Te Kōrero o te whakahaere i ngā kāhui wai māori o Te Moana a Toi ki te Rāwhiti

The East Coast 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 East Coast Freshwater Management Unit (FMU). These options are to do with how we manage freshwater in the East Coast 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.

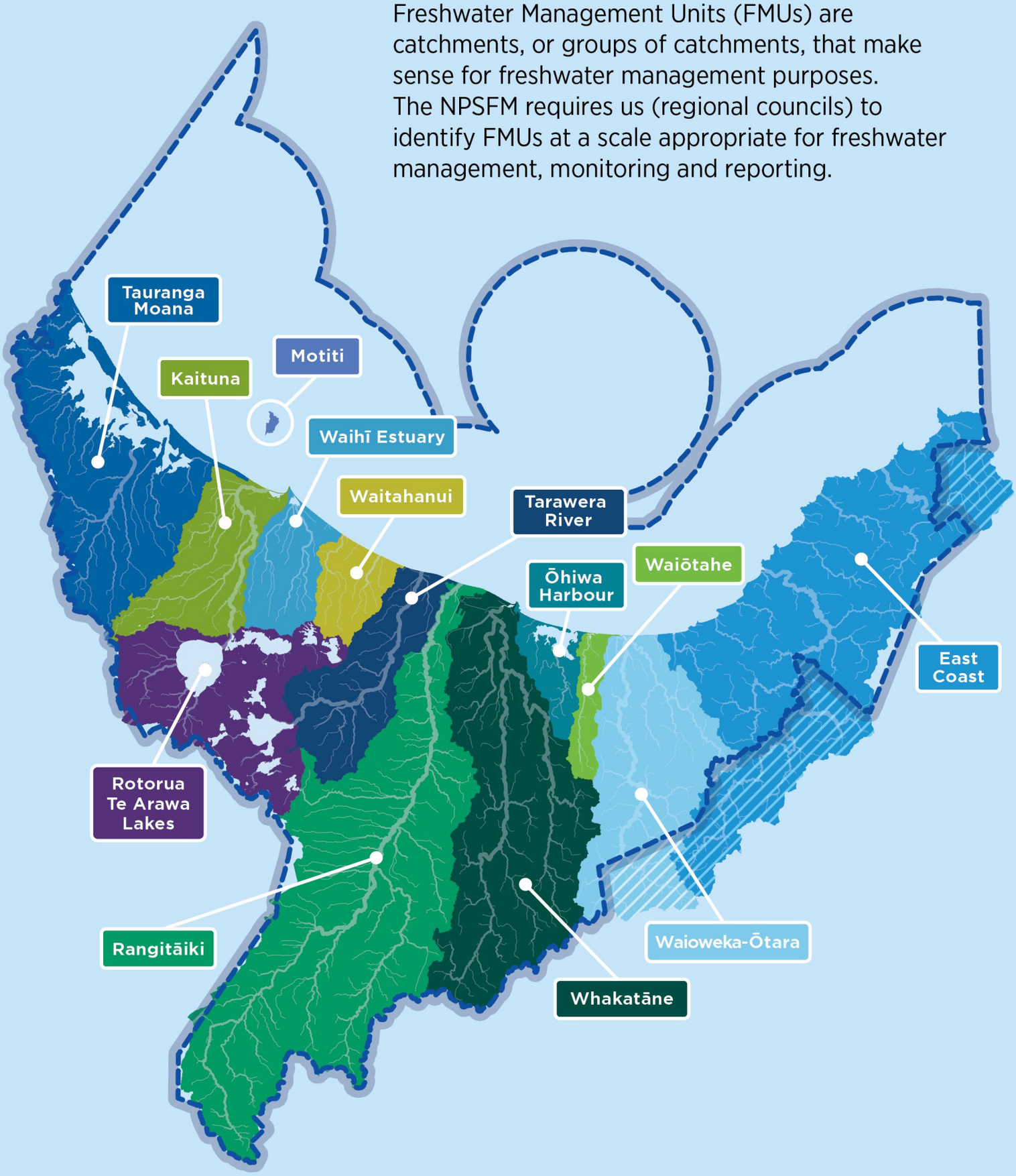
For more info

- 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

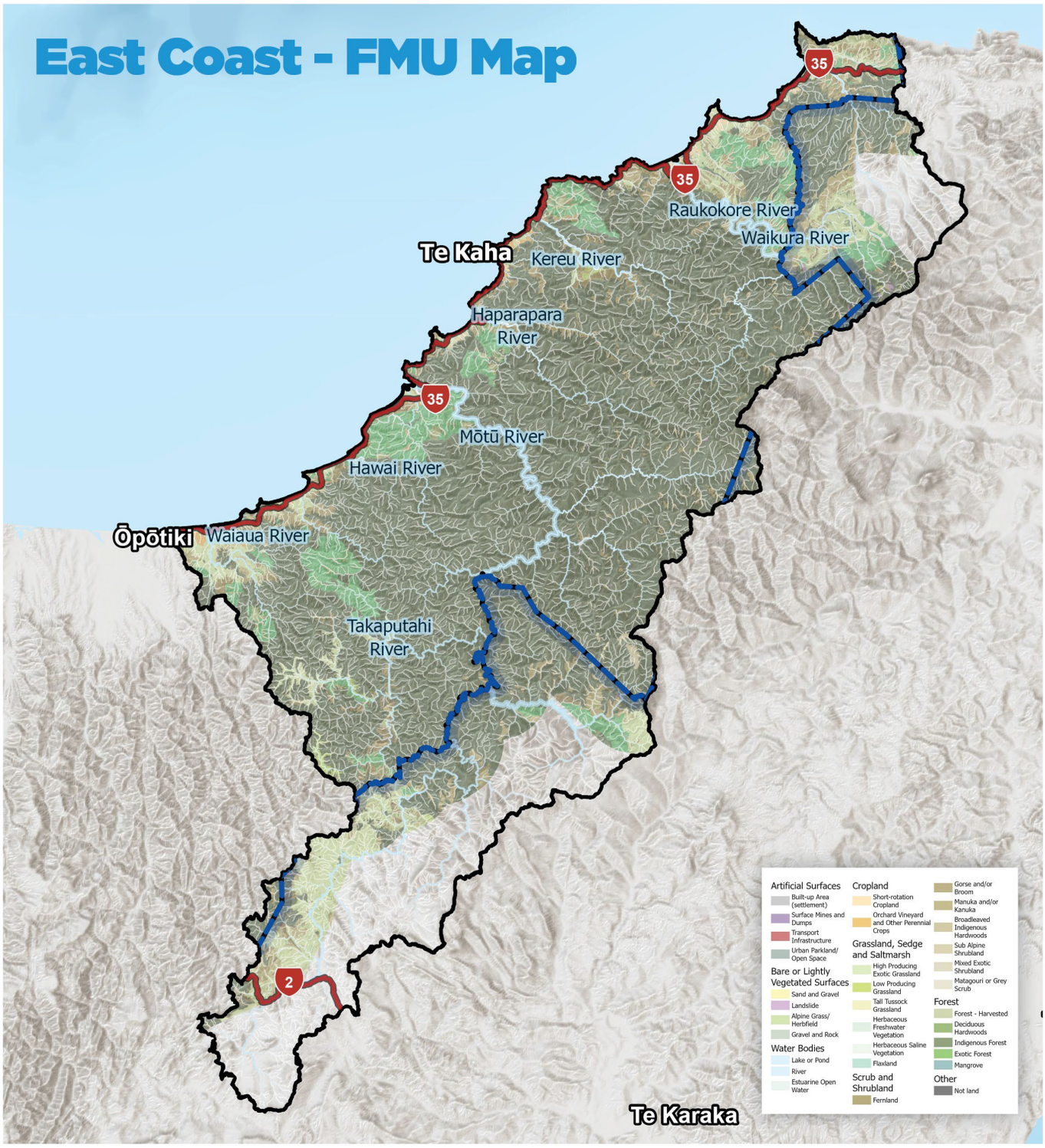
Draft Freshwater Management Units

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.

East Coast - FMU Map

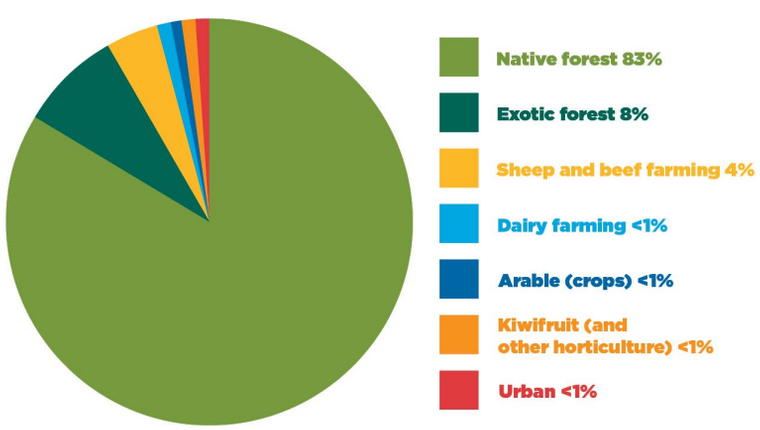


Land area:

188,000 ha

Population:

1,760 people



Mō te Tauira o te whakahaere i ngā kāhui wai māori o Te Moana a Toi ki te Rāwhiti

About the Draft East Coast Freshwater Management Unit (FMU)

The Draft East Coast FMU covers most of the East Cape, including the Whangaparāoa, Waikura, Waikakariki, Waiaua, Tōrere, Takaputahi, Raukōkore, Mōtū, Kereu, Hāwai, and Haparapara River catchments. A large part of the Mōtū River Catchment and Waikura Valley are situated within the Gisborne region. We are working with Gisborne District Council to address cross boundary issues. This FMU covers an area of 275,364 ha, including the parts within the Gisborne District (refer Figure 1). Within the Bay of Plenty, the East Coast FMU covers 15.5% of the region.

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

Tangata whenua

