Te Kōrero o te rōpū whakahaere o te wai māori o Waitahanui

The Waitahanui Freshwater Management Unit Story

The purpose of this booklet is to explain draft options to address requirements of the National Policy Statement for Freshwater Management 2020 (NPSFM) in the Draft Waitahanui Freshwater Management Unit (FMU). These options are to do with how we manage freshwater in Waitahanui to achieve outcomes the community wants there.

This booklet covers:

- A description of the draft FMU
- Freshwater management issues in this FMU
- Options for:
  - **A.** A long-term vision for freshwater;
  - **B.** Proposed outcomes for key freshwater values;
  - **C.** Water quality, ecosystem health and other issues and targets;
  - **D.** Water take limits and minimum flows; and
  - **E.** The kinds of rules and other methods being considered to achieve these things.

We are early in the policy development process and are seeking feedback from the community to help inform the important decisions.

Your feedback to the questions inside this booklet can be provided in writing on the corresponding question sheet, online via our website or in person at one of our community events.

TOI MOANA
BAY OF PLENTY
REGIONAL COUNCIL

Ko te wai te oranga o ngā mea katoa

Water is the life-giver and essence of all things

Ngā tohu

This design represents the multiple waterways and waterbodies such as streams, rivers, lakes, and sea. The overall flowing form represents a river/tributary carving its way through the whenua. The koru has been included to represent the life force that water embodies and gives. Haehae represent whakapapa, including the past, present and future. It is a visual celebration of water as a life-giver and the essence of all things.

Te Wairere represents a waterfall with huka (foam) the dynamic movement of the water and the connections between different tributaries as they flow from the land to the sea, mai i te whenua, ki te moana.

Te Mana o te Wai - Tirohanga whānui

Essential Freshwater - Overview

In 2020, the New Zealand Government released the National Policy Statement for Freshwater Management (NPSFM) which outlines the direction all regional councils must take in the management of freshwater. As a result, the Bay of Plenty Regional Council now needs to change its Regional Policy Statement (RPS) and Regional Natural Resources Plan (Regional Plan). This means changing some of the policies and rules we use to manage how freshwater and land is used.

Between April 2023 and September 2023 we will ask you about your aspirations for your local waterways and your feedback on our draft change options. Your elected regional councillors will then consider and decide on options.

By the end of 2024 we will notify formal proposed changes to policies and rules. Everybody will be able to make submissions and be heard by a freshwater hearings panel.

Draft change options *2022 - 2023*	**Community engagement** *April - Sept 2023*	**Amend options** *Late 2023*	**Councillors decide** *Late 2024*	**Notify propsed RPS and RNRP change** *Late 2024*	**Public submissions** *2025*	**Hearings** *Late 2025 - 2026*

We acknowledge there are already a lot of other changes happening due to a host of new national regulations and proposed new laws, and this is yet more. Nevertheless, we encourage your involvement because many of the proposals discussed are specific to this FMU and we need you, the community, to help work through and identify solutions that will work for us all.

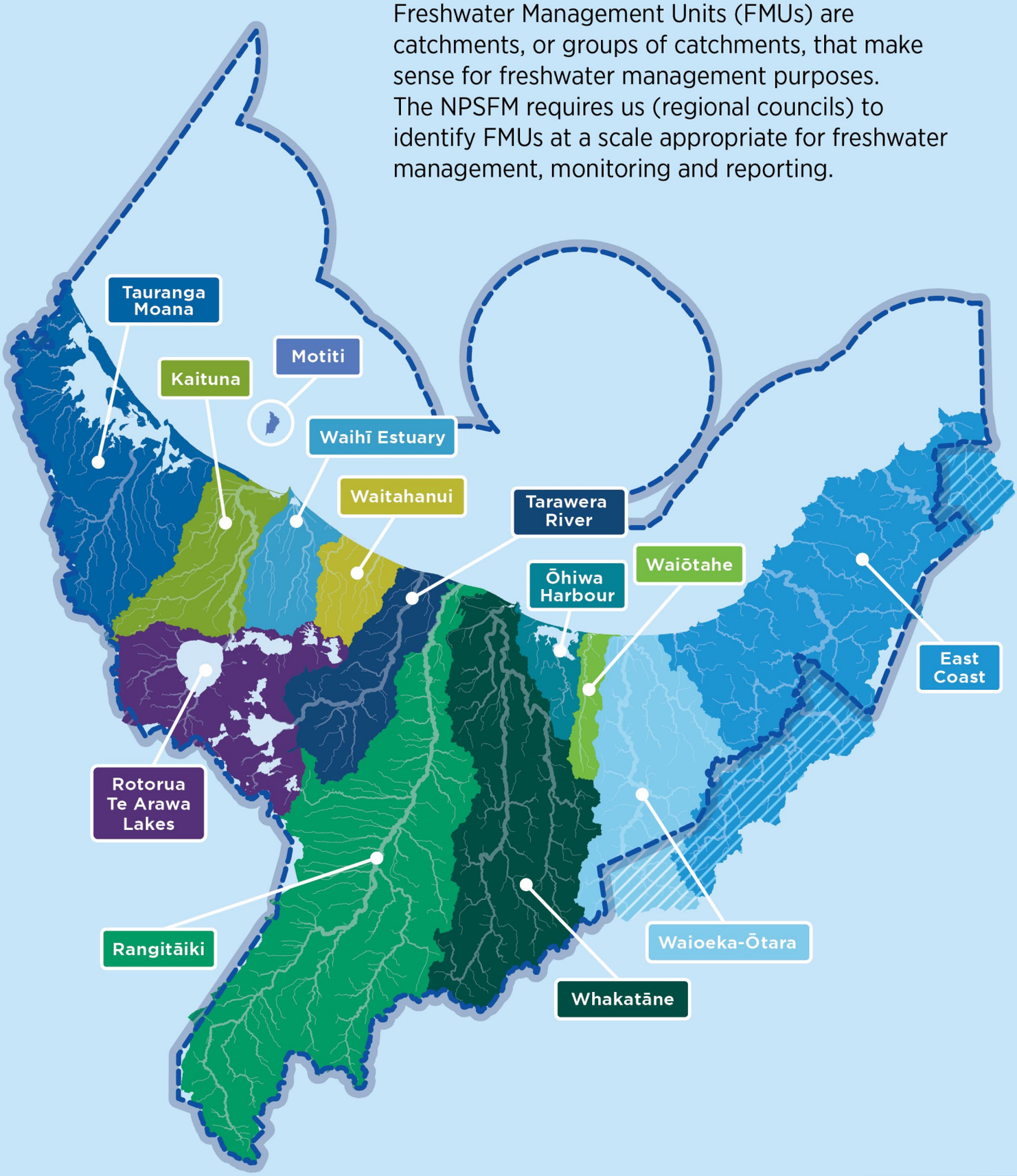
For more info

- Head to **boprc.govt.nz/freshwater**
- Read our Region Wide Overview booklet
- Sign up to receive our Freshwater Flash e-newsletter at **boprc.govt.nz/newsletters**
- Follow our social media
- Visit **participate.boprc.govt.nz**

