

Proposed new rules and regulations North Otago FMU



This summary provides an overview of the provisions relating to the North Otago Freshwater Management Unit (FMU). This includes environmental outcomes, target attribute states and area-specific rules and limits. The rules and limits are in addition to those in the region-wide rules covered in the other summaries.

If you are unsure of any particular terms, there is a glossary of terms.

Recent content updates:

- 26 September 2023:
Added proposed environmental flows, level and take limits for lakes, rivers and aquifers and added information regarding whether further allocation of water is available
- 25 September 2023:
Added North Otago FMU boundary map
- 24 September 2023:
Added timeframe for achieving the environmental outcomes for target attribute states
Added information regarding 'matters of control' in table 2
- 21 September 2023:
Updated environmental flow rates and take limits for the Kākaunui catchment
- 18 September 2023:
Updated environmental flow rates and take limits for the Kākaunui catchment
Added information on environmental level and take limit regarding the North Otago Volcanic Aquifer

A map of the North Otago FMU is shown below.



Environmental outcomes

In its new Land and Water Regional Plan ORC must set environmental outcomes for the freshwater values identified in the North Otago FMU. An environmental outcome statement describes the desired future state that communities in the North Otago FMU and tangata whenua would like to see for a specific value.

The environmental outcome statements are very similar across all FMUs and rohe in Otago, which reflects the fact that the aspirations that tangata whenua and the different communities have for the environment are largely consistent across the region.

Table 1 sets out the draft environmental outcomes for the North Otago FMU.

Table 1: Draft environmental outcomes

Value	Environmental Outcomes for North Otago FMU	Attributes to measure and monitor
NPS-FM compulsory values (apply to every FMU/rohe)		
Ecosystem health	Freshwater bodies support healthy freshwater ecosystems with thriving habitats for a range of indigenous species, and the life stages of those species, that would be expected to occur naturally.	<p>Rivers:</p> <ul style="list-style-type: none"> Ammonia Nitrate Suspended fine sediment E. Coli Dissolved reactive phosphorus Periphyton Macroinvertebrates (MCI/ASPM) Fish IBI E. Coli primary contact sites Macroinvertebrates (QMCI) score*¹ Deposited fine sediment* Dissolved oxygen* Ecosystem metabolism* <p>Lakes:</p> <ul style="list-style-type: none"> Phytoplankton (Chlorophyll-a) Total nitrogen Total phosphorus Ammonia Cyanobacteria* Submerged plants (natives)* Submerged plants (invasive)* Lake-bottom dissolved oxygen* Mid-hypolimnetic dissolved oxygen*

<p>Human contact</p>	<p>Water bodies are clean and safe for human contact activities and support the health of people and their connections with water bodies.</p>	<p>Rivers:</p> <p>E. Coli</p> <p>Suspended fine sediment</p> <p>Periphyton</p> <p>E. Coli primary contact sites</p> <p>Lakes:</p> <p>Phytoplankton (Chlorophyll-a)</p> <p>Cyanobacteria (Biovolume cubic millimetres per litre)*</p>
<p>Threatened species</p>	<p>The freshwater habitats of threatened species are protected and support the persistence and recovery of threatened species over time.</p>	<p>All the attributes listed for Ecosystem Health above.</p> <p>Recency of presence</p> <p>National conservation category and status</p> <p>Regional conservation category and status</p> <p>Number of sub-populations</p>
<p>Mahika kai (food and resource gathering)</p>	<p>Mahika kai resources are restored to a condition in which populations of valued mahika kai species are self-sustaining and plentiful enough to support cultural take.</p> <p>Mana whenua are able to safely access, harvest and use these resources now and in the future.</p>	<p>All the attributes listed for Ecosystem Health above.</p> <p>Others available soon.</p>

