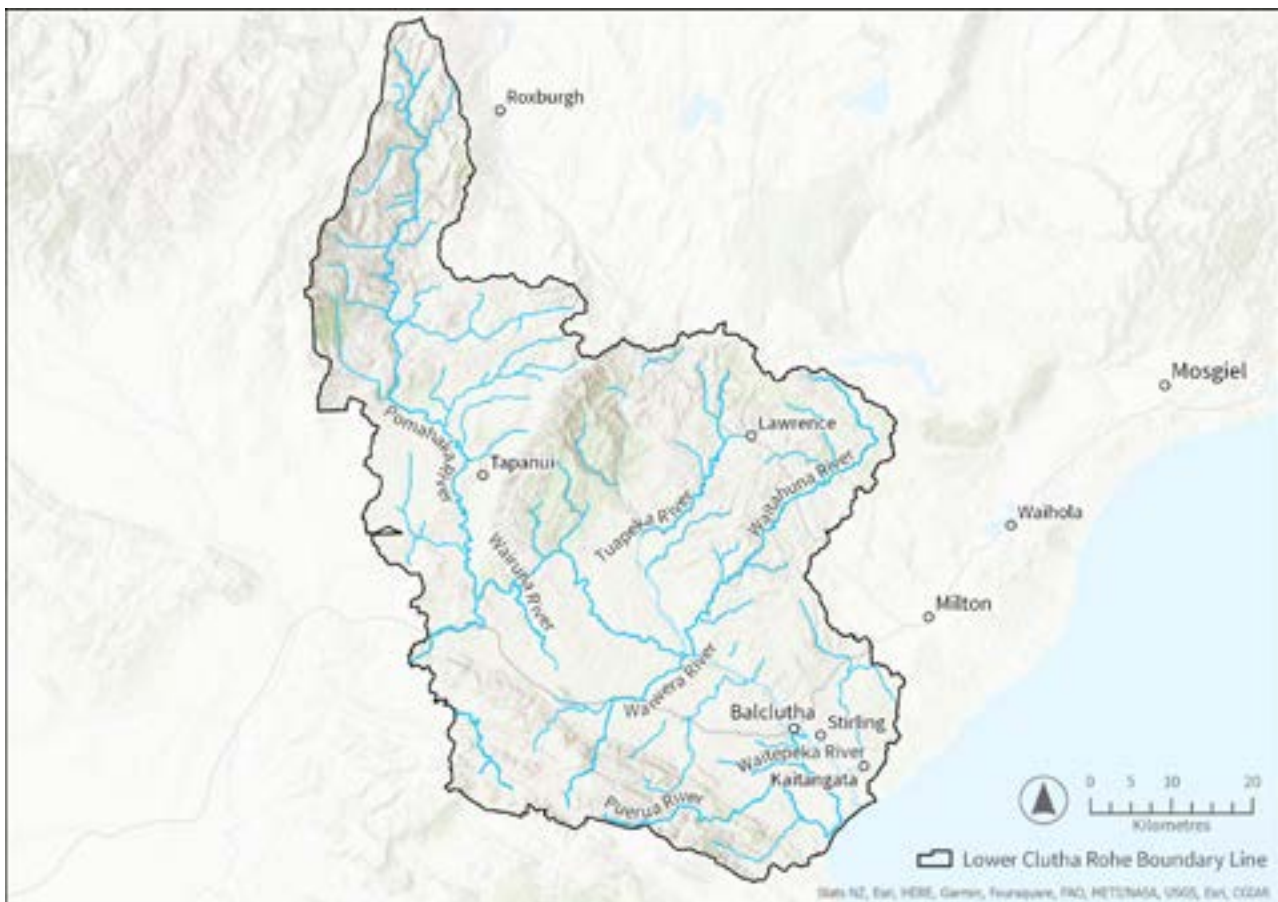


Proposed new rules and regulations Lower Clutha Rohe

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 Lower Clutha Rohe 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

A map of the Lower Clutha Rohe boundary 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 Lower Clutha Rohe. An environmental outcome statement describes the desired future state that communities in the Lower Clutha Rohe 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 Lower Clutha Rohe.

