Te kōrero o te rōpū whakahaere o te wai māori o Motiti

The Motiti 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 Motiti Freshwater Management Unit (FMU). These options are to do with how we manage freshwater on Motiti 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.

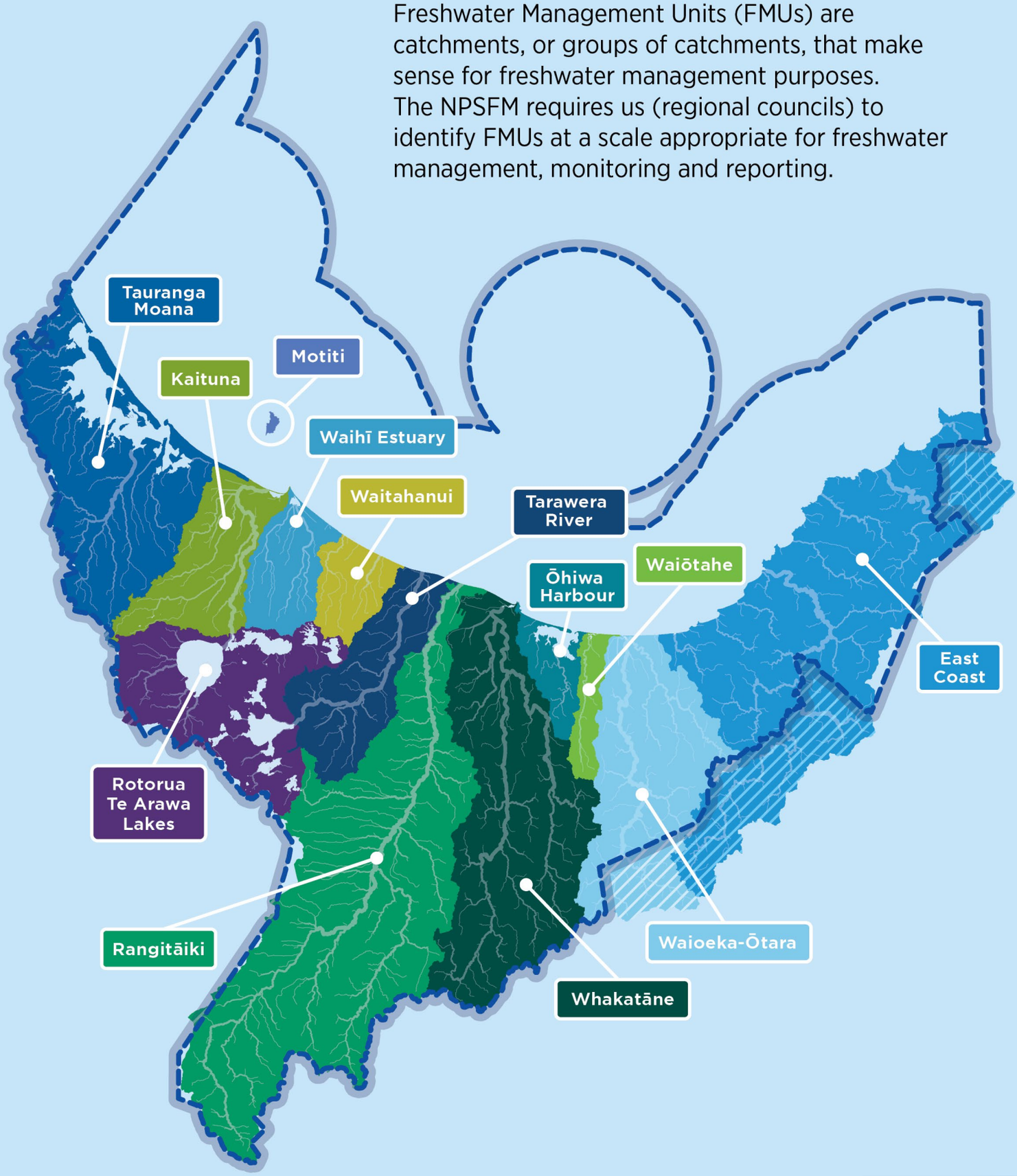
For more info

- 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**

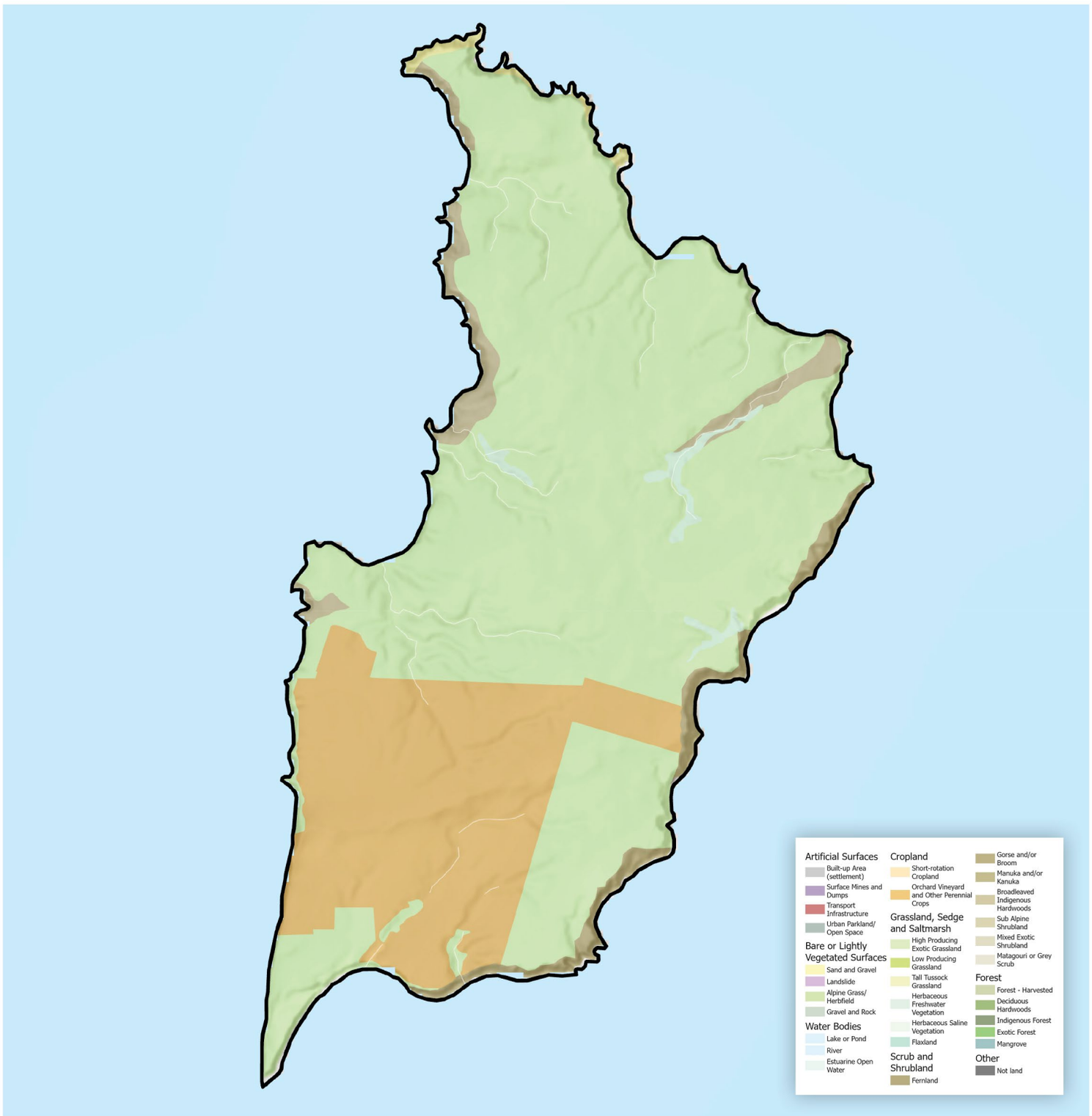
Ngā tauira o ngā rōpū whakahaere o te wai māori

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.