Other values (apply to every FMU/rohe)		
<p>Natural form and character</p>	<p>Freshwater bodies and their riparian margins, and any connected receiving environment including any estuaries and hāpua (lagoon) are able to behave in a way that reflects their natural form and character to the greatest extent practicable, and the natural form and function of unmodified water bodies is protected.</p>	<p>Rivers:</p> <ul style="list-style-type: none"> Suspended fine sediment Periphyton Macroinvertebrates (QMCI) score* Deposited fine sediment* <p>Lakes:</p> <ul style="list-style-type: none"> Phytoplankton (Chlorophyll-a) Cyanobacteria* Submerged plants (natives)* Submerged plants (invasive)* Lake-bottom dissolved oxygen* Mid-hypolimnetic dissolved oxygen*
<p>Drinking water supply</p>	<p>Provided the health and wellbeing needs of water bodies and freshwater ecosystems are met, source water from water bodies (after treatment) is safe and reliable for the drinking water supply needs of the community.</p> <p>Activities do not introduce or increase the concentration of contaminants in water, so that, after existing treatment, it no longer meets drinking water standards.</p>	
<p>Wāhi tūpuna (sites of significance to iwi)</p>	<p>Cultural associations with wāhi tūpuna are maintained, visible, and whānau are able to access, use and relate to wāhi tūpuna now and in the future.</p>	<p>Information coming soon.</p>

<p>Fishing</p>	<p>Fish are safe to eat; and</p> <p>Insofar as it is consistent with the protection of indigenous and threatened species, the spawning and juvenile rearing waters for trout</p>	<p>Rivers:</p> <p>E. Coli</p> <p>Suspended fine sediment</p> <p>Periphyton</p> <p>Nitrate</p> <p>Suspended fine sediment</p> <p>Macroinvertebrates (MCI/ASPM)</p> <p>Fish IBI</p> <p>Macroinvertebrates (QMCI) score*</p> <p>Lakes:</p> <p>Phytoplankton (Chlorophyll-a)</p> <p>Cyanobacteria (Biovolume cubic millimetres per litre)*</p>
<p>Irrigation, cultivation and production of food and beverages</p>	<p>Provided the health and wellbeing of water bodies and freshwater ecosystems and human health needs are met, the cultivation and production of food, beverages and fibre is enabled.</p>	<p>Rivers:</p> <p>Suspended fine sediment</p> <p>Periphyton</p> <p>Water quantity</p>
<p>Wetlands</p>	<p>Wetlands are protected, and their ecosystem health, indigenous biodiversity, and hydrological functioning is restored where degraded.</p>	<p>Information coming soon.</p>
<p>Taoka species (treasured species)</p>	<p>Thriving, connected habitats for indigenous species are restored and sustained for ever and their mauri is intact.</p>	<p>Kākaunui and Kauru: Water quality is sufficient to sustain restocking of taoka species including wai kākahi (freshwater mussels), whitebait and waikōura (freshwater crayfish).</p>

Target attribute states

Attributes are indicators that we can measure and monitor. Attributes tell us about the state of a river or lake. A target attribute state (TAS) is the state that an attribute must achieve to make sure that an environmental outcome is met. The timeframe for achieving the TAS for each FMU is set by the environmental outcomes for the FMU. For the North Otago FMU, the environmental outcomes are to be achieved by 2050. By monitoring attributes and comparing their baseline state with their TAS we learn how well we are on track towards achieving the environmental outcomes for this FMU.

While the environmental outcome statements are largely consistent across Otago, baseline states and TAS are usually specific to each FMU and rohe. Attributes for each value and baseline states for those attributes have been identified along with trends derived from the Otago Regional Council's State of the Environment (SoE) monitoring data.

The baseline state and TAS for the North Otago FMU are in this map below.

Zoom into an area and view the various locations of proposed monitoring sites in an area(s).

Select the yellow dot representing a proposed monitoring site to see the Target Attribute States.

You can further select the Target Attribute States table to view a larger version of the table.

(Note: If you are on a mobile device, tap on the arrow next to the 'X' icon for the table to show.)