Ngā tauira o ngā rōpū whakahaere o te wai māori

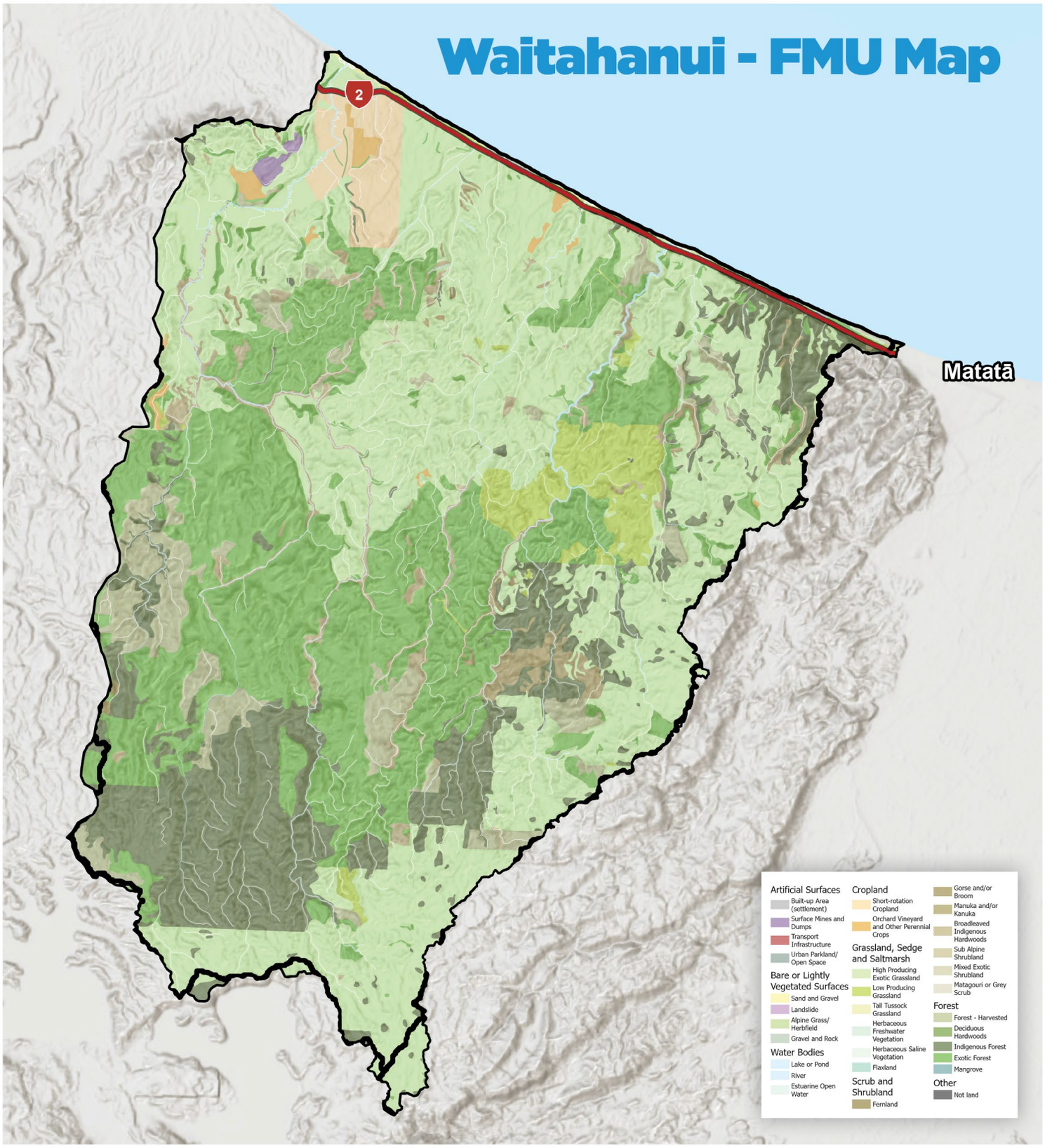
Draft Freshwater Management Units

Freshwater Management Units (FMUs) are catchments, or groups of catchments, that make sense for freshwater management purposes. The NPSFM requires us (regional councils) to identify FMUs at a scale appropriate for freshwater management, monitoring and reporting.



We are proposing 13 Draft FMUs in our region, based on surface water catchments (or groups of these with similarities) and whether they feed into lakes, estuaries, or the ocean. Each Draft FMU has special characteristics (e.g., water body, cultural, community, geology, landform, land use and economic characteristics) that make it unique. Each will have its own chapter in the Regional Plan. The Regional Plan will have region wide rules but may also have rules specific to each FMU. The rules in FMUs may vary depending on the issues faced in that FMU.

Waitahanui - FMU Map

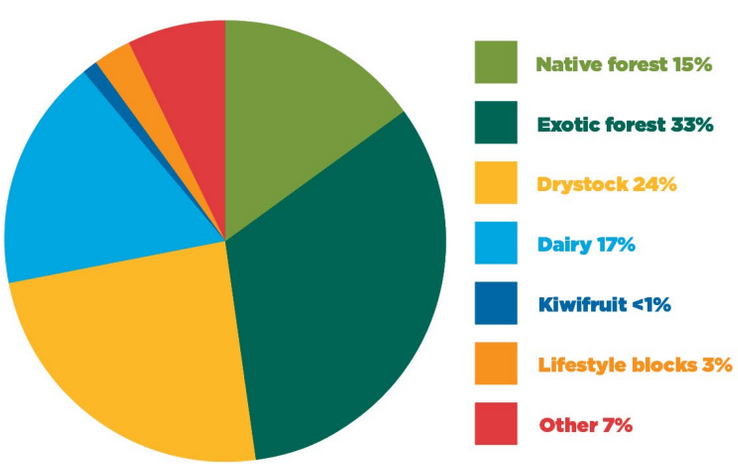


Land area:

25,580 ha

Population:

1,150 people



Mō te tauira o te rōpū whakahaere o te wai māori o Waitahanui

About the Draft Waitahanui Freshwater Management Unit (FMU)

The Draft Waitahanui FMU contains the catchment of the Waitahanui Stream, as well as the coastal catchments of the Hauone, Pikowai, Ruataniwha, Waipapa, Herepuru, Mimiha and Ohinekoao streams. It covers an area of 25,585 ha.

The headwaters of the Waitahanui Catchment are fed via groundwater by Lakes Rotoehu and Rotomā and include the Morepara Stream, Whakahaupapa Stream and Pungarehu Stream. The Waitahanui Stream flows out to the coast at Ōtamarākau.

Question 1 Do you think we have got this draft FMU boundary about right?

Tangata whenua

- Ngāti Rangitihi, Ngāti Awa, Ngāti Tūwharetoa (Bay of Plenty), Ngāti Pikiao, Ngāti Mākino and Ngāti Whakahemo have interests and heritage associated with this FMU. Māori communities are based around hapū and marae, and are very closely connected through whakapapa.
- In this FMU about a quarter of the land area, or about 6,520 hectares, is Māori-owned land. Land use on Māori-owned land is dominated by exotic forest (78%), dairy (12%), and native forest (9%).
- Ngāti Mākino is working towards a comprehensive freshwater management framework to uphold the integrity of the awa. This is building on work the iwi has undertaken to identify cultural flows for the awa tūpuna.
- There are no statutory acknowledgements relating to water in this FMU.
- Council is committed to continuing the journey to involve tangata whenua in freshwater management and support Matauranga Māori.

Communities

- As of June 2022, the population of this FMU is estimated to be 1,150 people. The population is projected to either contract by up to 6% or increase by up to 28% by 2048.
- Parawai Bay, Waimiha Stream, Waitahanui Stream and several other locations were identified as recreation sites through community feedback so far. Several sites along the Waitahanui Stream were identified as being valued for their natural form and character.
- People who responded to our surveys in 2021 and 2022 were unhappy with the current state of some freshwater values, noting the smell and look of the water in the Hauone Stream and water levels dropping over the last 40 years in the Waitahanui Stream. Gully head erosion and On-Site Effluent Treatment at campgrounds were also raised as potential issues.