- Tangata whenua within this takiwā are hapū centric and protective of their respective rohe. Over 85% of the population in this FMU identified as Māori (in 2018) and about a third of the land area, or 94,800 hectares, is Māori-owned[1]. Land use on Māori-owned land is dominated by native forest (75%), exotic forest (15%) and sheep and beef (6%).
- There are 16 marae in the area and there is strong presence of ahi kā. Te Whānau a Apanui, Ngāi Tai, Whakatōhea and Ngāti Porou have an interest and heritage associated with this FMU.
- Important mahinga kai species include tuna (eels) and kuku (mussels) and a range of coastal and freshwater fish species such as kahawai and inanga (whitebait).
- Enabling economic and job opportunities (particularly through horticultural development), and papakainga development are current initiatives for tangata whenua that rely on access to water.
- Te Whānau a Apanui is currently progressing Treaty of Waitangi settlement negotiations. The Deed of Settlement phase is expected to be completed by June 2023, followed by legislation. This may change natural resource management arrangements and a hapū-based freshwater planning process may follow. While the proposals in this booklet are for a plan change in 2024, we may need to change course based on this future Treaty Settlement legislation.
- Ngai Tai are preparing to enter Treaty Settlement discussions with the Crown and there are several applications for Customary Marine Titles under the Marine and Coastal Areas Takutai Moana Act.
- Council is committed to continuing the journey to involve tangata whenua in freshwater management and support Matauranga Māori.

[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.

