to still be 40 people living at the kaik at Ōmāui under the chief Mauhe. As a result of this pattern of occupation, there are a number of urupā located at the lower end of the Ōreti, in the estuarine area. Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected by secret locations.

The mauri of the Ōreti represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.

## **Statutory Acknowledgement for Te Ana-Au (Lake Te Anau)**

*(From Schedule 58 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Lake known as Te Ana-au (Lake Te Anau), the location of which is shown on Allocation Plan MD 42 (SO 12259).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Te Ana-au, as set out below.

### **Ngāi Tahu Association with Te Ana-au**

Te Ana-au is one of the lakes referred to in the tradition of 'Ngā puna Wai Karikari o Rakaihautu,' which tells how the principal lakes of Te Wai Pounamu were dug by the raNgātira (chief) Rakaihautu. Rakaihautu was the captain of the canoe, Uruao, which brought the tribe, Waitaha, to New Zealand. Rakaihautu beached his canoe at Whakatū (Nelson). From Whakatū, Rakaihautu divided the new arrivals in two, with his son taking one party to explore the coastline southwards and Rakaihautu taking another southwards by an inland route. On his inland journey southward, Rakaihautu used his famous kō (a tool similar to a spade) to dig the principal lakes of Te Wai Pounamu, including Te Ana-au.

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Te Ana-au figures in Ngāi Tahu histories as one of the last places where Ngāi Tahu and Ngāti Mamoe came into conflict after the peace established between Rakihihia and Te Hautapunui o Tū. After Rakihihia had died, his bones were stripped of flesh and were buried in a cave on a cliff facing the seaside near Dunedin. However, a landslip led to the bones being uncovered. The bones were found by Ngāi Tahu fishermen and made into fish hooks, an act designed to insult. Among Māori it was a practice to take the bones of enemy leaders who had recently died, fashion them into fish hooks and present fish caught with them to the enemy as a gift. Once the fish had been eaten, the enemy would be told they had feasted on fish that had in turn feasted on their dead.

While Ngāi Tahu were fishing with their Ngāti Mamoe relations, one of the Ngāi Tahu fisherman referred to the fish biting the bones of Rakihihia. The Ngāti Mamoe fisherman recognised the insult and checked the cave in which their leader had been interred. Finding that the cave had been desecrated, the Ngāti Mamoe found and killed the son of a senior Ngāi Tahu raNgātira (chief). Before Ngāi Tahu could retaliate, the Ngāti Mamoe were warned that they should leave the coast for the inland lakes where they would not be found. Ngāti Mamoe headed to Te Ana-au. Among this Ngāti Mamoe party was Rakihihia's brother, Pukutahi. Pukutahi fell sick along Te Ana-au's shoreline and rested while his followers explored the lake to find a safer place.

Approaching the lakes, Te Hau, the leader of the Ngāi Tahu party, observed that the fugitives had divided in two, and unfortunately for Pukutahi decided to follow the trail up to Te Ana-au. The Ngāti Mamoe camp was found and in the morning the chiefs of Ngāti Mamoe, including Pukutahi, were killed. This was to be one of the last battles between the tribes.

The lake was an important mahinga kai in the interior. The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Te Ana-au, the relationship of people with the lake and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mauri of Te Ana-au represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the lake.

## **Statutory Acknowledgement for Toi Toi Wetland, Rakiura**

*(From Schedule 63 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Wetland known as Toi Toi, the location of which is shown on Allocation Plan MD 135 (SO 12266).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Toi Toi, as set out below.

### **Ngāi Tahu Association with Toi Toi**

Toi Toi wetland is particularly significant to Ngāi Tahu as a kākāpō habitat. The kākāpō, once a prized mahinga kai for Ngāi Tahu, used the wetland as a feeding ground. The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Toi Toi, the relationship of people with the wetland and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

Much of Toi Toi's value lies in its pristine and unmodified character. The mauri of Toi Toi represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the wetland.

## **Statutory Acknowledgement for Tutoko**

*(From Schedule 66 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the mountain known as Tutoko, as shown on Allocation Plan MS 3 (SO 24747 (Otago Land District) and SO 12231 (Southland Land District)).

### **Preamble**

Under Sections 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Tutoko as set out below.

### **Ngāi Tahu Association with Tutoko**

The Fiordland area, within which Tutoko stands, represents, in tradition, the raised up sides of Te Waka o Aoraki, after it foundered on a submerged reef and its occupants, Aoraki and his brothers, were turned to stone. These people are now manifested in the highest peaks in Ka Tiritiri o Te Moana (the Southern Alps). The fiords at the southern end of the Alps were carved out of the raised side of the wrecked Waka o Aoraki by Tū Te Rakiwhānoa, so as to make the waka (canoe) habitable by humans. The deep gorges and long waterways that are the fiords were provided as safe havens on this rugged coast, and stocked with fish, forest and birds to sustain humans.

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events that have shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Tutoko is not, in fact, the original name of the maunga (mountain), but was applied by Dr J Hector in 1863 after he met the old raNgātira (chief) Tutoko and his two daughters, Sara and May. The hills to the north of the Kōtuku River are named the Sara Hills, and those to the south May Hills, after these daughters. The use of this name is seen as appropriate to Ngāi Tahu, as Tutoko was an important raNgātira of this region at that time, and is represented by the mountain.

Tutoko is the kaitiaki (guardian) of Whakatipuwaitai, the westernmost creation of Rakaihautu and the southernmost kāinga (settlement) of Te Tai Poutini (West Coast) pounamu trails, which provides access to koko-takiwai (a type of pounamu) at Piopiotahi (Milford Sound) and Poison Bay further to the south. The kāinga was also an important staging post for travel into the Lake Wakatipu area via the Hollyford Valley. All of these trails, whether by land or by sea, lie under the shadow of Tutoko.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of the land, the relationship of people with the land and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

Mountains such as Tutoko are linked in whakapapa to the gods, and being the closest earthly elements to Raki the sky father, they are likened to the children of Raki and Papa, reaching skyward. The mauri of Tutoko represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the land.

## **Statutory Acknowledgement for Uruwera (Lake George)**

*(From Schedule 68 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the Wetland known as Uruwera (Lake George), the location of which is shown on Allocation Plan MD 59 (SO 12261).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Uruwera, as set out below.

### **Ngāi Tahu Association with Uruwera**

Lake George is known to Ngāi Tahu as Uruwera, named after a descendant of the Waitaha raNgātira (chief), Rakaihautu. Uruwera's descent lines lead to Te Ropuake, the wife of Mako, a leading chief of Ngāti Irakehu of Banks Peninsula. Te Ropuake's mother was Hine Te Awheka, wife of Te Rakiwhakaputa, another leading Ngāi Tahu chief who eventually occupied Rapaki on Banks Peninsula. Both Mako and Te Rakiwhakaputa migrated to Canterbury with the Ngāi Tahu hapū, Ngai Tuhaitara. Examples such as this demonstrate the interconnected nature of Ngāi Tahu whakapapa.

For Ngāi Tahu, histories such as this reinforce tribal identity and solidarity and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Foods taken from this mahinga kai included tuna (eels), inaka (whitebait) and water fowl.

Uruwera has been in continual use by Ngāi Tahu as a mahinga kai for many generations. The lake is a particularly important resource for Ngāi Tahu from Ōraka, Awarua and Ruapuke.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Uruwera, the relationship of people with the lake and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

As a result of this history of use, there are a number of urupā associated with Uruwera. Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected by secret locations.

The mauri of Uruwera represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the lake.

## **Statutory Acknowledgement for Waiau River**

*(From Schedule 69 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the River known as Waiau, the location of which is shown on Allocation Plan MD 124 (SO 12263).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to the Waiau, as set out below.

### **Ngāi Tahu Association with the Waiau**

The Waiau River features in the earliest of traditional accounts, and was a place and resource well known to the earliest tūpuna (ancestors) to visit the area. Rakaihautu and his followers traced the Waiau from its source in Te Ana-au (Lake Te Anau) and Motu-ua or Moturau (Lake Manapōuri), to its meeting with the sea at Te Wae Wae Bay.

The waka Takitimu, under the command of the raNgātira (chief) Tamatea, was wrecked near the mouth of the Waiau River and the survivors who landed at the mouth named the river “Waiau” due to the swirling nature of its waters. Tamatea and his party made their way up the river to Lake Manapōuri where they established a camp site. The journey of Tamatea was bedevilled by the disappearance of Kaheraki who was betrothed to Kāhungunu, a son of Tamatea, Kaheraki strayed away from the party, and was captured by the Maeroero (spirits of the mountain).

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

The Waiau has strong links with Waitaha who, following their arrival in the waka Uruao, populated and spread their influence over vast tracts of the South Island. They were the moa hunters, the original artisans of the land. There are remnants of Waitaha rock art associated with the river. Surviving rock art remnants are a particular taonga of the area, providing a unique record of the lives and beliefs of the people who travelled the river.

There is also a strong Ngāti Mamoe influence in this area of the country. Ngāti Mamoe absorbed and intermarried with the Waitaha and settled along the eastern coast of Te Wai Pounamu. The arrival of Ngāi Tahu in Te Wai Pounamu caused Ngāti Mamoe to become concentrated in the southern part of the island, with intermarriage between the two iwi occurring later than was the case further north. The result is that there is a greater degree of Ngāti Mamoe influence retained in this area than in other parts of the island. These are the three iwi who, through conflict and alliance, have merged in the whakapapa (genealogy) of Ngāi Tahu Whānui.

Numerous archaeological sites and wāhi taonga attest to the history of occupation and use of the river. These are places holding the memories traditions, victories and defeats of Ngāi Tahu tūpuna. The main nohoanga (occupation site) on the Waiau was at the mouth and was called Te Tua a Hatu. The raNgātira (chief) Te Wae Wae had his kāinga nohoanga on the left bank of the Waiau River mouth.

The Waiau, which once had the second largest flow of any river in New Zealand, had a huge influence on the lives and seasonal patterns of the people of Murihiku, over many generations. The river was a major mahinga kai: aruhe (fernroot), tī root, fish, tuna (eels), shellfish and tutu were gathered in the summer, a range of fish were caught in the autumn, kanakana (lamprey) were caught in the spring, while the people were largely reliant during winter on foods gathered and preserved earlier in the year. Rauri (reserves) were applied to the mahinga kai resources, so that people from one hapū or whānau never gathered kai from areas of another hapū or whānau. Some 200 species of plants and animals were utilised by Ngāi Tahu as a food resource in and near the Waiau.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of the Waiau, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

Place names provide many indicators of the values associated with different areas, including Waiharakeke (flax), Papatōtara (tōtara logs or bark), Kirirua (a type of eel found in the lagoon), Te Rua o te Kaiamio (a rock shelter that was a ‘designated meeting place’ for the local Māori, similar to a marae) and Ka Kerehu o Tamatea — (“charcoal from the fire of Tamatea” — black rocks near old Tuatapere ferry site).

The Waiau River was a major travelling route connecting Murihiku and Te Ara a Kiwa (Foveaux Strait) to Te Tai Poutini (the West Coast), and as such was a important link between hapū and iwi. Pounamu on the West Coast, and summer expeditions to Manapōuri (Motu-ua or Moturau) for mahinga kai were the main motivations for movement up and down the Waiau. Mōkihi (vessels made from Raupō) were utilised for travel down the river and were a very effective and common mode of travel, making transportation of substantial loads of resources possible.

The tūpuna had an intimate knowledge of navigation, river routes, safe harbours and landing places, and the locations of food and other resources on the Waiau. The river was an integral part of a network of trails which were used in order to ensure the safest journey and incorporated locations along the way that were identified for activities including camping overnight and gathering kai. Knowledge of these trails continues to be held by whānau and hapū and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the river.

The Waiau was once a large and powerful river, up to 500m across at the mouth, narrowing to 200 m further upstream. The water flow from the Waiau River was an important factor in the

ecological health and bio-diversity of the coastal resources.

The mauri of the Waiau represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.

## **Statutory Acknowledgement for Waituna Wetland**

*(From Schedule 73 – refer to Sections 205 and 206 Ngāi Tahu Claims Settlement Act 1998)*

### **Statutory Area**

The statutory area to which this statutory acknowledgement applies is the wetland known as Waituna, the location of which is shown on Allocation Plan MD 58 (SO 12260).

### **Preamble**

Under Section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Waituna, as set out below.

### **Ngāi Tahu Association with Waituna**

Intermittently open to the sea, Waituna wetland (with the western end, where the lagoon breaks out to sea known as Kā-puna-wai) was a major food basket utilised by nohoanga and permanent settlements located in the immediate vicinity of the wetlands, and further away, for its wide variety of reliable mahinga kai. The great diversity of wildlife associated with the complex includes several breeds of ducks, white heron, gulls, spoonbill, kōtuku, oyster-catcher, dotterels, terns and fernbirds. The wetlands are important kōhanga (spawning) grounds for a number of indigenous fish species. Kaimoana available includes giant and banded kōkopu, varieties of flatfish, tuna (eels), kanakana (lamprey), inaka (whitebait), waikākahi (freshwater mussel) and waikōura (freshwater crayfish). Harakeke, Raupō, manuka, tōtara and tōtara bark, and Pīngao were also regularly harvested cultural materials. Paru or black mud was available, particularly sought after as a product for making dyes.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Waituna, the relationship of people with the lake and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

As a result of this history of use and occupation of the area, there are wāhi tapu and wāhi taonga all along its shores. It is also possible that particular sections of the wetland were used for waiwhakaheketūpāku (water burial).

Urupā and wāhi tapu are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected by secret locations.

The mauri of Waituna represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the area.



## Purposes of Statutory Acknowledgements

Pursuant to Section 215, and without limiting the rest of this schedule, the only purposes of these statutory acknowledgements are—

- (a) to require that consent authorities forward summaries of resource consent applications to Te Rūnanga o Ngāi Tahu as required by regulations made pursuant to Section 207 (clause 12.2.3 of the deed of settlement); and
- (b) to require that consent authorities, the Historic Places Trust, or the Environment Court, as the case may be, have regard to these statutory acknowledgements, as provided in Sections 208 to 210 (clause 12.2.4 of the deed of settlement); and
- (c) to empower the Minister responsible for management of these statutory acknowledgement areas or the Commissioner of Crown Lands, as the case may be, to enter into a Deed of Recognition as provided in Section 212 (clause 12.2.6 of the deed of settlement); and
- (d) to enable Te Rūnanga o Ngāi Tahu and any member of Ngāi Tahu Whānui to cite these statutory acknowledgements as evidence of the association of Ngāi Tahu to these statutory acknowledgement areas as provided in Section 211 (clause 12.2.5 of the deed of settlement).

## Limitations on Effect of Statutory Acknowledgements

Except as expressly provided in Sections 208 to 211, 213, and 215,—

- (a) these statutory acknowledgements do not affect, and are not to be taken into account in, the exercise of any power, duty, or function by any person or entity under any statute, regulation, or bylaw; and
- (b) without limiting paragraph (a), no person or entity, in considering any matter or making any decision or recommendation under statute, regulation, or bylaw, may give any greater or lesser weight to Ngāi Tahu's association to these statutory acknowledgement areas (as described in these statutory acknowledgements) than that person or entity would give under the relevant statute, regulation, or bylaw, if these statutory acknowledgements did not exist.

Except as expressly provided in this Act, these statutory acknowledgements do not affect the lawful rights or interests of any person who is not a party to the deed of settlement.

Except as expressly provided in this Act, these statutory acknowledgements do not, of themselves, have the effect of granting, creating, or providing evidence of any estate or interest in, or any rights of any kind whatsoever relating to, these statutory acknowledgement areas.

## Other mechanisms relevant to this Plan

The Ngāi Tahu Claims Settlement Act also sets up a range of other sites and information that may be relevant to any applicant or consent holder, or to the public generally. These are Nohoanga which are camp sites at specified places on rivers within the region; Tōpuni which are landscape features of special importance or value to Ngāi Tahu; and Taonga species which are a range of flora and fauna that culturally valued by Ngāi Tahu.

The following set out the basic detail on the location and types of places and species referred to in the Schedules to the Act.

## Nohoanga (Camp Sites)

### Sites over which Nohoanga Entitlements to be Granted in Southland

*(From Schedule 95 – refer to Section 246 Ngāi Tahu Claims Settlement Act 1998)*

- |    |                        |  |
|----|------------------------|--|
| 45 | Lake Manapōuri         | Lake Manapōuri Lake Manapōuri - 1 hectare approximately, being Part Manapōuri Lakebed. Subject survey, as shown on Allocation Plan MN 73 (SO 12234).   |
| 46 | Lake Te Anau           | Lake Mistletoe - 1 hectare approximately, being Part Section 6, Block III, Eglinton Survey District (SO 6989). Subject to survey, as shown on Allocation Plan MN 446 (SO 12254).                                 |
| 47 | Lake Te Anau           | Lake Te Anau – (91 hectares approximately Mile Creek) being Part Run 301B (SO 4685). Subject to survey, as shown on Allocation Plan MN 486 (SO 12256).   |
| 48 | Mataura River          | Ardlussa - 1 hectare, approximately, being Parts Crown Land, Mataura Riverbed and unformed legal, road, Block III, Wendonside Survey District. Subject to survey, as shown on Allocation Plan MN 475 (SO 12255). |
| 49 | Mavora Lakes           | Mavora Lakes - 1 hectare, approximately, being Part Run 568 (SO 6800). Subject to survey, as shown on Allocation Plan MN 77 (SO 12235).  |
| 50 | Ōreti River            | Junction of 1 hectare, approximately, Ōreti River and being Part Section 136, Irthing Stream Eyre Survey District (SO 1). Subject to survey, as shown on Allocation Plan MN 263 (SO 12248).                      |
| 51 | Waiua River and Lagoon | Waiua River - 1 hectare, approximately, (No 1) being Part Section 10 and Part Waiua Riverbed, Block I, Alton Survey District (SO 2840) Subject to survey, as shown on Allocation Plan MN 90(SO 12236).           |
| 52 | Waiua River and Lagoon | Waiua River -1 hectare, a proximately, (No 2) being Part Sections 7 and 7A, Block XV, Longwood Survey District (SOs 2021 and 3726) Subject to survey, as shown on Allocation Plan MN 444 (SO 12253).             |
| 53 | Waiua River and Lagoon | Queen's Reach - 1 hectare, approximately, being Part Section 25, Block II, Manapōuri Survey District (SO 10887). Subject to survey as shown on Allocation Plan MN 258 (SO 12245).                                |
| 54 | Waikaia River          | Piano Flat - 5800 m <sup>2</sup> , approximately, being Sections 8, 9, 10, 11 and Part Section 7, Block VI, Gap Survey District (SO 6837) Subject to survey, as shown on Allocation Plan MN 259 (SO 12246).      |

55 Waikawa River and Harbour Waikawa River - 3085 m2 approximately (Public access to the river along track to continue) being Part Section 42, Town of Niagara Comprised in existing Document 084684.1. Subject to survey, as shown on Allocation Plan MN 260 (SO 12247).

