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Clean Water

90% of rivers and
lakes swimmable
by 2040



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Waitangi Tribunal

23 Feb 2017

Ministry of Justice
WELLINGTON

New Zealand Government

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***Making Aotearoa New Zealand
the most liveable place in the world***
Aotearoa - he whenua mana kura mō te tangata

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Message from the Ministers



Swimming in a clean river or lake is an exhilarating experience. It is different to having a dip in a pool or at the beach. It is a recreational opportunity that has been lost to billions of people in the world due to pollution. New Zealand is blessed with so much fresh water that most of our rivers and lakes remain suitable for swimming but agricultural and urban development over the past 50 years is putting some areas at risk. This plan is about protecting and enhancing this Kiwi way of life for future generations.

The benefits of improving the water quality of our rivers and lakes for swimming are broader than this one activity. Activities like rafting, kayaking, collecting mahinga kai, and recreational fishing also benefit. The measures to improve swimmability, like fencing, riparian planting, and better wastewater treatment, also improve the clarity and ecological health of our waterways. The gains are not just for recreation and the environment. Tourism is now New Zealand's largest industry and we must ensure our water quality matches up to our clean, green brand.

This plan is ambitious but also practical. Requiring every place to be swimmable all of the time is unachievable and would lack credibility. Water quality varies dramatically with the weather and even our cleanest waterways exceed safe levels of contaminants during flood events. That is why this package focuses on the frequency that the water quality in our rivers and lakes meets swimming standards. The improvements we are seeking come at an estimated \$2 billion cost but we believe this is well justified for the environmental benefits.

There are five key components of this plan.

- A new target that 90% of our rivers and lakes are swimmable by 2040.
- New maps and information on the current water quality for swimming.
- Changes to the National Policy Statement for Freshwater Management including water quality requirements for recreation, limiting nutrients and for ecological health.
- Criteria for allocation of the \$100 million Freshwater Improvement Fund.
- Details of new national stock exclusion regulations.

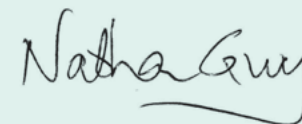
This plan builds on our work beginning in 2009 to improve water management with compulsory water metering introduced in 2010, the first National Policy Statement on Freshwater in 2011 and the National Objectives Framework in 2014. The Clean Water package is the next step but we have further reform in the pipeline. We have important work ahead in developing good management practice for both rural and urban users and the difficult issue of improving water allocation.

We pay tribute to the work of the Land and Water Forum and the Iwi Leaders Group who have contributed so much to these ongoing freshwater reforms. These are thorny long-term problems and it is easy to be divisive and play the blame game. It is a credit to organisations like the Environmental Defence Society, the Royal Forest and Bird Protection Society, Federated Farmers, the Freshwater Iwi Leaders Group and so many other organisations that have come together through the Land and Water Forum to pave the way for the huge changes occurring across New Zealand in water management.

Region by region, river by river, we are seeing New Zealanders stepping up to the challenge of better managing our fresh water. We hope you will contribute to the policies and initiatives outlined here to better care for our water.



Hon Dr Nick Smith
Minister for the Environment



Hon Nathan Guy
Minister for Primary Industries

The purpose of this document

This document sets out the Government's further work in the ongoing programme of water reform following consultation on *Next steps for fresh water (Next steps)*. Specifically, we are now:

- proposing a target of 90% of rivers and lakes swimmable by 2040
- seeking feedback on proposed amendments to the National Policy Statement for Freshwater Management 2014 (Freshwater NPS)
- inviting applications for the Freshwater Improvement Fund
- seeking feedback on the detail of policy proposals for excluding stock from waterways.

Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments	Allocation
National bottom lines	Freshwater Improvement Fund	Our Land and Water National Science Challenge
	Stock exclusion	
Iwi rights and interests		

During consultation on *Next steps*, we outlined proposals for:

- amending the Freshwater NPS
- criteria for a Freshwater Improvement Fund
- excluding stock from waterways by regulation.

We received nearly 4000 written submissions – expressing the views of over 6000 New Zealanders – about the proposals in *Next steps*. A [summary of these submissions](#) is available on the Ministry for the Environment website.