Communities

- As of 2022, the population of this FMU was estimated to be 1,760 people, scattered across numerous small coastal settlements (e.g. Ōmaio, Te Kaha, Raukōkore). Māori communities are based around hapū and marae and are very closely connected through whakapapa.
- Community feedback so far has told us that people want to see a culturally rich and diverse environment, free flowing water with Whio (blue ducks), and a clean awa that is a source of food. Retaining this paradise and the associated recreational values of kayaking, fishing, diving, swimming, walking, and white-water rafting is of great importance.

Land and land use

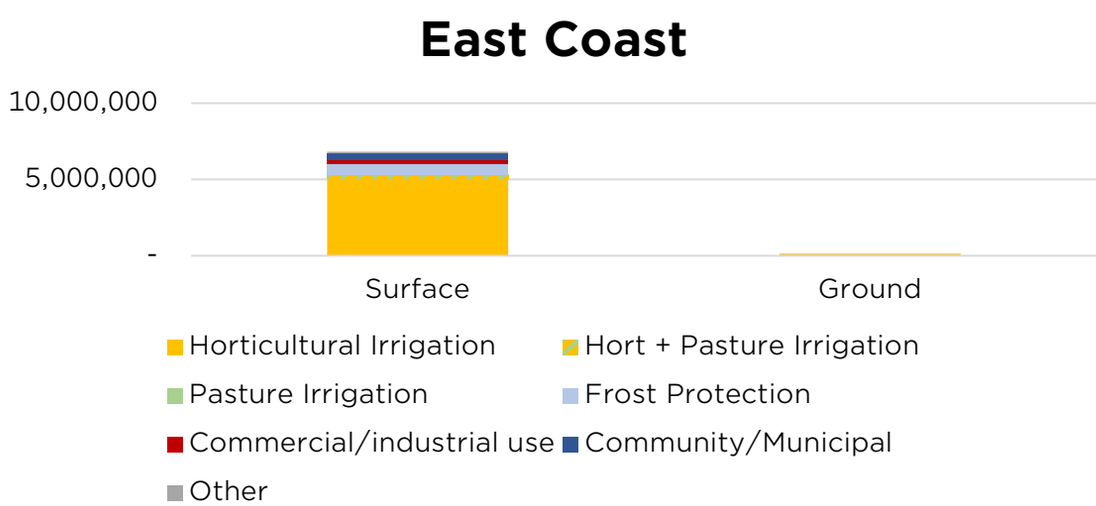
- The geology of this FMU is mainly sedimentary, with steep hill country prone to gully erosion and landslips.
- The Haparapara and Kereū catchments are largely unmodified, except for small areas around the coast and modest effects of feral animal browsing in the bush. In contrast, the Mōtū, Raukōkore and Whangaparāoa catchments have agriculture in the upper reaches, although much of the headwaters are outside the Bay of Plenty region.
- Land cover is predominantly native forest (83%), followed by exotic forest (8%) and sheep and beef farming (4%). There are small amounts of dairy, arable, kiwifruit and urban land uses (1% or less each). Productive areas are concentrated in the upper parts of some catchments and in the lowland coastal strip. In recent years there has been an intensification of land use on the coastal plain as maize and pastoral farming transition to kiwifruit and other horticultural crops.
- This FMU is included in the Ōpōtiki District economic figures along with the Ōhiwa Harbour, Waiōtahe and Waioeka-Ōtara Draft FMUs. Dairy farming in the Ōpōtiki District is estimated to contribute $23 million, sheep and beef farming $6 million, and kiwifruit, other horticulture, grain and other crops are estimated to contribute $43 million to the Bay of Plenty's GDP (in 2020/21).

Rivers, streams, wetlands, and estuaries

- Most rivers in this FMU are short and steep and flow directly to the sea. Their headwaters are mostly in the Raukūmara Ranges and flow in a northerly direction. Except for the Mōtū, the catchments are relatively small. All rivers have gravel beds and are prone to flash high flows following rain and very low summer flows.
- Rivers are in relatively good health and support diverse populations of native fish, including migratory species. Eighteen fish species were recorded, 15 of which are native. Two of these (pīharau (lamprey) and short jaw kōkopu) are endangered.
- The Hāwai, Mōtū, Haparapara, Kereū, Waiaua and Raukōkore Rivers are considered to have Outstanding Natural Character making them among the very best we have.
- The Mōtū holds significant cultural value for tangata whenua. New Zealand's first Water Conservation Order was placed on the Mōtū River in 1984, in response to concerns that proposed hydroelectric developments would compromise its values. The Order prevents any new water takes and dams from being established on the river.
- Within this FMU about 6% of natural wetland remains (230 ha) compared to the historical extent (3,837 ha).
- The Waiaua and Whangaparāoa Estuaries are potentially sensitive to degradation by contaminants from their catchments.

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 21 water take consents (14 surface water, seven groundwater).[2]
- Drinking water supplies include the Raukōkore River for a population of approximately 500 at Raukōkore and Waihau Bay, a water take to supply Te Kaha (population of approximately 200), and several smaller systems supplying local communities.
- Large scale horticultural development (mostly kiwifruit) has occurred in recent years and two large irrigation schemes (Raukōkore and Kereū Rivers) have plans to develop approximately 1250 ha of land.



East Coast Resource Consents to take water – volume m^3/year

- There are no substantial commercial, industrial, or municipal point source discharges in this FMU.
- Many of the smaller communities have no reticulated wastewater disposal system and rely on On-site Effluent Treatment.

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. This would add stress to already limited water availability.
- There may be higher flood flows in summer and winter.
- Sediment loss from erosion may get a lot worse.

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

[2] Excludes non-consumptive takes (e.g., hydro-electricity generation, flood control) and short-term or occasional takes (e.g., dust suppression and dewatering during construction works).

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[3]:

Option A The mauri of wetlands, rivers, streams, and springs are maintained or improved to a standard that provides for the relationship of tangata whenua to their waterways and the needs of current and future generations.

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 and protect the ecosystem health of freshwater and the Waiaua and Whangaparāoa estuaries.
2. The Mōtū River (within the Bay of Plenty Regional Council boundary) and the outstanding water bodies (rivers, streams, and wetlands) in this FMU are preserved in their natural state.