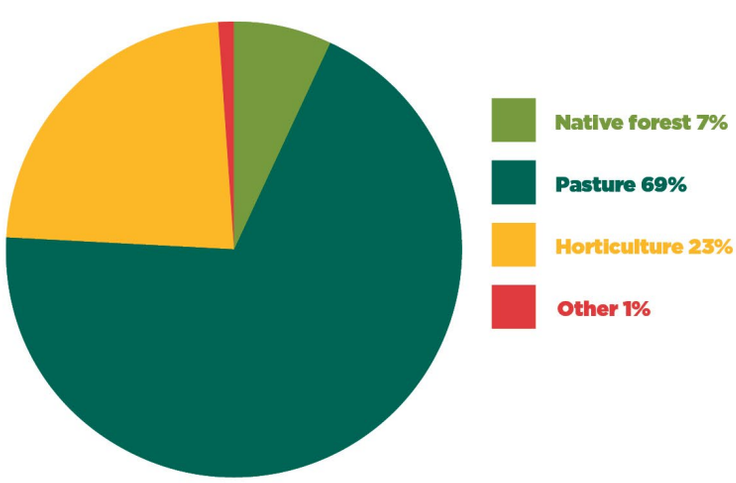
Motiti - FMU Map

Land area:

720 ha

Population:

30 people



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

About the Draft Mōtītī Freshwater Management Unit (FMU)

The Draft Mōtītī FMU includes the freshwater catchments of Mōtītī Island, which is located approximately 12 km north of the closest onshore point at Pāpāmoa. The island is approximately 720 ha in area and rises only 56 m above sea level.

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

Tangata whenua

- There are significant whakapapa, cultural and historical connections and responsibilities for tangata whenua within the Mōtītī FMU. Te Patuwai and Ngāi Tauwhao are acknowledged by the Waitangi Tribunal as the tangata whenua for Mōtītī. Ngāti Awa and Ngāi Te Rangi have an interest with regard to their iwi rohe and their relationship with their respective hapū. Te Arawa waka affiliates have also expressed an interest in the Island.
- There is korero regarding the inland waterways particularly springs and wetlands that were important for mahinga kai purposes, and it is known that the majority of food came from the sea. It is known that seabirds who were attracted to the freshwater were a food source.
- There are many sacred freshwater related sites. Many are mentioned in the Mōtītī District Plan, which affords them protection. One of these springs - Kawakawa (meaning the origins) is a puna wai that springs from the heart of the island.
- Almost half of Mōtītī's area, or 322 ha, is Māori-owned land. This is dominated by pasture (90%) and indigenous vegetation (9%). Over 4815 Māori landowners are listed.

Communities

- As of June 2022, the population of Mōtītī Island was estimated to be around 30 people.
- Community feedback so far has told us people want to see thriving kaimoana around the island. Some also sought improvements to biodiversity and natural character.
- People were concerned about water quality, streams habitat and rubbish disposal issues, erosion from riverbanks, and loss of water quantity.

Land and land use

- Land cover is now predominantly pasture (69%), 23% horticulture and 7% indigenous vegetation.
- The Island has lost a lot of its original vegetation cover and that remaining is considered to be in relatively poor health .
- There are limited species or habitat surveys done on Mōtītī Island.

Streams, wetlands, and estuaries

- The island has small streams, springs and seeps, which are not big enough to swim in. There have been no known formal studies of freshwater ecosystem health but the environment court has noted generally poor health.
- Approximately 7.4 ha of wetland is located in at least three locations around the island.
- The margins of Mōtītī Island are identified for their significant coastal indigenous biological diversity, but their freshwater dependency element is unclear. There is some evidence of sediment deposition on rocky reefs.
- The nearby marine fishery is very important. Historically, these reefs supported an abundant fishery which in recent times has diminished.