Freshwater reform timeline

2009

- › Land and Water Forum established to advise on water reform
- › Land, Air, Water Aotearoa (LAWA) website launched

2010

- › Resource Management (Measurement and Reporting of Water Takes) Regulations introduced

2011

- › National Policy Statement for Freshwater Management introduced
- › Fresh Start for Fresh Water Clean-up Fund established
- › Irrigation Acceleration Fund established

2013

- › Consultation on *Freshwater reform 2013 and beyond*

2014

- › National Policy Statement for Freshwater Management amendments introduce National Objectives Framework and national bottom lines for water quality
- › Te Mana o Te Wai Fund established

2015

- › Environmental Reporting Act passed
- › *Environment Aotearoa* released

2016

- › Consultation on proposed changes to the National Policy Statement for Freshwater Management (*Next Steps for Fresh Water*)
- › Our Land and Water Science Challenge launched

2017

- › Consultation on *Clean Water*
- › Targets for freshwater quality for swimming proposed
- › Swimming maps launched
- › Freshwater Improvement Fund established
- › Regulations for stock exclusion from waterways progressed

1. 90% of rivers and lakes swimmable by 2040

New Zealanders value swimming in our rivers and lakes and we want to know future generations will enjoy this pastime too. This message came through loud and clear at public meetings and in the thousands of submissions we received during consultation on *Next steps*.

Freshwater Reform Programmes		
2009 - 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
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Freshwater NPS	Freshwater NPS amendments	Allocation
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	Stock exclusion	
Iwi rights and interests		

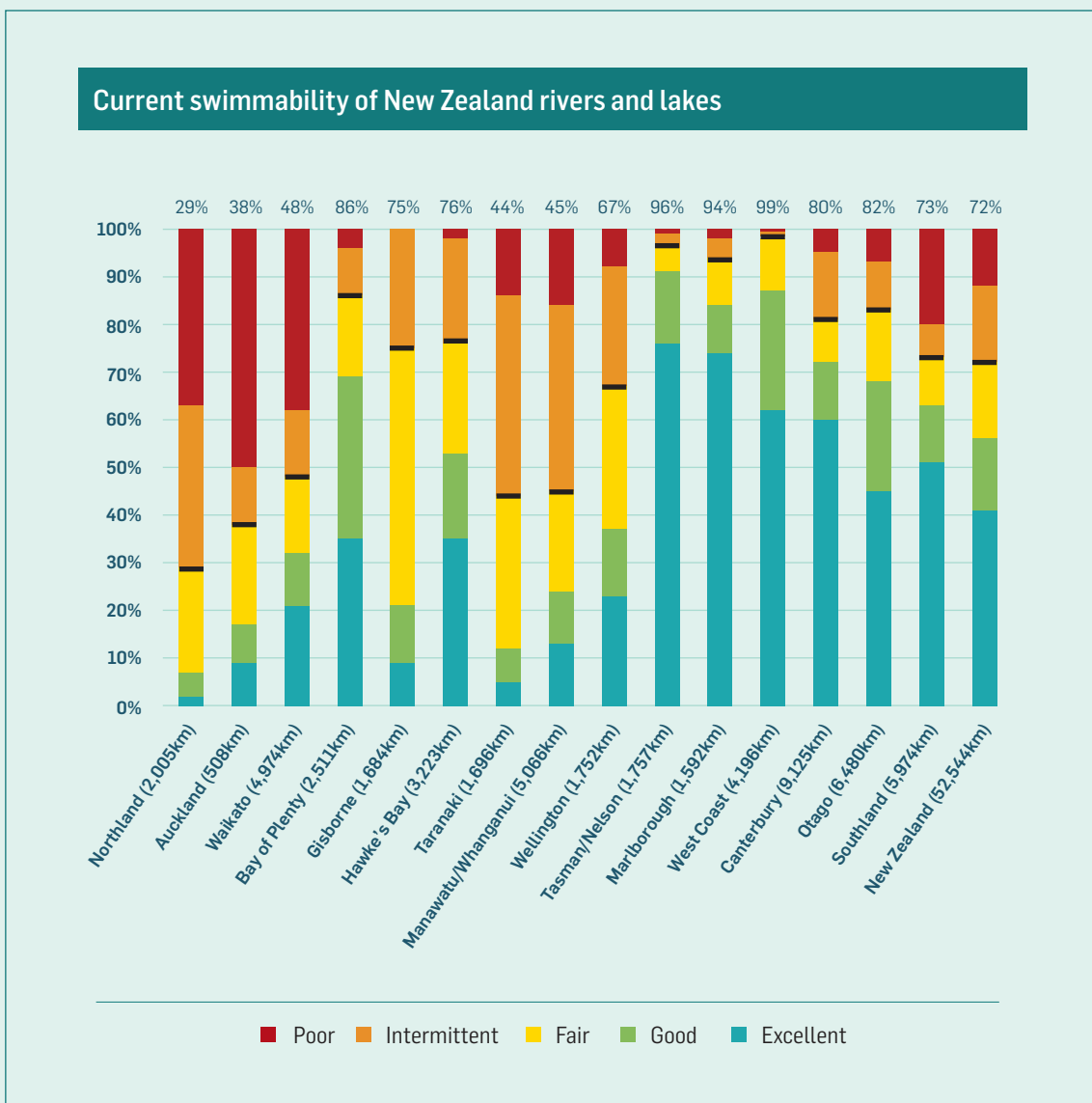
We have many great places to swim but we can do even better. We want to make sure that more of our rivers and lakes are swimmable more of the time.