This vision is to be achieved by 2035.

Option B The mauri of freshwater and freshwater ecosystems across the East Coast FMU is protected, enhanced, and maintained through the expression of kaitiakitanga. Within the East Coast FMU:

1. The health and wellbeing of all rivers, streams, wetlands, springs, and freshwater ecosystems is maintained or improved.
2. The Mōtū River is preserved in its natural state and associated tikanga Māori and kaitiakitanga responsibilities are protected and recognised.
3. The mauri of rivers, streams, wetlands, and springs are preserved and restored to maintains its connection to, and relationship with, tangata whenua now and for future generations.

The vision is to be achieved within the following timeframes: 2035

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

[3]The draft long term vision and outcomes options are based on Whakatōhea, Ngāi Tai and Te Whānau a Te Haraawaka resource management plans with an additional reference to use values. Also, Te Ao Tūroa is Te Whānau a Apanui's strategic document contains an intrinsic set of values and tikanga that guide the relationship of the hapū with the natural world was considered.

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, and that the Raukūmara Forest Park has some of the most outstanding and least modified rivers, streams, and wetlands in the entire region.

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, and for some commercial and industrial uses. 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. Water quantity provides for existing aquatic life. Diversity and abundance of desired aquatic species are maintained or improved. Habitats of rivers, streams, and wetlands, including their margins, plants and animals, are preserved or restored and maintained. All remaining wetlands are actively protected and enhanced and there is an overall restoration and gain of 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	Water quality and quantity and associated out of stream values are restored, maintained and protected allowing for the protection and restoration of taonga species, the cultural health of taonga species and the continuation of mahinga kai practices and associated tikanga.
Natural form and character	The natural form and character of the Hāwai, Mōtū, Haparapara, Kereū, Waiaua, Whangaparāoa and Raukōkore Rivers, including the margins, are maintained. The natural character of rivers, streams and wetlands is maintained or returned to its original shape and character following gravel extraction.
Drinking water supply	People have sufficient, reliable, and safe water

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*
	for drinking and reasonable domestic use, to the extent possible and subject to providing for the outcomes shaded above.
Wai tapu	Water quality and quantity and associated out of stream values are protected and maintained to a standard allowing for the protection of waahi tapu, sites of cultural significance, wai tapu and the tikanga associated with these sites and waters
Transport and tauranga waka	Maintain access to and along rivers and streams. Water quality and quantity and associated out of stream values are to a standard allowing for continuation and protection of associated tikanga Māori with these sites.
Fishing	Restore, protect, and enhance freshwater and ocean fisheries resources.
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

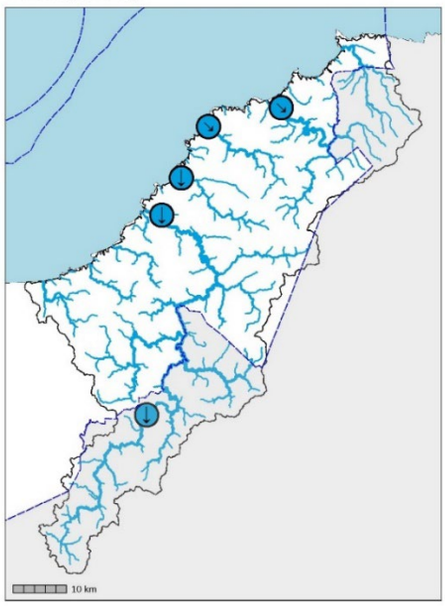
The main water quality attributes we measure in rivers and streams are the contaminants of concern for most areas, the nutrients nitrogen and phosphorus, and sediment. Find out more about how we monitor river health, here.

The Bay of Plenty Regional Council has five monitoring sites in this FMU (on Haparapara, Kereū, Mōtū and Raukōkore Rivers) 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 concentrations are well below levels that can have toxic effects, in the A band, but are showing worsening trends. This may be related to land use intensification in the upper catchments but could also be partly due to natural causes.

Measured dissolved reactive phosphorus concentrations are high, in the C or D bands, but showing improving trends. Suspended fine sediment is in D band for the Mōtū River and showing worsening trends but is in the A band at other monitoring sites. The sedimentary geology in this FMU easily erodes under heavy rainfall and this increases sediment and dissolved reactive phosphorus run off.

Nitrate (toxicity)