## **Tōpuni**

### **Tōpuni for Motupōhue (Bluff Hill)**

*(From Schedule 85 – refer to Sections 238 and 239 Ngāi Tahu Claims Settlement Act 1998)*

#### **Description of Area**

The area over which the Tōpuni is created is the area known as Motupōhue, as shown on Allocation Plan MS 8 (SO 12233).

#### **Preamble**

Under Section 239 (clause 12.5.3 of the deed of settlement), the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional values relating to Motupōhue as set out below.

#### **Ngāi Tahu Values Relating to Motupōhue**

The name Motupōhue is an ancient one, brought south by Ngāti Mamoe and Ngāi Tahu from the Hawkes Bay region where both tribes originated. The name recalls a history unique to the Ngāi Tuhaitara and Ngāti Kuri hapū that is captured in the line, 'Kei korā kei Motupōhue, he pāreka e kai ana, nā tō tūtae' ('It was there at Motupōhue that a shag stood, eating your excrement').

Oral traditions say that the Ngāti Mamoe leader, Te Rakitauneke, is buried upon this hill. Te Rakitauneke's saying was: 'Kia pai ai tāku tītiro ki Te Ara a Kiwa' ('Let me gaze upon Foveaux Strait'). Some traditions also place another Ngāti Mamoe leader, Tū Te Mokohu, on this hill.

For Ngāi Tahu, histories such as this represent the links and continuity between past and present generations, reinforce tribal identity and solidarity, and document the events which shaped Ngāi Tahu as an iwi.

The mauri of Motupōhue represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with Motupōhue.

### **Tōpuni for Takitimu Range, Southland**

*(From Schedule 89 – refer to Sections 238 and 239 Ngāi Tahu Claims Settlement Act 1998)*

#### **Description of Area**

The area over which the Tōpuni is created is the area known as Takitimu Range located in Murihiku (Southland), as shown on Allocation Plan MS 5 (SO 12232).

#### **Preamble**

Under Section 239 (clause 12.5.3 of the deed of settlement), the Crown acknowledges

Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional values relating to Takitimu as set out below.

### **Ngāi Tahu Values Relating to Takitimu**

The Takitimu maunga (mountains) were named by Tamatea, the captain of the Takitimu waka (canoe) in memory of the waka after it struck trouble in Te Waewae Bay, and was eventually wrecked near the mouth of the Waimeha Stream.

Tradition states that the Takitimu waka was overtaken by three large waves known as O-te-wao, Ō-roko and Ō-kākā, followed by a cross wave, which resulted in the Takitimu being hurled well inland, with its cargo being strewn about. In some accounts the ranges inland from Te Waewae Bay are likened to the huge waves that caused the demise of the waka Takitimu. In other accounts the Takitimu maunga are considered to be the upturned hull of the waka.

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events that have shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Tamatea and his crew made their way overland from the site of the wreck. Tamatea likened the majestic and upright Takitimu maunga when he viewed them from the south coast, to the crew of the Takitimu struggling to control the waka in adverse conditions. During the overland journey past the Takitimu maunga Tamatea lost one of his party, a woman named Kaheraki who strayed away from the party and was captured by the maeroero (spirits of the mountain) and never seen again. Kaheraki had been betrothed to Kāhungunu, who was a son of Tamatea.

The Takitimu maunga are, therefore, a symbolic reminder of the famous exploits of Tamatea in the south, and a reminder forever locked into the landscape, of the tūpuna (ancestral) waka Takitimu, adding lustre to the noted spiritual values of the western Southland landscape. The Takitimu maunga are visible from all points of the Murihiku landscape, and are also a noted weather indicator.

The mauri of Takitimu represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the land.

### **Tōpuni for Tutoko**

*(From Schedule 93 – refer to Sections 238 and 239 Ngāi Tahu Claims Settlement Act 1998)*

#### **Description of Area**

The area over which the Tōpuni is created is the area known as Tutoko located in Fiordland National Park, as shown on Allocation Plan MS 3 (SO 24747 (Otago Land District) and SO 12231 (Southland Land District)).

#### **Preamble**

Under Section 239 (clause 12.5.3 of the deed of settlement), the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional values relating to Tutoko, as set out below.

### **Ngāi Tahu Values Relating to Tutoko**

The Fiordland area, within which Tutoko stands, represents, in tradition, the raised up sides of

Te Waka o Aoraki, after it foundered on a submerged reef and its occupants, Aoraki and his brothers, were turned to stone. These people are now manifested in the highest peaks in Ka Tiritiri o Te Moana (the Southern Alps). The fiords at the southern end of the Alps were carved out of the raised side of the wrecked Waka o Aoraki by Tū Te Rakiwhānoa, so as to make the waka (canoe) habitable by humans. The deep gorges and long waterways that are the fiords were provided as safe havens on this rugged coast, and stocked with fish, forest and birds to sustain humans.

For Ngāi Tahu, traditions such as this represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events that have shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Tutoko is not, in fact, the original name of the maunga (mountain), but was applied by Dr J Hector in 1863 after he met the old raNgātira (chief) Tutoko and his two daughters, Sara and May. The hills to the north of the Kōtuku River are named the Sara Hills, and those to the south, May Hills, after these daughters. The use of this name is seen as appropriate to Ngāi Tahu, as Tutoko was an important raNgātira of this region at that time, and is represented by the mountain.

Tutoko is the kaitiaki (guardian) of Whakatipuwaitai, the westernmost creation of Rakaihautu and the southernmost kāinga (settlement) of Te Tai Poutini (West Coast) pounamu trails, which provides access to koko-takiwai (a type of pounamu) at Piopiotahi (Milford Sound) and Poison Bay further to the south. The kāinga was also an important staging post for travel into the Lake Wakatipu area via the Hollyford Valley. All of these trails, whether by land or by sea, lie under the shadow of Mt Tutoko.

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of the land, the relationship of people with the land and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

Mountains such as Tutoko are linked in whakapapa to the gods, and being the closest earthly elements to Raki the sky father, they are likened to the children of Raki and Papa, reaching skyward. The mauri of Tutoko represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the land.

## Appendix C - ANZECC Sediment Guidelines

### Assessment of Contaminants in Sediments

The table is an extract from the national guidelines for sediment quality (Australia New Zealand Environment and Conservation Council - ANZECC 2000).

The levels referred to in the table represent guidelines, based on overseas biological effects data due to the lack of local data. Values are expressed as concentrations on a dry weight basis. For organics, values are normalised to 1% organic carbon, rather than expressing as mg/kg organic carbon as is sometimes done. This requires that if the sediment organic carbon content is markedly higher than 1%, the guideline value should be adjusted accordingly.

If the lower sediment quality guideline (ISQG-Low) for a particular contaminant is not exceeded, the chemical is unlikely to cause any biological impact on organisms inhabiting that sediment.

If chemical concentrations exceed the ISQG-Low levels, they may be toxic and further investigation is recommended to determine whether they pose a threat.

Recommended sediment quality guidelines<sub>a</sub>

These guidelines apply to the sediment after reasonable mixing.

Contaminant	ISQG-Low
<b>Metals</b> (mg/kg dry wt.)	
Antimony	2
Cadmium	1.5
Chromium	80
Copper	65
Lead	50
Mercury	0.15
Nickel	21
Silver	1
Zinc	200
<b>Metalloids</b> (mg/kg dry wt.)	
Arsenic	20
<b>Organometallics</b> (µSn/kg dry wt.)	
Tributyltin	5
<b>Organics</b> (µg/kg dry wt.) <sub>b</sub>	
Acenaphthene	16
Acenaphthalene	44
Anthracene	85
Fluorene	19
Naphthalene	160
Phenanthrene	240
Low Molecular Weight PAHs	552

Contaminant	ISQG-Low
Benzo(a)pyrene	430
Dibenzo(a,h)anthracene	63
Chrysene	384
Fluoranthene	600
Pyrene	665
High Molecular Weight PAHs <sub>c</sub>	1700
Total PAHs	4000
Total DDT	1.6
p,p'-DDE	2.2
o,p'- + p,p'-DDD	2
Chlordane	0.5
Dieldrin	0.02
Endrin	0.02
Lindane	0.32
Total PCBs	23

a Primarily adapted from Long et al (1995)

b Normalised to 1% organic carbon

c Low molecular weight PAHs are the sum of concentrations of acenaphthene, acenaphthalene, anthracene, fluorene, 2-methylnaphthalene, naphthalene and phenanthrene; high molecular weight PAHs are the sum of concentrations of benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a, h) anthracene, fluoranthene and pyrene.

## Appendix D - Good Spray Management Practices

### Introduction

This appendix has been developed from various sources of information, including information sheets from MPI, and regional plans developed by other regional councils. The material relating to spray management is based on information contained in New Zealand Standard 8409 (Management of Agrichemicals) developed by the New Zealand Agrichemical Education Trust.

This appendix has been included in the Plan in a simple and convenient form of general public information and education purposes. The information contained in this appendix also provides general guidance on the best practicable option for preventing or minimising adverse effects on the environment from the application of agrichemicals. It provides a general indication of the nature of the conditions that might be attached to a resource consent for the application of agrichemicals.

Any person discharging agrichemicals:

- should use only agrichemicals with label claims for use in or over bodies of water;
- for spraying of emergent plants should not submerge treated plants;
- should always proceed upstream while spraying surface water, to avoid any buildup of agrichemical concentration in the water;
- should notify landowners whose stock have access to surface water, or who use the surface water for potable water;
- should apply agrichemicals to parts of the waterbody at intervals of at least 10 days and not simultaneously over the whole area. Fish then have an opportunity to move to untreated areas if the dissolved oxygen content drops significantly;
- water that has been treated with agrichemicals should not be used for the following purposes, until the times specified have elapsed after treatment:
  - ◆ standing water: bathing, human consumption, fish farming, and livestock watering (24 hours); overhead irrigation (10 days);
  - ◆ flowing water should not be used for the above purposes for 24 hours. Though it is difficult to determine the distance downstream from the treated stretch that the limitation should apply in, the general criteria are:
    - near-static water (flowing not more than 1 km in 24 hours): the limitation should apply to the treated section and 1 km downstream;
    - faster flowing water: the limitation should apply over the treated stretch and the distance treated water would move in 24 hours, or up to the point of discharge into the main body of receiving water.

Any person application discharging agrichemicals by spray application:

- should undertake an accredited or recognised course in the use of agrichemical sprays or act under the supervision of a registered agrichemical applicator;
- should not spray if the windspeed over the area to be sprayed is more than one metre per second;
- should have particular regard to windspeed and direction during the application of spray;
- should discharge sprays during periods of positive air movement away from sensitive receiving environments (including surface water, places of public assembly, and public amenity areas);



- should have particular regard to selection of nozzle size and pressure of spray units, to prevent or minimise the potential for spray drift.
- should dilute spray solutions to the proper concentration for application;
- should dispose of surplus spray solution and spray containers according to recommendations of the manufacturer or supplier, as stated in the directions on the product container label;
- should keep specific records of the type of each spray applied, the volume of spray used, the volume of product concentrate used, the date, and the locality;
- should use only those agrichemicals currently licensed for use within New Zealand under the Hazardous Substances and New Organisms Act 1996;
- should apply sprays strictly in accordance with the manufacturer's instructions, as stated on the product container label;
- should preferably use sprays of low volatility or low toxicity;
- should use equipment generating a droplet size greater than 50 microns in diameter, and preferably greater than 250 microns.

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## **NZS 8409:2004**

### **Appendix G - Spray Drift Hazard and Weather Conditions**

(Informative)

#### ***G1 Introduction***

Application of agrichemicals in particulate form, whether as solids or liquids (droplets) inevitably means some losses occur in transferring the agrichemical to the target. The law requires any such losses to be minimized.

The Hazardous Substances (Classes 6, 8 and 9) Regulations specify the setting of tolerable exposure limits for toxic substances (Class 6) and environmental exposure limits for ecotoxic substances (Class 9). It is an offence to exceed these limits when applying agrichemicals.

#### ***G2 Off-target Movement***

Off-target movement of spray i.e. spray drift, occurs in two main ways:

- (a) primary drift – the movement of spray as droplets;
- (b) secondary drift – the movement of spray contaminated dust, soil or sand particles and movement of spray as a vapour (gaseous phase). This also applies to the off-site movement of fumigants.

There are a number of factors that can affect both forms of drift, including droplet size, spray release height (relative to the ground or inversions) and wind speed. Vapour pressure (volatility) of the agrichemical can affect secondary drift where it occurs by volatilization from the target surface after deposition. In view of the two types of drift, an internationally accepted definition of drift has been developed.

Drift (of agrichemical) means the physical movement of agrichemical through the air at the time of application or soon thereafter to any off-target site. The movement of agrichemical caused by erosion, migration, volatility, or windblown soil particles to off-target sites that occurs after the application is not included in the definition unless specifically addressed on the product label,

with respect to drift control requirements.

The applicator is responsible for primary drift because it occurs at the time of spraying and the means of minimizing primary drift are within the control of the applicator. Factors related to the application equipment (e.g. droplet size, height of release of the spray) can be adjusted by the applicator that can also make judgements about the weather (e.g. wind speed, wind direction).

Physical movement of agrichemical can also occur as vapour at the time of spraying so can be considered primary drift. The applicator can demonstrate responsibility by selecting agrichemicals that are known to have low volatility (product label information) and choosing weather conditions that are not conducive to volatilization of the agrichemical at the time of application.

Research shows that vapour drift occurs mostly as secondary drift.

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The applicator has little or no control over secondary drift apart from selection of non-volatile agrichemicals and prediction of the weather condition in the period following the agrichemical application (see Appendix D and G7 for further comment on vapour drift).

#### ***G3 Drift Hazard***

The hazard from spray drift depends on two main factors: the extent of drift (how much spray is drifting and how far it is likely to travel), and what is put at risk from spray drift. In many cases, the extent of crop injury from drift is dependent on the factors of concentration of the agrichemical and the time available for uptake. This means that even low concentrations in time can produce injury. This explains the recognition of high hazard under apparently calm conditions.

Some guidance for operators is required, and table G1 sets out the important factors. Users should note that additional factors such as adequate notification to those who may be at risk, so that they can take precautionary action, effectively reduces drift hazard.

#### ***G4 Sensitive Areas***

There can be cases where there is considerable spray drift, but no drift hazard because there is nothing that is at risk from the spray drift, i.e. no sensitive areas. Assessing drift hazard is partly a function of the existence of any sensitive areas, and therefore before spraying, users should identify and record any sensitive areas located near the target area. Responsible agrichemical application means being able to demonstrate, by production of a map, sketch, field notes or other documentation that this requirement has been met. The following are examples of sensitive areas, (except where the area involved is the intended spray target). Check with the regional authority however as there may be sensitive areas specified in the regional plan.

Sensitive areas include:

- (a) residential buildings;
- (b) school buildings;
- (c) public places and amenity areas where people congregate;
- (d) public water supply catchments and intakes;

- (e) waterbodies and associated riparian vegetation;
- (f) sensitive crops or farming systems (e.g. organic farms, greenhouses);
- (g) wetlands, indigenous vegetation habitat areas and reserves;
- (h) public roads.

Table G1 summarises the main factors affecting any hazard associated with spray drift.

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**Table G1 – Drift hazard guidance chart**

Potential Drift Hazard Scale			
Factor	High hazard	Low hazard	Comment
Wind speed	Zero/very low (less than 1 m/s) or greater than 6 m/s	Steady (1 – 3 m/s)	Measure or estimate using smoke
Wind direction	Unpredictable	Predictable, and away from sensitive areas	Use smoke to indicate
Humidity	Low (delta T > 8oC)	High (delta < 4 °C)	Measure, using whirling psychrometer
Atmospheric stability	Inversion layer present	No inversion layer	Use cold smoke to indicate
Maximum height of release of agrichemical	>1.5 m above the target	< 0.5 m above the target	Application technique See 5.3.4.2
Particle (droplet) size	< 50 microns diameter	> 250 microns diameter	See Q1
Volatility of agrichemical	High (vapour pressure > 10 mPa)	Low (vapour pressure < 0.1 mPa)	Check product label, SDS, or PSC
Sensitive area	Close (< 100 m) away	None, or more than 1 km distant	Identify on property protocol (see M4)
Buffer zone	None	Yes (> 100 m)	Guideline only
Shelter belts	No shelter	Live shelter, > 3 m high and 1 m thick	Not for herbicides
Toxicity	Class 6.1A, B, C, D	Class 6.1E	Check label

**Note –**

- (1) The potential drift hazard scale is given as high or low, and intermediate situations should be rated accordingly. For example, a droplet size of 150 microns diameter would represent a moderate drift hazard.
- (2) Some factors can be changed to reduce the hazard rating, e.g. use lower volatility chemical, larger droplet size.
- (3) All of the weather related factors are to be assessed at the application site.