We're proposing a target of ensuring 90% of rivers and lakes are swimmable by 2040. This target sends a strong signal that we want to see improvement but at the same time, we recognise there are costs and choices to be made to achieve this.

Our first goal is to make 80% of our rivers and lakes swimmable by 2030. We think this is challenging but achievable. We'll get most of the way there through a combination of measures set out in these proposals, work already underway, and some new initiatives.

Reaching 90% of rivers and lakes being swimmable by 2040 is more ambitious. We'll need to do further work to clarify the costs and impacts of improvements. Communities will decide which rivers and lakes are most important to them for swimming, what improvements are needed, and how quickly they will be made. The cost to meet the target for swimmable lakes and rivers will depend on the measures put in place locally to meet them.

We'll ask regional councils to tell us by 2018 how the target can be achieved, including the likely costs and the impacts on their communities. Current water quality for swimming varies for different water bodies within regions and from region to region. The costs of achieving swimming targets will also vary between and within regions. The water quality by region according to the total length of rivers and shoreline of lakes is shown in the graph below.



We propose applying the target to rivers that are deep enough to swim in and lakes with perimeters longer than 1,500 metres. It is based on the concentration of *Escherichia coli* (*E. coli*) in rivers and toxic algae in lakes. *E. coli* indicates the likely presence of *Campylobacter* (and other potentially harmful organisms) that can make people sick, while toxic algae blooms also have the potential to make people sick.