Regional boundary

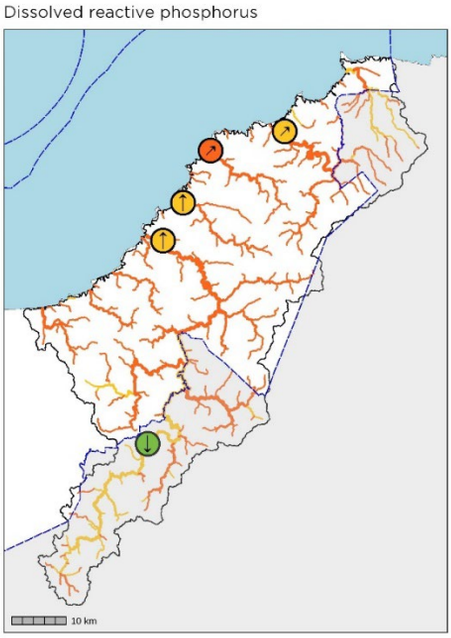
FMU boundary

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

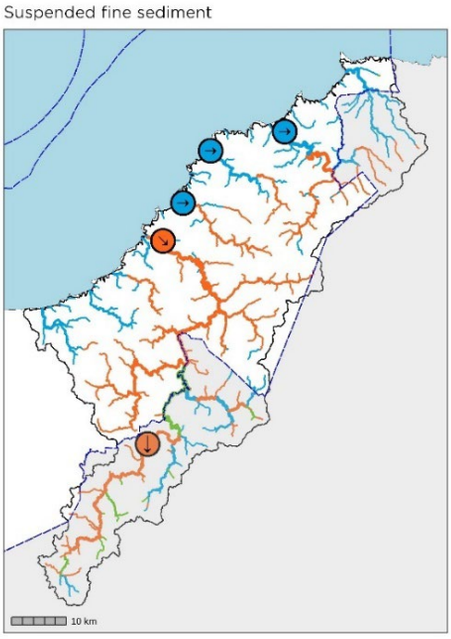
FMU boundary

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 in the East Coast FMU have shown healthy fish communities, with good instream habitats and few barriers to migratory fish access. 18 fish species were recorded, 15 of which are native. Of these 15, two (lamprey and shortjaw kōkopu) are endangered. Longfin eels, bullies (common, redfin and bluegill and giant), torrent fish and shortfin eel were the most common - all of which are migratory. A wide variety of galaxids are also found, including Inanga, kōaro, banded kōkopu, giant kōkopu and shortjaw kōkopu.

The Council has 12 macroinvertebrate monitoring sites in the East Coast FMU to measure state and trends in river health. A wide range of MCI state bands have been observed – A-D bands. Some rivers and streams had lower MCI indices that indicate potential stress from sediment and loss of riparian shade, or from natural processes. Two sites did not meet the national bottom line for MCI.

Human contact

The main human health attributes we measure are faecal indicator bacteria and cyanobacteria (blue/green algae). Elevated levels of faecal indicator 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 *enteorococci* are the bacteria we measure in estuaries and the sea. Find out more about how we monitor river health, here.

The Council has four monitoring sites for human contact in the East Coast FMU, two river sites (Haparapara and Kereū Rivers) and two coastal sites (Maraetai and Whanarua Bay). Water quality conditions at these monitored swimming sites are generally safe for human contact in summer – A-C bands but have occasional increases in bacteria after rainfall. This means most of the time over summer there is a small risk of getting sick but there is higher risk of getting sick if you swim or wade in the areas after rainfall.

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.

Tikanga guides the act of fishing around the Mōtū, prohibiting fishing on Saturdays and during Te Kau ma Rua.

We know there will be other important traditional harvest sites, practices 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?

Most of the contaminants in streams come from general land runoff, as there are no major point source discharges in this FMU. Gully and major slip erosion can be a big contributor of sediment and phosphorus. Nutrients like nitrate and ammonia are mainly from farming, particularly in upper catchments. Although areas with livestock and horticulture make up only a small part of the FMU, contaminant losses from these areas are estimated to be disproportionately higher, and there are more ways we can manage them to improve river health. However, overall, most contaminants in this FMU are estimated to come from native forest, not because it is a bad source of contaminants, but because it covers the biggest area, and is steep with high rainfall, so contributes the most runoff. High numbers of wild deer, goats and pigs can cause more sediment and bacteria runoff, so controlling these would help but it might be hard to achieve big changes to water quality in this FMU.

Freshwater health issues for this FMU

From the point of view of contaminants, this FMU is generally in good health. However, there are some concerns to think about. These are:

- **Sediment loss.** This mostly affects the Mōtū River by reducing water clarity, but it also affects Waiaua and Whangaparāoa estuary ecological health. Heightened sediment loss (well above natural conditions) from native forest, pastoral land, and recently logged areas, can be considered an issue for the whole FMU. Some of this is driven by large scale slips dating back to Cyclone Bola and some is likely due to pest browsing in native forest, which can increase sediment loss. Climate change projections predict that sediment loss will continue to worsen so this may be something we need to focus on addressing in this FMU.
- **Nutrients, sediment and *E. Coli.*** Pastoral land use in the Upper Mōtū Catchment appears to be affecting the river, causing worsening trends downstream. Production land in the upper Mōtū lies in the Gisborne District, not within Bay of Plenty Regional Council jurisdiction.
- **Nitrate and ammonia levels.** These are currently low, but all monitoring sites have a likely/very likely worsening trend that should be investigated (noting some have only native forest upstream so some of this could be due to natural causes).
- **Stream ecosystem health.** Ecosystem health is generally good but may be impacted during/just after forest harvest and in farming areas. There are fish communities and habitats which could be at risk from new activities if they cause obstacles to fish passage or degrade habitat.

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).

In this FMU, many aspects of ecosystem health are very good (in the 'A' band), and we need to maintain this. There are three sites where the baseline state does not meet the national bottom line and must be improved if possible (although we are still working out just how much of this is likely to be due to natural causes):

- Mōtū River at Houpoto, for suspended sediment.
- Waiiti at State Highway 35 and Waewaetukuku at Ohutu Road, for macroinvertebrates.

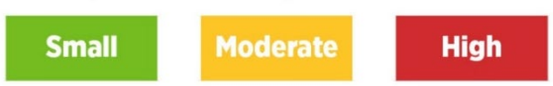
Several sites have water quality or ecosystem health attribute baseline states which are not 'A' band but are better than the national bottom line. We can decide if we want to improve these or just maintain them as they are. For any improvements, we also need to decide on a time frame in which they should happen. In this FMU, naturally occurring processes are likely to be a key contributor to 'poor' states for phosphorous and sediment. 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. For example, if the target is to keep current water quality, and the trend is not getting worse, the timeframe could be immediate or up to five years. If the target requires more change, more time might be needed.
- 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.

KEY: Indicative scale of change needed to improve water quality, or likely water quantity constraint.