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- (4) Toxicity of the agrichemical has been included on the chart, but use of a schedule heading is only one indicator of toxicity and is not always sufficient. In all cases, users should select the least toxic agrichemical that is suitable for the specific application. Check the label and product information.
- (5) 1 m/sec = 3.6 km/h; 6 m/sec = 20 km/h (approx.).

**G5 Weather Conditions**

The important weather conditions at the application site are as follows.

**G5.1 Wind direction**

Spray can be moved away from the application site (target area) by any wind. The wind direction is also important with respect to the application technique; all applications should be made with a cross-wind, starting at the downwind edge. Smoke generators, or other reliable indicators of wind speed and direction should be used at the application site where conditions dictate.

**Note** - Heat producing smoke generators can produce thermal lift, which may mask the presence of an inversion.

**G5.2 Wind speed**

Very low wind speeds usually mean the wind direction is unpredictable. Higher wind speeds mean a stable wind direction, and may also give better spray penetration into some crops, by turbulent mixing. Spraying should not be carried out in high winds (see table G1).

**G5.3 Inversions**

**G5.3.1 Condition favouring inversions**

An inversion condition develops when a band of warmer air develops at some height above the ground. It most commonly forms when air close to the ground cools rapidly as a result of heat loss by radiation to a cloudless sky. The presence of an inversion can be detected by measuring air temperatures and wind speeds at various heights, but for practical purposes, the easiest method is to use smoke. Smoke, rising vertically, cannot pass through the inversion layer, but travels horizontally usually just below the layer of warm air.

**Note** – Do not rely on smoky fires to generate the smoke as the thermal up draught from the fire may allow the smoke to penetrate the inversion layer, and thereby hide its presence, or overcome a light wind movement.

### **G5.3.2 *Spraying advice***

Spraying under inversion conditions means the final destination of the chemical cannot be predicted with any certainty, and should only be carried out if the spray droplets are non-evaporative, are discharged below the inversion layer, and are greater than 250 microns in diameter.

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## **NZS 8409:2004**

### **G5.4 Katabatic winds**

Katabatic winds flow downhill and are caused by cold air sinking down a slope. This usually occurs early in the morning. Winds of up to 6 knots (3 m/sec or 10 km/h) may flow out of valley systems some considerable distance across flat country.

### **G5.5 Anabatic winds**

Anabatic winds flow uphill, and are caused by warm air rising up the slope as the sun warms them. Anabatic winds usually follow Katabatic winds in the morning. When wind speeds are low (less than 2-3 km/h), wind direction can be unpredictable.

The rule should always be – do not apply agrichemical sprays or dusts unless the wind direction and speed are known, or the agrichemical is non-volatile and applied as particles or droplets greater than 250 microns diameter.

## **G5.6 Temperature and relative humidity (RH)**

### **G5.6.1 *Temperature***

High air temperatures mean rapid evaporation of spray droplets. The rate of evaporation is also affected by relative humidity. A droplet evaporates faster at an RH of say 50 % in warmer air than in cold air at the same RH.

### **G5.6.2 *Relative humidity***

RH can easily be measured using a whirling psychrometer, which has 2 thermometers. The bulb of one thermometer is covered with a moist wick, which dries in the air, lowering the temperature of the bulb. The difference between the dry bulb and wet bulb is called the wet bulb depression or delta T. The greater delta T, the greater the evaporation potential for spray droplets.

Generally, spraying of water-based agrichemicals should not be carried out when delta T is greater than 8 °C. For low and ultra-low volume applications (less than 10 L/ha) delta T should be less than 4 C.

## **G6 Buffer Zones and Shelter Belts**

Off-target movement of spray is affected by a large number of interrelated factors including weather conditions, spray characteristics and application technique. A buffer zone between the application site, and a sensitive area may reduce the hazard to that sensitive area. The buffer zone works by allowing the agrichemical to disperse to concentrations low enough not to present a risk (i.e. not exceed any Environmental Exposure Limit (EEL) set). The use of shelter belts to intercept and retain the agrichemical may effectively reduce the width of the buffer zone

required. However for herbicides, particularly those used for total vegetation control, live shelter will also be affected by the spray so it will not be useful in those situations.

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Other factors that affect the width of a buffer zone include:

- (a) application technique (e.g. projecting spray into the air);
- (b) the agrichemical used (e.g. volatility);
- (c) the physical nature of the shelter belt.

#### G6.1 Buffer zone guidelines

It is vital that the guidelines given below are regarded as that – guidelines, which represent the best estimate for three typical application types. Buffer zones, with or without shelter belts, merely provide an opportunity for concentrations of agrichemical to fall sufficiently so that the risk to sensitive areas beyond the buffer zone becomes acceptable (i.e. environmental exposure levels are not exceeded). Depending on the particular circumstances however, there is no guarantee that this can be achieved. Therefore buffer zones are only one of many methods to manage and reduce drift hazard.

Table G2 gives suggested minimum distances between the downwind edge of the target area and the sensitive area. These are for guidance. There are spray droplet drift models that can be used to give more detailed information for specific situations.

**Note** - For examples of spray drift models, i.e. Spray Drift Task Force, see [www.agdrift.com](http://www.agdrift.com) and SpraySafe Manager, NZ Forest Research Institute, [www.forestresearch.co.nz](http://www.forestresearch.co.nz).

**Table G2 – Buffer zones**

Application method	Distance (metres)	
	With shelter	Without shelter
Boom sprayer	2	10
Air blast sprayer	10	30
Aerial application	100	300

**Note -**

These distances are subject to:

- (a) the equipment used (boom, air blast, aircraft) being calibrated and operated correctly;
- (b) all other appropriate strategies being observed to reduce spray drift hazard (table G1);
- (c) shelter being completed and without gaps at the base.

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### **G6.2 Shelter belt characteristics**

Shelter belts will not eliminate spray drift, but can have a significant effect in reducing the amount of spray moving off-target. The physical structure of the shelter belt is important with respect to its effectiveness. The general conclusions are:

- (a) natural (live) shelter is much more effective than artificial shelter;
- (b) the porosity and density of the shelter is important – a minimum thickness of 1 m and a porosity of about 50 % is recommended;
- (c) porosity and density are a function of the thickness of the shelter;
- (d) for effective reductions in wind speed (and hence drift reduction) the width to height ratio of shelter is critical. A width to height ratio of about 3.5 is recommended (i.e. a shelter 1 m wide (thick) should be 3.5 m–4 m high);
- (e) any spray released at or above shelter height will not be contained by the shelter.

### **G7 Vapour Drift**

As a general rule, spraying of agrichemicals that are volatile should take place in conditions where the temperature following application is likely to decrease rather than increase. That will help manage the risk of secondary drift, i.e. chemical volatilizing from the target plants some time after spraying has ended.

#### **G7.1**

The two main factors controlling the rate of volatilisation are:

- (a) the vapour pressure of the agrichemical (high vapour pressure, high volatilisation);
- (b) the moisture status of the soil or plant surface (high moisture content, high volatilisation).

There are many other factors that also affect the rate of volatilization of an agrichemical from a target surface. These include airflow (up to 10 times the rate in still air), temperature (0.5% per °C), rate of penetration into the target surface, formulation, presence of any adjuvant and chemical/air interfacial area. The major factors in vapour movement are wind velocity and turbulence.

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### **G7.2**

Research indicates that the hazard from vapour drift and volatilization is mostly due to the volatilisation of agrichemical from the target surface following application (secondary drift) and not from evaporation from spray droplets during application (primary drift); although both can and do occur. There are a number of ways in which an operator can minimize the vapour drift

hazard.

The following points should be noted:

- (a) use spray quality as coarse as possible (i.e. large droplets), consistent with getting adequate coverage at the selected application rate;
- (b) ensure that soil applied products are incorporated into the soil immediately following application;
- (c) minimise the distance between the target plant and the discharge point of the spray to reduce the opportunity for primary drift;
- (d) use low volatility formulations;
- (e) conditions where the wind direction is unstable and likely to change in the period following application (up to 12 hours) increases the hazard where more volatile agrichemicals are used. Also, increases in air temperature following application will increase volatility and increase the downwind drift hazard distance;
- (f) do not spray where the conditions are considered too uncertain to be sure about managing any vapour drift hazard.

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### **Appendix M - Notification and Signage for Application of Agrichemicals**

(Normative)

#### **M1 Introduction**

This Appendix applies to both ground and aerial application. Users shall check with the appropriate local authority for any specific notification requirements for agrichemical use.

#### **M2 Notification**

**Note** – Notification does not prevent spray drift and does not lessen a user's responsibilities regarding the identification and recording of sensitive areas adjacent to the site of any agrichemical application.

##### **M2.1 Application of agrichemicals including fumigants**

Notification of the intention to spray is intended to inform people who could be affected, and provide the opportunity for them to take action to avoid or minimize potential exposure of themselves, their children, or their property to specific applications of agrichemicals.

Notification to satisfy the requirements of this Standard for different use situations is set out below. In each case however, check and comply with appropriate local authority requirements.

##### **M2.2 Application on private property**

Any person who is likely to be directly affected by the application of agrichemicals has a right to information about the operation. The owner or occupier of the property on which the spraying is to take place shall inform, at intervals of no more than once a year, any person who is likely to be directly affected by the application, that a spray plan (see M4) has been prepared and is available on request. More or less frequent information may be provided where mutually acceptable arrangements have been agreed to, and recorded on the spray plan. Notification shall also be in accordance with any regulatory requirements of the local authority.



### **M2.3 Contract application**

Contract use of agrichemicals implies that the application is not on the applicator's own property. This makes the proper identification of affected parties difficult. In these cases contractors shall ensure that appropriate notification has been given by the client to the affected parties. The notification requirements shall be documented using a written spray plan or protocol. This shall comply with local authority requirements and shall be made available on request to those who may be affected (see M4).

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#### **M2.4 Application in public places and amenity areas**

Notification shall be by way of notices in local newspapers, or other recognized methods such as "information drops". Notification shall be given not less than one week prior to application and shall be in accordance with local authority requirements. Information shall include:

- (a) the district, street or location to be treated;
- (b) the period of use;
- (c) the reason for use (e.g. vegetation control). In addition the notice shall indicate where or how further information can be obtained;
- (d) door-to-door notification may also be appropriate;
- (e) vehicles or equipment used for applying agrichemicals shall have an appropriate sign, e.g. "Agrichemical Application in Progress, (Herbicide/Insecticide/Fungicide)". The name of the local authority or contractor shall be displayed;
- (f) appropriate temporary hazard warning signs shall be used where spray vehicles are likely to be a hazard to motorists. Such signs must comply with requirements of the Traffic Regulations – check with the Land Transport Safety Authority;
- (g) other temporary signs shall be appropriately placed so that any people approaching the target area see them.

### **M3 Signage**

Signs can be used at the application site to advise that agrichemical application is being, or has been carried out. To satisfy the requirements of this Standard the sign shall clearly indicate the type of agrichemical used e.g. herbicide, insecticide.

#### **M3.1 Specific requirements**

Put signs on all normal lines of approach to an area treated with agrichemicals in the following situations:

- (a) public places, for any agrichemical use;
- (b) other areas that may be accessible to the public.

Signs shall be there during agrichemical use, and shall remain in place for a period equivalent to the contact re-entry time for the agrichemical used (refer to product information or supplier).

Users shall check with the appropriate local authority for any specific information to be included on signs.

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### **M4 Spray Plans/Protocols**

The development of a spray plan or protocol will assist in addressing the potential off-target application of agrichemicals and identify the measures adopted to avoid or mitigate adverse effects associated with them.

**Note** - Local authorities may also have specific requirements for spray plans or protocols.

To satisfy the requirements of this Standard the plan must be available on request and include:

- (a) a plan or map detailing the location of any sensitive areas including but not limited to houses, schools, and roads, especially those used by school children and crops sensitive to the chemical being used, (see also Appendix G4);
- (b) the crops to be sprayed, the types of chemical (insecticide, herbicide, fungicide etc.) that are likely to be used during the year and the times of the year that spraying is likely to occur;
- (c) strategies employed to avoid contamination of sensitive areas (for example specific application techniques such as large droplet sizes, hand application, not spraying outside rows, turning machinery off when turning, having no-spray buffer zone areas, only spraying when the wind is in the specified direction, having personnel monitoring boundaries during the application, lists of people (and their contact phone number) who want to get a phone call just prior to any spraying, any other mutually agreed strategies to manage any risk);  
**Note** - It is desirable to consult with potentially affected neighbours to establish mutually acceptable measures to avoid or manage effects of drift.
- (d) the identity of the person likely to be carrying out agrichemical application and confirmation of their current qualifications;  
**Note** – For example – GROWSAFE® certification.
- (e) particular weather conditions which may increase potential drift hazard;
- (f) indication of agrichemicals to be used that may present a specific hazard (e.g. bee toxicity).

## **Appendix E - Water Quality Standards**

These standards apply following reasonable mixing with the receiving waters, unless otherwise stated. They do not apply to waters within artificial storage ponds such as effluent storage ponds or stock water reservoirs or to temporarily ponded rainfall.

The standard for a given parameter will not apply in a surface waterbody where, due to natural causes, that parameter falls outside the range given in the standard.

Plan users should contact Environment Southland for guidance on standard methodologies for collecting water quality data. Monitoring requirements imposed as consent conditions require sample collection, preservation and analysis to be carried out in accordance with the most recent edition of American Public Health Association (APHA) “Standard Methods for the Examination of Water and Wastewater” and monitoring and analyses to be carried out by a laboratory with International Accreditation New Zealand (IANZ) registration or equivalent.

### **Surface waterbodies classified as “Natural State Waters”**

The natural quality of the water shall not be altered.

### **Surface waterbodies classified as “Lowland soft bed”**

The temperature of the water:

- shall not exceed 23°C
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community abundance and composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 1.3 metres.<sup>14</sup>

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

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<sup>14</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

The Macroinvertebrate Community Index shall exceed 80 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed 3.5.<sup>15</sup>

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies classified as “Lowland hard bed”**

The temperature of the water:

- shall not exceed 23°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 1.6 metres, except where the water is naturally low in clarity as a result of high concentrations of tannins, in which case the natural colour and clarity shall not be altered.<sup>16</sup>

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

For the period 1 November through to 30 April, filamentous algae of greater than 2 cm long shall not cover more than 30% of the visible stream bed. Growths of diatoms and cyanobacteria greater than 0.3 cm thick shall not cover more than 60% of the visible stream bed.<sup>17</sup>

Biomass shall not exceed 35 grams per square metre for either filamentous algae or diatoms and cyanobacteria.<sup>18</sup>

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<sup>15</sup> MCI and SQMCI indices to be determined using Environment Southland’s SOE sampling protocol and MfE’s Protocol P2 for sample processing (Stark et al. 2001)

<sup>16</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

<sup>17</sup> Applies to the part of the bed that can be seen from the bank during summer low flows or walked on.

<sup>18</sup> Expressed in terms of reach biomass per unit of exposed strata (i.e., tops and sides of stones) averaged across the full width of the stream or river.

Chlorophyll a shall not exceed 120 milligrams per square metre for filamentous algae and 200 milligrams per square metre for diatoms and cyanobacteria.<sup>19</sup>

The Macroinvertebrate Community Index shall exceed a score of 90 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 4.5.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies classified as “Hill”**

The temperature of the water:

- shall not exceed 23°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 1.6 metres.<sup>20</sup>

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

Filamentous algae of greater than 2 cm long shall not cover more than 30% of the visible stream bed. Growths of diatoms and cyanobacteria greater than 0.3cm thick shall not cover more than 60% of the visible stream bed.

Biomass shall not exceed 35 grams per square metre for filamentous algae.

Chlorophyll a shall not exceed 120 milligrams per square metre for filamentous algae.

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<sup>19</sup> Expressed in terms of reach biomass per unit of exposed strata (i.e., tops and sides of stones) averaged across the full width of the stream or river.

<sup>20</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

The Macroinvertebrate Community Index shall exceed a score of 100 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 5.5.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies classified as “Mountain”**

The temperature of the water:

- shall not exceed 21°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 7.2 to 8, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 99% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 3 metres.

The concentration of total ammonia shall not exceed 0.32 milligrams per litre.

The concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres in any sample.

Filamentous algae of greater than 2 cm long shall not cover more than 30% of the visible stream bed.

Biomass shall not exceed 35 milligrams per square metre for filamentous algae.

Chlorophyll a shall not exceed 50 milligrams per square metre for filamentous algae.

Growths of diatoms and cyanobacteria greater than 0.3 cm thick shall not cover more than 60% of the visible stream bed.

The Macroinvertebrate Community Index shall exceed a score of 120 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 7.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### Surface waterbodies classified as “Lake Fed”

The temperature of the water:

- shall not exceed 21°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 7.2 to 8, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 99% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 3 metres.<sup>21</sup>

The concentration of total ammonia shall not exceed 0.32 milligrams per litre.

The concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres in any sample.