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 coastal areas).
- At Mōtītī, springs were and remain an important source of freshwater for residents. A marae was moved to be closer to water.
- There is a single surface water take consent on the island, for horticultural irrigation which enables the taking of up to 845m^3/day at a maximum rate of take of 11.47 l/s from dam storage. No other commercial or industrial activities requiring water occur on the island. Water from springs and streams is also used for domestic and stock drinking water.
- There may be some risk of seepage from household Onsite Effluent Treatment systems, and existing soak holes and long drops. Islanders have said they are concerned about effluent disposal affecting groundwater.

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

- More frequent intense rainfall is likely to increase erosion and sediment run off.
- Average annual rainfall totals are not expected to change significantly in the period to 2040, but the pattern changes, with less in the spring/summer months. This would add stress to already limited water availability.

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

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

What is your vision for the future of freshwater?

Draft long-term vision for freshwater

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

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

Option A The mauri of Mōtītī freshwater is enhanced as well as that of the oceans that surround it, and water is available for present and future generations on the island.

1. Innovative and sustainable land and water management practices support food production and minimise the risk of sediment loss impacting the rocky reefs around the island.
2. Freshwater is cleaner and more extensive riparian margins form corridors for plants, bird and insects.
3. Maatauranga monitoring is established.

This vision is to be achieved by 2040.

Option B The mauri, water quality and the habitats of the streams, wetlands, seeps and springs of Mōtītī Island are enhanced and their flow is sustained.

Freshwater on Mōtītī Island:

1. Is managed using kaitiakitanga undertaken by tangata whenua of Mōtīti who are the kaitiaki.
2. Sustains island occupants by remaining abundant and available for a variety of uses.
3. Supports mahinga kai and the restoration/proliferation of traditional kai species including the Mōtītī eels, inanga and traditional bird species.
4. Becomes more natural, with cleaner water and more extensive natural margins forming corridors for plants and animals.
5. Enhances the mauri of Mōtītī at large, that of the oceans that surround it and the mana of its people.

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

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

Draft values and environmental outcomes

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

Mōtītī has a long history of agricultural use supported by freshwater resources. There are no formal records of use of inland waterways for mahinga kai purposes, and most of the food came from the sea. However, seabirds who were attracted to the freshwater were once an important food source. Many of the island springs and waterfalls are taonga and their protection is a clear outcome. Having access to fresh, potable water is essential to sustain life on Mōtītī. The island environmental plan seeks improvements to natural character something that was mentioned in online engagement also. The agricultural and horticultural land uses will require an adequate level of water reliability provided the overarching Te Mana o te Wai purpose is met.

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 improved. The flow of streams, seeps and springs on the island is maintained. Riparian margins of streams, seeps and springs are restored and managed.
Human contact	Water quality of the springs is suitable for people to connect with the water.
Threatened species	Protect the critical habitats required to support the presence, abundance, survival and recovery of threatened species. (Unclear whether this value is present in the FMU).
Mahinga kai	Taonga freshwater species are restored and protected, and their cultural health and the continuation of mahinga kai practices and associated tikanga are provided for. The mauri of freshwater of the entire island is enhanced.
Natural form and character	Riparian habitats are restored, and natural corridors used by an increasing number of native species.
Drinking water supply	Freshwater on Mōtītī Island is generally suitable for potable use (Unclear whether this value is present in the FMU).
Wai tapu	Sacred and special freshwater sites are physically protected and opportunities for their enhancement are available. Water quality and quantity provides for the protection of wai tapu and the tikanga associated with these sites and waters.

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*
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.

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.

Coastal ecosystem health?

There are no sensitive estuaries but there are near shore rocky reefs that host a range of marine species and are an important kaimoana source for residents of Mōtītī Island. A recent report utilised satellites to estimate spatial patterns and long-term trends in water quality products around Mōtītī Island and the Mōtītī Protection Areas. This indicates surface temperature warming and declining coastal productivity.

