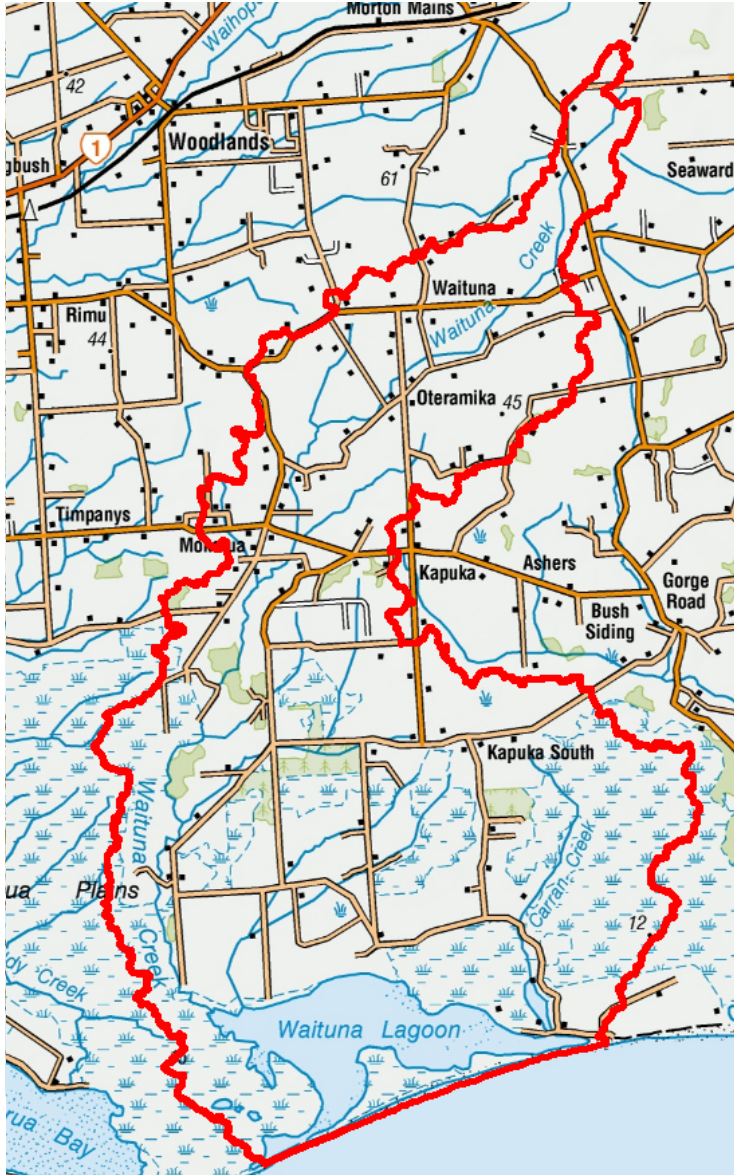




Catchment context, challenges and values for Waituna

Version 1.1 November 2024

Waituna




Ki uta ki tai (from mountains to sea)

In Southland, water shapes the landscape, the economy and the region's way of life. Water is a taonga (a treasure of the people, a sacred place). Southland has a diverse range of highly productive land uses that contribute to the region's prosperity but ongoing intensification, both urban and rural, brings challenges to the environment and communities. The Ngāi Tahu philosophy "ki uta ki tai" recognises that water is important in a variety of ways, including for customary and recreation uses. This approach also recognises that we are managing the connections between people, land and waters, such as the effects of changes to water quality and quantity on the health and function of estuaries and coastal lagoons.

Waituna Catchment

The Waituna catchment is a small coastal catchment located east of Invercargill. The catchment begins near the western extent of Tramway Road West. From here, it extends and expands southward across lowland plains, incorporating the districts of Waituna, Oteramika, Mokotua and Kapuka South. The catchment encompasses parts of the Awarua plains (wetlands) and ends at the Waituna Lagoon which discharges into Toetoes Bay.

The Waituna Wetland is a Ngāi Tahu Statutory Acknowledgement Area - which recognises the relationship of Ngāi Tahu with specific sites and areas, providing for this to be reflected in their



management. The unique plant and animal life supported in the Waituna Lagoon and Awarua Wetland complex also led to it receiving international RAMSAR wetland designation and scientific reserve status in 1976 and 1983 respectively.