Chlorophyll a shall not exceed 50 milligrams per square metre at any time or exceed a monthly mean of 15 milligrams per square metre for filamentous algae or diatoms and cyanobacteria.<sup>22</sup>

The Macroinvertebrate Community Index shall exceed a score of 90 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 4.5.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### Surface waterbodies classified as “Spring Fed”

The temperature of the water:

- shall not exceed 21°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

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<sup>21</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

<sup>22</sup> Expressed in terms of reach biomass per unit of exposed strata (i.e., tops and sides of stones) averaged across the full width of the stream or river.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 99% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 3 metres.<sup>23</sup>

The concentration of total ammonia shall not exceed 0.32 milligrams per litre.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

Chlorophyll a shall not exceed 50 milligrams per square metre at any time, or exceed a monthly mean of 15 milligrams per square metre for filamentous algae or diatoms and cyanobacteria.<sup>24</sup>

The Macroinvertebrate Community Index shall exceed a score of 90 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 4.5.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies classified as “Lowland/Coastal Lakes and Wetlands”**

The temperature of the water:

- shall not exceed 23°C
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

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<sup>23</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

<sup>24</sup> Expressed in terms of reach biomass per unit of exposed strata (i.e., tops and sides of stones) averaged across the full width of the stream or river.



When lake inflows are below their median values, the Secchi depth clarity of the water shall not be less than 1.5 metres, except where the water is naturally low in clarity as a result of high concentrations of tannins, in which case the natural colour and clarity shall not be altered.<sup>25</sup>

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites”, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

The concentration of chlorophyll a shall not exceed 5 milligrams per cubic metre.<sup>26</sup>

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies classified as “Hill Lakes and Wetlands”**

The temperature of the water shall not exceed 23°C the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When lake inflows are below their median values, the Secchi depth clarity of the water shall not be less than 5 metres.

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”.

The concentration of faecal coliforms shall not exceed 130 *E. coli* per 100 millilitres.

Biomass shall not exceed 35 grams per square metre for filamentous algae.

The concentration of chlorophyll a shall not exceed 5 milligrams per cubic metre.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

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<sup>25</sup> Visual clarity in lakes to be measured as Secchi depth.

<sup>26</sup> Determination of lake chlorophyll concentration to be follow the protocols in Burns et al. (2000).

## Surface waterbodies classified as “Mountain Lakes and Wetlands”

The temperature of the water

- shall not exceed 21°C
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 99% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

The natural colour and clarity of the waters must not be changed to a conspicuous extent.

When lake inflows are below their median values, the Secchi depth clarity of the water shall not be less than 10 metres.

The concentration of total ammonia shall not exceed 0.32 milligrams per litre.

The concentration of Escherichia coli shall not exceed 130 E. coli per 100 millilitres in any sample.

The concentration of chlorophyll a shall not exceed 2 milligrams per cubic metre.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

## Surface waterbodies classified as “Mataura 1”

The Protected Waters<sup>27</sup> between map references NZMS 260 F45:967-503 to F45:963-508 (Mataura River).

Any discharge is to be substantially free from suspended solids, grease and oil.

The daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

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<sup>27</sup> Protected Waters means:

- (a) the Mataura River from its source (approximate map reference NZMS 260 E42:502-333) to its confluence with the sea (approximate map reference NZMS 260 F47:877-946); and
- (b) the Waikaia River and its tributaries, the Ōtamita Stream, and all other tributaries of the Mataura River upstream of its confluence with the Ōtamita Stream (approximate map reference NZMS 260 F45:881-582); and
- (c) the Mimiha Stream and the Mokoreta River and each of their tributaries.

The pH of the water must be within the range 6 to 8.5, except when due to natural causes.

The waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

There must not be any destruction of natural aquatic life by reason of a concentration of toxic substances.

The natural colour and clarity of the waters must not be changed to a conspicuous extent.

The oxygen concentration in solution in the waters must not be reduced below 6 milligrams per litre.

Based on no fewer than five samples taken over not more than a 30-day period, the median value of the faecal coliform bacteria content of the water must not exceed 2000 per 100 millilitres and the median value of the total coliform bacteria content of the water must not exceed 10,000 per 100 millilitres.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

#### **Surface waterbodies classified as “Mataura 2”**

The Protected Waters between map references NZMS 260 F45:894-581 to F45:885-584 (Mataura River) and NZMS 260 F46:917-391 to F46:924-396 (Mataura River).

Any discharge is to be substantially free from suspended solids, grease and oil.

The natural water temperature must not be changed by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of a discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water must be within the range 6.5 to 8.3, except when due to natural causes.

The waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

There must not be any destruction of natural aquatic life by reason of a concentration of toxic substances.

The natural colour and clarity of the waters must not be changed to a conspicuous extent.

The oxygen concentration in solution in the waters must not be reduced below 6 milligrams per litre.

Based on no fewer than five samples taken over not more than a 30-day period, the median value of the faecal coliform bacteria content of the water must not exceed 200 per 100 millilitres.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

### **Surface waterbodies Classified as “Mataura 3”**

The Protected Waters other than those parts classified as Mataura 1 and Mataura 2.

Any discharge is to be substantially free from suspended solids, grease and oil.

The daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water must be within the range 6 to 9, except when due to natural causes.

The waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

There must not be any destruction of natural aquatic life by reason of a concentration of toxic substances.

The natural colour and clarity of the waters must not be changed to a conspicuous extent.

The oxygen concentration in solution in the waters must not be reduced below 5 milligrams per litre.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix G “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

**Table 1 “Ammonia standards for Lowland and Hill surface waterbodies”**

<b>Total Ammoniacal Nitrogen in mg/m<sup>3</sup> at different pH</b>	
<b>pH</b>	<b>NH<sub>4</sub><sup>+</sup>-N + NH<sub>3</sub>-N mg/m<sup>3</sup></b>
6.0	2570
6.1	2555
6.2	2540
6.3	2520
6.4	2490
6.5	2460
6.6	2430
6.7	2380
6.8	2330
6.9	2260
7.0	2180
7.1	2090
7.2	1990
7.3	1880
7.4	1750
7.5	1610
7.6	1470
7.7	1320
7.8	1180
7.9	1030
8.0	900
8.1	780
8.2	660
8.3	560
8.4	480
8.5	400
8.6	340
8.7	290
8.8	240

Total Ammoniacal Nitrogen in mg/m <sup>3</sup> at different pH	
pH	NH <sub>4</sub> <sup>+</sup> -N + NH <sub>3</sub> -N mg/m <sup>3</sup>
8.9	210
9.0	180

## References

- Australian and New Zealand Environment and Conservation Council 2000. *Australian and New Zealand guidelines for fresh and marine water quality*.
- Burns, N., Bryers, G., and Bowman, E. 2000. *Protocol for monitoring trophic levels of New Zealand lakes and reservoirs*. Prepared for the Ministry for the Environment.
- Stark, J.D., Boothroyd, I.K.G., Harding, J.S., Maxted, J.R. and Scarsbrook, M.R. 2001. *Protocols for sampling macroinvertebrates in wadeable streams. New Zealand Macroinvertebrate Working Group Report No. 1*. Prepared for the Ministry for the Environment.

## **Appendix F - Water Conservation Orders**

### **Water Conservation (Mataura River) Order 1997**

SR 1997/126

PURSUANT to Sections 214 and 423 of the Resource Management Act 1991, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, and on the recommendation of the Minister for the Environment made in accordance with the report of the Environment Court following an inquiry by that Court, makes the following order.

#### ***Analysis***

(List of Sections)

- 1 Title and commencement
- 2 Interpretation
- 3 Outstanding features
- 4 Rates of flow in Mataura River and Waikaia River
- 5 General provisions relating to water permits, discharge permits, and regional plans
- 6 Water permit to dam not to be granted, etc
- 7 Provisions relating to discharges
- 8 Scope of this order

#### ***Orders***

##### **1. Title and commencement—**

- (1) This order may be cited as the Water Conservation (Mataura River) Order 1997.
- (2) This order comes into force on the 28th day after the date of its notification in the Gazette.

##### **2. Interpretation—**

In this order, unless the context otherwise requires,—

“Act” means the Resource Management Act 1991:

“Authorised inflows” means discharges of water or water containing waste into protected waters pursuant to a discharge permit:

“Protected waters” means—

- (1) the Mataura River from its source (approximate map reference NZMS 260 E42:502333) to its confluence with the sea (approximate map reference NZMS 260 F47:877946); and
- (2) the Waikaia River and its tributaries, the Ōtamita Stream, and all other tributaries of the Mataura River upstream of its confluence with the Ōtamita Stream (approximate map reference NZMS 260 F45:881582); and
- (3) the Mimiha Stream and the Mokoreta River and each of their tributaries.

3. **Outstanding features —**

It is declared that the protected waters include outstanding fisheries and angling amenity features.

4. **Rates of flow in Mataura River and Waikaia River —**

- (1) Because of the outstanding features specified in clause 3, the rates of flow in the Mataura River and in the Waikaia River must not be reduced, by the grant or exercise of water permits, below the minimum rate of flow specified in subclauses (2) and (3).
- (2) The minimum rate of flow at any point in the Mataura River and the Waikaia River above the Mataura Island Road Bridge (approximate map reference NZMS 260 F46:850158), where the flow is estimated by the Southland Regional Council from measurements taken at that point, must be 95% of —
  - (a) the flow so estimated by the Southland Regional Council at that point; plus
  - (b) water taken in accordance with the Act from the protected waters upstream of that point and not returned to the protected waters —less authorised inflows upstream of that point which did not have their source in the protected waters.
- (3) The minimum rate of flow at any point in the Mataura River below the Mataura Island Road Bridge (approximate map reference NZMS 260 F46:850158), where the flow is estimated by the Southland Regional Council from measurements taken at that point, must be 90% of—
  - (a) the flow so estimated by the Southland Regional Council at that point; plus
  - (b) water taken in accordance with the Act from the protected waters upstream of that point and not returned to the protected waters—less authorised inflows upstream of that point which did not have their source in the protected waters.

5. **General provisions relating to water permits, discharge permits, and regional plans—**

- (1) A water permit or a discharge permit must not be granted under Part 6 of the Act and a regional plan must not be made under Part 5 of the Act in respect of any part of the protected waters if such a permit or plan would contravene the provisions of this order.
- (2) The prohibitions in subclause (1) do not apply to water permits or discharge permits granted or regional plans made in respect of any part of the protected waters for all or any of the following purposes:
  - (a) research into, and enhancement of, fisheries and wildlife habitats;
  - (b) the construction, maintenance, or protection of roads, bridges, pylons, and other necessary public utilities;
  - (c) soil conservation and river protection and other activities undertaken pursuant to the Soil Conservation and Rivers Control Act 1941;
  - (d) stock water and stock-water reservoirs.



## 6. Water permit to dam not to be granted, etc—

- (1) A permit to dam the Mataura River from its source to the sea and the Waikaia River from its source to its confluence with the Mataura River must not be granted under Part 6 of the Act.
- (2) A permit to dam any tributary of the Waikaia River or the Mataura River which forms part of the protected waters must not be granted under Part 6 of the Act if the dam would harm salmonid fish-spawning or prevent the passage of salmonid fish.
- (3) The prohibition in subclause (1) does not apply to water permits in respect of the weir at approximate map reference NZMS 260 F46:912385 if the water permits are granted or renewed subject to similar terms and conditions to which the former permits were subject.

## 7. Provisions relating to discharges

- (1) A discharge permit must not be granted and a regional plan must not be made for any discharge into the protected waters if the effect of the discharge would be to breach the following provisions and standards:
  - (a) Any discharge is to be substantially free from suspended solids, grease, and oil:
  - (b) After allowing for reasonable mixing of the discharge with the receiving water in that part of the protected water between map references NZMS 260 F45:967503 to F45:963508 (Mataura River), —
    - (i) the natural water temperature must not be changed by more than 3 degrees Celsius;
    - (ii) the acidity or alkalinity of the waters as measured by the pH must be within the range of 6.0 to 8.5, except when due to natural causes;
    - (iii) the waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours;
    - (iv) there must not be any destruction of natural aquatic life by reason of a concentration of toxic substances;
    - (v) the natural colour and clarity of the waters must not be changed to a conspicuous extent;
    - (vi) the oxygen content in solution in the waters must not be reduced below 6 milligrams per litre;
    - (vii) based on not fewer than 5 samples taken over not more than a 30-day period, the median value of the faecal coliform bacteria content of the water must not exceed 2000 per 100 millilitres and the median value of the total coliform bacteria content of the water must not exceed 10,000 per 100 millilitres;
  - (c) After allowing for reasonable mixing of the discharge with the receiving water in that part of the protected waters between map references —
    - (i) NZMS 260 F45:894581 to F45:885584 (Mataura River); and
    - (ii) NZMS 260 F46:917391 to F46:924396 (Mataura River),—
      - (A) the natural water temperature must not be changed by more than 3 degrees Celsius;
      - (B) the acidity or alkalinity of the waters as measured by the pH must be within the range of 6.5 to 8.3, except when due to natural causes;

- (C) the waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours;
  - (D) there must not be any destruction of natural aquatic life by reason of a concentration of toxic substances;
  - (E) the natural colour and clarity of the water must not be changed to a conspicuous extent;
  - (F) the oxygen content in solution in the waters must not be reduced below 6 milligrams per litre;
  - (G) based on not fewer than 5 samples taken over not more than a 30-day period, the median value of the faecal coliform bacteria content of the waters must not exceed 200 per 100 millilitres:
- (d) After allowing for a reasonable mixing of the discharge with the receiving waters in those parts of the protected waters other than the parts specified in paragraphs (b) and (c),—
- (i) the natural water temperature must not be changed by more than 3 degrees Celsius;
  - (ii) the acidity or alkalinity of the waters as measured by the pH must be within the range of 6.0 or 9.0, except when due to natural causes;
  - (iii) the waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours;
  - (iv) there must not be any destruction of natural aquatic life by reason of a concentration of toxic substances;
  - (v) the natural colour and clarity of the waters must not be changed to a conspicuous extent;
  - (vi) the oxygen content in solution in the waters must not be reduced below 5 milligrams per litre.
- (2) Where it is impracticable, because of emergency overflows or the carrying out of maintenance work or any other temporary situation, to require compliance with the relevant provisions of subclause (1), water permits and discharge permits may be granted by the Southland Regional Council.

**8. Scope of this order—**

Nothing in this order limits the effect of Section 14(3)(b) and (e) of the Act relating to the use of water for domestic needs, for the needs of animals, or for fire-fighting purposes.

**Marie Shroff**

Clerk of the Executive Council.

**Explanatory Note**

This note is not part of the order, but is intended to indicate its general effect.

This order declares that the Mataura River and the Waikaia River and various other rivers, streams, and tributaries include outstanding fisheries and angling amenity features.

The order includes various provisions to preserve and protect these features.

Issued under the authority of the Acts and Regulations Publication Act 1989.

Date of notification in Gazette: 10 July 1997.

This order is administered in the Ministry for the Environment.

## Water Conservation (Oreti River) Order 2008

Issue 127-5744

ANAND SATYANAND, Governor-General  
ORDER IN COUNCIL

At Wellington this 4th day of August 2008

Present:

HIS EXCELLENCY THE GOVERNOR-GENERAL  
PRESIDING IN COUNCIL

Pursuant to Section 214 of the Resource Management Act 1991, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following Order.

### **Order**

1. **Title**—This order is the Water Conservation (Oreti River) Order 2008.
2. **Commencement**—This order comes into force 28 days after the date of its notification in the *New Zealand Gazette*.
3. **Interpretation**—In this order, unless the context otherwise requires:
  - “Act” means the Resource Management Act 1991
  - “damming” means the impounding of all or part of the natural flow of any water that may involve an associated temporary or permanent structure
  - “river” means the main stem of those waters identified in the Schedules to this order. The main stem shall be the river with that name on NZMS260 series topographical maps between specified lower and upper river limits as defined by map references in Schedules to this Order
  - “tributaries” means all the tributaries of rivers or sections of rivers identified in Schedules to this order.
4. **Outstanding characteristics**—The waters specified in Schedules 1 and 2 include or contribute to, to the extent identified in Schedule 2, the following outstanding characteristics, features, and values:
  - (a) habitat for brown trout;
  - (b) angling amenity;
  - (c) habitat for black-billed gulls;
  - (d) significance in accordance with tikanga Māori.
5. **Waters to be protected**—Because of the outstanding characteristics, features, and values identified in clause 4, the waters specified in Schedule 1 are to be protected in accordance with the relevant conditions in clauses 7 to 9 as specified in Schedule 1.

6. **Waters to be protected as contributing to outstanding features—**  
Because of their contribution to outstanding characteristics and features identified in clause 4, the waters specified in Schedule 2 are to be protected in accordance with clause 8 to the extent specified in those clauses and in Schedule 2.
7. **Restriction on damming of waters—**Subject to clauses 10 and 11, no water permit may be granted or rule included in a regional plan authorising the damming of waters specified in item 1 of Schedule 1.
8. **Requirement to maintain fish passage—**Subject to clauses 10 and 11, no water permit may be granted or rule included in a regional plan relating to the waters specified in Schedule 1 and item 1 of Schedule 2 authorising an activity that will adversely affect the passage of fish.
9. **Restriction on the alteration of water quality—**Subject to clauses 10 and 11, no discharge permit may be granted or rule included in a regional plan authorising a discharge into any of the waters specified in item 1 of Schedule 1 that will result in a reduction of water quality beyond the zone of reasonable mixing.
10. **Scope of order—**
  - (1) This order does not limit sections 14(3)(b) and (e) of the Act relating to the use of water for an individual's reasonable domestic needs, or for the reasonable needs of an individual's animals for drinking water, or taken or used for fire-fighting purposes.
  - (2) This order does not restrict or prevent the grant of resource consents for the purpose of:
    - (a) research into, and protection or enhancement of, fisheries and wildlife habitats; or
    - (b) the construction, removal, maintenance or protection of any road, ford or bridge, or the maintenance or protection of any network utility operation (as defined in section 166 of the Act); or
    - (c) the construction and maintenance of soil conservation and river protection works undertaken pursuant to the Soil Conservation and Rivers Control Act 1941; or
    - (d) the protection of human or animal health.
11. **Exemptions—**Nothing in this order prevents the grant of a discharge or water permit that would otherwise contravene conditions set out in clauses 7, 8 and 9 if:
  - (a) a consent authority is satisfied that:
    - (i) there are exceptional circumstances justifying the grant of a permit; or
    - (ii) the permit is for an activity that is of a temporary nature; or
    - (iii) the permit is for an activity that is associated with necessary construction and maintenance work; and
  - (b) the exercise of any such resource consent would not compromise the protection of the outstanding characteristics and features identified for the waters specified in the Schedules.