Value	Environmental Outcomes for Lower Clutha rohe	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*

Draft Land and Water Regional Plan: Lower Clutha Rohe

<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>Other values (apply to every FMU/rohe)</p>		

<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>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 and salmon are provided for.</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 available 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>Information available soon.</p>

<p>Commercial and industrial use</p>	<p>Provided the health and wellbeing of water bodies and freshwater ecosystems and human health needs are met, commercial and industrial activities are enabled.</p>	<p>Rivers:</p> <p>Suspended fine sediment</p> <p>Periphyton</p> <p>Water quantity</p>
<p>Hydro-electric power generation</p>	<p>Existing hydro-electric generation activities are developed, operated, maintained and upgraded in a way that meets the environmental outcomes to the greatest extent practicable.</p>	<p>Information available soon.</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 Lower Clutha rohe, the environmental outcomes are to be achieved by 2045. 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 or rohe.

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 Lower Clutha rohe are in the 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 briefing papers, including the briefing papers Primary Production, Wastewater, Stormwater, Earthworks, Water Quantity and various others. However, for the Lower Clutha rohe a number of specific rules are proposed that are needed to make sure the environmental outcomes for this rohe are achieved overtime. These additional rules, which will be included in the Lower Clutha rohe chapter of the new Land and Water Regional Plan, are shown in the table below.

Table 2: Overview of proposed additional provisions for Lower Clutha Rohe

Contaminants of concern	Draft LWRP
<p>Rivers</p> <ul style="list-style-type: none"> • Periphyton (TNTP) • E. Coli • MCI <p>Lakes</p> <ul style="list-style-type: none"> • Nitrate <p>Groundwater</p> <ul style="list-style-type: none"> • Arsenic • Nitrate 	<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: <ul style="list-style-type: none"> 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 • Matters of control are: <ul style="list-style-type: none"> 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 rohe methods to avoid or mitigate adverse effects of the activity on water quality methods to reduce contaminant loss stocking rates • If controlled activity conditions cannot be met, the activity requires a discretionary consent. • Increase setbacks for high-risk activities, such as intensive winter grazing and stock access near waterways. <ul style="list-style-type: none"> all livestock (including sheep) on low slope land of 10 metres from the beds of wide rivers (over 1 metre) and 3 metres from smaller continually flowing rivers. with a transition time of 10 years for existing fences.

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

The Lower Clutha rohe chapter will also include take limits and environmental flows and levels for rivers, lakes and aquifers in this Rohe.

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 all 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 after important values, such as threatened fish, drinking water supply or mahika kai (food and resource gathering) values, are looked after.

Lakes

Environmental levels and take limits for lakes in the Lower Clutha FMU's are shown in the table below.

It is proposed that a narrative take limit is set for Gem Lake. This limit will prohibit any new takes, damming or diversions that could impact water levels in this lake (except for takes that are permitted under the Resource Management Act 1991 and will ensure that these lakes will continue to behave in their natural or near natural state.

Lake Tuakitoto will continue to be managed in accordance with its current levels, while any takes from this lake will be subject to the take limits that apply to the wider Lake Tuakitoto/Lovells Creek catchment.

Controlled lakes and reservoirs in the rohe, such as Greys Dam and Hawkers Dam, will be subject to the minimum environmental flow and take limits take limits that apply to the river catchments within which these are located.