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 no long term monitoring sites in the Mōtītī FMU to measure state and trends in river and stream water quality. In areas where we don't have enough monitoring data, river health has been estimated by an Expert Panel using the best information available. This gives us a sense of states and helps us identify where changes may be needed to meet environmental outcomes. The NPSFM requires us to take action and make improvements if water quality is below a national bottom line or is degrading (shows a worsening trend over time), unless this is due to natural causes.

Nitrogen concentrations are estimated to be in the A or B band. This is well below levels that can have toxic effects, but nutrients like nitrogen and phosphorous can promote plant, weed and algal growth.

Dissolved reactive phosphorus concentrations are estimated to be in the C band, potentially ranging A-D. High phosphorus levels are likely due to the volcanic influence in the area, although human activity will be adding to this.

Estimates of suspended fine sediment are in the A or B band, ranging A-D. There is evidence of sedimentation of reefs during storms/heavy rainfall.

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 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.

There is no monitoring by BOPRC for invertebrates, fish, periphyton or aquatic pest plants carried out in the Mōtītī FMU presently. Macroinvertebrates react relatively strongly to the immediate environment. It is likely that lower state bands would be observed in the pastoral and horticultural land use classes.

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 *enteorococci* are the bacteria we measure in estuaries and the sea. Find out more about how we monitor river health, here.

There are no bathing water quality monitoring sites. Estimates for *E. coli* state for human contact are D band ranging A-E bands.

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, the traditional materials sources from the environment and the tikanga (practices) of collecting or harvesting them. This value is demonstrative of tangata whenua connections, responsibilities and kaitiakitanga obligations. It is important because the loss of these species and associated tikanga can have a profound effect on tangata whenua who rely on them.

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. Identifying these and understanding how tangata whenua and kaitiaki understand, assess and care for wai māori is critical to understanding and providing for the health of the mahinga kai compulsory value.

Where do contaminants come from?

Estimated contaminant source risks are likely to roughly mirror land use, and will be highly dependent on land management practice, such as how nutrient inputs, irrigation, and critical source areas (overland flow paths) are managed to minimise contaminant losses. Domestic on-site effluent discharges pose a risk of *E. coli* losses to water.

Drystock is estimated to contribute most of the nitrogen, phosphorous, sediment and *E. coli* load, followed by horticulture.

Freshwater health issues for this FMU

Very little data is available, but indicated issues are as follows:

Measures to help reduce sediment erosion from Mōtītī Island will help support biodiversity in the rocky reefs surrounding the island. In addition, impacts on water clarity from the BOP coast are evident and sediment reductions for rivers discharging to the coast will help support the water clarity and light environment on the offshore coast.

Faecal contaminants may be an issue for freshwater and coastal waters on the island, and good practice should be applied to minimise this, particularly in relation to human and animal drinking water sources.

Nutrients may not be an issue at the moment and increase in nutrient losses should be avoided.

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 is 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).

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 accept C band state or worse only if that is naturally occurring, or if climate change predictions suggest no better can be achieved.
- To apply a reasonable timeframe to achieve this, so that any land and water users who need to make changes have time to transition.

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

Nitrogen	Phosphorus	Sediment	*E. coli*

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

Small | Moderate | High

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 options

Alongside the national regulations, key options include:

- Supporting good management practice and risk reduction through Freshwater Farm Plans.
- Exploring with the local people options to replace long drops and soak holes, potentially with OSET or composting toilets that may pose less risk of seepage.

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.