## Schedule 1

### Clauses 5, 7, 8 and 9

#### *Protected waters with outstanding characteristics*

Item	Waters	Outstanding Characteristics or Features	Conditions to Apply
1	Oreti River main stem at Rocky Point at NZMS 260 E44373946 upstream to the forks at E42 345 450	Habitat for brown trout Angling amenity Value in accordance with tikanga Māori	Prohibit damming (Clause 7) Maintenance of fish passage (Clause 8) Maintenance of water quality (Clause 9)
2	Weydon Burn, Windley River and all other tributaries upstream of the Oreti River at E43 305210 near Lincoln Hill	Habitat for brown trout	Maintenance of fish passage (Clause 8)

## Schedule 2

### Clauses 6 and 8

#### *Waters to be protected for their contribution to outstanding features*

Item	Waters	Outstanding Characteristics or Features	Conditions to Apply
1	Oreti River downstream of Rocky Point at E44 373946 to the Wallacetown Bridge at E46 455208	Habitat for brown trout Habitat for black-billed gull	Maintain fish passage (Clause 8)
2	Groundwater hydraulically connected to the surface water of the Oreti River from Rocky Point at E44 373946 upstream to the forks at E42 345450	Habitat for brown trout	Maintenance of fish passage (Clause 8)

### Michael Webster

for Clerk of the Executive Council.

### Explanatory Note

This note is not part of the order, but is intended to indicate its general effect.

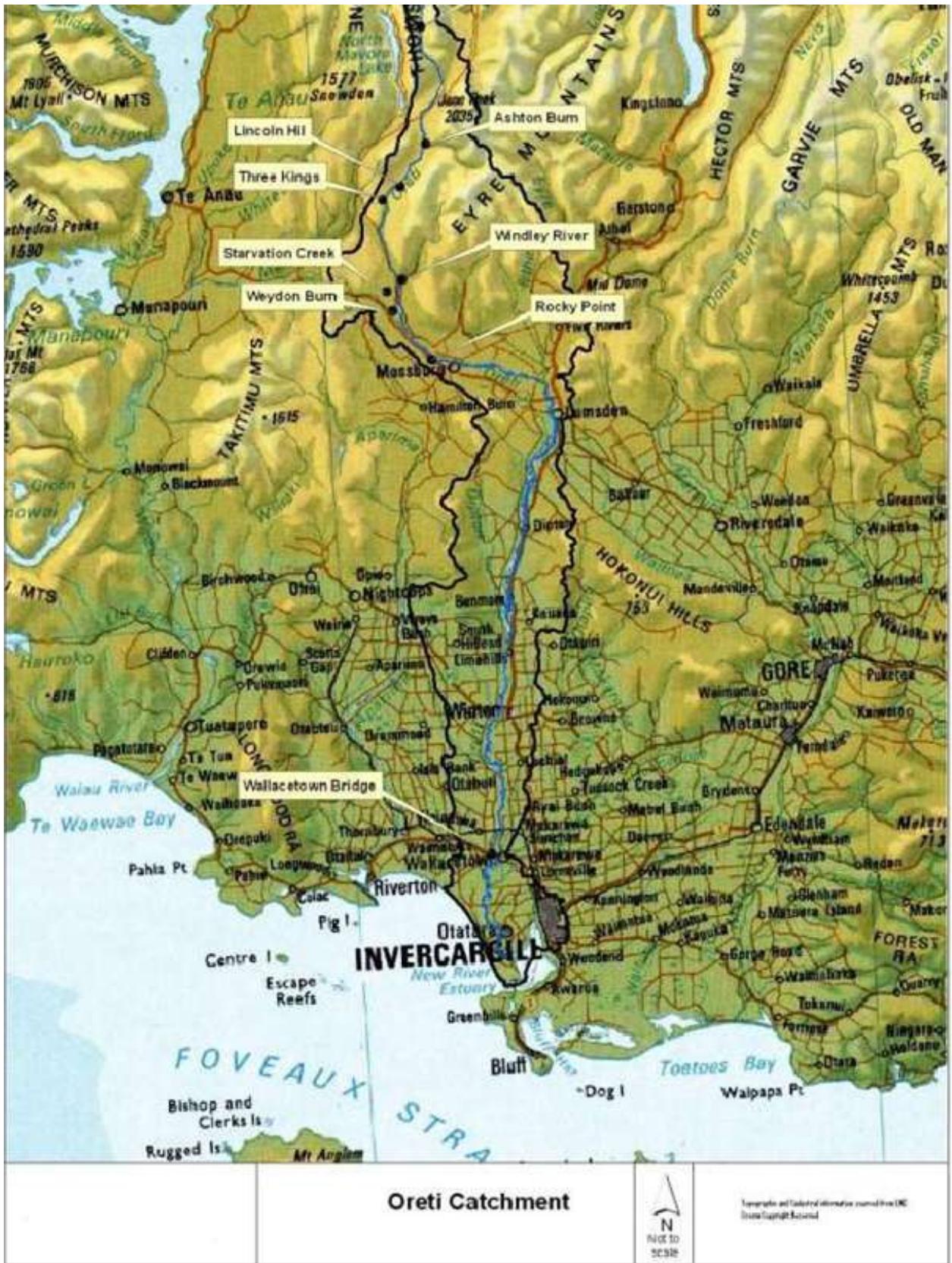
This order declares that the Oreti River and various other rivers, streams, and tributaries include outstanding fisheries and angling amenity features.

The order includes various provisions to preserve and protect these features.

Issued under the authority of the Acts and Regulations Publication Act 1989.

Date of notification in Gazette: 14 August 2008.

This order is administered in the Ministry for the Environment.



## **Appendix G - Popular Bathing Sites**

Each of the following sites encompasses the waters immediately under the relevant bridge and 100 metres upstream and downstream of the bridge:

- Ōreti River at Winton Bridge
- Ōreti River at Wallacetown Bridge
- Mataura River at Gore Bridge
- Aparima River at Thornbury Bridge
- Waiau River at Tuatapere Bridge
- Waikaia River at Waikaia Bridge
- Mataura River at Riversdale

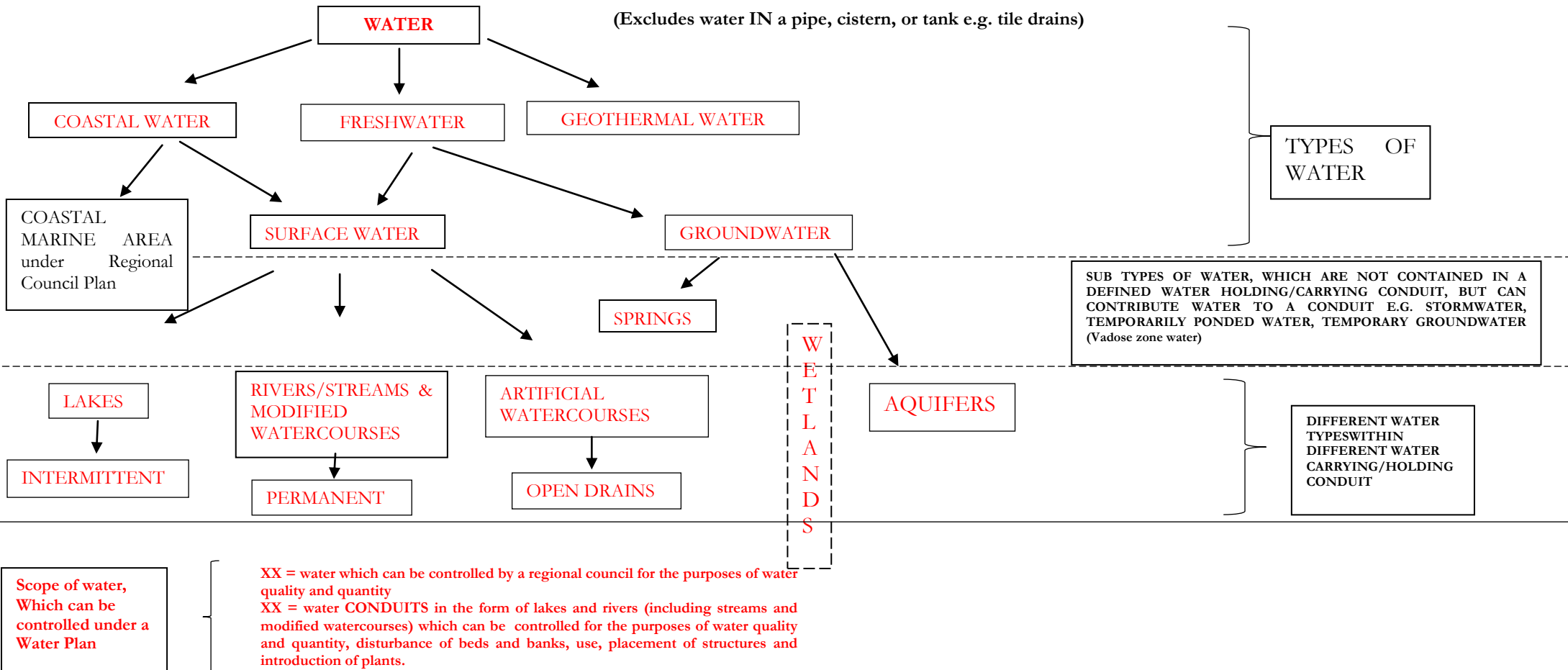
The following sites listed are considered indicative of popular bathing sites although they are not found within Southland's lowland, hill and spring-fed waterbodies. These sites are monitored each month for contact recreation standards:

Waikaia River at Piano Flat – classified under the Mataura classification  
Mararoa River at Mavora Lake – classified as mountain



# Appendix H - Water Terminology Framework

Unchanged from Water Plan



**NOTE**  
The framework or “genealogy” above provides the basis for the terms used in the Regional Water Plan for Southland. The framework has been developed to ensure plan users can be confident that when a term is used in the plan they can understand what types of water, and in what conduits, are being controlled.



## Appendix I - Natural State Waters Outside National Parks

Table 1 “Natural State Waters outside National Parks”

Area Name	DOC code	DOC land status	Exclusions – refers to any waters on specified DOC managed land not to be managed as NS (all other waters on specified DOC land to be managed as NS)
Borland Mire	RASI	Scientific Reserve	
Burwood (Red Tussock)	RASI	Scientific Reserve	Excludes headwaters of Weydon Burn and Wash Creek
Dean Forest	CAST	Stewardship Land	Excludes tributaries within Motu Bush.
Eweburn, Lake Te Anau	CAST	Stewardship Land	
Eyre Mountains Taka Ra Haka Conservation Park	CACP	Conservation Park	Excludes Maitaia catchment.
Halfmoon Bay	CAST	Stewardship Land	Excludes Little River Catchment.
Hokonui Forest	CAST	Stewardship Land	Excludes tributaries of Makarewa River & Hedgehope Stream but includes Dunsdale Stream.
Lake George	RAGP	Government Purpose Reserve	Excludes tributaries flowing into Lake George
Lillburn Valley Road	CAST	Stewardship Land	
Lindsay Ecological Area	CAEA	Ecological Area	Excludes Masson Creek East Branch but includes Masson Creek West Branch
Longwood Forest	CAST	Stewardship Land	Excludes areas within the Conservation Area near Pourakino Stream and small tributary of Aparima.
Mavpra Park	CAST	Stewardship Land	
Mccolgan Fhf	CAST	Stewardship Land	
Paddock Hill	CAST	Stewardship Land	
Pyke Forest	CAST	Stewardship Land	
Rowallan Forest	CAST	Stewardship Land	
Seaward Moss	CAST	Stewardship Land	
Snowdon Forest	CAST	Stewardship Land	
Stewart Island Forest	CAST	Stewardship Land	Excludes Little River Catchment.
Takitimu Conservation Area	CAST	Stewardship Land	
Te Anau Downs	CAST	Stewardship Land	

Area Name	DOC code	DOC land status	Exclusions – refers to any waters on specified DOC managed land not to be managed as NS (all other waters on specified DOC land to be managed as NS)
Te Anau Downs, Henry Creek	CAST	Stewardship Land	
The Cone Forest	CAST	Stewardship Land	
Tiwai Spit	CAST	Stewardship Land	Excludes surface water on land to the west of a straight line drawn on the edge of the main eastern Tiwai North South aligned Boundary and groundwater within the Tiwai groundwater zone.
Toetoes	CAST	Stewardship Land	Excludes two tributaries that flow into Maitara River.
Upper McLeod's Conservation Area	CAST	Stewardship Land	Excludes headwaters to the Ōreti River that do not adjoin Snowden Forest
Woodlaw Forest	CAST	Stewardship Land	

CAST = Stewardship Area – s.25 Conservation Act 1987

CAEA = Ecological Area – s.21 Conservation Act 1987

NPNP = National Park – s.4 National Parks Act 1980

RAGP = Government Purpose Reserve – s.22 Reserves Act 1977

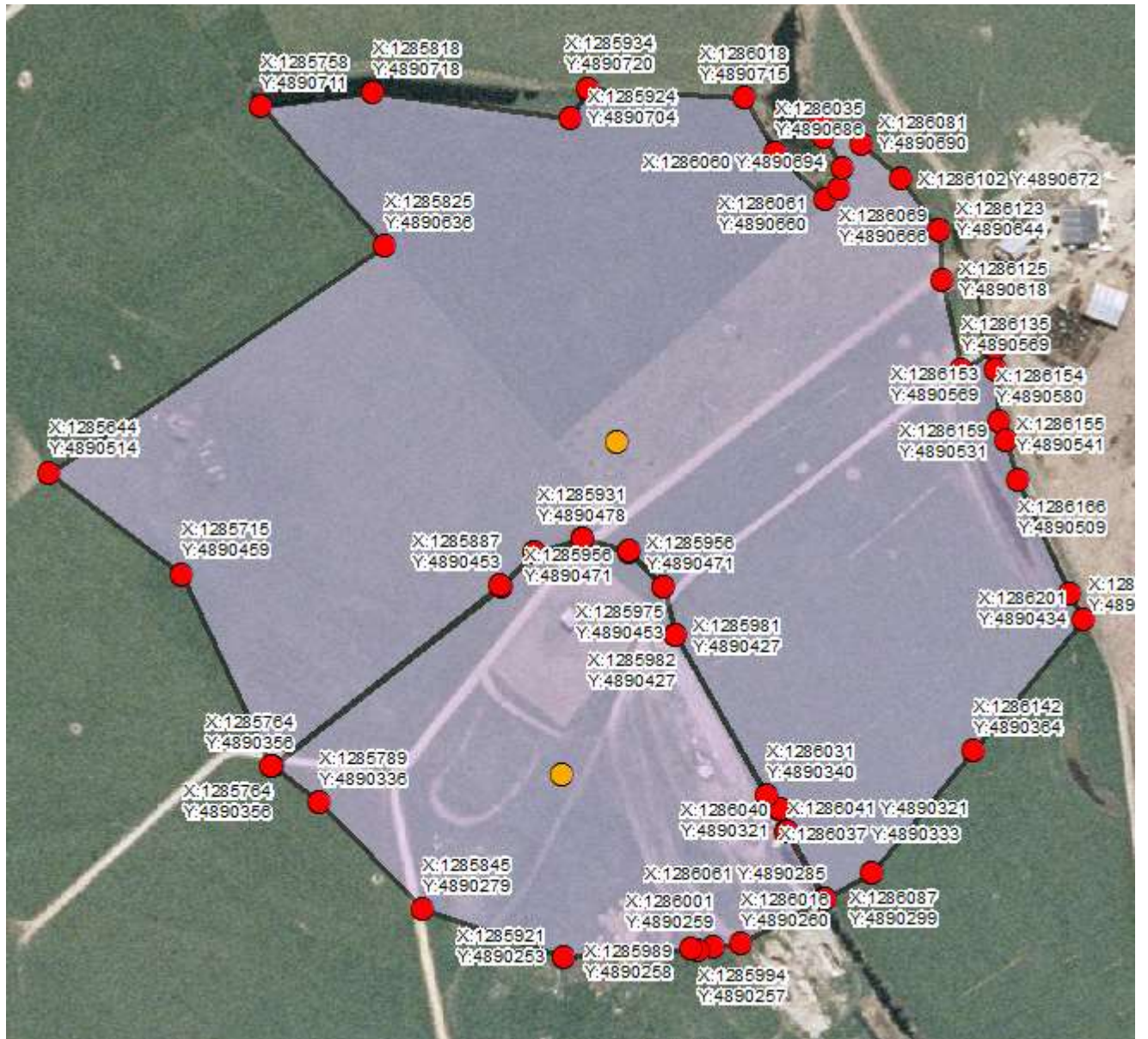
RASI = Scientific Reserve – s.21 Reserves Act 1977

CACP = Conservation Park – s.19 Conservation Act 1987

## Appendix J – Drinking Water Protection Zones

Operator	Catchment	Groundwater Zone	Source	Northing	Easting	Popln
Alliance Group Ltd	Oreti River		River	5420300	2145900	>501
Alliance Group Ltd	Makarewa River		River	5419200	2148300	>501
Gore District Council	Mataura River	Knapdale	River/Bore	5452168	2195791	>501
Gore District Council	Mataura River	Knapdale	River/Bore	5452297	2195724	>501
Gore District Council	Mataura River	Knapdale	River/Bore	5450400	2196200	>501
Gore District Council	Mataura River	Knapdale	River/Bore	5450300	2196200	>501
Gore District Council	Mataura River		River	5450576	2196346	>501
Gore District Council	Mataura River		River	5451948	2195195	>501
Invercargill City Council	Oreti River		River	5424489	2146891	>501
Southland District Council		Lintley Aquifer	Bore	5487633	2154466	>501
Gore District Council	Waikana Stream		River	5437798	2192526	>501
Gore District Council	Pluera Stream		River	5437465	2196345	>501
Gore District Council	Mataura River		River	5439186	2191951	>501
NZAS		Tiwai	Bore	5392000	2159000	>501
NZAS		Tiwai	Bore	5391406	2161388	>501
NZAS		Tiwai	Bore	5391327	2159883	>501
NZAS		Tiwai	Bore	5391632	2160620	>501
NZAS		Tiwai	Bore	5391361	2162150	>501
NZAS		Tiwai	Bore	5391266	2163695	>501
Southland District Council	Morley Creek		River	5464271	2120579	>501
Southland District Council	Aparima River	Lower Aparima	River/Bore	5440980	2123300	>501
Southland District Council	Aparima River	Lower Aparima	River/Bore	5421665	2127426	>501
Southland District Council	Upukerora River	Te Anau	River/Bore	5519900	2098600	>501
Southland District Council	Lake Te Anau	Te Anau	Lake/Bore	5520370	2095910	>501
Southland District Council	Lake Te Anau	Te Anau	Lake/Bore	5520330	2095880	>501
Southland District Council	Lake Te Anau	Te Anau	Lake/Bore	5520178	2095805	>501
Southland District Council		Lower Waiau	Bore	5440150	2098960	>501
Southland District Council		Lower Waiau	Bore	5439911	2099172	>501
Southland District Council		Lower Oreti	Bore	5442527	2147316	>501
Southland District Council		Lower Oreti	Bore	5442600	2147500	>501
Southland District Council	Bowen River		River	5603700	2108200	>501

# Gore District – Coopers Wells



## **Appendix K – Surface Water Appendix**

### **Methodology for establishing the point used to determine minimum flow and the level of allocation**

The point used to determine the minimum flow and the level of allocation for the purposes of Policy 22 is as follows:

- (i) the point of take; or
- (ii) in the case of surface waterbodies where flow is lost to groundwater along the length of the surface waterbody, the most flow sensitive point downstream.