Land and land use

- This FMU is dominated by volcanic geology.
- Land use in this FMU is 33% in exotic forest, 24% drystock, 17% dairy and 15% native forest. Just over 200 ha or 1% of the FMU area was in kiwifruit in 2017 but this is expanding. The upper catchments of Waitahanui, Pungarehu and Pikowai Streams are forested.
- There is a difference in contour between the western end of the FMU, with gentle rolling country changing further east to steeper country.
- This FMU straddles the Western Bay of Plenty District and the Whakatāne District. Agriculture in these districts is estimated to contribute $250 million to the Bay of Plenty's regional GDP in 2020/21, and horticulture is estimated to contribute $246 million. A portion of this comes from the Waitahanui FMU.

Rivers, streams, and wetlands

- This FMU supports six threatened species. Four areas are identified for their significant coastal biodiversity. Four priority biodiversity sites involve a water body within this FMU.
- About 4% (30 ha) of the historical extent of wetland remains in this FMU.
- Fish and Game have identified the Waitahanui Stream as a waterway where adult trout are present and/or spawn. Community feedback so far identified herring, inanga (whitebait), trout and tuna (eels) in the Waitahanui near Ōtamarākau.

Water use, takes and discharges

- Water is used for a variety of purposes. It is used for a range of cultural purposes (such as karakia, iriiri, whakanoa), recreational purposes (such as fishing), mahinga kai, drinking/household supply and for food production (mostly horticultural irrigation/frost protection in the coastal area).
- As of January 2022, there were 37 water take consents in this FMU (20 surface, 17 ground water). The majority of consents and volume allocated is for primary production (irrigation and frost protection). Commercial and industrial use is low, with only one take for quarrying near Ōtamarākau.
- There are no community drinking water supply sources within this FMU, however the Ngāti Rangitihi Environmental Plan identifies the following streams as a drinking water source - Waitahanui, Pikowai, Ruataniwha, Hauone, Herepuru, Ohinekoao and Mimiha Streams.
- There are no major point source discharges in this FMU, but there are 16 discharge consents to land, two On-Site Effluent Treatment discharge consents and seven discharge consents to water.

What is likely to happen with climate change over the medium to long term (mid-late century)?

- Under climate change, reduced summer rainfall and increased evaporation (from land or water) and transpiration (evaporation from plants) may increase water demand while reducing stream flow.
- There may be higher flood flows in summer and winter.
- Climate Change is predicted to have a severe impact on sediment, particularly in pastoral areas.

Question 2 Does this brief summary about the people, land and water in this FMU seem right to you?

He aha tōu kitenga mō te anamata o te wai māori?

What is your vision for the future of freshwater?

Draft long-term vision for freshwater

A key part of freshwater planning is being clear about what you seek to achieve. A long-term vision for freshwater is required by the NPSFM and must set out what tangata whenua and the community collectively want to see for freshwater in the FMU. Visions should be ambitious but reasonable.

We've drafted some options based on issues and what we've heard from tangata whenua and communities so far:

Option A The mauri of the Waitahanui, Hauone, Pikiowai, Ruataniwha, Mimiha and Ohinekoao Streams and all life within them is protected and enhanced, so our awa can continue to sustain us.

1. Innovative and sustainable land and water management practices support food and forestry production so that rivers and streams are safe for human contact, mahinga kai thrives and ecosystem health is enhanced.
2. Future land development opportunities in this FMU reduce contaminant loss and maintain sufficient flows in rivers and streams.
3. The tapu headwaters of the Waitahanui are identified as a no take zone.

This vision is to be achieved by 2040.

Option B The mauri of the Waitahanui, Hauone, Pikiowai, Ruataniwha, Mimiha and Ohinekoao Streams and all life within them is protected and enhanced, so our awa can continue to sustain us.

1. Habitats support healthy populations of all indigenous species, in particular whitebait.
2. Migratory fish passage is provided throughout their catchments.
3. Natural character and shape of awa are protected, particular meanders in lower reaches.
4. Riparian margins are enhanced.
5. Healthy and diverse ecosystems where taonga flora and fauna flourish.
6. Healthy and abundant mahinga kai resources.
7. Our awa are suitable for swimming, cultural and ceremonial activities.

The vision is to be achieved within the following timeframes: 2040

Question 3 As a draft vision do you prefer Option A or B?

Draft values and environmental outcomes

The NPSFM uses the term "values" to refer to important aspects of freshwater. We must manage freshwater to protect compulsory freshwater values and must also consider other values if present. We must set environmental outcomes for these values.

We have used tangata whenua and community feedback as well as our own research to identify the values we think matter most in this draft FMU. We have heard that people want to be able to swim and gather kai without getting sick and want to know that the water supports a range of fish and other native animals. We have also heard that looking after streams and wetlands enhances their mauri.

Water is also valued as a resource for people and communities to use – in marae and households, as drinking water for animals, for irrigation and food production. Water is important for the livelihoods of local people, but we must make sure its use does not damage ecological health or diminish mauri.

The following table contains some draft outcome statements, based on what we have heard so far.

Freshwater Values *The ways fresh water is important* *Shaded values are compulsory national values in the NPSFM*	**DRAFT Environmental outcome** *How we would like the values to be*
Ecosystem health	Water quality is maintained or improved, where degraded. The volume and flow of rivers and streams sustains aquatic life, spring flows and prevents saltwater intrusion. Restore and enhance the health and diversity of ecosystems and habitats for taonga flora and fauna species. The diversity and abundance of desired aquatic species and birds is maintained or improved, and pest species are controlled.
Human contact	The water quality will be suitable for swimming, cultural and ceremonial activities without the risk of getting sick.
Threatened species	Protect critical habitat to support the presence, abundance, survival, and recovery of threatened species.
Mahinga kai	Water is suitable to sustain plentiful kai, which is safe to eat, within freshwater bodies and the mouths of the coastal streams. Restore, maintain, and protect the mauri of freshwater resources to support the continuation of mahinga kai practices and associated tikanga.
Natural form and character	Preserve or restore and maintain the natural form and character of water bodies including the meanders in the lower reaches, margins, fauna, and springs.
Drinking water supply	People have sufficient, reliable, and safe water for drinking and reasonable domestic use, to the extent possible and subject to providing for the outcomes shaded above.
Wai tapu	Protect and manage wai tapu sites.

Freshwater Values *The ways fresh water is important* *Shaded values are compulsory national values in the NPSFM*	**DRAFT Environmental outcome** *How we would like the values to be*
Transport and tauranga waka	Water level and quality are managed to enable navigation/tauranga waka of the channel.
Fishing	Restore and enhance freshwater and ocean fisheries.
Animal drinking water	Farmed animals have sufficient, reliable, safe, and palatable drinking water, to the extent possible and subject to providing for the outcomes shaded above.
Irrigation, cultivation, and production of food and beverages	Reasonable and efficient irrigation and food processing freshwater needs are provided for with an adequate level of reliability, to the extent possible and subject to providing for the outcomes shaded above.
Commercial and industrial use	Reasonable and efficient commercial and industrial freshwater needs are provided for with an adequate level of reliability, to the extent possible and subject to providing for the outcomes shaded above.

Question 4 What do you think of the draft values and outcomes identified for this FMU?

Te kounga o te wai me te oranga o te pūnahi hauropi

Water quality and ecosystem health

The vision, values and outcomes give a sense of where we want to be. How hard it is to get there depends very much on where we are right now. The things we do on the land can affect river, stream, wetland, and estuary health. We measure lots of different things to check the health of the environment- these are called attributes. The state given below is what it was like in September 2017 – called baseline state as defined in the NPSFM. The NPSFM has a grading system for each attribute. The grades are A-D bands. A band = very good state, D = poor state. The trend tells us whether it is getting better or worse over time.