An interactive map is available online for you to view:
www.orc.govt.nz/landwaterproposedchanges

FMU provisions

National direction requires Council to set limits as rules or action plans (as appropriate) to achieve the environmental outcomes. This can be done at a region-wide level or at FMU/rohe level. The draft region-wide rules are set out in different chapters, including Primary Production, Wastewater, Stormwater, Earthworks and Drilling, Water Quantity and various others. However, for the North Otago FMU a number of specific rules are proposed that are needed to make sure the environmental outcomes for this FMU are achieved over time. These additional rules, which will be included in the North Otago FMU chapter of the new Land and Water Regional Plan, are shown in the table below.

Table 2: Overview of proposed additional provisions for North Otago FMU

Contaminants of concern	Draft LWRP
<p>Rivers: E. Coli Periphyton (TNTP) DRP MCI</p> <p>Groundwater: Nitrate E. Coli</p>	<ul style="list-style-type: none"> • Consent required for dairy farming and dairy support which allows all activities on farm to be considered in order to require reductions in contaminant losses. Controlled activity status with conditions: • the dairy farm is existing • has a freshwater farm plan • average stocking rate no greater than 2.5 cows per hectare • livestock are wintered on the land • synthetic nitrogen fertiliser cap of 100 kgs per hectare per year. <ul style="list-style-type: none"> • Matters of control are: • the content of, and compliance with, the farm’s certified freshwater farm plan • the timing of any actions or good management practices proposed to achieve the environmental outcomes for the FMU • methods to avoid or mitigate adverse effects of the activity on water quality • methods to reduce contaminant loss • stocking rates <ul style="list-style-type: none"> • If controlled activity conditions cannot be met, the activity requires a discretionary consent.

Environmental flows and levels and limits on take, diversion and damming of water

The North Otago FMU chapter will also include water take limits and environmental flows and levels for rivers, lakes and aquifers in this FMU.

Take limits reflect the total quantity of water that can be taken, dammed or diverted from a stream, river, lake or aquifer. Once the combined rate of take for all consented water takes, diversion or damming activities from a water body matches this take limit no further water can be allocated in new consents.

Environmental flows (for rivers or streams) or environmental levels (for lakes and aquifers) include minimum flows or levels that when reached, any consented (and some permitted) takes, diversions and damming activities must cease. These restrictions on water taking, diversions or damming activities typically occur during dry periods and are needed to make sure important values, such as threatened fish, drinking water supply or mahika kai (food and resource gathering) values, are looked after.

Lakes

An environmental level and take limit will be set for the Devil’s Bridge Lagoon, the North Otago FMU’s only natural lake. Given the uniqueness of this lake, it is proposed that a narrative take limit is set for the lake that prohibits any new takes, damming or diversions that could impact lake levels (except for takes that are permitted under the Resource Management Act 1991). As there are currently no consents for the taking, damming or diversion of water from this lake the prohibition will ensure that the lake levels in Devil’s Bridge Lagoon will continue to behave naturally.

Table 3: Environmental levels and take limits for Lakes

Name	Environmental level(s)	Take limit	Further allocation available (estimate based on best available information)
Natural lakes (unmodified)			
Devil’s Bridge Lagoon	Natural minimum water level	Narrative - no new taking, diversions, damming or discharges from the lake or upper catchment	No

River catchments

Environmental flows and take limits for the North Otago FMU’s rivers are shown in the table below. Take limits and environmental flows are often set as a percentage of the 7-day Mean Annual Low Flow (7-day MALF). The 7-day MALF is a flow statistic that provides an indication of how low the flow gets in a typical year.

For smaller rivers or streams with a mean flow of 5,000 l/s or less and that are not subject to a high degree of hydrological alteration (due to water taking or damming), such as Kakaho Creek or Oamaru Creek, a total take limit is set as 20% of 7-day MALF. Restrictions on water takes, diversions and damming activities in these catchments are triggered when flows are at 90% of the 7-day MALF.

Table 4 provides estimates of the actual minimum flows and take limits for different catchments based on the default method using the best available information to determine the 7-day MALF of each catchment. The numeric minimum flows and take limits will not be included in the LWRP. Instead, the LWRP will refer to the relevant % of 7-day MALF.

