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

The Waiōtahe 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 Waiōtahe Freshwater Management Unit (FMU). These options are to do with how we manage freshwater in Waiōtahe 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	Community engagement	Amend options	Councillors decide	Notify propsed RPS and RNRP change	Public submissions	Hearings
2022 - 2023	*April - Sept 2023*	*Late 2023*	*Late 2024*	*Late 2024*	*2025*	*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.

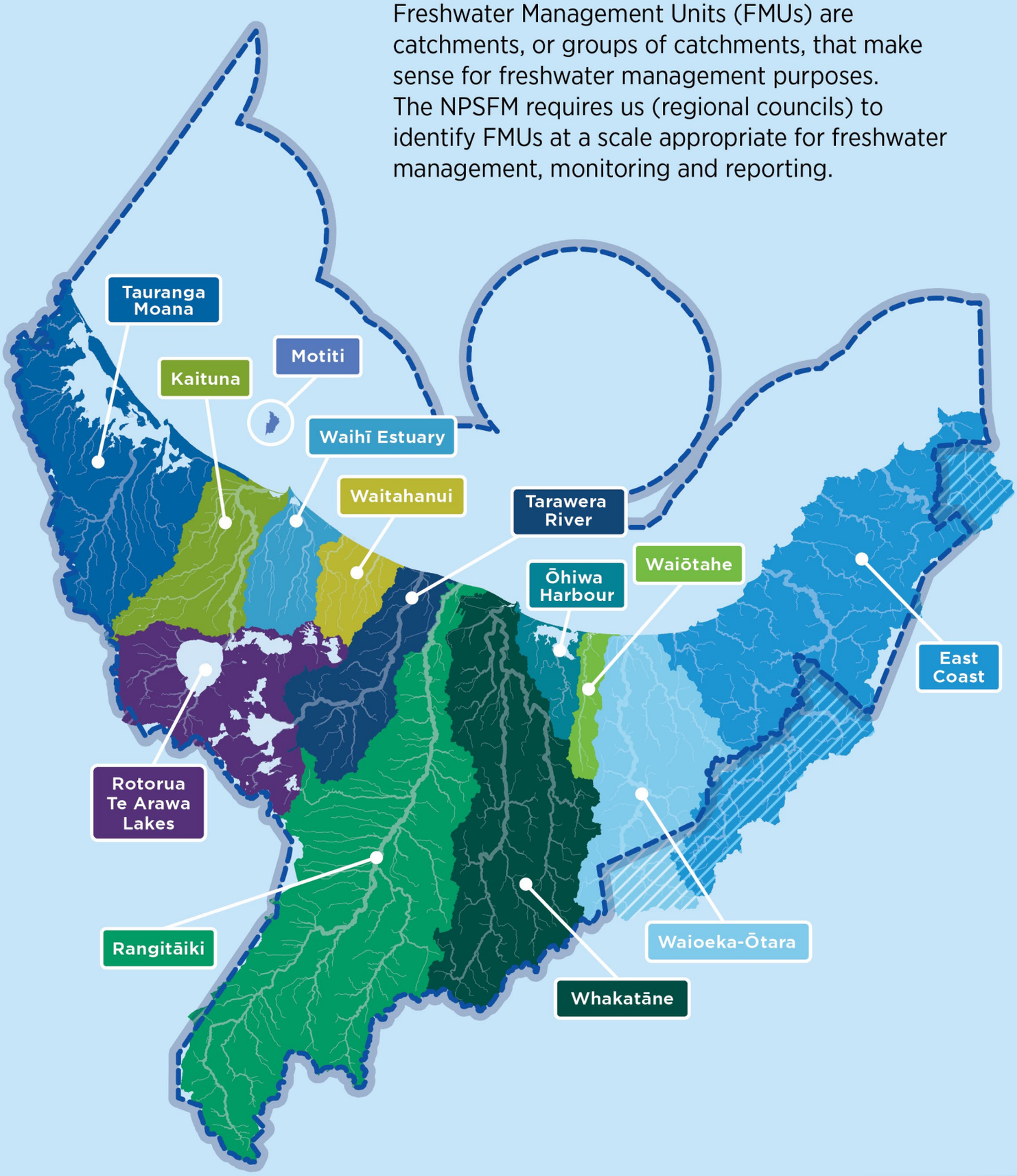
For more info

- 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**

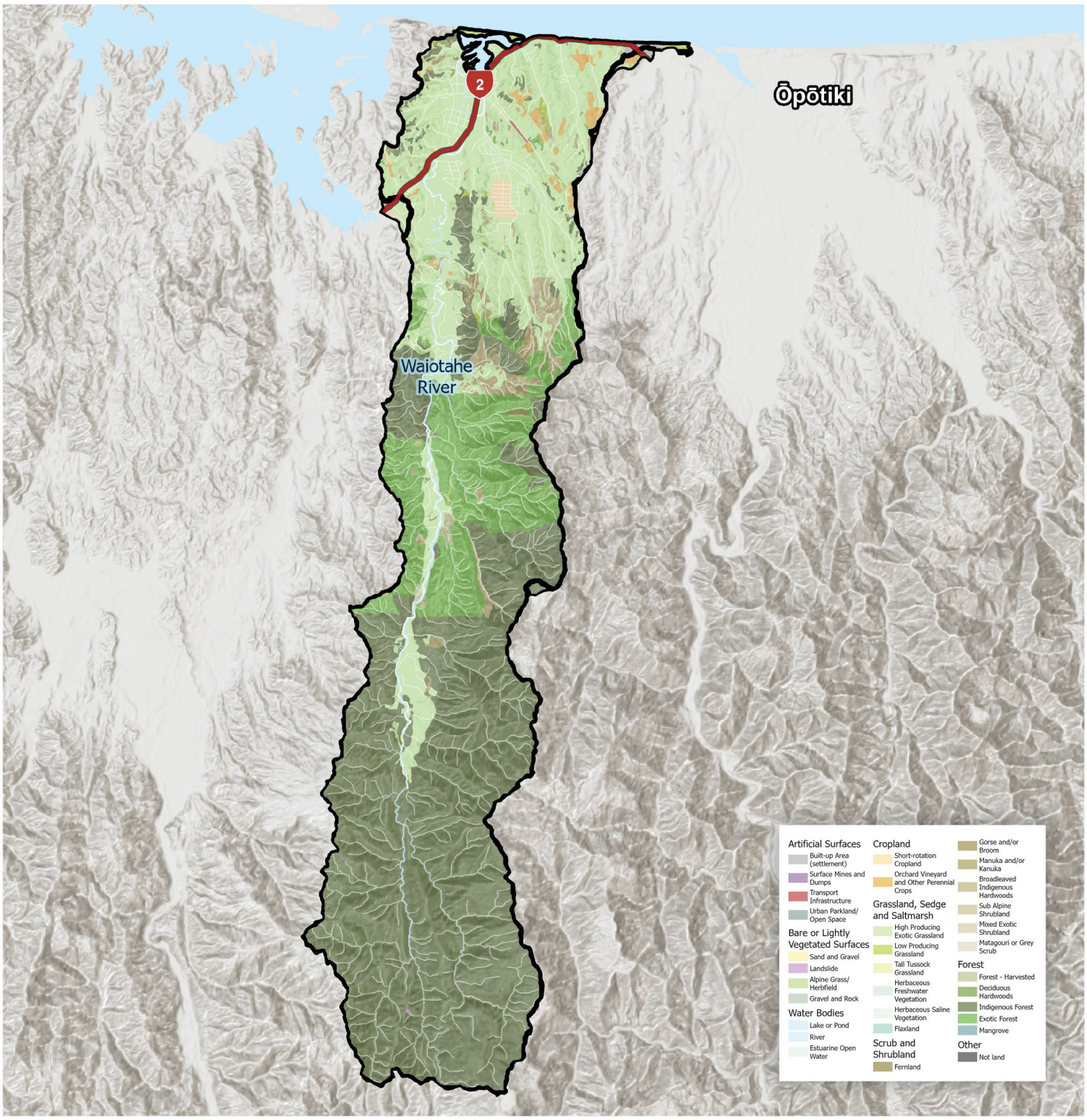
Ngā tauira o ngā rōpū whakahaere o te wai māori

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.



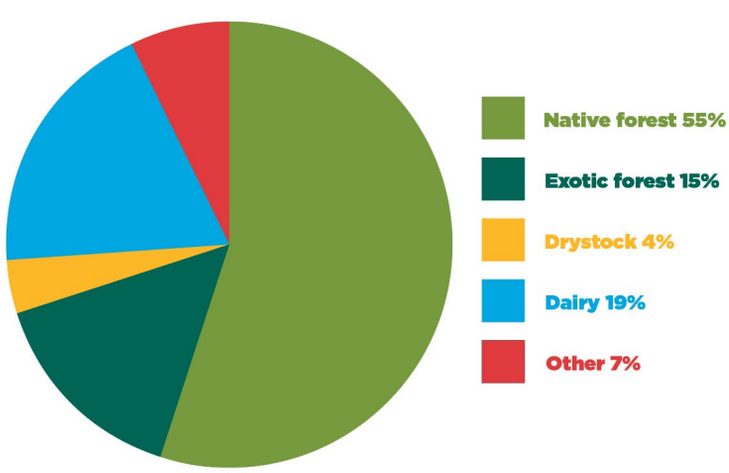
Waiotahe - FMU Map

Land area:

15,370 ha

Population:

1,750 people



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

About the Draft Waiōtahe Freshwater Management Unit (FMU)

The Draft Waiōtahe FMU is relatively long and narrow (30 km long and 4 km-5 km wide), covering an area of 15,370 ha. It follows the catchment of the Waiōtahe River, from its headwaters (Paititutu Stream) to the estuary at Waiōtahe Beach and also includes the coastal Waiwhakatoitoi Stream Catchment. There are six main tributaries flowing into the Waiōtahe River - Paititutu Stream, Ohiao Stream, Oruamanganui Stream and the Ruakaka Stream.