River and stream water quality for ecosystem health

The main water quality attributes we measure in rivers and streams are the contaminants of concern for most areas, the nutrients nitrogen and phosphorus, and sediment. Find out more about how we monitor river health, here.

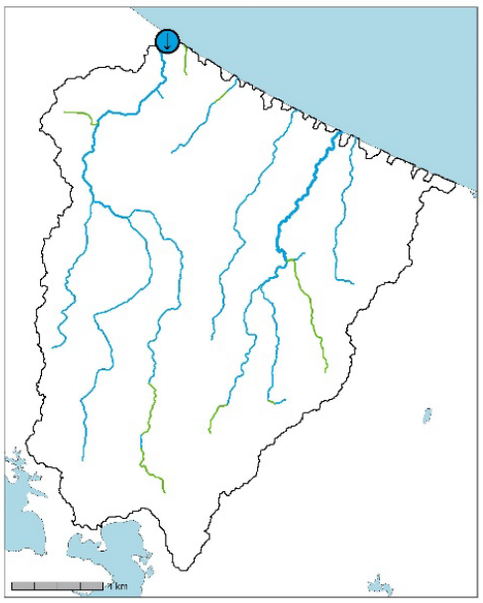
The Bay of Plenty Regional Council has one monitoring site in Waitahanui FMU to measure state and trends in river and stream water quality. In areas where we don't have enough monitoring data, river health has been estimated by an Expert Panel using the best information available. This gives us a sense of states and helps us identify where changes may be needed to meet environmental outcomes. The NPSFM requires us to take action and make improvements if water quality is below a national bottom line or is degrading (shows a worsening trend over time), unless this is due to natural causes.

Measured nitrogen concentration is well below (better than) levels that can have toxic effects – in the A band, but is showing a worsening trend. Modelling indicates nitrogen concentrations are lower at the top of the catchment but increase downstream, reflecting the increasing amount of more intensive land use.

Measured dissolved reactive phosphorus concentration is high – in the D band but is showing an improving trend. The high phosphorus is likely from the volcanic influence in the area, although human activity will be adding to this.

Measured suspended fine sediment is in the A band, and is showing an improving trend. Large wet weather events can contribute harmful pulses of sediment that may not be reflected in this data.

Nitrate (toxicity)



Regional boundary

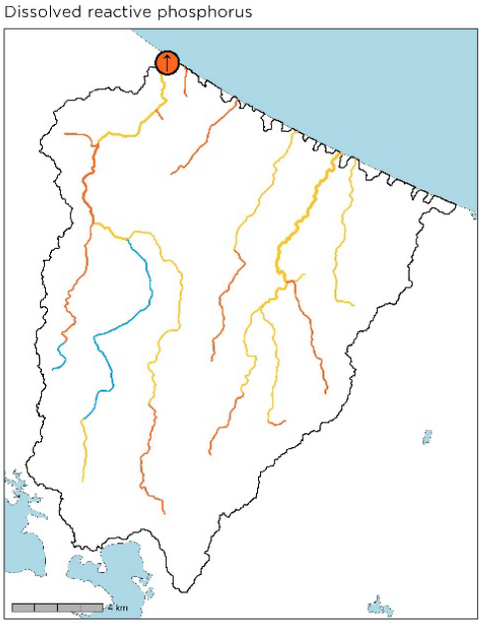
FMU boundary

Estimated state
- A
- B
- C
- D

Monitored state
- A
- B
- C
- D

Monitored trend
- ↑ Very Likely Improving
- ↗ Likely Improving
- → Indeterminate/Uncertain
- ↘ Likely Worsening
- ↓ Very Likely Worsening

Dissolved reactive phosphorus



Regional boundary

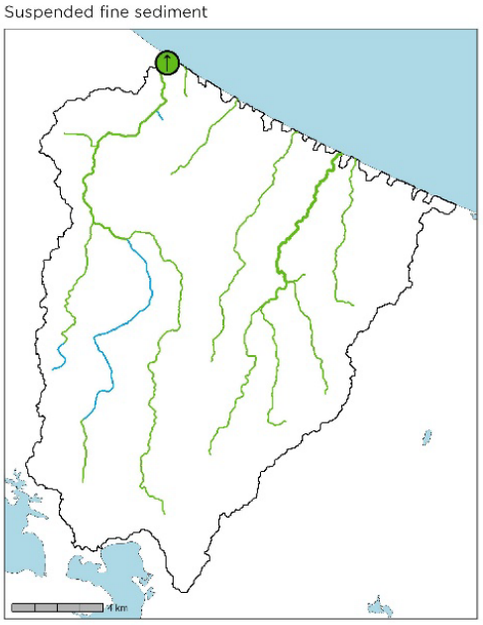
FMU boundary

Estimated state
- A
- B
- C
- D

Monitored state
- A
- B
- C
- D

Monitored trend
- ↑ Very Likely Improving
- ↗ Likely Improving
- → Indeterminate/Uncertain
- ↘ Likely Worsening
- ↓ Very Likely Worsening

Suspended fine sediment



Regional boundary

FMU boundary

Estimated state
- A
- B
- C
- D

Monitored state
- A
- B
- C
- D

Monitored trend
- ↑ Very Likely Improving
- ↗ Likely Improving
- → Indeterminate/Uncertain
- ↘ Likely Worsening
- ↓ Very Likely Worsening

River and stream aquatic life for ecosystem health

The main aquatic life attributes we measure are fish, macroinvertebrates which include worms, snails, and insects, both in their immature larval phase, and as adults (e.g., mayflies, caddisflies, beetles), and periphyton - algae and fungi that grow on the beds of our rivers, lakes and streams and can make it slippery and slimy. For ease of interpretation, invertebrate data is simplified as special indices such as the Macroinvertebrate Community Index (MCI). The Macroinvertebrate Community Index (MCI) is based on the tolerance or sensitivity of species to organic pollution and nutrient enrichment and measures the presence (or absence) of invertebrates. Higher MCI scores indicate better stream conditions at the monitoring site. Two other indices are also used to describe macroinvertebrate health – the quantitative MCI and Average Score Per Metric; check out our Water Ecology Tool at www.boprc.govt.nz/wet for more information.

Fish surveys show 15 fish species in Waitahanui FMU Estuary FMU, 14 of these are native. Longfin eel, shortfin eel, redfin bully, smelt and banded kōkopu were the most common. The threatened species shortjaw kōkopu was found at one site in the headwaters of the Herepuru Stream in 1997, but it is unknown if this species still occurs in this FMU.

The Council has three macroinvertebrate monitoring sites in Waitahanui FMU to measure state and trends in river health. Two sites were in C band for MCI and one site was D band and did not meet the national bottom line. Some rivers and streams had lower MCI indices that indicate potential stress from sediment and loss of riparian shade, or from natural processes.

Whilst not toxic, nutrients like nitrogen and phosphorous can promote plant, weed and algal growth. Because these streams have mobile pumice beds, and generally well-shaded headwaters, this is not likely to be an issue in Waitahanui FMU.

Human contact

The main human health attributes we measure are bacteria and cyanobacteria (blue/green algae). Elevated levels of faecal bacteria from animal dung, human wastewater and birds can make water unsafe for people to swim in or gather kai from. This is often used as a measure of ‘swimmability’. *E. coli* is the bacteria we measure in rivers and lakes as an indicator of other bacteria that could be present. Faecal coliforms and *enteorococi* are the bacteria we measure in estuaries and the sea. Find out more about how we monitor river health, here.