Table 4: Rivers managed by default minimum flows and take limits

Name	Environmental flow (l/s)	Take limit (l/s)	Further allocation available (estimate based on best available information)
River catchments with a mean flow \leq 5,000 l/s and managed by default limits			
<ul style="list-style-type: none"> • Minimum flow set as 90% of 7-day MALF • Take limit set as 20% of 7-day MALF 			
Aitchison Road Creek	0	0	No
Back Creek	104	23	Yes
Glen Creek	0	0	No
Hilderthorpe	72	16	Yes
Kaik Road Creek	71	16	Yes
Kakaho Creek	3	1	Yes
King Road Creek	5	1	Yes
Kuriiti Creek	59	13	Yes
Kurinui Creek	46	10	Yes
Landon Creek	130	29	Yes
Ngutukaka Creek	65	14	Yes
Oamaru Airport Creek	14	3	Yes
Oamaru Creek	65	15	Yes
Oamaru North Creek	0	0	No
Orore Creek	56	12	Yes
Peaks Road Creek	22	5	Yes

Post Office Creek	45	10	Yes
Stony Creek (2)	111	25	Yes
Sutherland Road Creek	394	88	Yes
Tarapuke Creek	219	49	Yes
Trotters Creek	114	25	Yes
Waikoura Creek	22	10	Yes
Waiwherowhero Creek	86	19	Yes

For some other river catchments in the North Otago, such as the Kakanui or Waianakarua Rivers, where damming, diversions or water takes have resulted in more substantial changes to the river hydrology, “bespoke” take limits and environmental flows will be set in the new Plan. These bespoke limits are informed by more detailed scientific and technical investigations.

For some bespoke catchments where a transition may be needed to achieve the environmental outcomes of the catchment and phase out over-allocation, it is proposed to set a common consent duration expiry date for any new consent granted under the LWRP framework. The proposed common catchment date for rivers where this will apply in North Otago FMU is 2035.

Table 5 provides the proposed minimum flows and take limits for bespoke river catchments.

Table 5: Rivers managed by bespoke minimum flows and take limits

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Table 5 provides the proposed minimum flows and take limits for bespoke river catchments.

Table 5: Rivers managed by bespoke minimum flows and take limits

Name	Environmental flow (l/s)	Take limit (l/s)	Further allocation available (estimate based on best available information)
River catchments managed by bespoke limits			
Kākaunui catchment	Kauru (trib): 122 Kākaunui at Clifton Falls: 496 Kākaunui at Mill Dam: 548 Kākaunui at McCones: 596	Kauru (trib): 24 Kākaunui at Clifton Falls: 110 Kākaunui at Mill Dam: 205 Kākaunui at McCones: 213	No
Shag River	Craig Road and Goodwood pump: 150	280	No
Waianakarua catchment	Oct to April: 200 May to Sept: 400	190	No
Waikōuaiti catchment	TBC	TBC	No

Finally, there is a third category of rivers, such as Awamoko Stream or Welcome Creek, where Otago Regional Council proposes to set interim take limits and environmental flows according to the default method above. These will be implemented through the resource consent replacement process. However, prior to this resource consent replacement process Council will assess whether there is a need to set bespoke minimum flows and take limits for these rivers through a plan change process. Given the current level of water use and allocation, these rivers will in effect be either fully allocated or over-allocated and any new taking of water will not be available.

Table 6 provides estimates of the actual minimum flows and take limits for different catchments based on the default method using the best available information to determine the 7-day MALF of each catchment. The numeric minimum flows and take limits will not be included in the LWRP. Instead, the LWRP will refer to the relevant % of 7-day MALF.

Table 6: Rivers managed by interim default minimum flows and take limits

Name	Environmental flow (l/s)	Take limit (l/s)	Further allocation available (estimate based on best available information)
River catchments where default limits will be set as interim limits to be given effect to at the time of consent renewal, unless bespoke limits are set			
Awamoa Creek	173	39	No
Awamoko Stream	37	8	No
Bow Alley Creek	35	8	No
Pleasant River	42	9	No
Welcome Creek	No flow stats available	No flow stats available	No

Aquifers

The North Otago FMU contains various aquifers. For most aquifers that are not hydraulically connected to surface water, such as the Lower Waitaki Plains Aquifer, take limits will be based on a proportion (35%) of the aquifers' mean annual recharge. National direction requires Otago Regional Council also to set environmental levels for this type of aquifers. As Otago Regional Council currently does not have sufficient groundwater level monitoring data to set environmental levels in the Land and Water Regional Plan when it will be notified, environmental levels for these aquifers may be set at a later date.