Name	Environmental level(s)	Take limit (l/s)	Further allocation available (estimate based on best available information)
Natural lakes (unmodified)			
Gem Lake	Natural minimum water level	Narrative - no new taking, diversions, damming or discharges from the lake or upper catchment	No
Natural lakes (with environmental levels and take limits)			
Lake Tuakitoto	Existing levels	Subject to the Lake Tuakitoto catchment take limit	No
Controlled lakes			
Greys Dam (Tuapeka River catchment) Malones Dam (Tuapeka River catchment) Milburns Pond/Victoria Dam (Tuapeka River catchment) Phoenix Dam (Tuapeka River catchment)	Lake levels managed by the minimum flow of the Tuapeka river	Subject to the take limit of the Tuapeka river catchment	Yes

Hawkers Dam (Waitahuna River catchment)	Minimum flow for Waitahuna River catchment	Subject to the take limit of Waitahuna River catchment	Yes
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River catchments

Environmental flows and take limits for rivers in the Lower Clutha rohe are shown in the table below.

Bespoke limits will be set for Poumāhaka river and Waiwera river following technical recommendations. For smaller rivers with mean flow of 5,000 l/s or less, a total take limit is set as 20% of the 7-day Mean Annual Low Flow (7-day MALF) of these rivers. The 7-day MALF is a flow statistic that provides an indication of how low the flow gets in a typical year. For the Waitahuna River, which is a larger river with a mean flow of more than 5,000 l/s, a larger take limit will be set at 30% of the 7-day MALF. 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 pLWRP framework, the proposed common catchment date for rivers where this will apply in Lower Clutha rohe is 2031.

Restrictions on consented and some permitted water takes, diversions and damming activities in catchments of smaller rivers or streams are triggered when recorded or observed flows are at 90% of the 7-day MALF. For the Waitahuna river these restrictions don't kick in until recorded or observed flows are at 80% 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	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 			
Allangrange (N)	1	0	No
Allangrange (S)	4	1	Yes
Balmoral Stream	189	42	Yes
Barnego Creek	218	48	Yes
Blackcleugh Burn	750	167	Yes
Blairvale Road Creek (1)	199	44	Yes
Blairvale Road Creek (2)	174	39	Yes
Bullock Creek	103	23	Yes
Bush Road	155	34	Yes
Bush Road Creek (2)	484	107	Yes
Camp Creek (2)	274	61	Yes
Carsons Creek	310	69	Yes
Clydevale Creek	813	181	Yes

Draft Land and Water Regional Plan: Lower Clutha Rohe

Crook Burn (1)	168	37	Yes
Flynn Road Stream	202	45	Yes
Hall Road Creek	0	0	No
Home Gully Stream	157	35	Yes
Island Rock Creek	689	153	Yes
Jimmys Creek	192	43	Yes
Kaihiku Stream	182	40	Yes
Low Burn	545	121	Yes
Pannetts Road Creek	0	0	No
Port Creek	205	46	Yes
The Wash Stream	147	33	Yes
Toiro river	166	37	Yes
Tuapeka River	421	93	Yes
Waitepeka River	194	43	Yes
River catchments with a mean flow > 5,000 l/s and managed by default limits <ul style="list-style-type: none"> • Minimum flow set as 80% of 7-day MALF • Take limit set as 30% of 7-day MALF 			
Waitahuna River	479	179	Yes

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

River catchments managed by bespoke limits			
	Environmental flow (l/s)	Take limit (l/s)	Further allocation available (estimate based on best available information)
Poumāhaka river at Burkes Ford	3,170	700	No
Poumāhaka tributary - Waipahi at Waipahi	490	110	No
Waiwera river	210	46	No

Aquifers

Environmental levels and take limits for aquifers identified in the Lower Clutha rohe are shown in the table below.

Given its close connection to the river, taking water from the Pomahaka Alluvial Ribbon Aquifer is to subject to the take limit and minimum flow set for the Poumāhaka river catchment.

The take limit for the Inch Clutha Gravel Aquifer is set as a proportion (35%) of the mean annual recharge of that aquifer. National direction requires Otago Regional Council also to set environmental levels for aquifers. As the Otago Regional Council currently does not have sufficient groundwater level monitoring data to set environmental levels for the Inch Clutha Gravel Aquifer in the Land and Water Regional Plan when notified, these levels will be set at a later date.

Table 6 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.