The Council has no monitoring sites in Waitahanui FMU for human contact.

Mahinga kai

The mahinga kai compulsory value includes the freshwater-related plants and animals that people can eat, the places these are harvested from and the tikanga (practices) of collecting or harvesting them. It is important because the loss of these species can have a profound effect on the communities who rely on them.

Several locations along the Waitahanui have been identified as having mahinga kai values. We know there will be other important traditional harvest sites and species in this FMU, but don’t have much information about these and how tangata whenua would assess their state yet. We welcome any information tangata whenua wish to provide.

Where do contaminants come from?

Losses from rural and exotic forest land uses are the main sources of the key contaminants caused by human activities. Dairy farming is estimated to contribute a disproportionately large share of nitrogen, phosphorus, and *E.coli* load compared to its land area in this FMU. Drystock and exotic forest contribute about one third each to these loads. While exotic forest contributes the most total phosphorus load, the proportion of losses from forest are lower

than the proportion of land area, whereas dairy contributes substantially more for its land area. Drystock contributes a disproportionately large share of the suspended sediment load compared to its land area in Waitahanui FMU.

The dominant erosion process in the catchment is shallow landslide. Drystock land uses are estimated to contribute the most sediment.

The shift of some dairy farming land use to kiwifruit may reduce *E. coli* losses in the medium term. However, there will need to be a strong focus on sediment control before, during and after any recontouring earthworks, and careful nutrient management, particularly in the first few years after planting of kiwifruit.

Freshwater health issues for this FMU

Ecological health is reasonably good, but there is opportunity to achieve improvement and some action needs to be taken to avoid further decline.

While nutrients are unlikely to be affecting ecological health in this FMU at the moment, this could occur in the future if nitrate trends continue worsening. Improvements in nutrient management practices and caution about conversion of land use or practice to activities with a high risk of nutrient loss will be needed to "hold the line". Likewise, good management to reduce sediment loss will be appropriate.

People swim in the lower Waitahanui Stream and, while there is no current recreational bathing site monitoring. Long term monitoring indicates a poor state for human contact, particularly after heavy rainfall. More active management of runoff and faecal contaminant losses from dairy and drystock farming land uses are needed.

Cultural indicators of health. We know there will be important cultural indicators that can provide a deeper understanding of wai ora, but don't have much information about these. We welcome any information tangata whenua wish to provide.

Question 5	Does this brief summary about water quality in this FMU seem about right to you?
Question 6	How satisfied are you with the water quality in this FMU?

What are we aiming for?

The NPSFM requires us to set targets for water quality that are at least as good as the baseline state of the rivers and better than the national bottom lines set in the NPSFM. These targets are the specific, measurable levels of water quality or ecosystem health, which will help us to achieve the environmental outcomes (on previous page).

Some attributes are in the A state band, and we will need to maintain this e.g., Ammonia (toxicity) and nitrate (toxicity). Where the trend is very likely worsening, as it is for nitrate, some action is required to halt degradation.

There are no sites with attributes whose baselines state is worse than a national bottom line. There is a range of choice about the Target Attribute States that can be set for many attributes and time frames to achieve them.

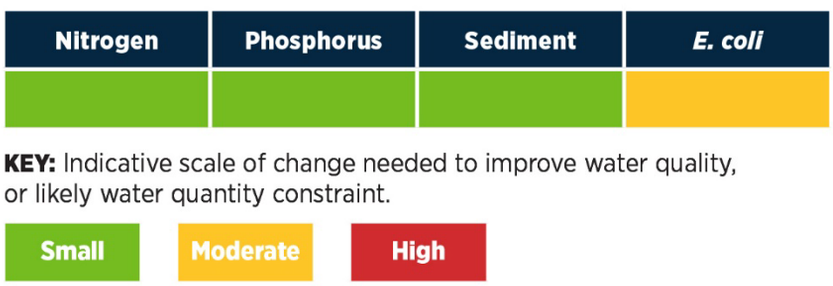
E. coli at the monitoring site on Waitahanui Stream at Ōtamarākau Marae needs to improve.

Phosphorus is likely to be naturally elevated in this FMU (similar to most of the region). We are working to understand this better, to make sure any targets are realistic.

From feedback we have received to date, we anticipate tangata whenua and communities will want:

- To achieve A or B band state for all attributes if this is achievable.
- To apply a reasonable timeframe to achieve this, so that any land and water users who need to make changes have time to transition. In this FMU 10 –20 years is suggested.
- To accept C band state or worse only if that is naturally occurring, or if climate change predictions suggest no better can be achieved.

Indicative scale of nitrogen, phosphorus, sediment and *E. coli* load reduction needed to improve water quality and meet draft environmental outcomes.



How can we meet the outcomes and targets we set?

The outcomes we set for freshwater will be met via a mix of voluntary measures (things people choose to do themselves), investment and works/actions by Council, regulations the government has set that everyone must follow, and extra rules Bay of Plenty Regional Council sets in the Regional Plan. The rules we set in the Regional Plan will be where these are the most appropriate way to address remaining issues that are not likely to be addressed by national regulations.

Regional Councils must implement national regulations relating to freshwater (via consents, monitoring, and compliance). We cannot change these but can make additional rules if we think they are needed to address local issues. It is important to have a sense of what national regulations currently say:

National regulations for freshwater

Current national regulations require:

- Stock exclusion (with a 3 m buffer) from large rivers (>1 m wide), lakes and wetlands for dairy cattle on all terrain, and for drystock on low slope land (<5 degrees).
- Controls on activities within and close to rivers, streams, lakes, and wetlands.
- Feedlots and stockholding area requirements: sealed; effluent collection, storage, and disposal; 50 m setback from rivers, lakes, wetlands, bores, drains and the coastal marine area.
- Cap of 190 kg/ha/yr on the amount of synthetic N-Fertiliser applied to dairy farms, along with reporting requirements.
- Controls on intensive winter grazing on forage crops – subject to conditions or consent required.
- Consent required for substantial land use change from forestry to pasture, anything to dairy or dairy support, or extending the irrigated area within dairy farms (provisional rule expires 2025).

- Plantation Forestry: a number of practice requirements, including setbacks from rivers, lakes and wetlands, and requirements relating to earthworks, harvesting, slash and other activities.

Pending national regulations in 2023 are:

- Certified Freshwater Farm Plans will be required for all farms over 20 ha and horticultural enterprises over 5 ha. Farm operators will need to identify activities that pose a risk of contaminant loss and identify actions to reduce risks.
- New regulations requiring Regional Councils to control activities in drinking water source protection areas.

Draft water quality policy options

Water quality is generally pretty good and national regulations will help address some problems. However, keeping things good, reversing negative trends and perhaps making room for further development may require doing a little better than we are now.

Options we are exploring for this FMU include:

- Expecting good management practice and risk management for all farming and horticulture land use, with a focus on *E. coli* management in particular, and also river habitat restoration and nutrient and sediment management, using Freshwater Farm Plans and minimum standards.
- Gathering farm data on stock, feed, fertiliser and other farm and horticulture nutrient inputs.
- Controlling intensive grazing that removes vegetation cover and cultivation, including active management of Critical Source Areas (overland flow paths), in similar way to national Intensive Winter Grazing Regulations.
- Requiring no future net increases in *E. coli*, nitrogen, phosphorus, or sediment as a result of future land use and practice change (this may require offsetting).
- Encouraging restoration of in-river habitat, as well as river margin habitat, including fish passage.
- Continuing to reduce Phosphorus, *E. coli* and nitrogen from point source discharges via tighter conditions for resource consents, including requiring lined animal effluent storage and effluent irrigation rate, timing and volume requirements.
- Encouraging or requiring stock exclusion from all permanent and intermittent rivers, streams, and large drains. Maintenance of a thick grass sward on margins and/orplanting of one side of drains and canals to provide shade and bring down water temperature.
- Encouraging or potentially requiring retirement of steep (>25 degrees), erosion prone land from grazing.
- Requiring plantation forestry management plans at the time of afforestation to address sediment loss during and after forest harvesting.
- Investigate and promote water control structures as mitigations within the moderately sized gully head erosion sites throughout this catchment.