Table 7 provides estimates of the actual takes limit for aquifers based on the default method using the best available information to determine the aquifers' Mean Annual Recharge (MAR). The numeric take limits will not be included in the LWRP. Instead, the LWRP will refer to the relevant % of the MAR.

Table 7: Aquifers managed by default take limits

Name	Environmental level(s)	Take limit (volume in m ³ /year)	Further allocation available (estimate based on best available information)
<p>Aquifers managed by default limits</p> <ul style="list-style-type: none"> Take limit: 35% mean annual recharge 			
Lower Waitaki Plains Aquifer	Not to be included in the LWRP at this time	81,095,000.00	Yes
Papakaio Aquifer – Big Hill Zone		469,000.00	Yes
Papakaio Aquifer – Waikoura Zone		441,000.00	Yes
Papakaio Aquifer – Camerons Zone		196,000.00	Yes
Papakaio Aquifer- Enfield Basin		196,000.00	Yes
Papakaio Aquifer – Maerewhenua Zone		378,000.00	Yes
Papakaio Aquifer – Waipati Zone		378,000.00	Yes
Papakaio Aquifer – Waipati Zone			483,000.00

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For aquifers with a close hydraulic connection to a river or stream, such as the Kakanui-Kauru Alluvium Aquifer or Shag Alluvium Aquifer, any water takes will be subject to the take limits and environmental flows set for these rivers.

Table 8 provides an overview of the environmental levels and take limits that apply to these aquifers.

Table 8: Alluvial Ribbon Aquifers

Name	Environmental level(s)	Take limit (volume in m ³ /year)	Further allocation available (estimate based on best available information)
Alluvial Ribbon Aquifers			
Kakanui-Kauru Alluvium Aquifer	Subject minimum flow for Kakanui river	Subject to take limit for Kakanui river	No
Shag Alluvium Aquifer	Subject minimum flow for Shag River	Subject to take limit for Shag riverriver	No

Finally, the North Otago FMU has one aquifer, the North Otago Volcanic Aquifer, that will be managed by a bespoke limit. The proposed take limit for this aquifer is shown in table 9 below.

Table 9: Aquifers managed by bespoke take limits

Name	Environmental level(s)	Take limit (volume in m ³ /year)	Further allocation available (estimate based on best available information)
Aquifer managed by bespoke limits			
North Otago Volcanic Aquifer	Not to be included in the LWRP at this time	7,000,000.00	Yes

Outstanding water bodies

Outstanding water bodies are water bodies that have one or more outstanding values. National direction requires the Otago Regional Council to identify outstanding water bodies and protect their important values. The table below lists the outstanding water bodies in this FMU and describes their outstanding values.

Maps of these water bodies are available below as well.

You can zoom in and view the various water bodies in an area(s).

Water bodies are shown in a blue colour. Select an area to view the water body name.

(Note: if you are on a mobile device, after selecting a water body, tap on the arrow next to the 'X' icon to view more information.) **An interactive map is available online for you to view:** www.orc.govt.nz/landwaterproposedchanges