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 such as sediment from forestry and general run-off from farms. However, keeping things good, reversing potential 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:

- Being clear about what 'good management practice' is. We may set out minimum requirements for Freshwater Farm Plans across the region and encourage continual improvement.
- Reduce erosion by retiring steep gullies from forestry, reducing stocking rates on very steep land (>25 degrees), planting native species (especially in gullies and riparian areas) and putting in sediment control bunds.
- Reducing the amount of nutrients and bacteria from animal droppings that can enter streams by promoting good management practices such as fencing stock away from rivers, retiring high risk areas and reducing pest animals in our forests.
- Ensuring that any dams, culverts, or other man-made structures in streams are properly built so that fish can still swim upstream.
- Improving stream ecosystem health by riparian planting.
- Making sure plantation forestry is better planned and managed at planting and harvest.
- Keep the nutrient levels in rivers low by encouraging good management practices and working with Gisborne District Council to manage farming activities in their parts of the catchments.

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, or in 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 a river or stream 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 the river or stream, 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 a river or stream gets too low. These limits can have a big influence of the health of a river or stream, 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?

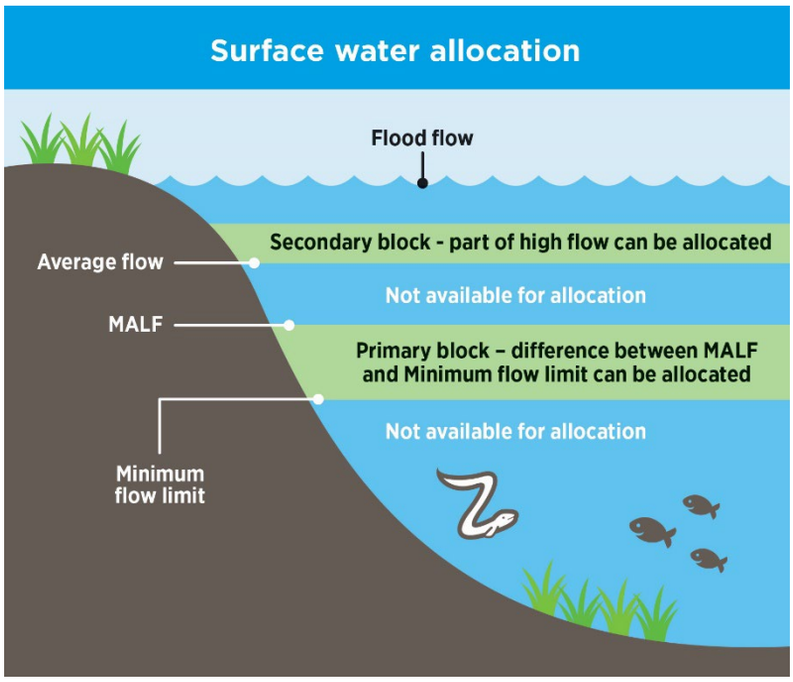
Our main tool for managing water quantity is the setting of minimum flows (limits to achieve the desired level of environmental protection).

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%.

In nine East Coast rivers and streams, we now have river or stream specific scientific studies to help us understand the likely effects of different water levels on the different fish populations in each river and stream. We are using this information to draft new minimum flow limits for individual rivers and streams, based on achieving a consistent level of habitat protection for native fish (and sometimes trout).

For rivers and streams where such studies are not available, we’ve based the limits on our knowledge of river or stream characteristics and the results of other studies.



The above figure shows how the minimum flow limit, primary allocation block and secondary allocation block relate to the flow in rivers and streams. Mean Annual Low Flow (MALF) is a commonly used measure that describes the average amount of water expected in rivers and streams 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, 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

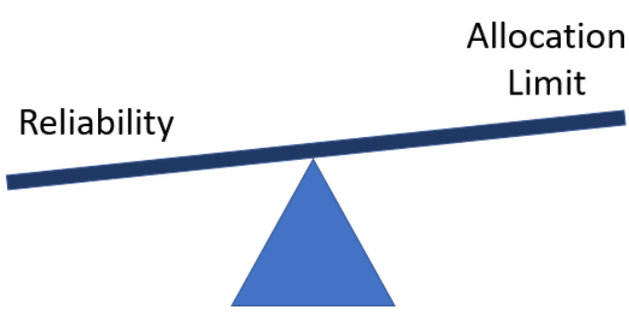
Once we've identified the minimum flow to protect the habitat for selected fish, we need to decide how much water is available to allocate to users.

The current default allocation limit is currently set at 10% of the 1 in 5-year low flow. Based on the current default allocation limits, several rivers and streams are currently considered over allocated in this FMU.

Reliability is a measure of how often authorised water users have to stop or reduce their water take (because rivers and stream are, or would fall, below the minimum flow). The higher the minimum flow, the more likely the river or stream 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 East Coast 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.

In this FMU, a number of out of river and stream dams have been built (or planned), to support horticultural development. Large dams can make the option of allocating less reliable water more viable for users, so creating a secondary allocation block may be a good idea.



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

The main issues for surface water in this FMU relate to the relative steepness of the hills feeding water into the short rivers and streams, and how we administer the takes. The issues include that:

- Water is often in short supply in this FMU, due to small catchments and typically low summer flows (maybe not this summer). This can put a lot of pressure on sensitive native fish populations, as well as on businesses and people who need water for irrigation and domestic needs.
- Storage is probably required to sustain further development.
- Currently, we allocate all the water as one block and this means our accounts record some rivers and streams as over allocated.
- Over allocation could be addressed by applying a secondary allocation block which is administratively more complex.