In the lower Waiōtahe Catchment, the river is stop banked, and a series of canals and drains flow from the Waiōtahe Plains into the river.

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

Tangata whenua

- Māori communities are based around hapū and marae and are very closely connected through whakapapa.
- There are significant whakapapa, cultural and historical connections and responsibilities for tangata whenua within this FMU who include Te Upokorehe, Ngāti Awa, Ngai Tūhoe and Whakatōhea.
- Approximately 4% or 619 ha of land area in this FMU is Māori land[1]. Land use on Māori land is dominated by native forest (71%), sheep and beef (14%) and dairy (12%).

Communities

- As of June 2022, the population of the Draft Waiōtahe FMU was estimated to be 1,750, mostly living in the lower part of the catchment.
- The Waiōtahe River supports Te Ahiaua Estuary at its mouth, which is well known for swimming and gathering pipi and cockles. There are swimming holes along the Waiōtahe River, and it is a popular area for whitebaiting.
- There is an active catchment group (freshwater focussed) and care groups (ecological focus) in this Draft FMU.

Land and land use

- The upper catchment of this FMU is dominated by native forest (55%), the mid catchment is dominated by exotic forest (15%) and the lower part of the catchment is dominated by dairy farming (19%) with a small proportion of drystock (4%) and some lifestyle and kiwifruit.