Name	Environmental level(s)	Take limit) (volume in m3/year)	Further allocation available (estimate based on best available information)
Aquifers with default limits			
<ul style="list-style-type: none"> Take limit: 35% mean annual recharge 			
Inch Clutha Gravel Aquifer	Not required to be included in the new LWRP at this time	3,640,000.00	Yes
Alluvial ribbon aquifers			
Poumāhaka Alluvial Ribbon Aquifer	Groundwater level managed by minimum flow Poumāhaka	Subject to take limit for Poumāhaka river (tbc)	No

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 rohe and describes their outstanding values.

Below is a map featuring all the water bodies in Otago.

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:
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Unique identifier	Site identifier	Values and characteristics
Ecology		
ECL19	Waipahī River	Pomahaka galaxias is reported, as a series of population fragments along the Waipahi River East Branch and its tributaries and while not presently reported as a continuous population the combined total area for the upper Waipahi River East Branch is over 17% of the total estimated area of occupancy. Given the small size of the majority of the populations for Pomahaka galaxias the upper Waipahi River East Branch is considered to support an outstanding suite of Pomahaka galaxias populations that may be linked by up and downstream dispersal of galaxiids, especially juvenile fish.
ECL20	Roto-nui-a-Whatu/Lake Tuakitoto Wetland	<ul style="list-style-type: none"> Roto-nui-a-Whatu/Lake Tuakitoto Wetland is relatively large (540 hectares), low-lying swamp considered the best remaining example of a previously widespread wetland type. A diverse mosaic of vegetation types and habitats exists. Scored a weighted conservation rank of 8.0 within the FENZ/ WONI analysis. This wetland satisfied 8 out of 11 pORPS APP2 criteria – rarity ((d)(i), (d)(ii), (d)(iii)), diversity (e), distinctiveness (f)(iii), and ecological context ((g)(ii), (g)(iii), (g)(iv)). An exceptionally high diversity of bird life reflected by the high habitat diversity present at the wetland. Over 50 species of bird have been recorded. Regionally and nationally important habitat for waterfowl, waders and swamp birds. Supports a significant proportion of the national population of Mallard (<i>Anas platyrhynchos</i>) and Aotearoa Shoveller (<i>Anas rhynchotis variegata</i>), Grey Teal (<i>Anas gracilis</i>) and Black Swan (<i>Cygnus atratus</i>). All these species breed here. Described as number 5 in the top 10 Aotearoa Wetland Wildlife Habitats, with large numbers of Fernbird (<i>Bowdleria punctata</i>).

		<ul style="list-style-type: none"> • Considered nationally important as a fresh water fishery habitat, supporting the Threatened giant kōkopu (<i>Galaxias argenteus</i>), longfin eel (<i>Anguilla dieffenbachii</i>), shortfin eel (<i>Anguilla australis</i>), whitebait (<i>Galaxias</i> spp.) and common bully (<i>Gobiomorphus cotidianus</i>) populations. Supports a commercial eel fishery, as well as recreational fisheries for perch and brown trout (<i>Salmo trutta</i>). • The threatened plant species swamp nettle (<i>Urtica linearifolia</i>) and <i>Isolepis basilaris</i> are present on swamp margin with a high composition of flax.
Site identifier		
None identified.		
Recreation		
REC48	Clutha River / Mata-au (below Roxburgh)	<ul style="list-style-type: none"> • Nationally significant for recreation. • Nationally significant for whitebaiting (RiVAS). • Regionally significant for whitebaiting in DOC Otago Conservation Management Strategy 2016 and Clutha District Plan. • Regionally significant as a fishery and for rafting and jet boating. • Used for white water kayaking and packrafting. • Nationally outstanding as a result of high significance for some activities and its use by a wide range of other significant activities.

