Catchment context, challenges and values for Ōrepuki Coastal Zone

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Te Ao Marama Inc.

environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga

Ōrepuki Coastal Zone

Ki uta ki tai (from mountains to sea)

The Ōrepuki Coastal Zone encompasses the narrow coastal margin around the southern end of the Longwood Range, from Waihoaka in the west to Taramea (Howells Point) in the east.

Historical clearance and altered drainage of land for farming, and gold mining in the case of the area near Round Hill, and for human occupation has created a landscape 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).

The headwater streams drain native forest land in the Longwood Range and then flow through pastoral land near the coast (e.g. Waimeamea River, Taunoa Stream, Rurikaka Creek, Ourawera Stream). The Longwood Range headwaters are categorised as natural state waters.

Several coastal springs feed wetlands and short coastal streams running through pastoral land to the coast (e.g. Falls Creek, Kenny Creek, Ōrepuki Creek, Ouki Creek, Pouahiri Creek). Groundwater is managed within the Ōrepuki groundwater zone.

There are several small lakes and wetlands associated with the Ourawera Stream catchment, including Ōuruwera (Lake George), and associated wetlands sit in the low-lying land between Kawakaputa, Ōraka (Colac Bay) and Ōraka Point. An extensive area of wetlands from Round Hill to Ōuruwera (Lake George) and towards Wakaputa is classified as Regionally Significant Wetland. Ōuruwera (Lake George) tributary waters are currently classified as natural state to the northeast and outflow waters are classified as lake fed between the lake and the coast to the southwest.

Prominent features in the catchment include Pāhia Hill and Pāhia Point at the coast, and Round Hill at the foot of the Longwood Range, including an historic gold mining site on its western face that is listed on the Environment Southland contaminated sites register.

There are several small estuaries at the coast at Waimeamea, Taunoa, Ouki, Pouahiri, Ourawera and Colac Bay.

Ōrepuki is the main settlement within the catchment, with approximately 900 people living in the Ōrepuki Coastal Zone. Of the approximately 29,000ha of land in the zone, an estimated 17,000ha (61%) is farmed and 10,000ha is within conservation estate (35%). The local catchment group is Ōrepuki Catchment Group.

The townships of Oraka/Colac Bay and Ōrepuki have stormwater discharges to the coast managed by the Southland District Council. Oraka/Colac Bay has a wastewater treatment scheme that discharges to land.

Abstraction pressure is not high in this area:

- Eight groundwater permits
- Two surface water permits (Stock water & dairy shed washdown
- No community water supply schemes
- Numerous small permitted takes (rural)

Takutai o Te Tītī marae is located within Colac Bay. There is 100ha of Māori freehold land within the Ōrepuki Coastal Zone.

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 and restoring lake margins and lake water quality
- Mauri 6: Protecting estuaries from contamination, while protecting and restoring estuary margins.

Hauora

A state of hauora and healthy resilience in the Ōrepuki Coastal Zone 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 bends, pools and wetland margins to straightened and channelised waterbodies
- wetlands are protected and re-established or restored
- nitrogen and phosphorus are 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.

Ōrepuki Coastal Zone – key freshwater issues

(not in order of priority)

- Intensive use of land with low suitability for intensive agriculture resulting in increased contaminant losses and soil damage.
- Intensive agricultural use of rolling and sloped land resulting in high risk of contaminant loss via overland flow pathways.
- Threats to culturally significant indigenous species, including loss of habitat required to support these species.
- Fish passage
- Wetland loss

Assessment of degradation

As part of regional plan development an assessment of which catchments are degraded has been undertaken for the Southland Region. 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

The Ōrepuki Coastal Zone has been assessed as degraded. 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.

Ōrepuki Coastal Zone contaminants

Supporting hauora outcomes

Modelling suggests that substantial nitrogen, phosphorus, sediment, and *E. coli* load reductions are required to support a state of hauora in the Ōrepuki Coastal Zone.

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

This modelling uses the updated 2022 periphyton criteria released by the Ministry for the Environment. These results are specific to achieving draft hauora objectives, assumes 20% spatial exceedance criteria for periphyton and that streams and rivers are shaded. Reported results indicate the reductions required to meet river nitrate toxicity, river periphyton, river *E. coli* (human contact), lake and estuary macrophyte and phytoplankton, river visual clarity, and river suspended sediment draft objectives only. All draft objectives referred to are those to achieve the bottom of the hauora band as described in Bartlett et al. (2020).[2]

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, consider your property's location and physiographic information. This will help you identify key contaminants and loss pathways that should be given particular attention when choosing mitigation actions.