The Southland Regional Council will determine the location of the above. Minimum flows are to be developed through gauging of river flows correlated with Southland Regional Council approved water level monitoring sites, rated flow recording sites, or hydrologic modelling.

The minimum flow will be as follows:

- (i) for takes from the primary allocation, the minimum flow will be Q95;
- (ii) for takes from the secondary allocation, the minimum flow will be the median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;
- (iii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained in Appendix K.

In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values.

In the absence of quality information, a precautionary approach will be adopted.

Primary allocation regimes will be determined by:

- (i) for all surface waterbodies outside the Waiau catchment and not subject to a Water Conservation Order that specifies an alternative environmental flow and level regime, a primary allocation is available when the following criteria can be met:
  - (1) the total surface water allocation does not exceed a volume of 30 percent of the natural pre-allocation Q95 at any downstream point in the catchment as determined by the Southland Regional Council following the methodology established in Appendix K; and
  - (2) the flow at that location is at or above the natural Q95;
- (ii) in the Waiau catchment, the primary allocation is that authorised through resource consents in force and operative with their terms;
- (iii) for surface waterbodies subject to a Water Conservation Order that specifies an environmental flow and level regime, the primary allocation will be that specified in the Order;
- (iv) in the absence of quality information, a precautionary approach will be adopted.

Secondary allocation regimes will be determined by:

- (i) for all surface waterbodies outside the Waiau catchment and not subject to a Water Conservation Order that specifies an alternative environmental flow and level regime, a supplementary allocation is available when the following criteria can be met:
  - (1) the total surface water allocation does not exceed a volume of 10 percent of the relevant seasonal flow cut-off flow in the surface waterbody at the time of take; and
  - (2) the flow at that location is at or above the median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;
- (ii) in the Waiau catchment and for surface waterbodies subject to a Water Conservation Order that specifies an environmental flow and level regime, the primary allocation encompasses any supplementary allocation;
- (iii) in the absence of quality information, a precautionary approach will be adopted.

### ***Minimum flows***

The minimum flow will be as follows:

- (i) for takes from the primary allocation the minimum flow will be Q95;
- (ii) for takes from the secondary allocation the minimum flow will be the natural median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;
- (iii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained within this Appendix.

In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values.

For all allocation regimes:

Except for surface waterbodies subject to an environmental flow and level regime established under any Water Conservation Order, establish environmental flow and level regimes for surface waterbodies taking into account the following matters where appropriate:

- (i) mauri and healthy ecosystems of indigenous species, including mahinga kai species;
- (ii) wāhi tapu sites or areas, and wāhi taonga;
- (iii) natural character, landscape, and visual amenity;
- (iv) indigenous vegetation within and adjacent to the waterbody;
- (v) habitats including spawning and nesting areas for invertebrates, birds and fish;
- (vi) fish passage, including facilitating the passage of native and salmonid fish where appropriate, and limiting the introduction of undesirable species and the spread of non native species into areas where they are not normally found;
- (vii) undesirable periphyton and sediment accumulation;
- (viii) maintenance of groundwater flows;
- (ix) the potential for establishment of invading exotic vegetation;
- (x) bedload and sediment transport processes;
- (xi) shoreline or bank erosion;
- (xii) functioning of the river mouth;

- (xiii) recreation opportunities;
- (xiv) accessibility to waterbodies and their margins;
- (xv) existing flow and level regimes, physical resources and activities;
- (xvi) the positive effects resulting from the use and development of the water resources; and

## Assessments of environmental effects for surface water takes, diversion and use

- (i) In situations where the total volume of surface water allocation is between 10 and 30 percent of the Q95 at any downstream point in the catchment as determined by the Southland Regional Council following the methodology established above, an assessment of environment effects using Method 1 below will be required.
- (ii) In situations where the total volume of surface water allocation will breach 30 percent of the Q95 at any downstream point in the catchment as determined by the Southland Regional Council following the methodology established above, an assessment of environment effects using Method 2 below will be required.

### *Method 1 – Assessment using Generalised Habitat Models*

The process for undertaking an assessment of environmental effects using generalised habitat models is as follows:

- **Step 1:** Determine the relevant surface water management unit and flow range using Environment Southland flow data.
- **Step 2:** Determine the appropriate critical value from the data obtained in Step 1 using following table which shows critical values by surface water management unit and flow range:

Median flow	Surface Water Management Unit		
	Lowland	Hill/Mountain	Hill2 (Hokonui/Catlins)
0 – 300 L/s	Diadromous galaxiid	Non-diadromous galaxiid	Diadromous galaxiids (low elevation) and non-diadromous galaxiids at higher elevations
300 – 750 L/s	Redfin/common bully	Trout spawning/juvenile rearing or non-diadromous galaxiid if trout excluded	Trout spawning/juvenile rearing or non-diadromous galaxiid if trout excluded Large adult trout
0.75 – 2.5 m <sup>3</sup> /s	Trout spawning/juvenile rearing* Large adult trout	Trout spawning/juvenile rearing Large adult trout	Trout spawning/juvenile rearing
2.5 – 5 m <sup>3</sup> /s	Trout spawning/juvenile rearing*	Large adult trout	Large adult trout
> 5 m <sup>3</sup> /s	Large adult trout	Large adult trout	Large adult trout

- **Step 3:** Determine the level of habitat at the mean annual low flow using generalised habitat models for the critical value species (refer to *Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004*) and compare with the cumulative effect of the allocated and proposed water takes.

### ***Method 2 –Assessment using Instream Habitat Flow Incremental Methodology***

The process for undertaking an assessment of environmental effects using instream habitat analysis is the same as the process using generalised habitat models outlined in Steps 1 and 2 above. Steps 3 and 4 of this process are as follows:

- **Step 3:** Determine the level of habitat at the Q95 using detailed instream habitat analysis for the critical value species (refer to *Review of methods for setting water quantity conditions in the Environment Southland draft Regional Water Plan, NIWA, June 2004*). For catchments with rivers with a median flow greater than 4.5 m<sup>3</sup>/s, Net Rate of Energy Intake modelling will be used to determine/revise allocation policy for that catchment.
- **Step 4:** Determine the habitat maintenance level using the following table. The habitat maintenance level is based on retaining a percentage of the habitat at Q95 or a proportion of the maximum habitat if it occurs at a flow less than the Q95. The flow that corresponds to this habitat maintenance level will be used to determine the impact of the cumulative abstraction on the waterbody and assist in determining if consent should be granted.

Fishery quality will be assumed to be high unless agreed otherwise by key stakeholders such as the Department of Conservation, Fish and Game New Zealand and Te Ao Mārama. Similarly, the habitat retention level could be adjusted depending on the perceived values of the out-of-stream use in consultation with key stakeholders.

<b>Critical value</b>	<b>Fishery quality</b>	<b>Significance ranking</b>	<b>% Habitat retention</b>
Large adult trout – perennial fishery	High	1	90
Diadromous galaxiid	High	1	90
Non-diadromous galaxiid	-	2	80
Trout spawning/juvenile rearing	High	3	70
Large adult trout – perennial fishery	Low	3	70
Diadromous galaxiid	Low	3	70
Trout spawning/juvenile rearing	Low	5	60
Redfin/common bully	-	5	60



## Appendix L – Groundwater Appendix

### Appendix L.1 Aquifer test requirements

Minimum aquifer test requirements to support resource consent applications to take groundwater are outlined in Table Y.1 below.

**Table Y.1: Minimum aquifer test requirements**

Size of take (m <sup>3</sup> /day)	Minimum Aquifer Test Requirements
<250	Standard yield test comprising 2 hours abstraction at the proposed maximum rate with drawdown and recovery of water levels in the pumped bore measured at regular intervals
250 to 750	<p>A step-drawdown aquifer test comprising a minimum of 3, 1-hour pumping steps followed by measurement of water level recovery. The maximum pumping rate utilised should be equal to or greater than the maximum proposed abstraction rate.</p> <p>A 24-hour constant-rate aquifer test undertaken at the maximum proposed abstraction rate. Water level monitoring should include drawdown and recovery (to within 10% of the initial static water level) in the pumped bore and in at least one observation bore within the area of localised drawdown. The pump rate should be kept constant within +/- 5%</p>
>750	<p><b><i>Confined Aquifers</i></b></p> <p>A step-drawdown aquifer test comprising a minimum of 3, 1-hour pumping steps followed by measurement of water level recovery. The maximum pumping rate utilised should be equal to or greater than the maximum proposed abstraction rate.</p> <p>A 24-hour constant-rate aquifer test undertaken at the maximum proposed abstraction rate. Water level monitoring should include drawdown and recovery (to within 10% of the initial static water level) in the pumped bore and in at least two observation bores in the source aquifer and one observation bore in the overlying aquifer within the area of localised drawdown. The pump rate should be kept constant within +/- 5%.</p> <p><b><i>Unconfined Aquifers</i></b></p> <p>A step-drawdown aquifer test comprising a minimum of 3, 1-hour pumping steps followed by measurement of water level recovery. The maximum pumping rate utilised should be equal to or greater than the maximum proposed abstraction rate.</p> <p>A 24-hour constant-rate aquifer test undertaken at the maximum proposed abstraction rate. Water level monitoring should include drawdown and recovery (to within 10% of the initial static water level) in the pumped bore and at least two observation bores within the area of localised drawdown. The pump rate should be kept constant within +/- 5%.</p>

## Appendix L.2 Stream depletion effects

The stream depletion effects resulting from groundwater abstraction will be classified and managed following the criteria outlined in Table Y.2:

- assessment of the magnitude of stream depletion will be supported by a conceptual hydrogeological model that describes the nature of local surface water/groundwater interaction;
- calculation of the magnitude of stream depletion will be undertaken using relevant analytical or numerical assessment techniques which are suitable for application in the hydrogeological setting in which abstraction will occur;
- representative hydraulic properties for assessment of the magnitude of stream depletion will be derived from aquifer testing undertaken in accordance with requirements outlined in Appendix L.1, as well as an assessment of representative values from the wider hydrogeological environment;
- waterbodies characterised as ephemeral will be excluded from consideration of stream depletion effects;
- stream depletion effects due to groundwater abstraction should not result in a more than minor effect on the frequency, extent and duration of flow loss in intermittent waterbodies;
- where the pumped well borders two or more streams the magnitude of stream depletion will be assessed in the following manner:
  - ◆ if  $SD_1 + SD_2 < 0.9Q$ , stream depletion will be managed on the basis of the calculated depletion in each stream;
  - ◆ if  $SD_1 + SD_2 > 0.9Q$ , the take will be classified as having a direct hydraulic connection and managed following the criteria outlined in Table Y.2.

Where:  $SD_1$  = calculated magnitude of stream depletion in Stream 1  
 $SD_2$  = calculated magnitude of stream depletion in Stream 2  
 $Q$  = the assessed pumping rate

- in the Mataura River catchment, the relevant minimum flow cut-off for groundwater takes classified as having a riparian, direct or high hydraulic connection will be determined as the figure required to maintain compliance with the flow allocation provisions of the Water Conservation (Mataura River) Order 1997. In all other catchments minimum flow cut-offs for groundwater takes classified as having a riparian, direct or high hydraulic connection will be determined following the Policy 16 Environmental flow and level regimes.

**Table Y.2: Classification and management of stream depletion effects**

Hydraulic Connection	Classification	Management Approach
Riparian	Any groundwater take within 5 metres of a surface waterbody <sup>a</sup>	The groundwater take will be managed as an equivalent surface water take unless there is clear hydrogeological evidence that demonstrates that pumping will not impact on the surface waterbody <sup>a</sup>
Direct	Where the calculated effect on an adjacent surface waterbody after 7 days abstraction at the maximum authorised rate is greater than 80 percent of the assessed pumping rate	The groundwater take will be managed as an equivalent surface water take for flow and allocation purposes and therefore subject to any relevant minimum flow and flow sharing regime.
High	Where the calculated effect on an adjacent surface waterbody <sup>a</sup> after 7 days abstraction at the maximum authorised rate is less than 80 percent of the assessed pumping rate; and, Where the calculated effect on an adjacent surface waterbody <sup>a</sup> after pumping at the maximum authorised rate for either: the maximum period allowed by the seasonal volume <sup>b</sup> , or a continuous period of 90 days is greater than 60 percent of the assessed pumping rate	Where the magnitude exceeds 2 litres per second the calculated stream depletion effect will be managed as an equivalent take from an adjacent surface waterbody with the remainder of the allocation included in the allocation volume for the relevant groundwater zone. Groundwater takes classified as having a high degree of hydraulic connection will be subject to any relevant minimum flow regime.
Moderate	Where the calculated effect on an adjacent surface waterbody <sup>a</sup> after pumping at the maximum authorised rate for either: the maximum period allowed by the seasonal volume or a continuous period of 90 days is less between 30 and 60 percent of the assessed pumping rate or has a magnitude greater than 5 litres per second	Where the magnitude exceeds 2 litres per second the calculated stream depletion effect will be included in the allocation calculated from an adjacent surface waterbody the remainder of the allocation included in the allocation volume for the relevant groundwater zone. No specific minimum flow restrictions will be imposed on the groundwater take.
Low	Where the abstraction is not classified as having a riparian, high, direct or moderate hydraulic connection.	The take will be managed solely as a groundwater take and the full allocation included in the allocation volume for the relevant groundwater management zone

**Note-**

<sup>a</sup> Includes rivers, streams, lakes and wetlands.

<sup>b</sup> In situations where the seasonal volume limits maximum rate abstraction to a period of less than 90 days.

## Appendix L.3 Interference effects

### Determination of “Acceptable”

- (a) The cumulative interference effect of any new groundwater abstraction (in conjunction with other lawfully established groundwater takes) is considered “acceptable” if the drawdown does not exceed any of the following limits:
  - (i) 20 percent of the available drawdown in any existing bore which adequately penetrates an unconfined aquifer that is not utilised for long-term monitoring of water levels; or
  - (ii) 50 percent of the potentiometric head in any existing bore screened in a confined aquifer that is not utilised for long-term monitoring of water levels; or
  - (iii) no more than 10 percent of the available drawdown in a unconfined aquifer which exists 50 percent of the time during natural conditions when no pumping is occurring for bores utilised for long-term monitoring of water levels; or
  - (iv) no more than 20 percent of the available potentiometric head in a confined aquifer that exists 50 percent of the time during natural conditions when no pumping is occurring for bores utilised for long-term monitoring of water levels.
- (b) An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under this policy.
- (c) Adequacy of bore construction and the available drawdown will be calculated following the methodology outlined in Appendix L.3. An increased volume or increased pumping rate for any lawfully established groundwater abstraction will be considered a new groundwater abstraction under this policy.
- (d) An exception to clause (a) above may be appropriate for aquifer testing and necessary infrastructure works, and in certain circumstances for mining activities where dewatering occurs for a short duration.