Unique identifier	Site identifier	Values and characteristics
Ecology		
ECL34	Welcome Creek	<ul style="list-style-type: none"> • Canterbury mudfish occur in the Welcome Creek catchment in ponds, wetland areas and instream habitat on the south bank of the Waitaki River and the population straddles the Otago and Canterbury Regional Council boundaries. Canterbury mudfish is a nationally critical threatened species. • This is the most southern population of Canterbury mudfish and the only population in Otago.
ECL35	Kākaunui River	<ul style="list-style-type: none"> • The lowland longjaw galaxias (<i>Galaxias cobitinis</i>) occupies areas of the lower Kākaunui and Kauru rivers in North Otago. • The largest fragment of Canterbury Galaxias is in the Kākaunui catchment (29.2 % of the area in Otago) and much of this is within the proposed lowland longjaw galaxias outstanding water body. • Banded kōkopu have been reported twice in the Kākaunui catchment. • Other native fish species include Bluegill bully, Canterbury galaxias, Common bully, Giant bully, Inanga, Kōoaro, Lamprey, Longfin eel, Redfin bully, Shortfin eel, Torrentfish, Upland bully. • The Kākaunui River Estuary is recognised within the ORC Coastal Plan as a feeding area for birds and the seaward margin of the estuary borders the North Otago Important Bird Area (IBA). • Records indicate the estuary supports up to 15 species of native threatened/at risk fish.

<p>ECL36</p>	<p>Waianakaura River</p>	<ul style="list-style-type: none"> • The Waianakarua and Kākaunui rivers had the highest native fish diversity in North Otago with fourteen species reported in each catchment. • The Waianakarua catchment is considered to be an outstanding catchment, representative of the diversity in North Otago and having a low level of modification, some land use protection and with only one introduced fish species present that has a low abundance and distribution. • The second largest fragment of Canterbury Galaxias is in the Waianakarua catchment (14.7 % of the area in Otago) and is contained within the proposed Waianakarua River outstanding water body. • The Waianakarua catchment has records for common smelt and black flounder. • Other native fish species include Bluegill bully, Canterbury galaxias, Common bully, Giant bully, Giant kōkopu, Inanga, Kōaro, Lamprey, Longfin eel, Lowland longjaw galaxias, Redfin bully, Shortfin eel, Torrentfish, Upland bully.
<p>ECL38</p>	<p>Waikōuaiti River Estuary</p>	<ul style="list-style-type: none"> • The Waikōuaiti River Estuary is listed in the ORC Coastal Plan as a coastal protection area with Kāi Tahu cultural and spiritual values. • The Waikōuaiti River Estuary supports a significant proportion of the world’s population of black-billed gulls. • Saltmarsh habitat is extensive, with 80 hectares covering 45% of the intertidal area, and dominated by herb fields (96%). This estuary has the largest area of saltmarsh within the Otago region supporting significant bird and fish ecological values.

Physical		
PHY19	Waitaki River braids	<ul style="list-style-type: none"> Regionally Significant Well defined braids in river. Braids are most well defined near the mouth of the Waitaki River
PHY20	Waihemo/Shag River estuary and salt marsh	<ul style="list-style-type: none"> Regionally Significant Least modified of a series of estuaries south of Shag Point/Matakaea. <p>Extensive dune system, mudflats, swamp, and salt marsh in an estuarine environment separated from the sea by a small sandspit.</p> <ul style="list-style-type: none"> Mouth of Waihemo/Shag River, 8km east of Palmerston.
Recreation		
None identified.		
Natural character		