Soils

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

Climate

The Ōrepuki Coastal Zone is subjected to constant cold, salt-laden winds from the south and west. The catchment receives orographic rainfall from the influence of the mountains at around two metres per annum in coastal areas, with greater amounts in higher altitude areas of the Longwood Ranges.

[1] The specific load reduction estimates are documented in Snelder et al. (2021a) [Type Topic Title (datacomsphere.com.au)], Snelder et al. (2021b) [Type Topic Title (es.govt.nz) and Report - E. coli state and rainfall effects (ESR).pdf] and Neverman et al. (2021) [LandCare Report (es.govt.nz)].

[2] See: Draft Murihiku Southland Freshwater Objectives [http://www.es.govt.nz/murihiku-southland-freshwater-objectives]

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[3] for more information.

[3] https://waterstory.es.govt.nz/

Sites of community significance

Ōrepuki is the main settlement within the catchment, with approximately 900 people living in the Ōrepuki Coastal Zone.

Monkey Island, Kawakaputa Bay and Colac Bay are popular coastal locations for recreational activities such as swimming and surfing. Taramea, Howells Point and Riverton Rocks, are also popular for coastal recreation.

Significant species or ecosystems

Significant species recorded within the Ōrepuki Coastal Zone include:

Taonga (prized) species[4]

- *Anguilla dieffenbachii* (longfin eel - Tuna) – At Risk, Declining
- *Galaxias brevipinnis* (kōaro - whitebait) – At Risk, Declining
- *Galaxias maculatus* (īnaka - whitebait) – At Risk, Declining
- Koura/kewai – freshwater crayfish
- Pātiki - flounder
- Kakahi - Freshwater mussels
- Kahu – Australasian Harrier
- Mātā - Fernbird
- Pūtakitaki - Paradise shelduck
- Tete - Grey teal
- Harakeke – flax

Threatened species

- *Anguilla dieffenbachii* (longfin eel - tuna) – At Risk, Declining
- *Galaxias brevipinnis* (kōaro – whitebait) – At Risk, Declining
- *Galaxias maculatus* (īnaka - whitebait) – At Risk, Declining

Recreational species

- Flounder
- Trout
- Kahawai

Significant ecosystems include the wetlands and streams within the regionally significant wetland area and connected to Ōuruwera Lake George.

[4] See: https://www.legislation.govt.nz/act/public/1998/0097/latest/DLM431337.html and https://www.legislation.govt.nz/act/public/1998/0097/latest/DLM431341.html

Cultural matters of importance to tangata whenua

The entire area is of high cultural significance as part of an ara tāwhito or ancient trail that follows the coastline connecting settlements, including an old pā site (Ōmāwhero) at Pahia and villages at Taunoa, Kawakaputaputa and Ōraka. The richness of mahinga kai resources within the estuaries, beaches and reefs supported these settlements and the area continues to be highly valued for gathering mahinga kai, including toheroa, pipi and pātiki (flounder), as well as īnanga (whitebait) and tuna (eels) from the rivers, streams, lakes and wetlands.

Takutai o te Tītī marae is located within Ōrepuki Coastal Zone, where Ōraka-Aparima Rūnaka are based, one of the 18 Papatipu Rūnanga (tribal councils) of Ngāi Tahu. The mana of Ōraka-Aparima Rūnaka is connected to the quality and abundance of mahinga kai in this area, and on the offshore islands where tītī (muttonbirds) are gathered.

Taunoa settlement was abandoned in the past when early gold mining activities contaminated waterways, impacting on available resources. In 1883 Native reserves were established under the Murihiku Native Reserves Grants Act at Ōraka, Kawakaputaputa and Ouetota recognising lands set aside for Ngāi Tahu in earlier arrangements. Taramea Peninsula was also a significant area of occupation and use, with springs known and named, some of which have been damaged and lost, so protecting and restoring springs and spring fed waterbodies is a priority for Ōraka-Aparima.

Ngāi Tahu ki Murihiku identified a range of priorities in 2020 relevant to freshwater management in Ōrepuki. 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 proposed 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 of 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. This includes 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 provide for uses that support people's health.

Users of water and land need to provide for hauora and in so doing, 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 well-being. 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 provide for 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 additional values that must be considered as well, and a range of values that have already been identified by Southlanders. 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.