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[1] Māori-owned land being land subject to the Te Ture Whenua Māori Act 1993 or settlement land returned as licensed land, commercial redress, or cultural vesting.

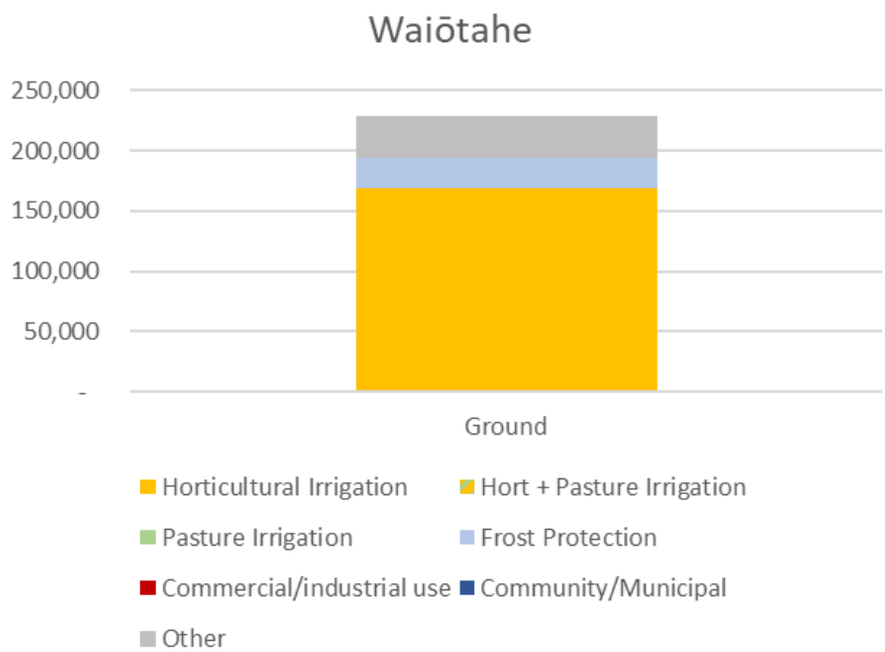
- Dairy farming and sheep and beef farming in the Ōpōtiki District are estimated to contribute $23 million and $6 million respectively to the Bay of Plenty's regional GDP in 2020/21. Horticulture and other crops are estimated to contribute $43 million. The Waiōtahe FMU contributes towards the Ōpōtiki District figures along with the Ōhiwa Harbour, Waioeka-Ōtara and East Coast FMUs.

Rivers, streams, wetlands and estuaries

- The estuary contains distinct high value ecological zones, including the sandfields, reedlands and the mudflats. A small mangrove population within the mudflats mark the south eastern range of mangroves in New Zealand. The estuary includes around 19 ha of saltmarsh, a small proportion of original extent. The Regional Coastal Environment Plan identifies the estuary as an "Outstanding Natural Features Landscape", an "Area of Significant Cultural Value", and an area of significant biodiversity values.
- The upper Waiōtahe River has been identified as a freshwater body with outstanding natural character.
- The Waiōtahe FMU supports 10 freshwater related threatened species (including fish, birds, plants and other animals). The Waiōtahe Spit provides a habitat for rare and endangered species such as the Dotterel. There are eight areas with significant coastal biodiversity and three priority biodiversity sites involve a water body within this FMU.
- Fish and Game have identified the main stem of the Waiōtahe River as a location where adult trout are present and/or spawn.
- There is 1 ha of wetland in the FMU (0.1% of the historical extent).

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 and for food production (mostly horticultural irrigation/frost protection in the coastal area).
- As of January 2022, there were just four water take consents in the Waiōtahe FMU, all from groundwater. All consents are for horticultural irrigation, with a couple of them also authorising take for frost protection and other minor purposes.
- The Ōpōtiki District Council has a groundwater bore consent to supply drinking water to Paerata East.
- There are no known commercial or industrial takes in this FMU.
- There are no major point source discharges in this FMU but there are 15 dairy discharges consents to land, four onsite effluent treatment (OSET) discharge consents and one discharge consent to water.



Waiōtahe FMU Resource Consents to take water – volume m^3/year (no surface water take consents)

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

- Climate Change is predicted to cause larger and/or more intense rainfall events, and a large increase of soil erosion, particularly in existing gullyheads and steeper pastoral areas. Sediment loads to the estuary are predicted to increase.
- Sea level is expected to rise which will change the Estuary and its values. Increased salinity and wetness may affect lowland farming, making it less viable in the medium to long term. Some areas of pasture are already affected by salinity and so are less productive.
- Climate change is expected to reduce summer rainfall and increase evaporation (from land or water) and transpiration (evaporation from plants) may increase water demand while reducing stream flow.

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 Ensure water quality and quantity in rivers, streams and wetlands can sustain the wellbeing of all human and living beings and provide for the cultural, landscape and biodiversity values of the estuary.

1. Innovative and sustainable land and water management practices support food production and flood mitigation so that the estuary is safe for human contact and mahinga kai gathering and ecosystem health is enhanced.
2. Lowland sources of E. coli and sediment are at levels that the estuary values can sustain.
3. Native forest sources of E. coli have been managed to protect sensitive estuary values.
4. Local people are confident they can safely take from their highly valued pipi beds.
5. Restore traditional swimming holes.
6. Pasture limited by climate change salinity and wetness impacts will be reverted to a sustainable landuse such as saltmarsh.

This vision is to be achieved by 2050.