NAT22	Kākaunui	<p>Active bed</p> <ul style="list-style-type: none"> Streams remain largely unmodified with no water takes or structures present. High water quality in the upper reaches which becomes degraded further downstream and outside of the area of outstanding natural character due to low intensity grazing. Only habitat nationally for the lowland longjaw galaxias. Diverse freshwater fish community including lowland longjaw galaxias, Canterbury galaxias, torrentfish, bluegill bully, upland bully, common bully, kōoaro, inanga, lamprey, longfin eel, shortfin eel. Flow regimes remain unmodified due to absence of structures, bores and water takes in the headwaters. <p>Margin</p> <ul style="list-style-type: none"> Margins are lined with tall tussock grassland. No structures are present due to steep topography and remoteness. Tracks are relatively limited on the upper slopes and tops. <p>Context</p> <ul style="list-style-type: none"> Water bodies drain steep and short catchments and identification of outstanding water bodies is limited to headwaters; therefore, there are limited structures and modifications present. Area is characterised by intact tall tussock grassland. Majority of the identified water bodies in the headwaters of the Kākaunui Mountains fall within the Kākaunui Conservation Area. Overall, the natural elements, patterns, and processes remain largely unmodified due to the area's remoteness and difficulty of access.
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<p>NAT23</p>	<p>Kākaunui</p>	<p>Active bed</p> <ul style="list-style-type: none"> • Intact rivers and streams (three main branches of Waianakarua and tributaries) with very limited modification present and absence of gravel abstraction in the upper reaches (lower reaches excluded from outstanding water body. • Water quality is high due to low intensity of grazing in headwaters of Waianakarua catchment. • Abundant freshwater fish community including Canterbury galaxias, torrentfish, bluegill bully, upland bully and has additional species present giant bully, redfin bully, common bully, Kōaro, inanga, lamprey, longfin eel, shortfin eel, black flounder common smelt. • Large areas of the upper catchment remain free of introduced fish. • Flow regimes remain unmodified due to absence of structures, bores and water takes. <p>Margin</p> <ul style="list-style-type: none"> • River and stream margins are clad in indigenous vegetation, including manuka, kanuka, and broadleaf forest. • No structures and very limited tracks are present (forestry and associated roads in lower catchment are excluded from outstanding water body identification). <p>Context</p> <ul style="list-style-type: none"> • Water bodies pass through intact, regenerating indigenous forest in mid catchment. • Steep topography and short catchments create sense of remoteness. • Adjacent land use in the upper catchment consists of low intensity grazing and recreational hunting blocks. • Adjacent land use in the mid reaches consists of pastoral farming with forestry dominating the lower foothills. • Largely encompassed within the Waianakarua Scenic Reserve and Kakaho Bush, Frasers and Razorback Ridge / Kurinui Creek Conservation Area. • Limited structures present including huts and four-wheel drive tracks. • Overall, the natural, elements, patterns, and processes are dominant due to lack of structures, vegetation clearance, and difficulty of access.
<p>Natural features and landscapes</p>		
<p>None identified.</p>		

Economic profile and snapshot

This Economic summary covers an area smaller than the North Otago FMU. The reason for this is that the communities at the southern end (i.e., Buckland's Crossing, Waikouaiti and Kari-tane) have closer socio-economic ties with Dunedin than Ōamaru. These areas are included in the Economic Snapshot for Dunedin and surrounds. Therefore, the analysis in the North Otago Snapshot focuses on communities located in Waitaki district who have economic ties with Ōamaru. For the purpose of this analysis, this area is referred to as Otago North.

In 2018, Otago North was home to around 20,000 residents (or around 9% of the population of Otago). In the 12 years between 2006 and 2018, there was a 10% (or 2,000 people) increase in population. Although this growth is lower than the average for Otago (+16%) or New Zealand (+17%), it is still sizable for a small population base. Most residents (nearly two in three) live in Ōamaru, while over one-quarter of the population lives in rural areas. The remaining 10% is settled in smaller rural service centres, i.e., Palmerston, Kakanui, Hampton, Maheno, Moeraki, and Herbert.

The local communities and economy in the North Otago area are especially reliant on water resources. The FMU contains the largest proportion of primary production land uses (89%) amongst all of Otago's FMUs and both primary production and food processing require water as a necessary input. Local tourism is also dependent on water's aesthetic value and ecosystem services (e.g., being part of the natural landscape and maintaining green spaces).

There are six main industry sectors in Otago North, providing more than two thirds of all jobs here. The Manufacturing industry and Tourism Related industries provide around 21% and 19% of all jobs respectively. Agriculture (10%), Health Care and Social Assistance (8%), Education and Training (7%), and Construction (7%) account for another one third of the employment in the area.

An understanding of Māori history and the Māori economy is essential for policy development and policy impact assessment. Not only does pre-European Māori history help shape modern day New Zealand, but the Māori economy is also integral to the New Zealand economic system. ORC is partnering with Aukaha and Te Ao Marama to develop an overview of Kāi Tahu history and economy.

- View the North Otago economic snapshot that provides local economy information
- View more regional economic information
- View the media release for new Otago economic reports