### Assessment of Interference Effects

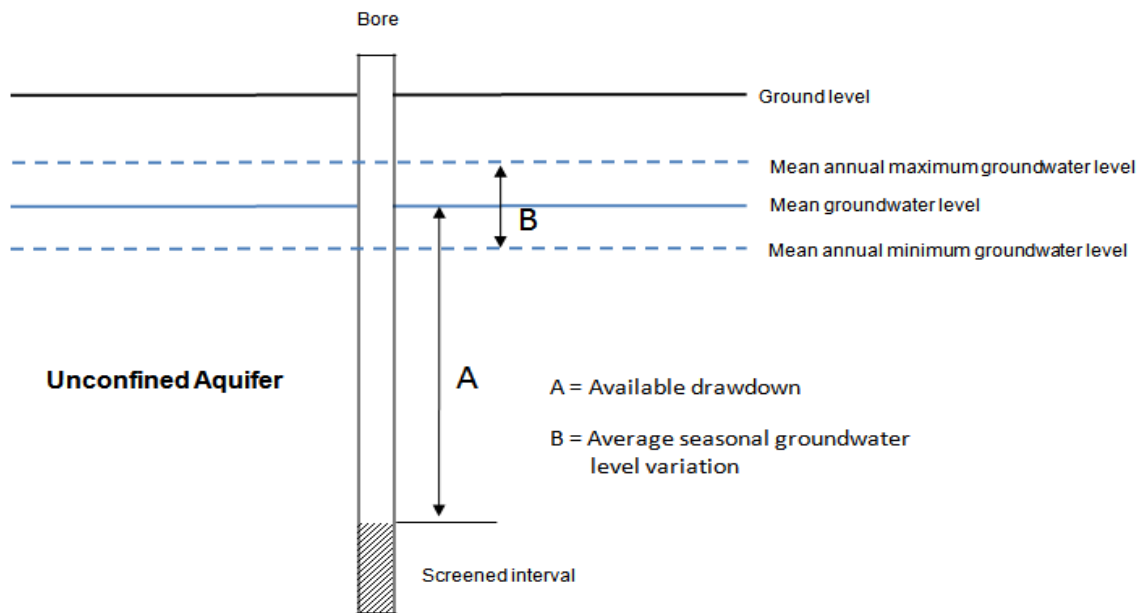
The magnitude of pumping interference effects will be assessed as the drawdown occurring in response to pumping at the maximum rate and/or duration using standard hydrogeological analysis methods appropriate for the hydrogeological setting.

### Unconfined Aquifers

An existing bore or well will be classified as adequately penetrating an unconfined aquifer where the interval over which groundwater enters the bore or well is located at a depth exceeding 3 times the average seasonal groundwater level variation below the mean groundwater level (i.e.  $A > 3 \times B$ ).

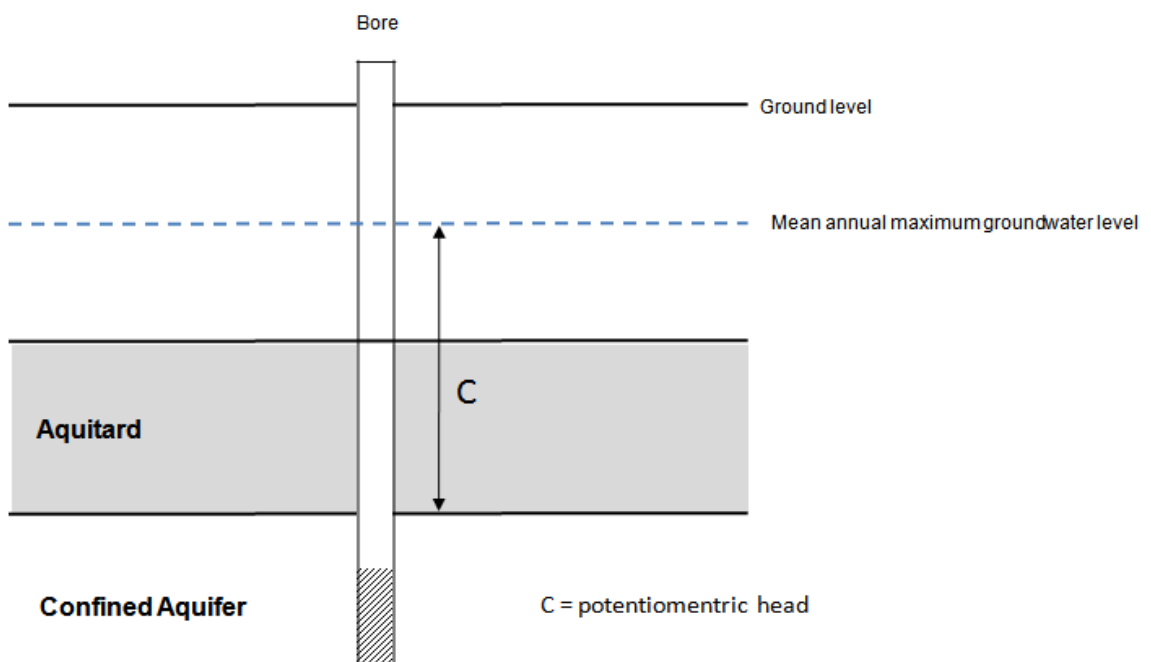
The available drawdown in an adequately penetrating bore screened in an unconfined aquifer is defined as the distance between the mean groundwater level and the top of the screened interval.

Bores or wells not meeting the criteria for adequate penetration will be excluded from assessment of pumping interference effects. Where the depth of the screened interval in a bore or well is not known, available drawdown will be assessed assuming the screened interval extends 1 metre upwards from the full bore or well depth.



### Confined Aquifers

The potentiometric head in a bore screened in a confined aquifer is defined as the head between the mean annual maximum piezometric level and top of the confined aquifer.



## Appendix L.4 Calculation of seasonal groundwater allocation

Where not specified by existing resource consent conditions, maximum daily and seasonal abstraction rates used for calculating cumulative allocation volumes under Rule 52 will be established on the following basis.

### Stock water and dairy use

Peak daily demand and annual allocation for groundwater takes for stock and dairy use will be calculated based on the number of each stock type multiplied by the relevant figures outlined in Table Y.3.

**Table Y.3 Peak and average daily water use for various stock types**

Water Use	Peak (daily) water requirement L/head	Average (annual) water requirement L/day
Dairy - lactating cows (including dairy shed use)	140	95
drystock	45	30
Beef Cattle	45	30
Deer - hinds	45	30
stags	30	20

### Seasonally Variable Water Uses

For water uses which exhibit significant seasonal variability in daily water use (e.g. municipal supply, milk processing, meat processing), seasonal abstraction rates will be calculated on the basis of the following:

$$\text{Seasonal Abstraction Rate} = (\text{Peak daily water use} \times 0.75) \times 365 \text{ days}$$

## Appendix L.5 Groundwater Allocation

### Y.5.1 Unconfined Aquifers

The primary allocation for groundwater management zones defined on Map Series 3: Groundwater Management are listed in Table Y.4.

**Table Y.4 Primary groundwater allocation limits**

Groundwater Zone	Primary Allocation (m <sup>3</sup> x 10 <sup>6</sup> /year)
Awarua	32.29
Blackmount	15.46
Castlerock	4.00
Cattle Flat	1.65
Central Plains	20.99
Centre Hill	5.29
Croydon	2.05
Dipton	6.32
Edendale	9.31
Five Rivers	12.23
Knapdale	2.22
Longridge	3.47
Lower Aparima	23.51
Lower Maitaura	24.97
Lower Oreti	13.49
Makarewa	44.65
Orepuki	8.00
Oreti	1.99
Riversdale	5.02
Te Anau	88.94
Te Waewae	13.83
Tiwai	1.98
Upper Aparima	41.06
Upper Maitaura	27.84
Waihopai	32.08
Waimatuku	15.66
Waimea Plains	9.30
Waipounamu	1.16
Wendon	3.83
Wendonside	7.07

## Y.5.2 Confined Aquifers

### *Lumsden Aquifer*

Groundwater abstraction from the Lumsden aquifer will be managed in accordance with the allocation volume and minimum water level cut-offs outlined in Table Y.5.

**Table Y.5 Lumsden Aquifer allocation and minimum groundwater level cut-offs**

Annual Allocation (m <sup>3</sup> x 10 <sup>6</sup> /year)	Monitoring bore	Initial level trigger		Minimum level cut-off	
		m asl	% reduction in abstraction	m asl	% reduction in abstraction
5.76	E44/0300	202.5	50	201.5	100

### *Garvie Aquifer*

Groundwater abstraction from the Garvie aquifer will be managed in accordance with the allocation volume and minimum water level cut-offs outlined in Table Y.6.

**Table Y.6 Garvie Aquifer allocation and minimum groundwater level cut-offs**

Annual Allocation (m <sup>3</sup> x 10 <sup>6</sup> /year)	Monitoring bore	Initial level trigger		Minimum level cut-off	
		m asl	% reduction in abstraction	m asl	% reduction in abstraction
8.38	F44/0301	147.0	50	146.0	100

### *North Range Aquifer*

Groundwater abstraction from the North Range aquifer will be managed in accordance with the allocation volume and minimum water level cut-off specified in Table Y.7. Groundwater takes from this aquifer will also be subject to a pro-rata reduction in seasonal allocation (1 October - 30 September) based on the seasonal recovery triggers specified in Table Y.8.

**Table Y.7 North Range Aquifer minimum groundwater level cut-off**

Annual Allocation (m <sup>3</sup> x 10 <sup>6</sup> /year)	Monitoring bore	Minimum level cut-off	
		m asl	% reduction in abstraction
1.83	E44/0196	201.5	100

**Table Y.8: North Range Aquifer seasonal recovery triggers**

E44/0196 Water Level 1 October (m asl)	Percentage of seasonal allocation available (%)
>250	100
>249	75
>248	50
>247	25

### *All Other Confined Aquifers*

Allocation volumes, minimum water level cut-offs and seasonal recovery triggers for confined aquifers not listed in Table Y.5 to Table Y.8 will be established following the methodology outlined in Appendix L.6.



## Appendix L.6 Establishing allocation volumes for confined aquifers

- In addition to confined aquifers specifically identified in Appendix L.5, aquifer systems elsewhere in the Southland Region may be classified by Environment Southland as confined where aquifer test data collected in accordance with requirements outlined in Appendix L.1 exhibit no significant departure from ‘ideal’ confined aquifer conditions.
- For aquifers which are characterised by Environment Southland as semi-confined (i.e. exhibiting a significant departure from ‘ideal’ confined aquifer conditions), allocation will be managed as part of that established for adjacent, hydraulically connected groundwater resources;
- Allocation volumes for confined aquifer aquifers not identified in Appendix L.6 will be determined on the basis of groundwater throughflow following Rule 54(e). Where alternative methods (such as numerical modelling) are not available, primary allocation for confined aquifers will be based on the following relation:

$$\text{Annual allocation} = 0.75(T \times i \times W)$$

Where  $T$  = representative aquifer transmissivity

$i$  = hydraulic gradient

$W$  = aquifer width perpendicular to groundwater flow

- Minimum groundwater level cut-offs (and/or seasonal recovery triggers) for confined aquifers will be established to:
  - ◆ maintain long-term aquifer storage volumes (taking into account observed temporal groundwater level variations, recharge and seasonal recovery characteristics);
  - ◆ establish and maintain a consistent reliability of supply for all groundwater users within the primary allocation volume. Trigger levels for supplementary groundwater allocation will be established at a level which maintains reliability of supply for the primary groundwater allocation.

## Appendix M – Taonga Species List

### Birds

Name in Māori	Name in English	Scientific name
Hoiho	Yellow-eyed penguin	<i>Megadyptes antipodes</i>
Kāhu	Australasian harrier	<i>Circus approximans</i>
Kākā	South Island kākā	<i>Nestor meridionalis meridionalis</i>
Kākāpō	Kākāpō	<i>Strigops habroptilus</i>
Kākāriki	New Zealand parakeet	<i>Cyanoramphus</i> spp
Kakaruai	South Island robin	<i>Petroica australis australis</i>
Kakī	Black stilt	<i>Himantopus novaezelandiae</i>
Kāmana	Crested grebe	<i>Podiceps cristatus</i>
Kārearea	New Zealand falcon	<i>Falco novaeseelandiae</i>
Karoro	Black-backed gull	<i>Larus dominicanus</i>
Kea	Kea	<i>Nestor notabilis</i>
Kōau	Black shag	<i>Phalacrocorax carbo</i>
	Pied shag	<i>Phalacrocorax varius varius</i>
	Little shag	<i>Phalacrocorax melanoleucos brevirostris</i>
Koekoē	Long-tailed cuckoo	<i>Eudynamys taitensis</i>
Kōparapara or Korimako	Bellbird	<i>Anthornis melanura melanura</i>
Kororā	Blue penguin	<i>Eudyptula minor</i>
Kōtare	Kingfisher	<i>Halcyon sancta</i>
Kōtuku	White heron	<i>Egretta alba</i>
Kōwhiowhio	Blue duck	<i>Hymenolaimus malacorhynchos</i>
Kūaka	Bar-tailed godwit	<i>Limosa lapponica</i>
Kūkupa/Kererū	New Zealand wood pigeon	<i>Hemiphaga novaeseelandiae</i>
Kuruwhengu/Kuruwhengi	New Zealand shoveller	<i>Anas rhynchos</i>
Mātā	Fernbird	<i>Bowdleria punctata punctata</i> and <i>Bowdleria punctata stewartiana</i> and <i>Bowdleria punctata wilsoni</i> and <i>Bowdleria punctata candata</i>
Matuku moana	Reef heron	<i>Egretta sacra</i>
Miromiro	South Island tomtit	<i>Petroica macrocephala macrocephala</i>
Miromiro	Snares Island tomtit	<i>Petroica macrocephala dannefaerdi</i>
Mohua	Yellowhead	<i>Moboua ochrocephala</i>
Pākura/Pūkeko	Swamp hen/Pūkeko	<i>Porphyrio porphyrio</i>
Pārera	Grey duck	<i>Anas superciliosa</i>
Pateke	Brown teal	<i>Anas aucklandica</i>
Pīhoihoi	New Zealand pipit	<i>Anthus novaeseelandiae</i>
Pīpīwharauoa	Shining cuckoo	<i>Chrysococcyx lucidus</i>
Pīwakawaka	South Island fantail	<i>Rhipidura fuliginosa fuliginosa</i>
Poaka	Pied stilt	<i>Himantopus himantopus</i>
Pokotiwha	Snares crested penguin	<i>Endyptes robustus</i>
Pūtakitaki	Paradise shelduck	<i>Tadorna variegata</i>

Name in Māori	Name in English	Scientific name
Riroriro	Grey warbler	<i>Gerygone igata</i>
Roroa	Great spotted kiwi	<i>Apteryx haastii</i>
Rowi	Ōkārito brown kiwi	<i>Apteryx mantelli</i>
Ruru koukou	Morepork	<i>Ninox novaeseelandiae</i>
Takahē	Takahē	<i>Porphyrio mantelli</i>
Tara	Terns	<i>Sterna</i> spp
Tawaki	Fiordland crested penguin	<i>Eudyptes pachyrhynchus</i>
Tete	Grey teal	<i>Anas gracilis</i>
Tīeke	South Island saddleback	<i>Philesturnus carunculatus carunculatus</i>
Tītī	Sooty shearwater/Muttonbird/Hutton's shearwater Common diving petrel South Georgian diving petrel Westland petrel Fairy prion Broad-billed prion White-faced storm petrel Cook's petrel Mottled petrel	<i>Puffinus griseus</i> and <i>Puffinus buttoni</i> and <i>Pelecanoides urinatrix</i> and <i>Pelecanoides georgicus</i> and <i>Procellaria westlandica</i> and <i>Pachyptila turtur</i> and <i>Pachyptila vittata</i> and <i>Pelagodroma marina</i> and <i>Pterodroma cookii</i> and <i>Pterodroma inexpectata</i>
Tītītipounamu	South Island rifleman	<i>Acanthisitta chloris chloris</i>
Tokoeka	South Island brown kiwi	<i>Apteryx australis</i>
Toroa	Albatrosses and Mollymawks	<i>Diomedea</i> spp
Toutouwai	Stewart Island robin	<i>Petroica australis rakiura</i>
Tūi	Tūi	<i>Prosthemadera novaeseelandiae</i>
Tutukiwi	Snares Island snipe	<i>Coenocorypha aucklandica huegeli</i>
Weka	Western weka	<i>Gallirallus australis australis</i>
Weka	Stewart Island weka	<i>Gallirallus australis scotti</i>
Weka	Buff weka	<i>Gallirallus australis hectori</i>

## Plants

Name in Māori	Name in English	Scientific name
Akatorotoro	White rata	<i>Metrosideros perforata</i>
Aruhe	Fernroot (bracken)	<i>Pteridium aquilinum</i> var <i>esculentum</i>
Harakeke	Flax	<i>Phormium tenax</i>
Horoeka	Lancewood	<i>Pseudopanax crassifolius</i>
Houhi	Mountain ribbonwood	<i>Hoberia lyalli</i> and <i>H. glabata</i>
Kahikatea	Kahikatea/White pine	<i>Dacrycarpus dacrydioides</i>
Kāmahi	Kāmahi	<i>Weinmannia racemosa</i>
Kānuka	Kānuka	<i>Kunzia ericoides</i>
Kāpuka	Broadleaf	<i>Griselinia littoralis</i>
Karaeopirita	Supplejack	<i>Ripogonum scandens</i>
Karaka	New Zealand laurel/Karaka	<i>Corynocarpus laevigata</i>