Option B Ensure water quality and quantity in rivers, streams and wetlands can sustain the wellbeing of all human and living beings. Within the Waiōtahe FMU:

1. Improve the water quality in the lower Waiōtahe River and its tributaries.
2. Access to and along culturally significant waterways are continually available to ahi kā.
3. Protect significant spawning grounds of whitebait, fish and eels, and traditional food and cultural resources.
4. Protect sites of cultural significance.
5. Protect the cultural, landscape and biodiversity values of the estuary.
6. Restore and enhance habitat and wetlands.

The vision is to be achieved by 2045.

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 iwi and community feedback as well as our own research to identify the values we think matter most in this draft FMU. The main outcomes for this smaller FMU come largely from published reports and include enhancing the health of Waiōtahe Estuary and generally enhancing river, stream, wetlands and streamside habitat. There is also a need to protect and maintain wai tapu and mahinga kai sites and fisheries.

Other outcomes that are important in this FMU relate to water's use as drinking water for animals, for irrigation and food production.

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, to sustain aquatic life and enhance the health of Waiōtahe Estuary and assist in achieving Objective 7 of the Regional Coastal Environment Plan. The volume and flow of freshwater bodies sustains aquatic life. Habitat restoration and enhancement is achieved as a result of the fencing off and planting of riparian margins, removal of exotic species and re-establishment of native flora sites within the wider catchment. Diversity and abundance of desired aquatic species is maintained or improved. Restore, protect and enhance wetlands.
Human contact	Water quality is suitable for swimming with a low risk of getting sick
Threatened species	Protect critical habitat to support the presence, abundance, survival, and recovery of threatened species.
Mahinga kai	Taonga species are protected, and their cultural health and the continuation of mahinga kai practices and associated tikanga are provided for. Water is suitable to sustain plentiful mahinga kai which is safe to eat within rivers, streams and Waiōtahe Estuary.
Natural form and character	The natural form and character of the upper Waiōtahe River and its tributaries including the margins are maintained.
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.

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*
Wai tapu	Protect and manage wai tapu sites in partnership between tangata whenua and councils. Where other sites and areas are affected the 'no net loss' principle shall apply.
Transport and tauranga waka	Maintain access to and along waterways of cultural importance. (Uncertain whether this freshwater value is present in this FMU).
Fishing	Enhance and protect freshwater and estuary fisheries.
Animal drinking water	Farmed animals have sufficient, reliable, safe 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.

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. Check out our Water Ecology Tool at www.boprc.govt.nz/wet for more information.

Estuary health

The main estuary attributes we measure are mud content, algae and seagrass cover, and sediment nutrients – like nitrogen and phosphorus. Like the NPSFM, the New Zealand Estuary Trophic Index (ETI) has a grading system that uses the same A-D bands. Waiōtahe FMU is the catchment of Waiōtahe Estuary. The estuary is a sensitive receiving environment and is highly valued for its pipi beds, cultural and landscape values and biodiversity.

The Waiōtahe FMU has significant levels of faecal bacteria present. There is a high percentage of the estuary with soft, muddy sediment. Waiōtahe Estuary is moderately to highly susceptible to eutrophication. Although the data is limited, there is indication that nutrient levels may be high enough to result in high macroalgal abundance in the long term, although this is low at present.

A public health warning for the consumption of shellfish has been in place since testing began in 2015.

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 the Waiōtahe FMU to measure state and trends in river and stream water quality. This site is on the Waiōtahe River at Toone Road, upstream of the pumped drainage network and intensively farmed land. 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

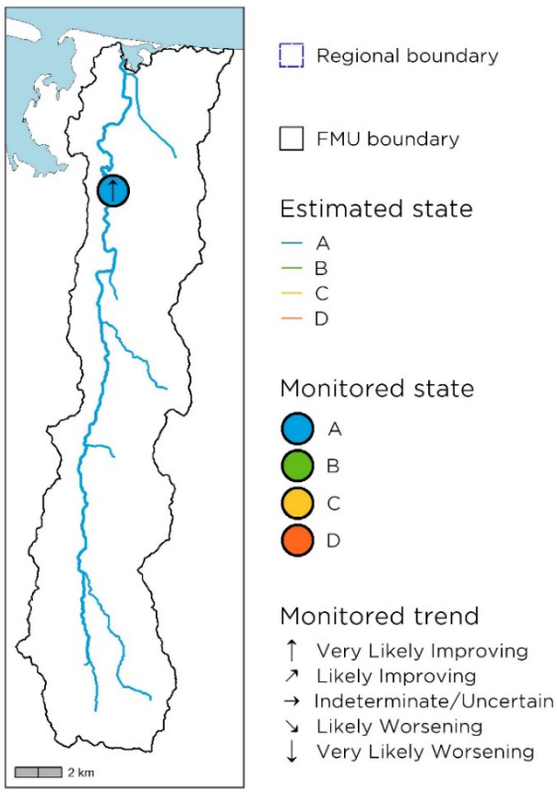
Measured nitrogen concentrations are well below levels that can have toxic effects, in the A band, and are showing improving trends. However, nitrogen concentrations may be high enough to affect ecosystem health in the estuary.

Measured dissolved reactive phosphorus concentrations are high, in D band and below the national bottom line, and trends were indeterminate. The high phosphorus is likely from the volcanic influence in the area, although human activity will be adding to this.