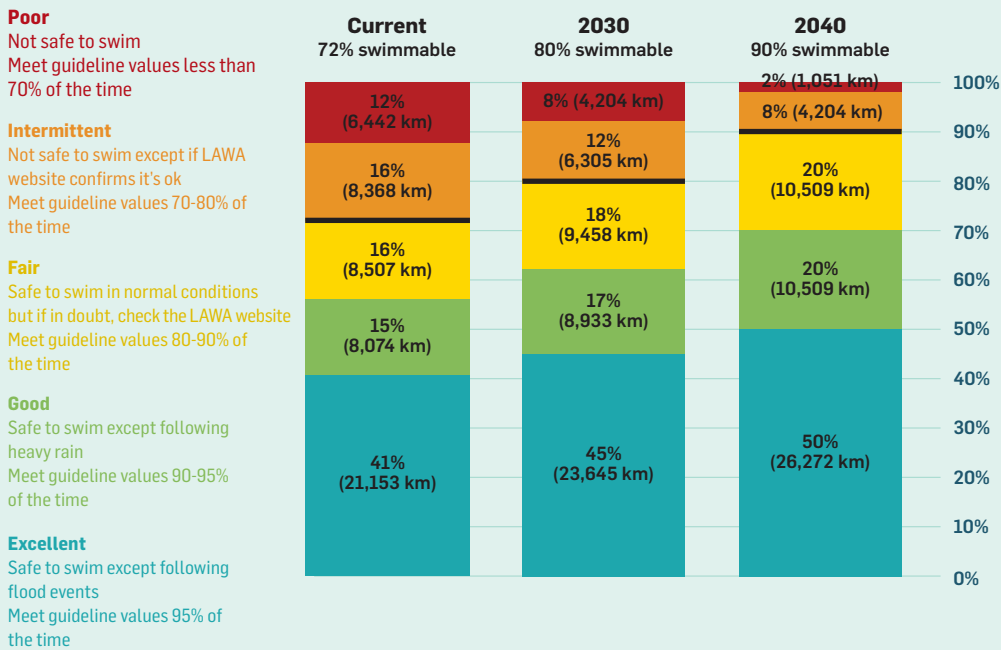
The graph on the following page shows what realising the national target would mean for rivers and lakes across the country. The 'swimmable' categories of excellent, good and fair (blue, green and yellow – where the water is suitable for swimming more than 80% of the time) are comparable with European standards.

The targets will be supported through the *Clean Water* package which:

- provides communities with better information. We have developed national and regional maps that set out *E. coli* levels in rivers and toxic algae volumes in lakes and how those levels affect where and when people can swim. The maps are complemented by the [Land, Air, Water Aotearoa \(LAWA\) website](#) which provides current water quality information from freshwater monitoring sites across the country
- directs regional councils to implement a transparent programme of improving water quality towards a swimmable standard over time, and to monitor and report on this progress
- invests \$100 million in projects that make a significant and measurable improvement to freshwater quality
- introduces new regulations for keeping stock out of our waterways.

This package is part of the Government's ongoing commitment to improving freshwater quality. We have already committed \$350 million to cleaning up some of our iconic lakes and rivers and \$97 million in the Our Land and Water National Science Challenge, which will develop new practices and technology to improve water quality while enhancing primary sector productivity.

90% of rivers and lakes swimmable by 2040



- The target is based on length of swimmable rivers which in total length are 45,000 kilometres, and lakes with perimeters longer than 1,500 metres (9,000 kilometres), totalling 54,000 kilometres nationally.
- *E. coli* guideline value for rivers is 540 *E. coli* per 100 mls, and the toxic algae guideline for lakes is 1.8 cubic millimetres per litre.
- 'Swimmable definition' is excellent, good and fair categories, that is, where it meets the guideline value more than 80% of the time (comparable with European standards).
- The national target is to increase proportions of swimmable waters (**blue**, **green** and **yellow**) to 80% by 2030 and to 90% by 2040, but also to improve water quality across all categories to an average of 90% (ie, to increase the proportion of rivers in all three swimmable categories of **blue**, **green** and **yellow**).
- 'Safe to swim' is based on water quality information alone. It excludes other factors that can affect safety, such as access, flow rates, adverse weather, or cyanobacteria in rivers for which there is insufficient data for modelling to map reliably.

CASE STUDY

Manawatu River



In response to growing concern over the state of the Manawatu River, in 2010 representatives of iwi, local and central government, farming and other sector groups established the Manawatu River Forum. Later that year, the Forum developed the Manawatu River Leaders' Accord which provides for a multi-stakeholder approach to improving the quality and mauri of the Manawatu River and its catchment.

From 2010 through to 2016, \$46 million has been spent on projects to improve the state of the Manawatu catchment, including \$5.2 million from the Fresh Start for Fresh Water Fund. Highlights of the Manawatu River Leaders' Accord to date include:

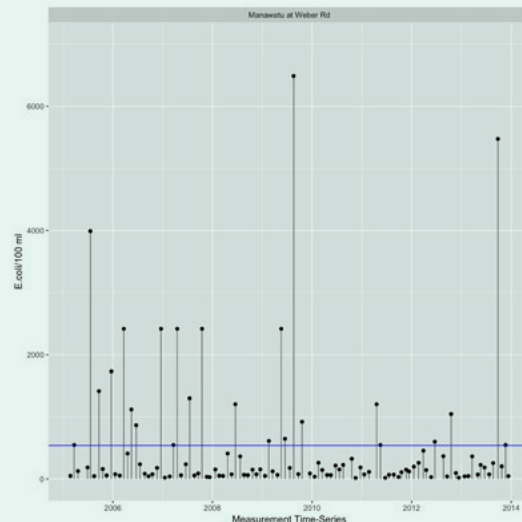
- 11,900 more natives plants established alongside waterways
- 474km of extra stream fencing
- 98 farm environment plans completed
- 14 information signs throughout the catchment sharing the cultural history of each site

- 12 fish passage improvements
- six wastewater treatment plants have been upgraded.

Improvements to water quality can take time to become apparent but there are already some encouraging signs in the Manawatu catchment. So far these projects have improved 600 kilometres of river into a more swimmable category. Of the 16 sites in the Manawatu catchment that have 10 years of data, over

30% show improving trends for *E. coli* (no sites show a decline). These improving sites show annual average reductions of 6-9%. 75% of the 16 sites also show improvement for total oxidised nitrogen and half show improvement for dissolved reactive phosphorus.

An example of the *E. coli* improvements is shown in the figure below for Manawatu River at Weber Road.



CASE STUDY

Lake Brunner



Lake Brunner/Kotuku-Whakaoho is the largest lake on the West Coast of New Zealand's South Island, significant for both recreation and tourism. A special management area, it is highly prized by tāngata whenua and is an important area ecologically. The catchment itself is unique in that it receives an average of 5000mm of rainfall per year.

Intensive dairy farming around the lake was identified as the primary driver of nutrient increases degrading the water quality. The West Coast Regional Council identified Lake Brunner as 'phosphorus sensitive' and highly susceptible to nutrient run-off from the land. Water quality monitoring identified increasing phosphorus, declining autumn oxygen levels, decreasing water clarity, and a Trophic Level Index (TLI) rating of 3.03 – indicating a high risk of algal bloom.

The Council notified a plan change in September 2010 with new provisions preventing stock access to waterways, imposing strict effluent management rules and minimising further land development.

In 2013, the Crown committed \$200,000 towards a \$440,000 project to clean up Lake Brunner. Led by the Council, in partnership with industry, Landcare Trust, and land owners, the funding was instrumental in assisting with remediation activities including community environmental projects and farm environment plans.

These activities saw the installation of 55km of stream fencing and the planting of nearly 30,000 plants.

The combined effort of all partners has seen some real tangible outcomes for Lake Brunner, including:

- improved trends for ammonia, nitrogen and dissolved reactive phosphorus
- a significant improvement in water quality, reaching the TLI target of 2.8 within six months of the project's completion
- lower levels of turbidity in connecting river catchments that affect water quality in Lake Brunner
- voluntary improved farming practices implemented on nearby properties.

2. Better information on water quality for swimming

Understanding the state of our rivers and lakes is key to deciding where and when improvements are necessary.