Name in Māori	Name in English	Scientific name
Karamū	Coprosma	<i>Coprosma robusta, coprosma lucida, coprosma foetidissima</i>
Kātote	Tree fern	<i>Cyathea smithii</i>
Kiekie	Kiekie	<i>Freycinetia baueriana</i> subsp <i>banksii</i>
Kōhia	NZ Passionfruit	<i>Passiflora tetrandra</i>
Korokio	Korokio Wire-netting bush	<i>Corokia cotoneaster</i>
Koromiko/Kōkōmuka	Koromiko	<i>Hebe salicifolia</i>
Kōtukutuku	Tree fuchsia	<i>Fuchsia excorticata</i>
Kōwahi Kōhai	Kōwhai	<i>Sophora microphylla</i>
Mamaku	Tree fern	<i>Cyathea medullaris</i>
Mānia	Sedge	<i>Carex flagellifera</i>
Mānuka Kahikātoa	Tea-tree	<i>Leptospermum scoparium</i>
Māpou	Red matipo	<i>Myrsine australis</i>
Mataī	Mataī/Black pine	<i>Prumnopitys taxifolia</i>
Miro	Miro/Brown pine	<i>Podocarpus ferrugineus</i>
Ngaio	Ngaio	<i>Myoporum laetum</i>
Nīkau	New Zealand palm	<i>Rhopalostylis sapida</i>
Pānako	(Species of fern)	<i>Asplenium obtusatum</i>
Pānako	(Species of fern)	<i>Botrychium australe</i> and <i>B. biforme</i>
Pātōtara	Dwarf mingimingi	<i>Leucopogon fraseri</i>
Pīngao	Pīngao	<i>Desmoschoenus spiralis</i>
Pōkākā	Pōkākā	<i>Elaeocarpus hookerianus</i>
Ponga/Poka	Tree fern	<i>Cyathea dealbata</i>
Rātā	Southern rātā	<i>Metrosideros umbellata</i>
Raupō	Bulrush	<i>Typha angustifolia</i>
Rautāwhiri/Kōhūhū	Black matipo/Māpou	<i>Pittosporum tenuifolium</i>
Rimu	Rimu/Red pine	<i>Dacrydium cypressinum</i>
Rimurapa	Bull kelp	<i>Durvillaea antarctica</i>
Taramea	Speargrass, spaniard	<i>Aciphylla</i> spp
Tarata	Lemonwood	<i>Pittosporum eugenioides</i>
Tawai	Beech	<i>Nothofagus</i> spp
Tētēaweka	Muttonbird scrub	<i>Olearia angustifolia</i>
Tī rākau/Tī Kōuka	Cabbage tree	<i>Cordyline australis</i>
Tīkumu	Mountain daisy	<i>Celmisia spectabilis</i> and <i>C. semicordata</i>
Tītoki	New Zealand ash	<i>Alectryon excelsus</i>
Toatoa	Mountain Toatoa, Celery pine	<i>Phyllocladus alpinus</i>
Toetoe	Toetoe	<i>Cortaderia richardii</i>
Tōtara	Tōtara	<i>Podocarpus totara</i>
Tutu	Tutu	<i>Coriaria</i> spp
Wharariki	Mountain flax	<i>Phormium cookianum</i>
Whīnau	Hīnau	<i>Elaeocarpus dentatus</i>
Wī	Silver tussock	<i>Poa cita</i>
Wīwī	Rushes	<i>Juncus</i> all indigenous <i>Juncus</i> spp and <i>J. maritimus</i>

## Freshwater Fish and Shellfish

Name in Māori	Name in English	Scientific name
Inanga	(whitebait species)	<i>Galaxias maculatus</i>
	Banded kokopu	<i>Galaxias fasciatus</i>
Koaro	(whitebait species)	<i>Galaxias brevipinnis</i>
	Shortjaw kokopu	<i>Galaxias postvectis</i>
Taiwharu	Giant kokopu	<i>Galaxias argenteus</i>
	Upland bully	<i>Gobiomorphus breviceps</i>
	Bluegill bully	<i>Gobiomorphus hubbsi</i>
Kokopu/hawai	Giant bully	<i>Gobiomorphus gobioides</i>
	Common bully	<i>Gobiomorphus cotidianus</i>
	Redfin bully	<i>Gobiomorphus buttoni</i>
Tuna	Longfin eel	<i>Anguilla dieffenbachii</i>
Tuna	Shortfin eel	<i>Anguilla australis</i>
Kanakana	lamprey	<i>Geotria australis</i>
	Alpine galaxias	<i>Galaxias paucispondylus</i>
	Gollum galaxias	<i>Galaxias gollumoides</i>
	Southern flathead galaxias	<i>Galaxias depressiceps</i>
Piripiripohatu	Torrentfish	<i>Cheimarrichthys fosteri</i>
Paraki/ngaiore	Common smelt	<i>Retropinna retropinna</i>
	Black flounder	<i>Rhombosolea retiaria</i>
Koura/kewai	Freshwater crayfish	<i>Paranephrops planifrons, Paranephrops zealandicus</i>
Kakahi	Freshwater mussels	<i>Echyridella menziesi</i>
Pipi/Kākahi	Pipi	<i>Paphies australe</i>
Tuaki	Cockle	<i>Austrovenus stutchburgi</i>
		<i>Dosinia anus, Paphies donacina, Mactra discor, Mactra murchsoni, Spisula aequilateralis, Basina yatei, or Dosinia subrosa</i>
Tuaki/Hākiari, Kuhakuha/Pūrimu	Surfclam	
Tuatua	Tuatua	<i>Paphies subtriangulata, Paphies donacina</i>
Waikaka/Pūpū	Mudsnail	<i>Amphibola crenata, Turbo smaragdus, Zedilom spp</i>

## **Appendix N – Management Plan Requirements**

The following definitions are relevant to Appendix N.

Critical Source Area means: Areas of enriched nutrient or sediment sources and hydrological activity that occur in small parts of a catchment or farm, but contribute a disproportionately large amount of nutrient or sediment to the environment (e.g. steep hills, gullies or swales).

### **Part A – Management Plans**

A Management Plan can be based on either of:

1. the material set out in Part B below; OR
2. industry prepared Management Plan templates and guidance material that:
  - (a) includes the material set out in Part B below, contains a methodology that will enable development of a plan that will identify actual and potential environmental effects and risks specific to the property, addresses those effects and risks and has a high likelihood of appropriately avoiding, remedying or mitigating those effects, includes objective performance measures; and
  - (b) has been approved as meeting the criteria in (a) and being acceptable to the Southland Regional Council by the Chief Executive of the Southland Regional Council.

### **Part B – Management Plan Content**

1. A written Management Plan is:
  - prepared and retained, identifying the matters set out in numbers 2–10 below;
  - updated at least once every 12 months; and
  - provided to the Southland Regional Council upon request.
2. The following property details are recorded:
  - physical address;
  - description of the ownership and name of a contact person;
  - legal description of the land and farm name;
  - details of all resource consents held, including a copy of each consent.
3. A map(s) or aerial photograph(s) at a scale that clearly shows:
  - the boundaries of the property;
  - the location of significant farm infrastructure;
  - the location of any critical source areas;
  - the physiographic unit(s) in which the land is located;
  - the location of permanent or intermittent rivers, streams, lakes, drains, ponds or wetlands;
  - where known, the of any subsurface drainage system(s) and relative depth and position , including the outlet(s) of any such systems;
  - the location of riparian vegetation and fences adjacent to waterbodies;
  - the location on all water ways where stock access or crossing occurs;

- the location of any known and recorded heritage site;
- the location of any areas within or adjoining the property that are identified in a District Plan as “significant indigenous biodiversity”.

4. ***Nutrient Budget***

- (a) A nutrient budget based on soil nutrient tests has been prepared, using the latest version of the OVERSEER model, in accordance with the latest version of the OVERSEER Best Practice Data Input Standards, or an equivalent model approved by the Chief Executive of Southland Regional Council:
- (i) where a material change in the land use associated with the farming activity occurs (being a change exceeding that resulting from normal crop rotations or variations in climatic or market conditions) the nutrient budget shall be prepared at the end of the year in which the change occurs, and also three years after the change occurs;
  - (ii) where a material change in the land use associated with the farming activity does not occur, the nutrient budget shall be prepared once every three years;
  - (iii) an annual review of the input data used to prepare the nutrient budget shall be carried out by or on behalf of the landowner for the purposes of ensuring the nutrient budget accurately reflects the farming system. A record of the review shall be kept by the landowner.

5. ***Good Management Practices***

- (a) A good management practices section which identifies:
- (i) the general good management practices which will be undertaken on farm over the coming 1 June to 31 May period. Examples of general good management practices are provided on the Southland Regional Council website.
  - (ii) the physiographic zones, and variants (where applicable) within the property;
  - (iii) the key transport pathways and contaminants (where applicable) for each of the physiographic zones within the property, from Table 1 below;
  - (iv) the good management practices for any relevant key transport pathways which will be undertaken on farm over the coming 1 June to 31 May period. A list of example actions to consider for each of the mitigations is provided on the Southland Regional Council website;
  - (v) upon 12 monthly review, the good management practices that were undertaken in the previous 1 June to 31 May period and the good management practices to be implemented over the coming 1 June to 31 May period;
  - (vi) a range of good management practices will be implemented each year.

**Table 1: Key transport pathways and contaminants for each physiographic zone**

Physiographic zone	Key transport pathways (✓)		
	Overland flow <sup>1</sup>	Deep drainage (leaching to groundwater) <sup>2</sup>	Artificial Drainage <sup>1</sup>
Alpine	✓		
Bedrock/Hill Country	✓ (o)		✓ (a)
Central Plains		✓	✓
Gleyed	✓ (o)		✓
Lignite-Marine Terraces	✓ (o)		✓ (a)
Old Mataura		✓	
Oxidising	✓ (o)	✓	✓ (a)
Peat Wetlands		✓*	✓
Riverine	✓ (o)	✓	

**NOTE:**

<sup>1</sup>Overland flow and artificial drainage transport nitrogen, phosphorus, microbes and sediment

<sup>2</sup>Deep drainage transports nitrogen, except in Peat Wetlands, see \* below

\*Deep drainage transports phosphorus rather than nitrogen, and lateral drainage of phosphorus and microbes through the soil is also a key pathway in the Peat Wetlands (mitigations are the same as for deep drainage)

✓ (o) denotes that overland flow is only a key transport pathway in the parts of the steeper parts of the physiographic zone, referred to as the (o), or overland flow variant (refer to physiographic zones map)

✓ (a) denotes that artificial drainage is only a key transport pathway in parts of the physiographic zone where there is artificial drainage, referred to as the (a), or artificial drainage variant (refer to physiographic zones map)

**6. Riparian Management Plan**

- (a) A Riparian Management Plan is prepared and implemented, and records in written and/or map form:
- (i) methods to exclude stock, where required, from waterbodies, critical source areas and riparian areas;
  - (ii) in relation to sheep, the mitigation measures to manage critical source areas to ensure contaminant losses, particularly associated with overland flow, are minimised.
  - (iii) the mitigation options to minimise overland flow including areas where stock will be excluded and areas where vegetation will be planted;
  - (iii) the type of vegetation to be planted and how it will be maintained;
  - (iv) the grazing of appropriately fenced riparian margins for weed control purposes;
  - (v) the access to waterways for maintenance purposes, and in particular the waterways maintained by the Southland Regional Council in accordance with the Southland Flood Control Management Bylaw 2010.
- (b) An up-to-date copy of the Riparian Management Plan is kept and provided to the Southland Regional Council upon request.



7. **Cultivation**

- (a) A cultivation map showing:
  - (i) waterbodies;
  - (ii) buffer strips along those waterbodies as follows:
    - (1) 3 m buffer where slopes are 4 degrees or less
    - (2) 10 m buffer where slopes are greater than 4 degrees and up to 16 degrees
    - (3) 20 m buffer where slopes are greater than 16 degrees
    - (4) as specified in resource consent conditions where the slopes are greater than 20 degrees;
  - (iii) land where cultivation is planned over the next period 1 June to 30 May;
  - (iv) any proposed good management practices for cultivation, such as contour ploughing, strip cultivation or minimum tillage.

8. **Intensive winter grazing**

Where intensive winter grazing is undertaken, an intensive winter grazing section which contains:

- (a) Good management practices:
  - (i) to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land for intensive winter grazing;
  - (ii) to avoid the conspicuous discolouration or sedimentation of any adjacent waterbodies;
- (b) an intensive winter grazing map showing the total extent of land that may be intensively winter grazed on the property which includes the following details in respect to that land:
  - (i) the extent of land to be intensively winter grazed for the next period 1 May to 30 September;
  - (ii) critical source areas;
  - (iii) waterbodies;
  - (iv) slope classes;
  - (v) buffer strips;
  - (vi) location of sub-surface drains their outlet position and relative height.

9. **Collected Agricultural Effluent**

- (a) The animal effluent disposal system application separation distances, depth, uniformity and intensity are self-checked annually in accordance with Section 4 “Land Application” in the guideline “A Farmer's Guide to Managing Farm Dairy Effluent - A Good Practice Guide for Land Application Systems” [2013].
- (b) Records of the application, separation distances, depth, uniformity and intensity of dairy effluent disposal, in accordance with (e)(ii) above, are kept and provided to the Southland Regional Council.
- (c) The application of collected agricultural effluent is avoided when the soil temperature is less than 5°C.

10. **Irrigation Management** (applies to farming activities that irrigate):
- (a) All irrigation systems installed or replaced after 1 October 2015 meet the Irrigation New Zealand Piped Irrigation Systems Design Code of Practice 2013, Irrigation New Zealand Piped Irrigation Systems Design Standards 2013 and the Irrigation New Zealand Piped Irrigation Systems Installation Code of Practice 2013.
  - (b) The irrigation system application depth and uniformity are self-checked annually in accordance with the relevant Irrigation NZ Pre-Season Checklist<sup>28</sup> and IRRIG8Quick Irrigation Quick tests<sup>29</sup> for any irrigation system operating on the property.
  - (c) Irrigation applications are undertaken in accordance with property specific soil moisture monitoring, or a soil water budget, or an irrigation scheduling calculator. Soil monitoring means monitoring soil moisture using either volumetric or tension based methodology.
  - (d) Records of irrigation system application depth and uniformity checklists, irrigation applications, soil moisture monitoring or soil water budget or irrigation scheduling calculator results and rainfall are kept and provided to the Southland Regional Council upon request.

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<sup>28</sup> Pre-Season Checklist: Centre Pivot and Linear Move Irrigators (Irrigation NZ, n.d.)

Pre-Season Checklist: Sprayline Irrigation (Irrigation NZ, n.d.)

Pre-Season Checklist: Travelling Irrigators (Irrigation NZ, n.d.)

Pre-Season Checklist: Drip Micro Irrigation (Irrigation NZ, n.d.)

Pre-Season Checklist: Water Supply (Irrigation NZ, n.d.)

Pre-Season Checklist: Compliance (Irrigation NZ, n.d.)

Recommendations and Checklist: Operations and Maintenance Manual (Irrigation NZ, n.d.)

<sup>29</sup> IRRIG8Quick Irrigation Performance Quick Test: Guidelines for Centre Pivot Irrigators (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Performance Quick Test: Guidelines for Linear Move Irrigators (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Performance Quick Test: Guidelines for Travelling Irrigators (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Calibration Quick Test: Guidelines for Sprayline Irrigation (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Calibration Quick Test: Guidelines for Drip Micro Irrigation (Page Bloomer Associates, n.d.)

IRRIG8Quick Frost Protection Calibration Quick Check (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Energy Quick Test: Pump Efficiency Guidelines (Page Bloomer Associates, n.d.)

IRRIG8Quick Irrigation Energy Quick Test: Delivery System Efficiency Guidelines (Page Bloomer Associates, n.d.)

## **Appendix O - Reasonable and Efficient Use of Water**

### **Irrigation**

- (a) Seasonal allocation for new resource consents to take and use water for irrigation at a rate exceeding (the equivalent of) 3,000 m<sup>3</sup>/ha/year will be established by use of a field-validated irrigation demand model to calculate the annual irrigation volume to achieve 80 percent (4 in 5 year) reliability which takes account of:
- physical factors including crop and soil type;
  - climatic factors including rainfall variability and evapo-transpiration;
  - irrigation application efficiency.
- (b) Replacement resource consent applications to take and use water for irrigation will utilise records of historical water use to establish a seasonal allocation which takes into account:
- the volume of water utilised in previous irrigation seasons;
  - any proposed changes to the operation of the irrigation system.

### **Group or Community Water Supplies**

A water management plan shall be submitted with a resource consent application to take and use water for group or community water supplies that addresses:

- the estimated average and peak demand for water taking into account the number of connections, the nature of water use and projected future demand;
- the current effectiveness and efficiency of the distribution network as well as works proposed to improve the efficiency of water distribution and use;
- how water demand will be managed during periods of water shortage.

### **Other Uses**

- The rate and volume of abstraction for resource consent applications to take and use water for purposes other than irrigation, group or community water supply will be calculated in accordance with best management practices for efficient use of water in relation to that use. Applications for replacement resource consents may also demonstrate by way of independent verification or audit that existing (and proposed) usage is in accordance with rates and volumes sought and does not result in wastage or inefficient use of water.

## **Appendix P – Effluent Pond Drop Test methodology**

- Testing is undertaken over a minimum period of 48 hours.
- Testing recording equipment is to be accurate to not more than 0.8 mm.
- Continuous readings are to be taken over the entire test period at not more than 10 second intervals.
- Data analysis is undertaken by a party independent of equipment installer.
- Any change in pond fluid level over the test period needs to be accounted for.
- Ponds must be at or over 75% design depth before a test can be undertaken.
- The pond has been de-sludged in the 12 months prior to the test being undertaken and there shall be no sludge or crust on the pond surface during the test.
- The pond surface is not frozen during any part of the testing.
- An anemometer shall be installed for the duration of the test and at no time shall the wind speed exceed 10 metres per second during the test.

## **Appendix Q – Sensitive Waterbodies**

Sensitive waterbodies include all waterbodies referred to in Appendix A: Regionally and Significant Wetlands and those listed below:

- Lake Te Anau;
- Lake Manapouri;
- Mavora Lakes;
- Lake Murihiku;
- Lakes on Stewart Island;
- Lakes in Milford Sound;
- The Reservoir (lake);
- Waituna Lagoon;
- New River Estuary;
- Waimatuku Estuary.