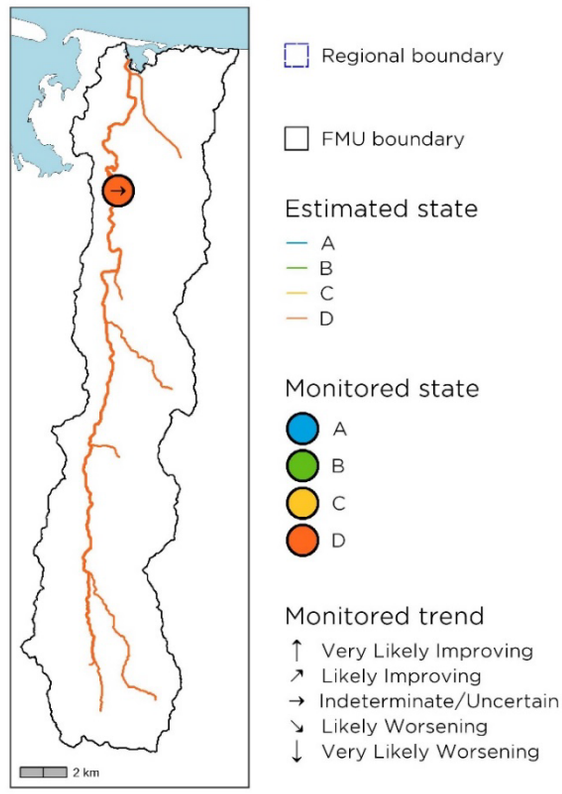
Measured suspended fine sediment is in the A band, and showing an improving trend, but large wet weather events (made worse by climate change) can contribute harmful pulses of sediment that may not be reflected in this data.

Lowland drainage canals downstream of the monitored site are expected to show poorer water quality.

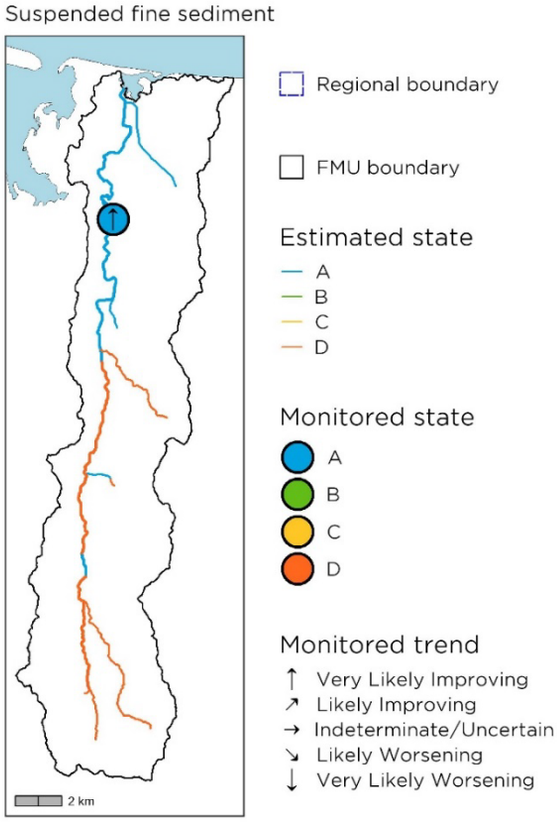
Nitrate (toxicity)



Dissolved reactive phosphorus



Suspended fine sediment



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 MCI is based on the tolerance or sensitivity of species to organic pollution 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 (QMCI) and Average Score Per Metric (ASPM).

Fish surveys show nine fish species recorded in this FMU, and eight of these are native. Longfin eels, common and redfin bullies, torrent fish and rainbow trout were the most common. A low number of surveys have been carried out in this FMU, and none in lowland intensive pasture dominated sub-catchments. It is highly likely that other native species would also be present throughout this FMU. Many of the fish species present are migratory, meaning any barriers could have a large effect on fish. This is particularly relevant in the lower parts of the FMU where pump stations and floodgates are present.

The Council has four macroinvertebrate monitoring sites in the Waiōtahe FMU to measure state and trends in river health one in a catchment dominated by pasture, and three in catchments dominated by exotic forest. These sites displayed a wide range of stream health in the B – D state bands.

Whilst not toxic, nutrients like nitrogen and phosphorous can promote plant, weed and algal growth in rivers, streams and estuaries. Four sites are being monitored for periphyton biomass, with baseline states in the A and B bands. The low periphyton biomass likely reflects the dominance of native or exotic forest at these sites, and resultant low nutrient concentrations. It is expected that the smaller shaded waterways which are not monitored would also have very low periphyton biomass.

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.

There are no BOPRC (river or estuary) bathing water quality monitoring sites in this FMU. There is one coastal bathing site located at the surf club on the main Waiōtahe Beach. This site is generally safe for swimming – "good" or B band, but has occasional increases in bacteria after rainfall. This means most of the time over summer there is only a very small risk of getting sick but there is higher risk of getting sick if you swim or wade in the areas after rainfall.

There is one monitored shellfish harvesting site within the Waiōtahe FMU, at the Ahiaua pipi beds. Shellfish from this site are generally not safe for human consumption. Significant levels of faecal bacteria are present, and a public health warning has been in place since routine monitoring began in 2015.

Mahinga kai

The mahinga kai compulsory value includes the freshwater-related plants and animals that tangata whenua traditionally subsisted on, the places these are harvested from and the tikanga (practices) of collecting or harvesting them. This value is demonstrative of tangata whenua connections, responsibilities and kaitiakitanga obligations, and can be found in stream and out of stream. It is important because the loss of these species and associated tikanga can have a profound effect on the communities who rely on them.

We know there are significant spawning grounds of inanga (whitebait), and rearing grounds for eels and other fish within the Whakatōhea rohe. Near the estuary mouth there is a pipi bed that has significant value as a cultural kaimoana resource which is heavily utilised.

We recognise the importance and value that tangata whenua and kaitiaki in the FMU place on mahinga kai, traditional materials, sources and gathering sites throughout the FMU. How tangata whenua and kaitiaki assess, understand and care for wai māori is critical to understanding and providing for the health of the mahinga kai compulsory value. We welcome any information tangata whenua wish to provide.