Recreation		
REC48	Umbrella Mountains	<p>Active bed</p> <ul style="list-style-type: none"> Streams remain largely unmodified with two small water takes present in the upper reaches of the Bullock Creek for irrigation. Lower sections below larger takes relating to sluicing in Little Pomahaka River are excluded from outstanding water body identification. Water quality is high in the upper reaches. Agricultural influence on water quality is present in the reaches downstream of the identified outstanding water bodies. Small, intact wetlands and lakes present in the upper reaches of the catchment. <p>Margin</p> <ul style="list-style-type: none"> Intact margins containing tall tussock grassland. Land use modification includes low intensity grazing of stock which increases in intensity in lower reaches. <p>Context</p> <ul style="list-style-type: none"> Much of this area falls within the Pomahaka and Old Man Range Conservation Areas which contain an abundance of alpine vegetation along the tops of the Umbrella Mountains and Old Man Range. There are limited structures and modifications, with the exception of tramping huts, low intensity grazing, and 4WD tracks. Overall the natural elements, patterns, and processes remain dominant and unimpeded in the headwaters of the Pomahaka River. Sensitive landscape due to open character and remoteness.

<p>NAT25</p>	<p>Blue Mountains</p>	<p>Active bed</p> <p>Intact active bed due to steep topography and narrow catchments in the headwaters of streams that drain the Blue Mountains.</p> <p>Water quality is high as no grazing occurs in the area and forestry and associated earthworks/roading are confined to the lower eastern slopes.</p> <p>Unmodified flow regimes with no water takes present in the upper reaches; lower parts of water bodies where takes occur are excluded from outstanding water body identification.</p> <p>Margin</p> <p>Margins remain intact due to lack of structures and indigenous forest.</p> <p>Margins are lined with silver beech forest and tall tussock grassland.</p> <p>No structures within the margins due to steep topography and dense vegetation.</p> <p>Context</p> <p>Located within the Blue Mountains Forest Conservation Area, the area is densely clad in silver beech forest.</p> <p>The upper reaches contain extensive tussock wetlands including species such as <i>Chionochloa</i>, <i>Cortaderia</i>, <i>Gahnia</i>, <i>Carex</i> (especially <i>C. secta</i>, <i>C. virgata</i>, <i>C. appressa</i>) and <i>Cyperus</i>, and <i>Schoenus pauciflorus</i>.</p> <p>Overall the natural elements, patterns and processes remain unimpeded due to lack of structures, steep topography, and remoteness.</p> <p>Opportunities for recreation experiences within the conservation area.</p>
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Natural features and landscapes		
LAN54	Upper Pomāhaka River	<ul style="list-style-type: none"> • Rocky, narrow, and meandering river with limited structures and consents. • Margins are clad in tall tussockland in the upper reaches, and grassland in the lower reaches. Remnants of indigenous forest are also present in the incised gullies. • Remote and isolated river within the northern extent of the Umbrella Mountains.

Economic profile and snapshot

As of 2018, there were approximately 12,000 residents in Lower Clutha Rohe (or 5% of the population in Otago and around 3 people/km²), which was an increase of around 200 people (or 1%) from 11,800 residents in 2006. The growth rate in the Lower Clutha Rohe is lower than that of the Otago Region (+16%). Just under half of the residents live in the rural area of the Rohe; around one in three people live in Balclutha; the rest of the population (approx. 20%) lives in four service centres of the Lower Clutha Rohe: Tapanui, Kaitangata, Benhar-Stirling and Lawrence.

The local economy in the Lower Clutha Rohe is especially reliant on water resources for primary production and primary goods processing. In 2020, the largest industries by employment (using Australian and New Zealand Standard Industrial Classification, ANZSIC, 2006) in the Rohe were primary industries and associated food manufacturing industries. Together, these industries provided more than half of all jobs in the Rohe. Both food growing and food processing require water resource as input and as means for waste disposal. Tourism related industries (Retail trade (6% of all jobs), Accommodation and Food Services (4%), Arts and Recreation Services (0.4%)) are relatively small compared to other parts of Otago.

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 Lower Clutha economic snapshot that provides local economy information](#)
- [View more regional economic information](#)
- [View the media release for new Otago economic reports](#)