Catchment context, challenges and values for Bluff

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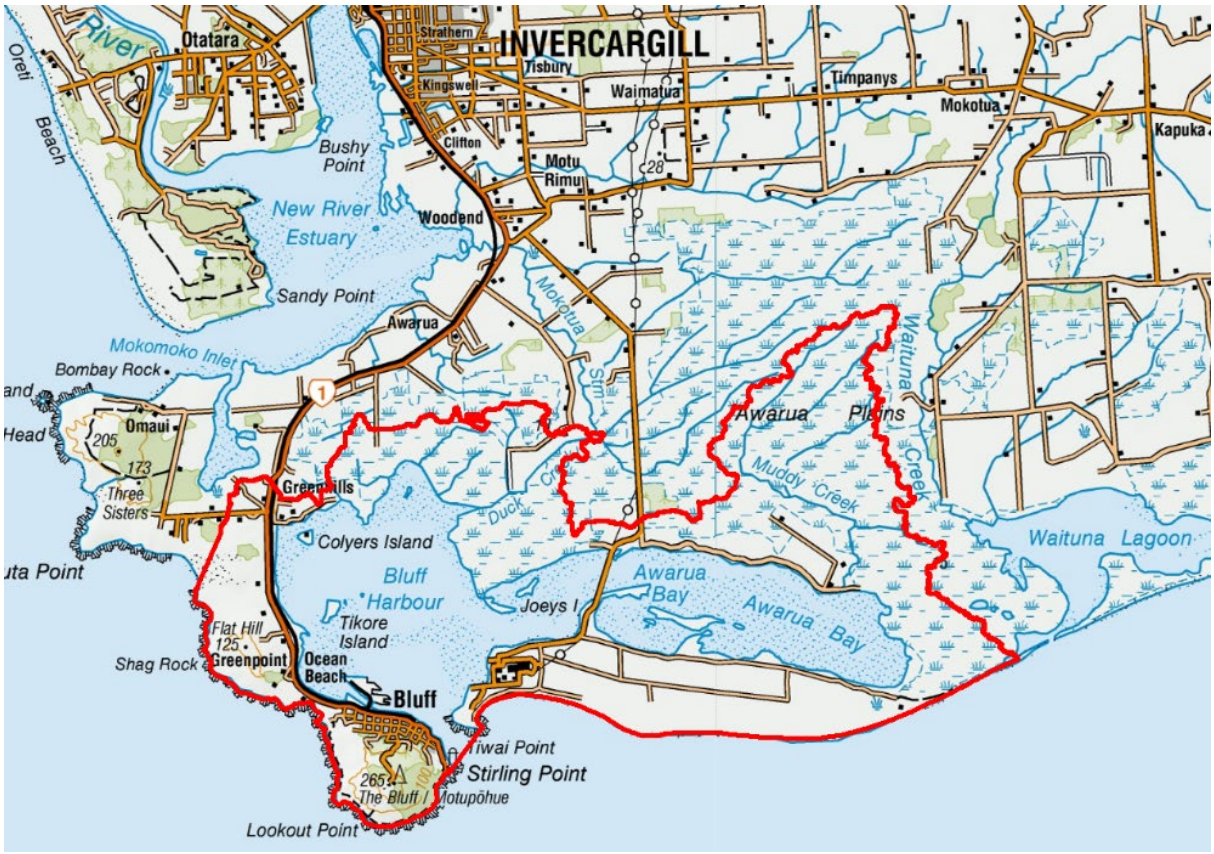
TE AO MARAMA INC.

environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga

Bluff



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 recreational 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.

Bluff Catchment

The Bluff zone is located south of Invercargill and encompasses small, coastal catchments that drain into Bluff Harbour and Awarua Bay. The zone incorporates the southern extent of the Awarua Plains wetland, Bluff Harbour and the Tiwai Peninsula - all three areas are valued for their natural habitat.

Motupōhue Bluff Hill 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.

This catchment has had many points of occupation as Māori favoured and utilised resources from the estuaries and coastal margins. It has been a centre of trade and commerce since early European arrival and was one of the earliest and largest bi-cultural settlements in the region.

Historical clearance and altered drainage of land for farming and settlements has made the area more prone to erosion, with greater and faster water runoff and river flood flows, reduced area of wetlands and riparian habitat, and increased loss of contaminants to waterbodies (e.g., sediment, nutrients and microorganisms).

Bluff Harbour and Awarua Bay cover a combined area of 5,700 ha. Both are noted for their naturally high-water quality, owing to a lack of non-point source contaminants entering the harbour. The surrounding wetlands of Awarua Bay are of significant conservation value, protected as an unmodified habitat for maritime and bird species.