Where do contaminants come from?

Surficial erosion is the dominant erosion process in the catchment. The majority of sediment loss is likely to be from native forest (estimated at 76%), because it is the largest single land use in the catchment (55%) and most of this is in areas with steep land and high rainfall.

Despite its smaller land area, dairy is estimated to be the largest contributor to nutrient loads in the catchment. Some low-lying dairy land has recently changed to host solar panel arrays, and several farms are actively considering partial retirement due to saltwater intrusion.

Native forest was estimated to contribute most of the E. coli load in the upper catchment, reflecting its dominance of land area in the FMU. However, much higher levels of E. coli are measured in the estuary than at the river monitoring site upstream and additional inputs of E. coli are estimated to come from the drainage network in the lower catchment, which discharges to the Waiōtahe River near the estuary. Dairy farmland is likely to be the most significant contributor of E. coli in the lower parts of the catchment.

Freshwater health issues for this FMU

Waiōtahe Estuary shellfish gathering and mahinga kai values are impacted by high levels of E. coli from the catchment, and very large reduction (up to 90%) may be needed to meet safe shellfish gathering standards. At this stage, solutions identified to reduce E. coli cannot achieve the full reduction. Since testing for E. coli in the estuary began in 2015, there has been a year-round public health warning at the shellfish gathering site. Much higher levels of E. coli are measured in the estuary than upstream. Drainage on low lying dairy farmed land is estimated to contribute to this. Although dairy farmers have done much to exclude stock, with 90-95% of river and drain margins fenced, the land is low lying and, in wet conditions, the saturated soils cannot absorb E. coli from stock droppings and land-based effluent application. Some E. coli and nutrient enters drains and rivers from overland flow. A large proportion is also estimated to come from native forest areas, suggesting feral animal sources.

Waiōtahe Estuary ecological health is affected by sediment from the catchment settling as mud. Macroalgae are not currently a problem, but current nutrient inputs could lead to future algae problems. Unlike several other estuaries in the region, the Waiōtahe Estuary is thought to have historically had soft substrate (some mud) and no seagrass beds. Even with the majority of the upland catchment in tree cover, soil from highly erodible land and periodic drain clearing will enter water and fine particles in a low flushing environment create a muddy substrate. Sediment load is likely to increase with climate change during severe storm events

on erosion-prone land under all land uses. Careful management of activities and practises that pose a high risk of sediment and nutrient loss will help to hold the line.

Cultural indicators of health. We know there will be important cultural indicators that can provide a deeper understanding of wai ora. Identifying these and understanding how fresh water supports the cultural health and wellbeing of tangata whenua, and how they understand, assess and care for wai Māori in relation to their cultural health is critical to understanding and providing for the health of the mahinga kai compulsory value.

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).

In the Estuary, mud content needs to be improved, E. coli needs to be reduced by up to 90% to meet shellfish harvesting safety standards, and nitrogen and phosphorus loads should not increase in an effort to keep macroalgae abundance low.

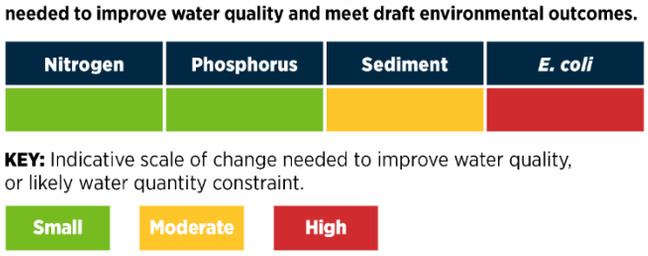
In rivers and streams:

- We need to maintain A band for nitrate and ammonia toxicity but may still need to manage nitrogen to address degrading trends for periphyton at some locations.
- While Dissolved Reactive Phosphorus concentrations need to improve, some is naturally occurring and work to estimate this is underway so that a realistic target can be set.
- Likewise, natural conditions may contribute to poor macroinvertebrate state bands.
- We need to maintain good fish IBI results, primarily by maintain habitat and low number of obstacles to fish passage.

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. For this FMU a timeframe of 10 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 lakes, rivers, streams 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

National regulations and the actions farmers have already taken in the catchment will help address the issues. However, we think some additional action and requirements will be needed, with a focus on achieving a big reduction in faecal bacteria getting to water, and also on reducing sediment loads and holding the line on nutrients. Options we are exploring include:

- Using Freshwater Farm Plans, require good management practice, set some minimum standards, and seek continual improvement to address rural land use practices that pose a high risk of sediment, nitrogen, *E. coli* and phosphorus loss. Focus on maintaining

vegetation cover, planting and stabilising river margins, stock exclusion from water bodies, and potentially pole planting on slip prone areas.