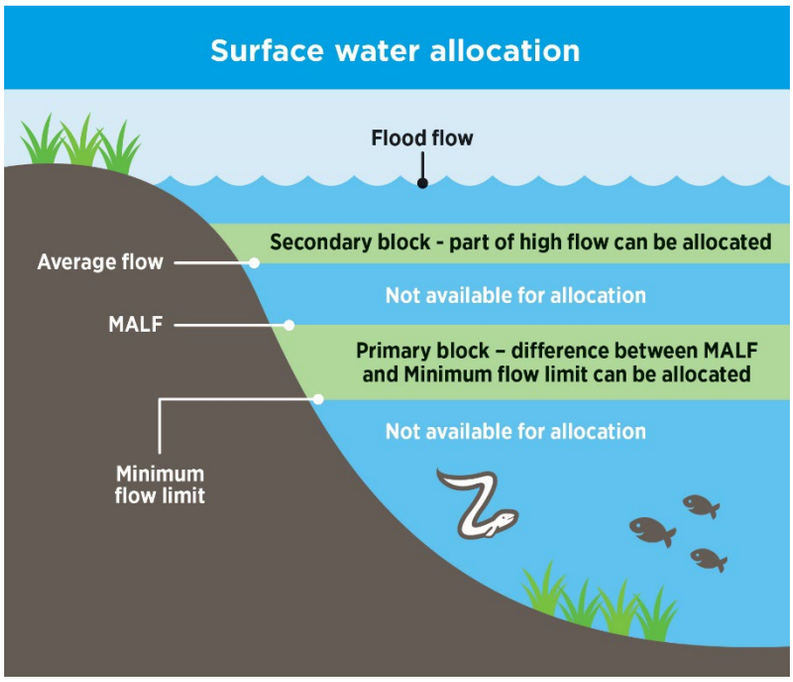
The NPSFM hierarchy of obligations prioritises the health and well-being of rivers, streams, lakes, wetlands and groundwater first, then human health needs, and then ability of people to provide for social, cultural and economic wellbeing.

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 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?

The tools we've used to identify draft minimum flows in other FMU's have limited application on Mōtītī, due to the small and sometimes intermittent nature of streams, limited use and limited information regarding hydrology and ecology. Tangata whenua have close relationships to the land and water and mātauranga relating to this important to managing the water resource. Any proposals to take water from streams beyond basic domestic and stock usage should require detailed individual consideration.

All streams and creeks on Mōtītī should be considered sensitive as they have small catchment areas with low summer flows and frequently lack riparian vegetation. On the mainland, we've proposed minimum flows of 95% of the summer low flows (95% MALF) in small coastal streams. Effectively this conservative minimum flow would mean that no water was available to take during drier than average summer periods. While not referring specifically to Mōtītī, advice from respected hydrologist Dr Ian Jowett is "A minimum flow of 95% MALF and an allocation limit of 5% MALF will have no significant effects. In fact, an abstraction of 5% MALF is unlikely to have any significant effects, regardless of minimum low."



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 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

Except for the location associated with the resource consent to take water (see map below), we don't have good information about the species that inhabit the island's streams and creeks. Consistent with the approach taken for small streams on the mainland and Dr Jowett's advice we suggest that a minimum flow of 95% MALF is consistent with the habitat retention levels identified 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.

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%

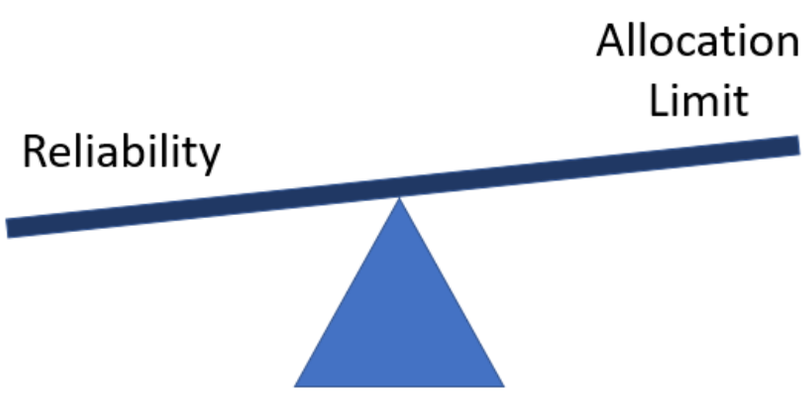
Question 11 We are moving to limits on water takes based on habitat protection for fish. Does this seem the best approach?