Before any of these suggestions are proposed as rules in our regional plan, we need to assess their appropriateness, effectiveness, efficiency (including costs and benefits) – a big part of that is understanding what you, as part of the community, think about them.

Question 7	Does our approach to setting the water quality targets seem about right to you?
Question 8	On balance, what is a reasonable timeframe to achieve these water quality targets for this FMU?
Question 9	Do you support the suite of draft water quality management options being considered for this FMU?
Question 10	What minimum good land management practice requirements do you think we should consider in this FMU?

Te nui o te waipapa me te tukunga

Surface water quantity and allocation

Surface water is the water that flows in rivers, streams, and lakes. Across the region, water is taken for different uses, and is usually taken with a pump connected by pipe to the river or stream.

What are we aiming for?

How much water we take from rivers and streams for people to use will affect how much water is left for native fish and macroinvertebrates that depend on it for their survival, and for in-river cultural, recreation and other uses.

One of our main aims with water quantity is for people to know how much water is available to be used without causing in-river harm. We do that by managing water takes to ensure plenty of water remains to sustain habitats for the fish that live in rivers and streams, and generally thereby protect other values too.

The NPSFM hierarchy of obligations prioritises the health and well-being of rivers, streams, lakes, wetlands, and groundwater first, then human health needs, and then ability of people to provide for social, cultural, and economic wellbeing.

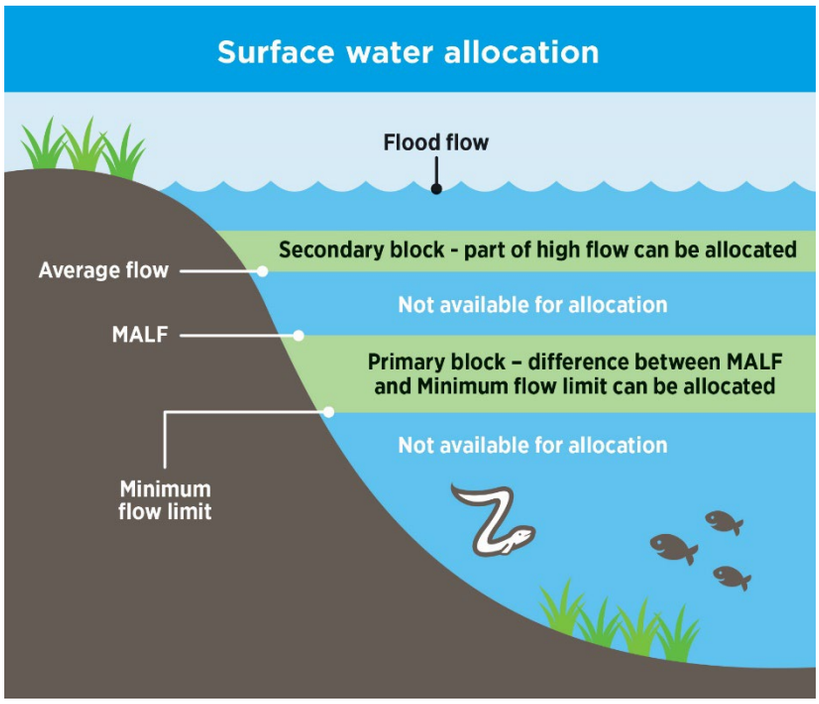
One of the ways we can do this is to protect native fish populations by setting limits on the total amount of water that can be allocated from each river or stream for people to use, and setting minimum flows, where users have to stop taking water if rivers and streams get too low. These limits can have a big influence on the health of rivers, streams, the things living in it, on the community, economic development, and possible land use in the catchment.

How can we meet the outcomes we seek?

Our main tool for managing water quantity is the setting of minimum flows (limits to achieve the desired level of environmental protection).

Some rivers and streams are relatively resilient, and more water can be taken without affecting/damaging/stressing ecosystems, whereas others are more sensitive. Likewise, some fish prefer deep, fast flowing water and others prefer slower flowing, shallower rivers, and streams.

In the Waitahanui Stream, the existing rules identified a stream specific minimum flow based on a scientific study of the stream. The minimum flow identified is 3800 l/s. As a percentage of MALF, this decreases as we go downstream, but is approximately 70% MALF at the base of the catchment.



The above figure shows how the minimum flow limit, primary allocation block and secondary allocation block relate to the flow in a river or stream. Mean Annual Low Flow (MALF) is a commonly used measure that describes the average amount of water expected in a river or stream during times of low flow. It is calculated by averaging the lowest weekly flow in each year of the flow record.

If people are allocated (by resource consents) more water than the total allocation limit, a river or stream is over allocated. The NPSFM requires us to not allow over allocation. While nobody wants to be told to stop taking water, especially during a drought, there is a trade-off between managing effects on the health of the river or stream (constraining takes at the minimum flow), the amount of water available for people to use (allocation limits), and how often restrictions are needed (reliability).

Habitat retention levels

With a lot riding on the limits we set, we need to get them right. A key part of the consideration is what level of habitat protection we want i.e. At times of low flow, how much stress should organisms living in the river or stream experience (they will be used to some stress from natural causes).

A proposed habitat retention level we are aiming to achieve by setting these minimum flows is shown in the table below. The suggested levels for target native fish species are based on our understanding of how flows affect these fish species, and how scarce and vulnerable or resilient the species are. For example, shortjaw kōkopu and giant kōkopu are threatened species that are scarce and vulnerable, so the highest retention level is proposed.

We know other considerations may be needed too, including ensuring flows support mahinga kai, cultural or recreational values. For example, where trout are in a river or stream, we suggest setting habitat retention levels for those to provide for fishing values, so these are in the table below as well.

The Waitahanui Stream is very strongly spring fed, with one of the highest flow rates per square kilometre of catchment of all streams in the region and relatively low variability (e.g., there is not so much difference between average flows and low flows compared to other rivers and streams). The flow record shows that August has more low flow days than all other months of the year, except for January and February. The stream is a significant trout fishery and spawning area.

The river has high cultural values. In 2016, local iwi (Ngāti Mākino and Ngāti Rangitihi) identified their cultural flow preferences. Multiple factors relating to the health and mauri of the river were used to do this, with a minimum flow level that in places is not met a lot of the time. The iwi strongly recommended that no further flow was available for allocation. More recently Ngāti Mākino has been working on a mauri model to support freshwater management planning.