- Requiring no net increases in *E. coli*, nitrogen, phosphorus, or sediment as a result of future land use and practice change (this may require offsetting).
- Requiring a raised dry pad for stock wintering on farm and storage of effluent in the lowlands, in order to reduce faecal and other contaminant runoff in heavy rainfall.
- Requiring stock exclusion and a potential setback from estuary margins, potentially including land already affected by salinity.
- Requiring stock exclusion from all rivers, streams and drains (through Freshwater Farm Plans) in the lowlands, and good drain management practice through Freshwater Farm Plans. This includes maintenance of a thick grass sward on margins and/or planting of one side of drains and canals to provide shade and bring down water temperature. Require temporary stock exclusion from flow paths in the lowlands when wet.
- Require lined animal effluent storage and set effluent irrigation rate, timing and volume requirements in consents.
- Controlling intensive grazing that removes vegetation cover (strip, block or break feeding) and cultivation, including active management of Critical Source Areas (e.g., overland flow paths), in a similar way to national Intensive Winter Grazing Regulations.
- Encouraging feral animal control in native forest to maintain river ecosystem health and reduce sediment and *E. coli* losses.
- Encouraging or requiring removal of stock from steep (>25 degrees), erosion prone land, and planting of native trees, or removal of heavy stock.
- Gathering farm data on stock, feed, fertiliser and other farm and horticulture nutrient inputs, and consider setting a cap on high nutrient inputs.
- Requiring plantation forestry management plans at the time of afforestation to address sediment loss during and after forest harvesting.
- Exploring and encouraging physical technological solutions such as sediment control bunds in appropriate locations.
- Supporting restoration of in-river habitat, and river and harbour margin habitat, including fish passage.
- Enabling land use change to land use that will contribute less contaminants and, in the lowlands, are appropriate to future wetter conditions.

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 and streams and lakes. Across the region, water is taken for different uses, and is usually taken with a pump connected by pipe to rivers and streams.

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 the 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 and 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 of the health of rivers and streams, the things living in it, on the community, economic development and possible land use in the catchment.

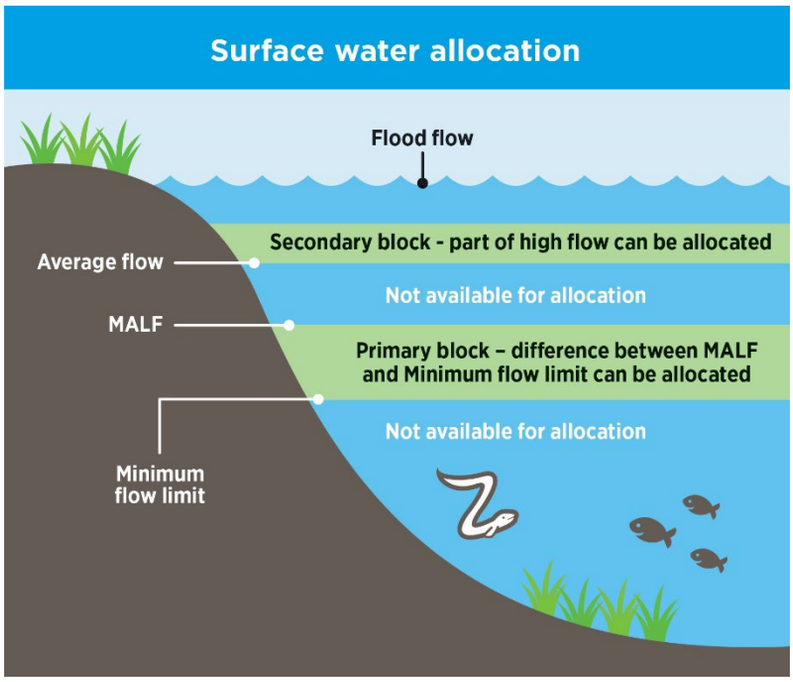
How can we meet the outcomes we seek?

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.

Currently a ‘one size fits all’ approach is used to set limits for surface water takes from most rivers and streams in the region. This approach has a default minimum flow of 90% of the 1 in 5-year low flow (the average of the lowest flow recorded in a rolling 5-year period) and an allocation limit set at 10%.

There are no specific studies in the Waiōtahe River and the draft minimum flow is based on generic information. This is considered adequate as currently there is no demand (beyond permitted takes) for surface water from this river.



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 or authorised to take more water than the total allocation limit, rivers and streams are 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 rivers and streams (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 rivers and streams 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 rivers and streams, we suggest setting habitat retention levels for those to provide for fishing values, so these are in the table below as well.

Target Species	Habitat retention level
Shortjaw kōkopu	100%
Giant kōkopu	100%
Other kōkopu 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?

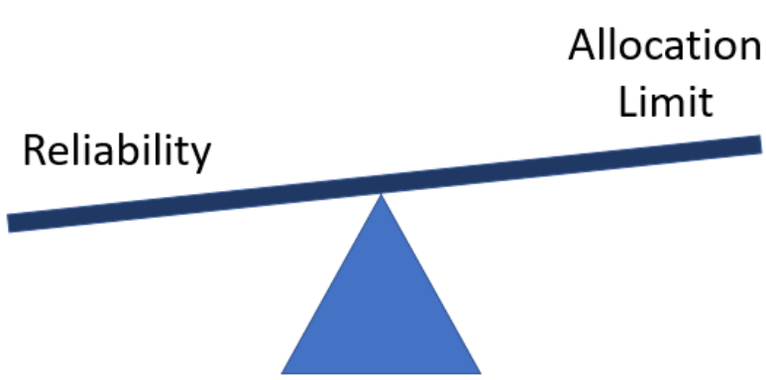
Water use

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 default allocation limit is currently set at 10% of the 1 in 5-year low flow.

Reliability is a measure of how often authorised water users have to stop or reduce their water take (because rivers and streams are or would fall 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 study of flow patterns in the region's gravel bed rivers and streams (such as found in the Waiōtahe FMU) found that if the minimum flow was 90% MALF there would be an average of 14 days per year that flow falls below this level and no water would be available to take. In very dry years, the number of days below 90% MALF might be over 100.



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

With no resource consents to take surface water from this FMU (Waiōtahe River) there are no particular issues relating to surface water quantity.

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

Surface water quantity options

Although no water is currently allocated, setting minimum flows and limits to allocation will inform consideration of any future applications to take water.

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.