Historical clearance and altered drainage of land for farming and human occupation has since made the area prone to erosion, with greater and faster water runoff and river flood flows, reduced areas of wetlands and riparian habitat, and increased loss of contaminants to waterways (e.g. sediment, nutrients and micro-organisms). Approximately 205 ha (11%) of wetland has been lost in the catchment between 2007 and 2015.

The Waituna Lagoon is a complex ecological system that is mechanically opened to the sea in relation to water level, sea and beach barrier conditions. It is the best remaining example of a natural coastal lagoon in New Zealand, despite this intervention. When the lagoon is open, the system behaves more like an estuary and when the lagoon is closed, it more closely resembles a lake. As a result, the lagoon is comprised of a diverse range of habitats such as shallow open water, sea grass beds, tidal pools, sandy beaches, salt marshes, intertidal sand and mud flats, coastal wetlands and riparian and landward vegetation.

When assessed in its closed state, the lagoon is in “poor” or “fair” condition for nutrient enrichment and eutrophication. Current nutrient inputs are too high and result in a build-up of concentrations during closed periods leading to phytoplankton and cyanobacteria blooms.

The earliest records of Ngāi Tahu ki Murihiku in the area date back to the 1300s, with the Waituna Lagoon providing an important food source in the region. Waipārera is the traditional Māori name for the Waituna Lagoon, and refers to pārerā (grey duck), indicating the importance of the lagoon for mahinga kai gathering. Access to the lagoon led to the establishment of permanent and seasonal settlements (including nohoanga) in the area.

In the 1860s, Europeans were attracted to the area by the prospect of gold that could be found along the seafront. Ngāi Tahu and early European settlers also harvested flax in the area, with goods transported by boat to and from Bluff. By the 1900s settlers began developing the swamp and peat wetland around the lagoon for farming. In 1904, a successful timber mill was established on the banks of the Waituna Lagoon, operating until it was destroyed by fire in 1907. Fish and waterfowl were also harvested, with the lagoon becoming a renowned trout fishing site following their introduction in the early 1900s. Today, there are no major towns in the Waituna catchment, although there are four community halls, one play centre and one store.

Groundwater is managed within the Awarua Groundwater Management Zone.

Approximately 400 people live in the Waituna catchment. Most live rurally, with some residents commuting to Invercargill for work. This highlights the strong urban and rural connections that occur throughout Southland.

Of the approximately 20,000 ha of land in the Waituna catchment, about 15,000 ha (72%) is used for farming. Approximately 4,800 ha is Department of Conservation estate and there is no Māori Freehold land.

Te Mana o Te Wai

- | | |
|----------|---|
| Mauri 1: | Maintaining the quality of water from the headwaters to the coast |
| Mauri 2: | Protecting and restoring springs and the quality of spring-fed waters to the coast |
| Mauri 3: | Protecting, restoring and re-establishing wetlands |
| Mauri 4: | Protecting groundwater quality |
| Mauri 5: | Protecting estuaries from contamination, while protecting and restoring estuary margins |

Hauora

A state of hauora or healthy resilience in the Waituna catchment will be supported when:

- sources of *E. coli* from human activity are prevented from reaching waterbodies as much as possible
- erodible lands and waterbody margins are stabilised
- sediment is prevented from reaching waterbodies as much as possible
- the flow of water is slowed by reintroducing sinuosity, pools and wetland margins to straightened and channelised waterbodies
- wetlands are protected and re-established or restored
- nitrogen and phosphorus have been reduced to levels that restore water quality to within the natural range for waterbodies
- natural habitat and biodiversity are abundant in riparian margins and instream

Waituna catchment – key freshwater issues

(not in order of priority)

- Eutrophication and sedimentation in lowland streams.
- Animal faecal contamination of lowland streams.
- Eutrophication of Waituna Lagoon.
- Elevated nutrient concentrations in groundwater contributing to eutrophication in lowland streams and the lagoon.
- Observed deteriorating Macroinvertebrate Community Index (MCI) score trends.

Assessment of degradation

An assessment of which catchments are degraded has been undertaken for the Southland Region as part of regional plan development. The mapping tool will have generated whether your boundary is within a degraded catchment or not and attached the map in the appendices. The below assessment of degradation is relevant to your location:

Your land sits within a degraded catchment

Actions must be included in the Farm Plan to demonstrate a reduction in contaminants contributing to this degradation. This definition of 'degraded' was set using a lower bar than what would be considered necessary to help achieve a state of hauora. The coming Plan Change Tuatahi will likely raise this bar to the level of hauora. To future-proof your operation you should incorporate actions that strive for a state of hauora. By default, doing this will also ensure the requirements of the Southland Water and Land Plan are met. Whilst the catchment context information provided here may give some guidance on what contaminants to focus on at a catchment scale, it is critical to utilise farm specific information when assessing contaminant loss risk and appropriate on farm mitigation actions.