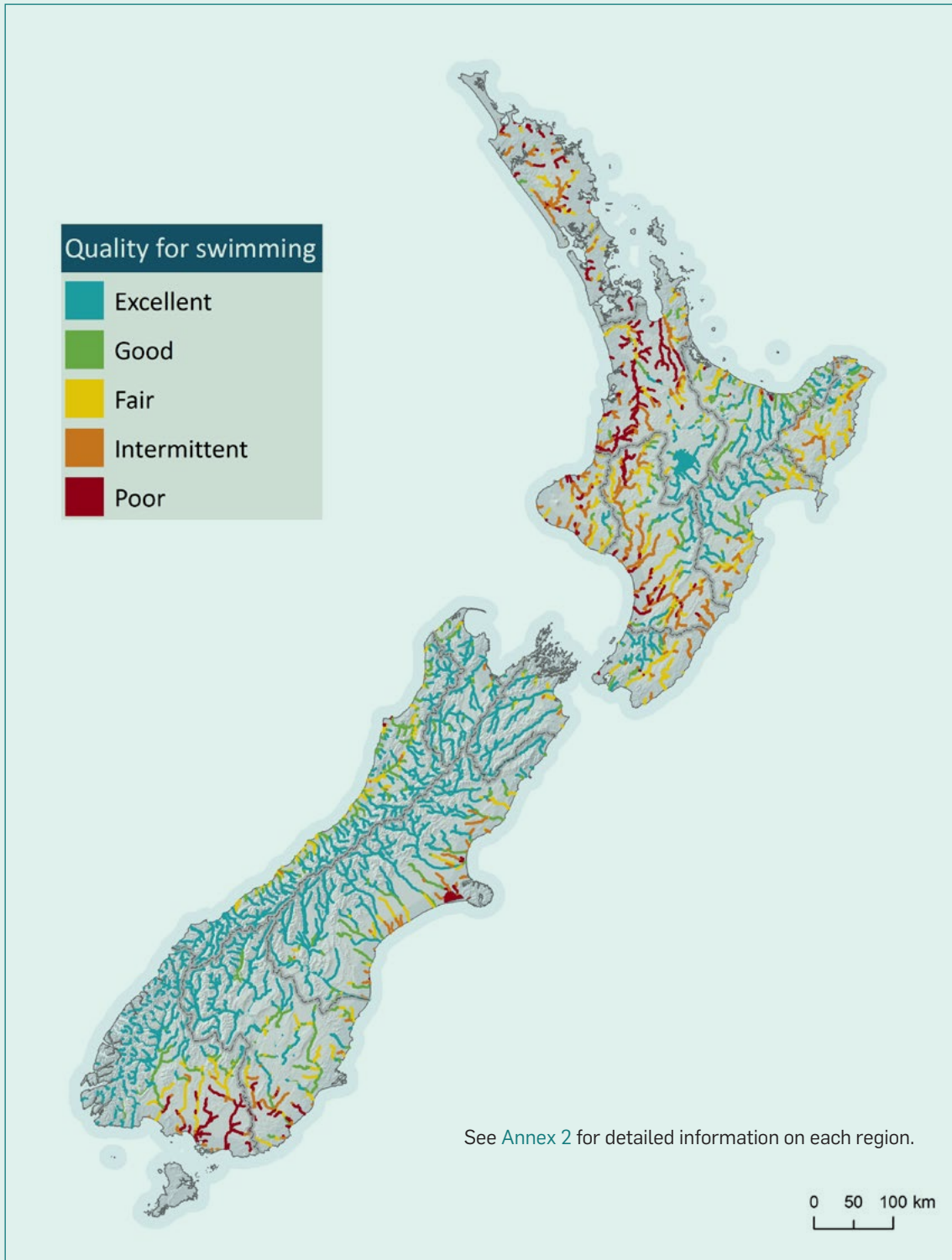
Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments	Allocation
National bottom lines	Freshwater Improvement Fund	Our Land and Water National Science Challenge
	Stock exclusion	
Iwi rights and interests		

Working with councils, we've gathered national data on levels of *E. coli* in rivers and toxic algae in lakes. We've used this to build an online tool that shows water quality for swimming. The maps are available on the [Ministry for the Environment website](#).

The maps use a combination of data gathered from monitored sites and modelled data. They show any river deep enough to swim in and all lakes with perimeters longer than 1,500 metres.