History of the area

For centuries, Awarua and the Motupōhue Bluff area has experienced significant activity as Te Ara a Kiwa/Foveaux Strait was a principal thoroughfare for Māori travelling to and from Rakiura/Stewart Island, Ruapuke and other islands, as well as along the coast to settlements in Fiordland, Otago and Canterbury. This catchment historically has had many points of occupation as Māori favoured and utilised resources from the estuaries and coastal margins. It has been a centre of trade and commerce since European arrival and was one of the earliest and largest bi-cultural settlements in the region.

European settlers were attracted to Bluff's sheltered harbour which provided a satisfactory base to establish sealing and whaling ventures. Today Bluff serves as Southland's main port and is New Zealand's southernmost mainland town. The harbour is used by the manufacturing, processing and primary production sectors, and as the base for Southland's fishing and oyster fleets.

Groundwater is managed within the Waihopai, Awarua and Tiwai groundwater zones.

Approximately 2,000 people live in the Bluff zone.

Of the nearly 10,800 hectares of land in the catchment, around 28% (3,040 ha) is now used for farming. Approximately 5,940 ha is Department of Conservation estate and less than 1% (0.46 ha) is 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 Bluff 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

Bluff catchment – key freshwater issues

(not in order of priority)

- Industrial and municipal wastewater and stormwater discharges around the Bluff township and Tiwai Point areas.
- Large areas of soils and land highly susceptible to phosphorus loss.

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 may sit 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.

Bluff contaminants

Supporting hauora outcomes

Modelling suggests that minimisation of nitrogen and reductions of phosphorus, sediment, and *E. coli* are required to support a state of hauora in the Bluff 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

- Minimise nitrogen and reduce phosphorus, sediment and *E. coli* loss as much as possible.
- Building resilience into the system to move towards hauora - could include actions such as planting, realignment of fences and roads, oxbows, 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.

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 Bluff catchment spans the coastal climate zone. The coastal zone is subject to cold, salt-laden winds from the south and west.

[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)].

Spring is the windiest and winter generally calmer. The Bluff catchment is an exposed coastal site, experiences higher average wind speeds and is frequently gusty in comparison to sheltered inland sites. For many but not all areas in Southland, the lowest monthly rainfall occurs in winter. Annual rainfall is between 1200 – 1500mm in the Bluff catchment. [2] Coastal areas do not typically experience dry spells, they are more common inland. 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 smaller in coastal areas compared to inland areas.

Freshwater data

Water quality results can be explored on the Land, Air and Water Aotearoa website. You can also look at Southland's Water Story[5] for more information.

Sites of community significance

The main town centre in the catchment is Bluff. Approximately 2,000 people live in the Bluff zone.

Significant species or ecosystems

Taonga species

- Tuaki – cockles
- Pātiki – flounder
- Kūtai – mussels
- Tuna – longfin eel
- Tio - Oysters
- 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.

Bluff Harbour is an expanse of water almost totally enclosed by land. As it is affected by tidal flow it is kept clean and the water clear, supporting a wide variety of fish, shellfish and edible seaweeds. Because of this it has always been an important source of kaimoana for Ngāi Tahu ki Murihiku. There

[2] https://niwa.co.nz/climate/national-and-regional-climate-maps/southland

was always an abundance of seafood to be gathered in and around Bluff Harbour, namely pipi (cockles), kūtai (mussels), roro (similar in shape to the toheroa), pāua, kina (sea eggs), pātiki (flounders), and many other fin fish, and these are still in demand today. There are also īnaka (whitebait) and tuna (eels) in all the creeks which run into the harbour.

The type of kelp found at the entrance to the harbour is suitable for making pōhā, (a kelp bag in which muttonbirds were preserved and stored) and is still used by some for this purpose today. Many archaeological sites are situated in and around the Bluff harbour area. There are sites on Tiwai where stone used for weapons, tools and ornaments, was quarried and taken to sites elsewhere for working and finishing. There are a number of burial sites around Tiwai and the Ōmāui area.

Mana whenua have always been able to live well from the sea, and to treat manuhiri (visitors) to delicacies, thus becoming known near and far for their hospitality. The ability to provide hospitality to visitors is a primary cultural tenet of Māori society, reflecting on the status, economic power, reputation, and social standing of the host people. The abundance of the food able to be supplied by hosts to visiting people signifies the wealth and mana of the iwi, and their success as rangatira and kaitiaki in preserving their local resources and cultural traditions. In most instances, individual iwi is known for special local foods that represent part of their tribal identity and association with the lands and waters of their traditional territory.

The availability of sufficient quantities of clean fresh water for cultural purposes is essential to the maintenance of mahinga kai resources and their related cultural values. The presence of pollutants diminishes cultural uses, particularly mahinga kai, and cultural identity. Many of the cultural redress provisions in the Ngāi Tahu Claims Settlement Act 1998 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 Bluff. Overall, Ngāi Tahu ki Murihiku seeks 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 used 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 doings 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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