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

Surface water quantity options

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

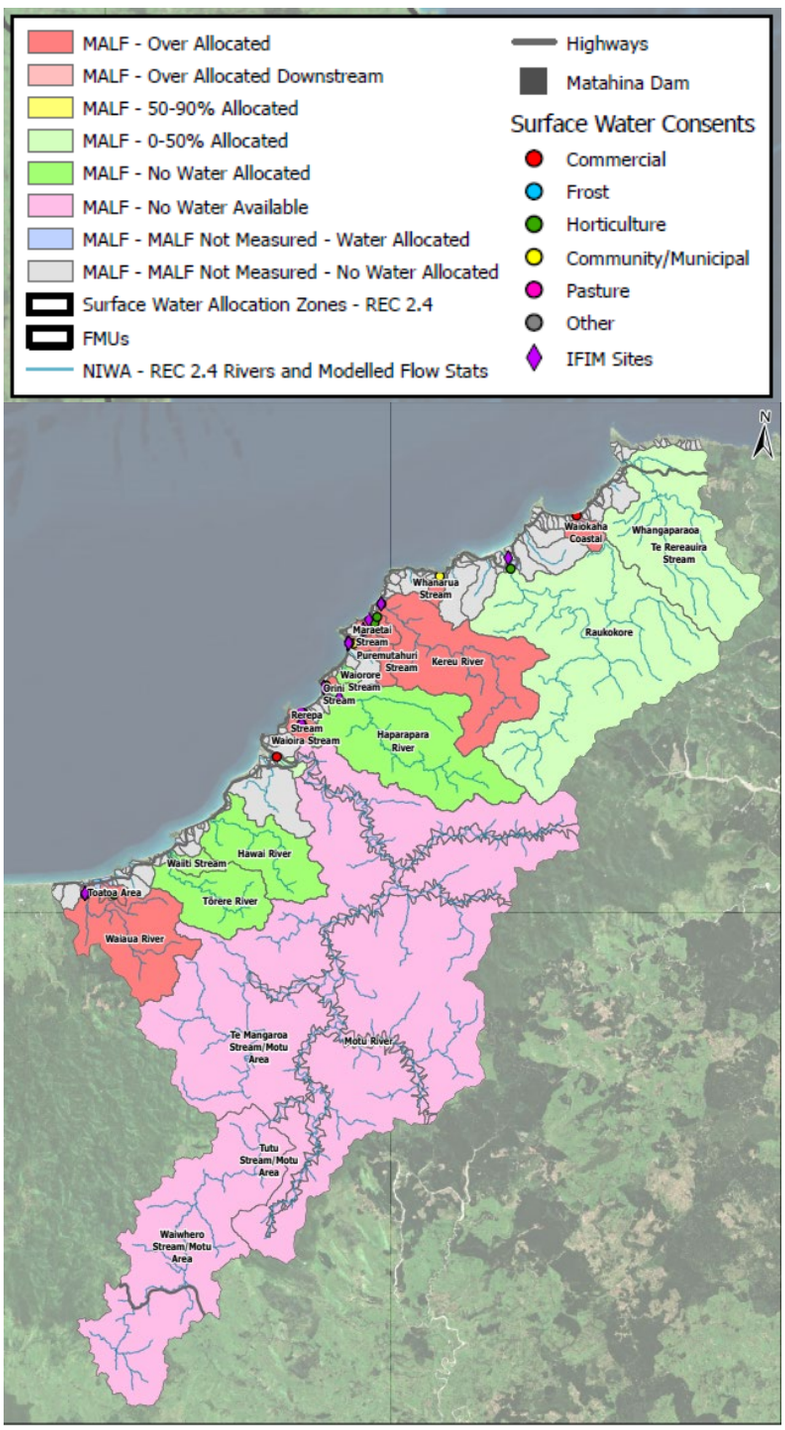
The first set of choices we need to make concerns the level of protection we give to the main fish present in the river. Essentially, we are keen to know what you think of the Habitat Retention Levels in the table above. We could make them more protective, which would mean water takes would have to be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

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.

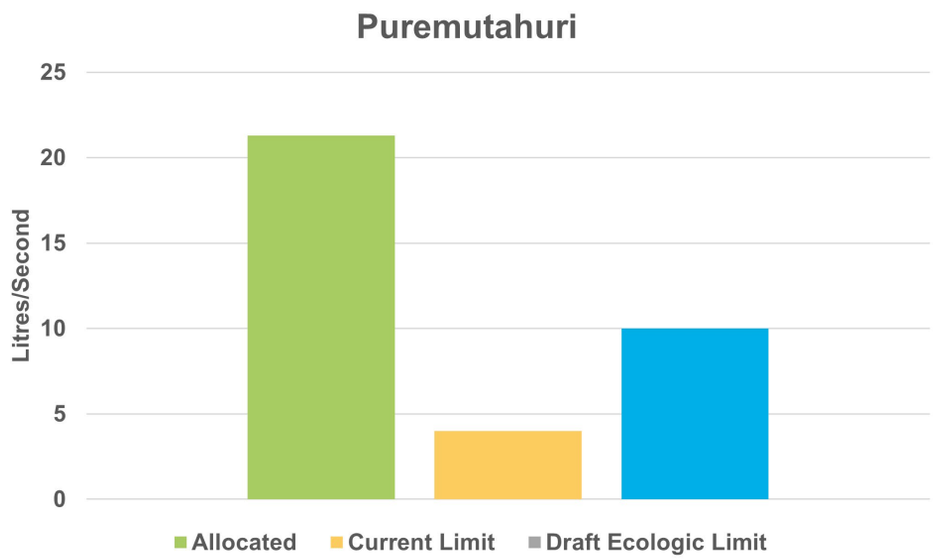
Option set 3: Primary and Secondary Block

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 based on draft minimum flows, and an allocation limit that is the difference between the Mean Annual Low Flow and minimum flow.