Target Species	Habitat retention level
Shortjaw kokopu	100%
Giant kokopu	100%
Other kokopu species	95%
Kōaro (adult)	90%
Inanga	90%
Bullies (excluding bluegill)	90%
Eels (tuna) juvenile	80%
Eels (tuna) adult	75%
Torrentfish	70%
Bluegill bullies	70%
Trout	95%

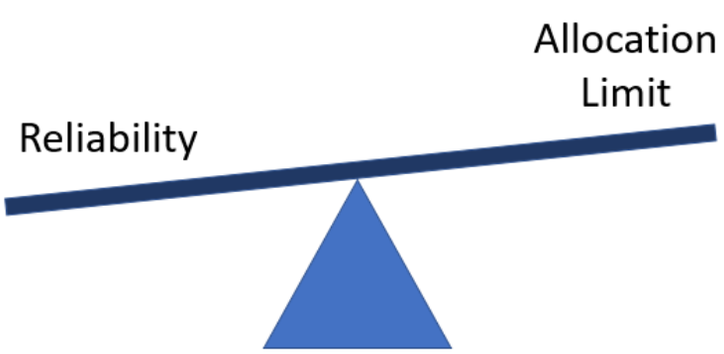
Question 11 We are moving to limits on water takes based on habitat protection for fish. Does this seem the best approach?

Water use

Once we've identified the minimum flow to protect the habitat for selected fish, we need to decide how much water is available to allocate to users.

The current allocation limit is set at the difference between the one in 5-year low flow (4680 l/s) and the minimum flow of 3800 l/s. On this basis, the Waitahanui Stream is over allocated.

Reliability is a measure of how often authorised water users have to stop or reduce their water take (because the river or stream is or would below the minimum flow). The higher the minimum flow, the more likely rivers and streams will fall to that flow due to natural conditions and the more frequently taking water will be restricted or stopped. The more water we allocate, the less reliable it is (the more often we need to restrict or stop water takes).



A balancing act: With a set minimum flow limit, there is a trade-off between the amount of water allocated for use and the reliability of water availability.

Question 12 Do you support or oppose the idea of encouraging more users to store water after heavy rainfall to help us all get through periods of drought?

Question 13 If you had to choose between a reliable water supply but very little water available and more water available but unreliably, which would you prefer and why?

Question 14 Sometimes our surface water challenges are because people take water at the same time. How willing would you be to work with others in your area to ensure water is taken from your stream(s) at different times?

Question 15 When the minimum flow is set at a high level, there isn't much water available to allocate and reliability is likely to be poor. Would you support reviewing the habitat retention levels of fish in over allocated catchments to increase the amount of water available for allocation?

Surface water quantity issues

Water allocation for use is important in this FMU due to the large number of resource consents supporting horticultural and pasture irrigation. This will have to be considered alongside kaitiaki/cultural flows.

Supporting and providing for the active involvement of tangata whenua in the setting of limits is necessary. Work is in progress to inform how kaitiaki/cultural flows requirements might be implemented. It is understood that tangata whenua and water users are working on the option of forming a water user group to manage when water is taken. Once this has happened, we will need to consider how any conflict between existing uses and cultural flow requirements is addressed.

Ecologically the stream is very resilient, and a scientific study identified a minimum flow of 50% mean annual low flow (MALF) would meet habitat retention levels sought. This is very enabling for users and would leave capacity for further highly reliable allocation in the stream.

The very stable flows in this FMU leave little room for higher allocations for frost protection or secondary uses.

Question 16 Does this brief summary about water quantity in this FMU seem about right to you?

Surface water quantity options

Uniquely in our region, this river has a specific minimum flow identified by scientific studies the operative Regional Plan. Now we've standardised the regional level of habitat protection and identified an allocation limit for ecological purposes. As a result, more water is available for allocation within the draft ecological limit outlined below.

Option set 1: Choosing Habitat Retention Levels (minimum flows)

The first set of choices we need to make concerns the level of protection we give to the main fish present in the river. Essentially, we are keen to know what you think of the Habitat Retention Levels in the table above. We could make them more protective, which would mean water takes would have to be restricted or stop more often, or less restrictive, posing a risk that low flows may reduce usable habitat for some fish.

An alternative to setting the minimum flow (ecologic minimum flow) using trout and native fish habitat retention levels in the table above, is to meet the habitat protection level for native fish species and a lower habitat protection level for trout, which would reduce the minimum flow (alternative minimum flow).

Option set 2: Deciding how much water can be allocated (primary allocation)

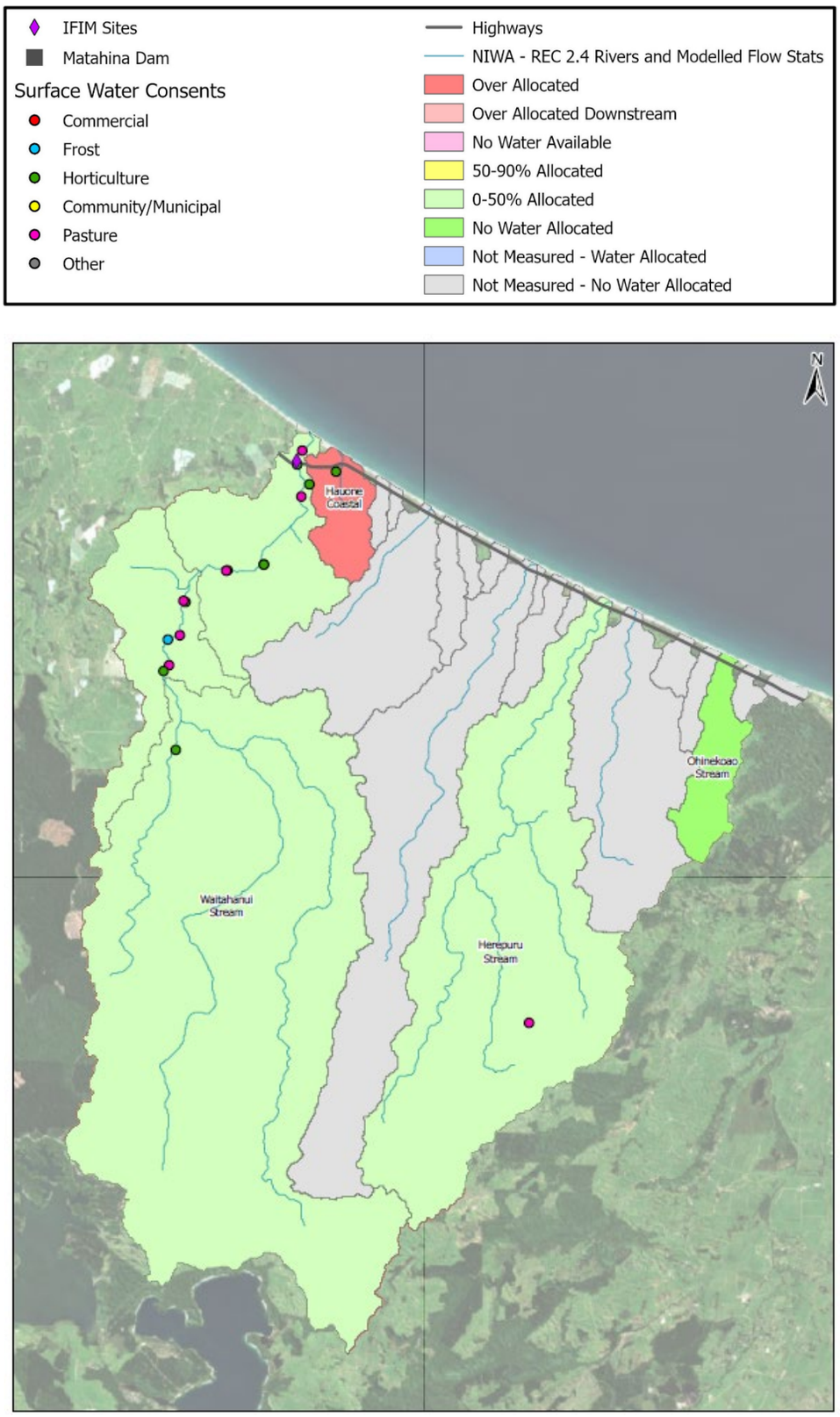
Our next choice concerns how much water to allocate and the effect of this on reliability for users. We propose that the allocation limit should be the difference between the Mean Annual Low Flow (MALF) and the minimum flow. Several catchments will be over allocated under this scenario because more than this amount of water is currently allocated in resource consents. The map on the following page shows the current allocation status using this option. We could make the allocation limit bigger, i.e., allocate more water, but this will mean that people will be told to restrict or stop taking more often.