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 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). The high minimum flows suggested for streams mean that any allocation of water would be highly unreliable unless supported by storage dams.



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

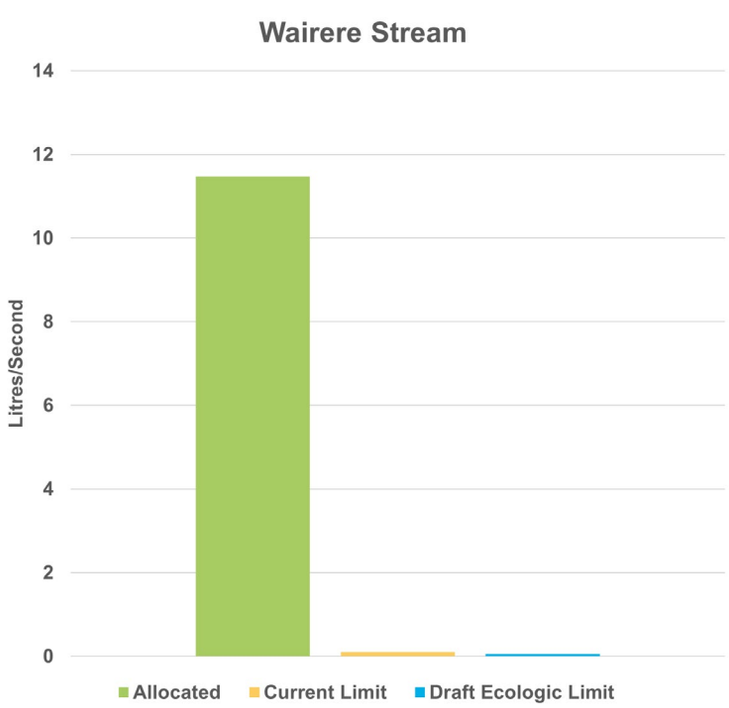
High minimum flows and low allocation limits mean that there is very little water available to take and reliability is low unless water is stored.

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

Surface water quantity options

Because of the limited water resources and knowledge available to us, we've simply suggested a very conservative minimum flow of 95% MALF and allocation limit of 5% MALF for the islands water bodies.

There is one resource consent to take water, from the Wairere Stream (and adjacent stream), at the southern end of the Island.



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

Introduction

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

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

Mōtītī Island has a base of rocks overlain by volcanic sediments. The Mōtītī Tephra, which is a shallow sediment deposit covering the internal part of the island, is the only geological unit that appears able to store and transmit groundwater. The Mōtītī Tephra discharges to springs around its edges, and these can form streams.

There are no consented groundwater takes on Mōtītī Island. However, the springs on the island are surface expressions of the limited Mōtītī groundwater resource and are highly significant to tangata whenua.

Because demand for groundwater on Mōtītī Island is limited there is thought to be no immediate risk to the resource.

Issues

- It is difficult to accurately predict recharge (and therefore take limits) - which depend a lot on localised rainfall.
- Surface and ground water features are highly interconnected. i.e. apart from rainfall recharging surface layers there is no other source of water to recharge groundwater making spring and stream flows vulnerable to changes in rainfall pattern.
- Tangata whenua have very strong cultural ties to the surface-water features, which are important for a host of reasons including to sustain island life.

Policy options

The main policy options for managing groundwater on Mōtītī Island are:

- Set a groundwater take limit based on a conservative 15% estimated recharge. That could have an impact on some surface features, but if there was a thorough assessment of any groundwater take application received this risk could be assessed more thoroughly then.
- Set groundwater take limit of 35% estimate recharge. That would be more likely to have impacts on surface water features, and seems unjustified given lack of demand for groundwater on the island.

- Make all groundwater takes full discretionary or non-complying activities against a very low take limit, with very strict policy to protect surface features. Any take would then shift the island close to overallocated status – reflecting the sensitivity of groundwater resources there. This option is the preferred option because it best supports the existing springs and sends the correct messages to anyone considering a groundwater take on the island.

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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