Schedule X Maps

Schedule X is a new method that shows where water quality is degraded within a catchment. Using the catchment context online tool, schedule X maps (which show the status of degradation) for the following parameters are available for your farm boundary.

- Total phosphorus
- Total nitrogen
- Suspended sediment
- E-coli

The water quality in all areas needs to be maintained or improved. Not degraded catchments need farm plan actions that **minimise** contaminant losses to the smallest amount reasonably practicable. Degraded catchments need farm plan actions that **reduce** contaminant losses so as to cause a reduction in adverse effects on water quality.

Waituna contaminants

Supporting hauora outcomes

Modelling suggests that large nitrogen, phosphorus, sediment, and *E. coli* load reductions are required to support a state of hauora in the Waituna catchment.

There are uncertainties associated with the exact percentage reductions required.¹ What is clear is that the gap between current water state and hauora is large and that we need to take significant action to address this. Given we know these substantial catchment reductions are required, significant on farm actions are needed to head in the right direction towards achieving the desired outcomes for our freshwater. On your property these actions should focus on mitigating the specific contaminant loss risks that exist on your land.

Catchment focus

- Reduce nitrogen, phosphorus, sediment and *E. coli* loss as much as possible.
- Building resilience into the system to move towards hauora – healthy resilience. This could include actions such as planting, realignment of fences and roads, creating oxbows and pest management.

Property specific information

Each farm has its unique characteristics, such as soil type, topography, climate, land use, and management practices. Using farm-specific information allows for a tailored approach to environmental management.

To address the issue of contaminant loss, it is crucial to begin by assessing farm-specific information on potential loss pathways and associated risks. In the absence of more detailed farm specific information, there are resources that can assist in focusing mitigation efforts on your property. Considering your property's location and physiographic information, we consider that these contaminants and loss pathways must be given particular attention when choosing mitigation actions.

¹ Specific load reduction estimates can be found in: Snelder et al. (2021a) [Snelder et al. (2021b) [and Neverman et al. (2021) [[LandCare Report \(es.govt.nz\)](https://www.landcare.govt.nz/research/landcare-report)]].

Soil

A soil breakdown and map are included for your property as a part of this report.

Climate

Southland is situated in the latitudes of the prevailing westerly winds and is the most southern and western part of New Zealand. The climate of the Waituna catchment spans the coastal climate zone. The coastal zone is subjected to cold, salt-laden winds from the south and west.

Spring is the windiest and winter is generally calmer. Typically exposed coastal sites experience higher average wind speeds and are frequently gusty compared to inland sites, coastal erosion is also occurring over time. For many but not all areas, the lowest monthly rainfall occurs in winter. Annual rainfall ranges from approximately 900 - 1200mm in the Waituna Catchment.² Coastal areas do not typically experience dry spells, however in inland areas they are more common. In low elevation coastal areas, both air and soil temperature are typically lower in the summer and higher in the winter compared to low elevation inland areas. The average daily temperature range is greater in inland areas.

Freshwater data

Water quality results can be explored on the Land, Air and Water Aotearoa <https://www.lawa.org.nz/explore-data/southland-region/lakes/waituna-lagoon>. You can also look at [Southland's Water Story](#)³ for more information.

Sites of community significance

There are no major settlements in the Waituna Catchment. It is estimated that approximately 400 people live in the Waituna catchment.

² Environment Southland climate data

³ <https://waterstory.es.govt.nz/>

Significant species or ecosystems

Taonga species

Please refer to the list of taonga species outlined in Schedule M of the Southland Water and Land Plan and the Ngāi Tahu Claims Settlement Act 1998 which includes plants and birds. In this area, some of the commonly found water taonga species include:

- Kōkopu – galaxiids
- Waikākahi – freshwater mussels
- Tuna – longfin and shortfin eel
- Waikōura – freshwater crayfish
- Kanakana – lamprey
- Īnaka – whitebait


Cultural matters of importance to tangata whenua

Ngāi Tahu ki Murihiku has an enduring connection and use of this area. Historical and contemporary relationships coupled changes to the waters, land, and ecosystem have helped define current cultural matters of importance.

The Waituna Wetland is treasured by Ngai Tahu ki Murihiku. 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. Protecting and restoring the health of the rivers and wetland is a priority for Ngāi Tahu ki Murihiku.