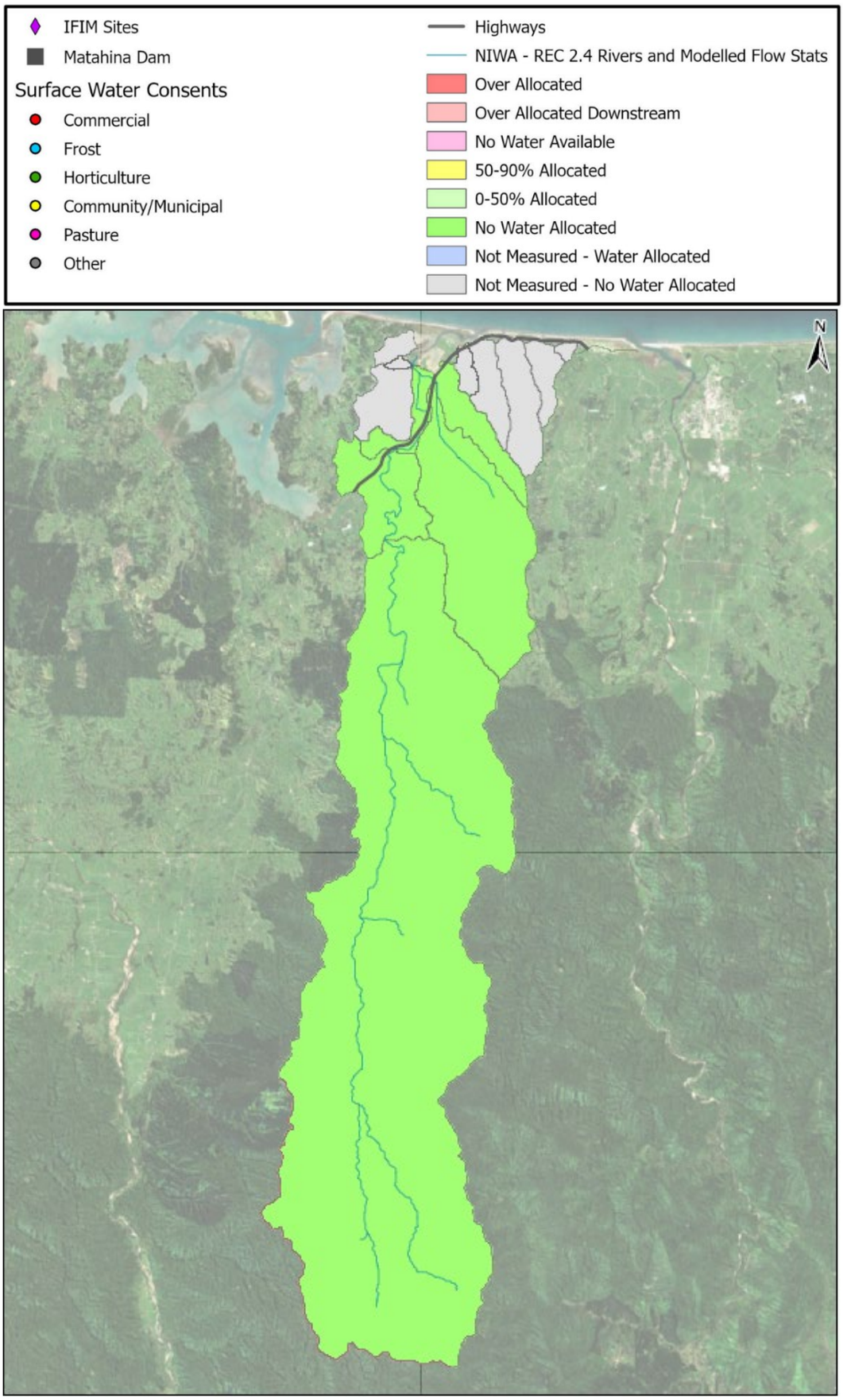
Essentially, we are keen to know what you think of the Habitat Retention Levels in the table above. We could make them more protective, which would mean water takes would have to be restricted or stop more often, or less restrictive, posing a risk that low flows may reduce usable habitat for some fish. We proposed to set an ecological minimum flow based on the Habitat Retention Levels in the table.

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 ecological minimum flow (that provides the habitat protection levels noted above. The map on the following page shows the current allocation status using this option.

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.



Allocation status based on draft ecological minimum flows, and an allocation limit that is the difference between the Mean Annual Low Flow and minimum flow (no surface water allocated).

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 for 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.

The geology of the Waiōtahe FMU is similar to Waioeka-Ōtara, with alluvial sediments underlain by marine sediments and mudstones near the coast. Groundwater is predominantly abstracted from a highly productive alluvial gravel aquifer via shallow bores.

Issues

The generally low level of allocation in this FMU means that groundwater abstraction is likely to be low compared to aquifer recharge.

Saline intrusion potential from large or concentrated takes near the coast would be a risk.

There may be limited groundwater capacity in inland parts of the FMU.

Policy options

Utilisation. The relatively low level of groundwater use in this FMU creates a potential for increased use if uses can be found and production wells established. Groundwater allocation policy in this FMU may not need to be particularly restrictive on takes.

Efficient Use. 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 overallocated or not) is calculated based on what is allocated and theoretically able to be used (not what is actually used).

Groundwater Management Zones. Next steps for this FMU include developing new Groundwater Management Zones within which allocation limits will be set. Given the potential for some localised areas of depletion, care will be needed to ensure these zones appropriately balance the need for administrative simplicity, equity and risk. How these zones are formed is something we want feedback on.

Next steps. New estimates of overall water balance for this FMU combined with further consideration of management units are thought unlikely to significantly change the current situation of relatively low demand and groundwater available for allocation.

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 i.e. greater risk of overallocation. 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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