Note: The Mōtū River (in pink) has no water available for allocation, because of a Water Conservation Order.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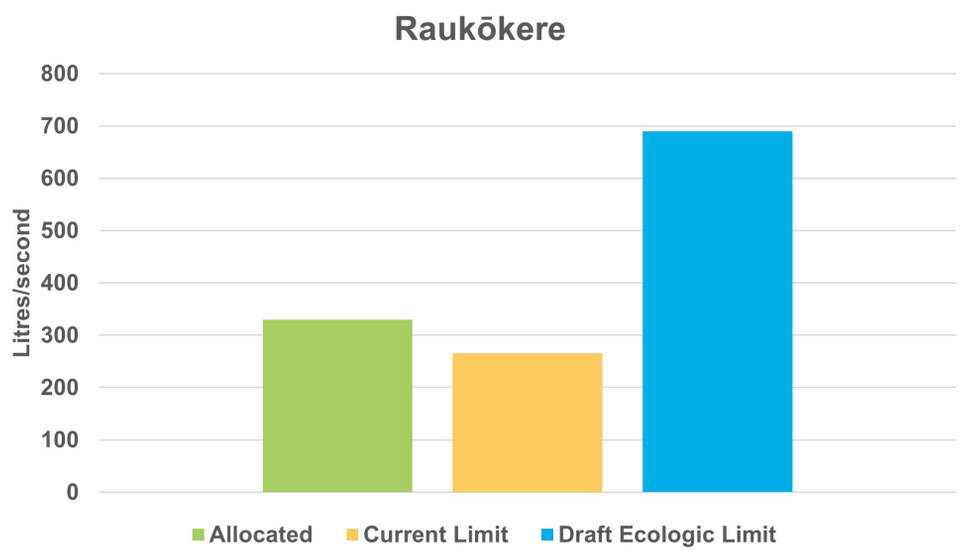
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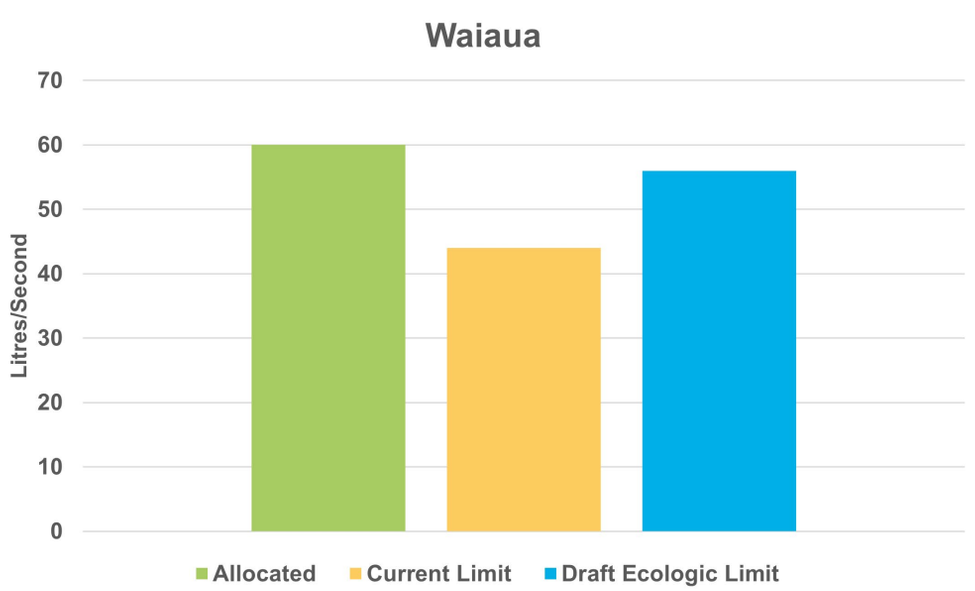
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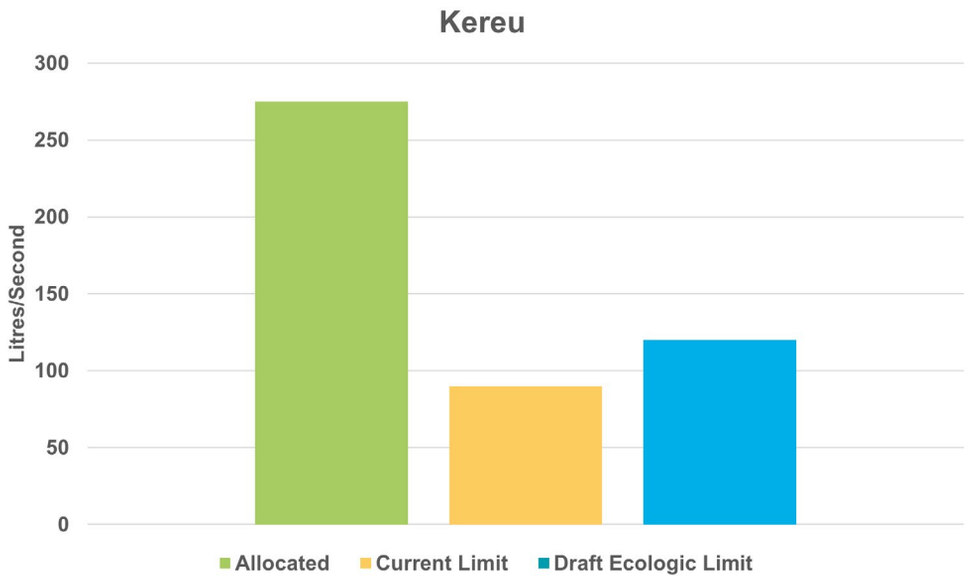

Total water currently allocated to water users, current allocation limit (default allocable flow in the current Regional Plan), and draft ecological allocation limit (total allocable flow using the difference between the Mean Annual Low Flow and the ecological minimum flow).

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 gravels, 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.

There is much less information about groundwater in this FMU, but we do know that it is not a significant resource here, because water can't flow through the solid greywacke rock in the upper catchments, except where there are fractures, and there is only a thin strip of water-holding sedimentary deposits on the coast. Existing bores have been low yielding, because it's hard to access the water at a practical rate.

In this FMU there are very few groundwater bores and we have little concern about these compared to intensively used FMUs. In practice, we think the relatively high cost of taking groundwater and its poor availability are probably self-limiting.

We have estimated recharge (how much water goes into the ground and can be theoretically extracted) in coastal sedimentary units and using a conservative allocation limit of 15% of annual average aquifer recharge. This would mean there is substantial groundwater available to allocate. In practice it may be difficult to access and extract this water.

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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TOI MOANA
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