If the allocation limit is based on the ecologic minimum flow, the allocation limit (called the ecological limit in the graphs below) would mean several rivers and streams remain over allocated.

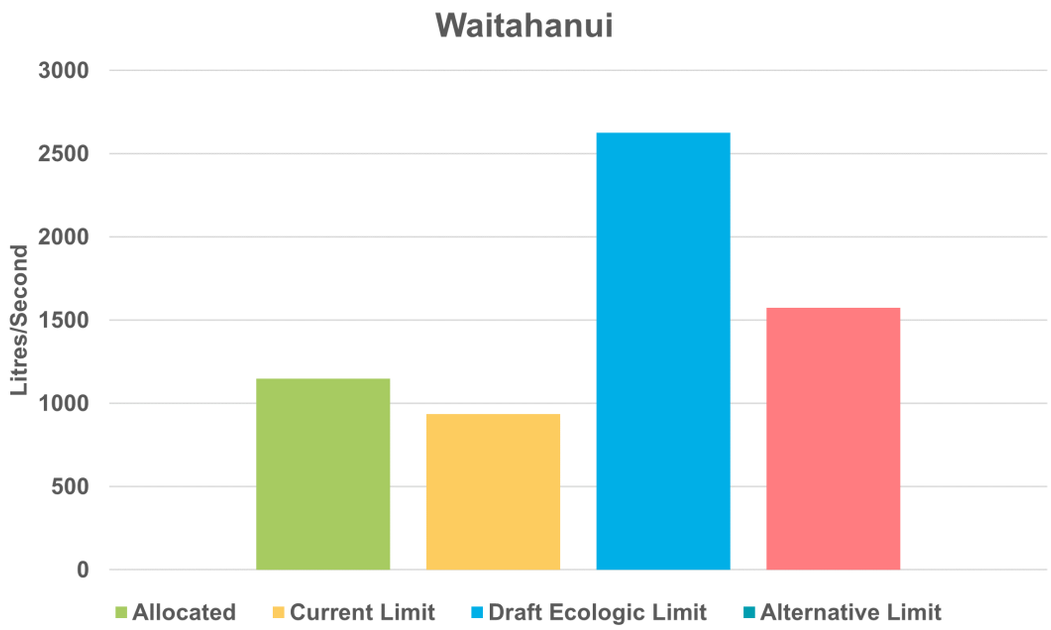
If an alternative allocation limit (called the alternative allocation limit in the graphs below) is based on the alternative minimum flow this would make more water available.

Option set 3: Primary and Secondary Block

We could allocate a lot more water (maybe twice as much) if we allocate a secondary block that can only be taken during periods of high flow. In this situation, users of the secondary block would probably need storage dams to provide reliable access to water during dry periods, because there will be more days when the allocated water cannot be taken. We are still investigating where this might be suitable, or how much extra water could be allocated, but it's likely that this option would better provide for current and future water dependant development if water storage dams are built.



Allocation status using the ecologic allocation limit (that is the difference between the Mean Annual Low Flow and ecologic minimum flow).



Total water currently allocated to water users, current allocation limit (default allocable flow in the current Regional Plan), the draft ecological allocation limit (total allocable flow using the difference between the Mean Annual Low Flow and the ecological minimum flow), and an alternative allocation limit.

Question 17 We have options to set water allocation limits for a catchment that are complex and species and area specific or more generic, simple and region wide. Which approach to water allocation limits do you prefer and why?

Question 18 A small number of catchments in the Tauranga Moana, Kaituna, Rangitāiki and East Coast FMU's are currently over allocated. We may need to claw back or reduce the overall water allocation in some catchments. How do you think we should approach this i.e. prioritise particular uses, timeframes for transition?

Te nui o te wainuku me te tukunga

Groundwater quantity and allocation

Groundwater is the water that flows underground – through gravel, sand, mud and between the crevices in rocks. Groundwater can be taken for irrigation or storage and can usually only be accessed via a bore drilled into the ground. In general, groundwater is more costly to access than surface water, especially if it is difficult to find or extract.

We manage groundwater differently to surface water. For groundwater, our focus is much more on the annual volume of water taken, while the surface water we are concerned about the rate of take at any one time. However, our concern for groundwater takes, also relates to how they will affect surface water features such as wetlands, rivers, and streams.

This FMU is dominated by rocks of volcanic origin, with some sedimentary deposits in the lowlands. Compared to neighboring FMUs, the volcanic deposits are thinner, and the hard basement greywacke rock underneath is exposed in the northern part of the FMU.

Issues

Current consented groundwater abstraction from the Waitahanui FMU is 3.5 M m^3/year, which is low (per unit area) compared to adjacent FMUs to the east and west. While consented abstraction is likely to be low relative to total FMU wide recharge, abstraction is concentrated along the coast, and in the north-west of this FMU.

There is some risk that salt water from the sea will move inland in the groundwater if there are large or too many takes near the coast.

There is variable access to adequately yielding aquifers across the FMU.

Surface water is over allocated in this FMU and the adjoining Waihī Estuary FMU so there is an opportunity to transfer demand from surfacewater to groundwater.

Policy options

This FMU is included within Bay of Plenty Regional Council's regional scale groundwater flow model for the Kaituna, Maketū and Pongakawa areas. This model will be used to inform limit setting by simulating various levels of groundwater abstraction and evaluating the associated cumulative effects on river baseflows and groundwater levels.

Across all FMUs consideration is being given to how to achieve more efficient use of freshwater; i.e. ensuring water allocation (what we consent) more closely matches need (what is used). This is because allocation status (whether an area is over allocated or not) is calculated based on what is allocated and theoretically able to be used (not what is actually used).

The main options being explored in this FMU are:

- How Groundwater Management Zones within which allocation limits are set. In this FMU this should result in a slightly simpler administrative arrangement with no significant impacts on existing users.
- Which allocation limits to choose. Some modelled scenarios show greater groundwater availability if a slight reduction of base flow of rivers and streams is accepted.
- Whether to include provisions that encourage use of groundwater to take pressure off potentially over allocated surface water catchments.

Next steps for this FMU will be developing new Groundwater Management Zones within which allocation limits are set. It is not envisaged that these will substantially change the current allocation status.

As noted above. Ngāti Mākino is exploring how a mauri model could be used to support freshwater management planning. This may involve a collective approach to water management for the Waitahanui.

Question 19 Does this brief summary about groundwater quantity in this FMU seem about right to you?

Question 20 Groundwater is managed primarily to protect and maintain surface waters, and to meet current and future beneficial uses. What other things should it be managed for?

Question 21 Our understanding of groundwater availability is incomplete. We can set groundwater allocation limits that are lower (i.e. more conservative) or higher. Where on the spectrum of risk are you?

For more information go to www.boprc.govt.nz/freshwater-info

Ngā mea e whai ake nei
Next steps

Feedback can be provided via our online platform, in person at community meetings, or in writing via post.

You can sign up to receive our Freshwater Flash e-newsletter at **boprc.govt.nz/newsletters** follow our social media or visit our website for regular updates.

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