The great diversity of wildlife associated with the complex includes several breeds of ducks, white heron, gulls, spoonbill, kōtuku, oystercatcher, 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), īnaka (whitebait), waikākahi (freshwater mussel) and waikōura (freshwater crayfish). Harakeke, raupō, mānuka, tōtara and tōtara bark, and pingao were also regularly harvested cultural materials. Paru or black mud was available, particularly sought after as a product for making dyes.

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 waiwhakaheketūpāpāku (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.



Today, the Waituna is regarded as culturally degraded due to reductions in water flows and flow pathways, and land use having changed the identity, movement and characteristics of the wetland; it can no longer do the job it was naturally supposed to do. The decline in water quantity and quality and accumulated effects have diminished the mauri of the river and estuary, particularly mahinga kai, and cultural identity. Many of the cultural redress provisions in the Ngāi Tahu Claims Settlement Act 1998, such as nohoanga, are associated with water use, availability and access. Water should be in a state for Ngāi Tahu to undertake mahinga kai.

Ngāi Tahu ki Murihiku identified a range of priorities in 2020 relevant to freshwater management in Waituna. Overall, Ngāi Tahu ki Murihiku seek to protect and enhance the mauri (life force) of freshwater resources so that future generations have the same or better access to healthy waterbodies, and that waterbodies are managed within a ki uta ki tai framework. This primary goal is supported by the fundamental concept of Te Mana o te Wai in the National Policy Statement for Freshwater Management and in the Southland Water and Land Plan.

Glossary

Ki uta ki tai (from mountains to sea)

Ki uta ki tai is a concept that refers to the interconnectedness of the natural world, including the relationships of water and land, from the coast up to the hills and mountains.

Environment Southland, in partnership with Te Ao Mārama, seeks to manage water and land resources in a way that reinforces the Ngāi Tahu philosophy ki uta ki tai (from mountains to sea). This integrated approach refers to the belief that all things are connected in the natural world and need to be managed that way. It is part of the foundation of regional planning in Southland, recognising the need to manage catchments as an integrated whole. This approach recognises the commitment of Environment Southland, in partnership with Te Ao Mārama, to manage the connections between people, water and land, including the impacts we have on the health of all types of waterbodies, including estuaries and coastal lagoons.

Te Mana o Te Wai

Te Mana o Te Wai is the fundamental concept that underpins all freshwater management.

Te Mana o te Wai recognises the fundamental importance of water in that protecting the health of freshwater protects the health and wellbeing of the wider environment. It is an approach that protects the mauri (life force) of the water.

Protecting mauri as a priority is already a foundation of regional planning in Southland.

Hauora

Hauora means a state of health that could be described as fit and well. It reflects a level of healthy resilience we all want for our waterways. In other words, a waterway can take a knock and bounce back and still be use without compromising people's health.

Users of water and land need to provide for hauora. By doing that, we acknowledge and protect the mauri of water. This is a foundation of regional planning in Southland.

Environment Southland and Te Ao Mārama have identified a range of attributes that in combination provide for hauora, the health and wellbeing of waterbodies.

A change to the regional plan that is being developed, Plan Change Tuatahi, will guide what is needed to support healthy waterbodies in the catchments of Waiau, Aparima, Ōreti, Mataura and Waituna.

Mahinga kai

Mahinga kai refers to the customary gathering of food and natural materials, and the places where those resources are gathered by tangata whenua.

For Ngāi Tahu, mahinga kai is about places, ways of doing things, and resources that sustain the people. It includes the work that is done (and the fuel that is used) in the gathering of all natural resources (plants, animals, water, sea life, pounamu) to sustain wellbeing. This includes the ability to clothe, feed and provide shelter.

Mahinga kai is a value that must be provided for when managing waterbodies.

Values

When we do a good job of managing freshwater then we honour a range of values that matter to the communities of Southland.

When managing freshwater we must provide for certain kinds of values; including ecosystem health (water quality, water quantity, habitat, aquatic life and ecological processes), threatened species, mahinga kai, Māori freshwater values and human contact. These are compulsory values.

There are a range of values that have already been identified by Southlanders, and additional values that must be considered as well. Many of these values informed the current regional plan, and further values are being considered as part of Plan Change Tuatahi.

Document control

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Disclaimer: This catchment context contains key information to be included in farm environmental management plans. It should not be solely relied upon. The information contained is subject to change and updates.