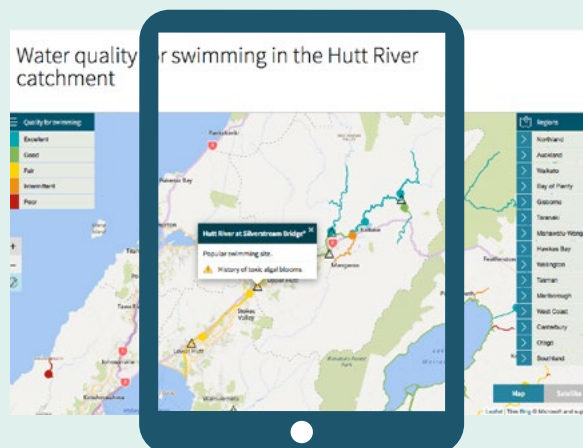
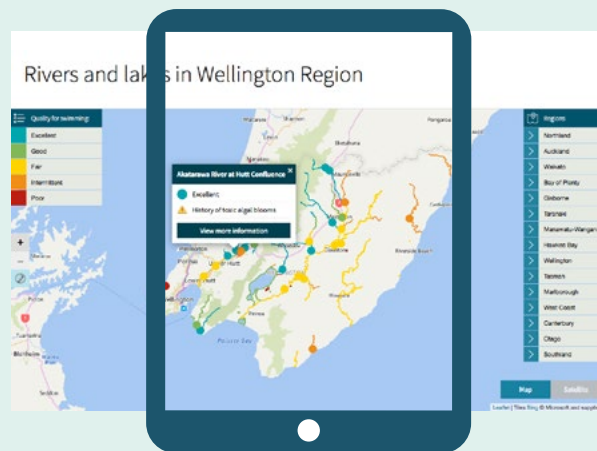
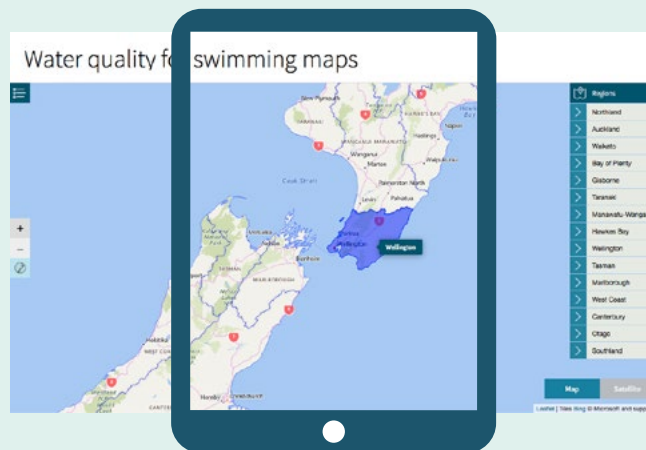
The maps complement information on the [LAWA website](#) which provides up-to-date local information on water quality for swimming. They are among a range of tools that will help communities and councils make decisions about improving water quality in their local rivers and lakes.

National rivers and lakes



Water quality for swimming maps, showing the Wellington region

These maps are available at:
www.mfe.govt.nz/fresh-water/about-freshwater



3. Amending the National Policy Statement for Freshwater Management 2014

Central government sets out its expectations for how councils should manage fresh water under the National Policy Statement for Freshwater Management 2014. In early 2016, we outlined proposed changes to the Freshwater NPS and sought public feedback. We've considered the feedback we received and are now consulting on specific amendments.

Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments (including iwi rights and interests)	Allocation
National bottom lines	Freshwater Improvement Fund	Our Land and Water National Science Challenge
	Stock exclusion	
Iwi rights and interests		



3.1 Swimming and recreational values

Most Kiwis have grown up swimming in a local lake or river. We need our Freshwater NPS to safeguard these waterways for our future. The Government recognises public concerns about the quality of our fresh water for swimming and is proposing to amend the Freshwater NPS to require councils to identify where the quality of lakes and rivers will be improved so they are suitable for swimming more often. The proposed amendments will require regional councils to consider swimming at all points of the objective and limit-setting process.

We have also proposed amendments to requirements for monitoring water quality, to require regional councils to report how often lakes and rivers are suitable for swimming. Councils will be required to identify in regional plans lakes and rivers that are currently suitable for swimming, and which water bodies will be improved so they are suitable for swimming more often, with specified timeframes for that improvement.

The references to secondary contact (wadeable rivers) in Objective A2 and elsewhere in the Freshwater NPS are confusing and have given rise to a perception the Freshwater NPS only requires regional councils to manage freshwater bodies so they are safe for boating and wading. This was not the intention, which was for council to identify with their communities those water bodies that needed to meet a swimmable standard. We propose removing the reference to secondary contact from throughout the Freshwater NPS and making it explicit that regional councils must improve the suitability of waterways for swimming.



3.2 Monitoring macroinvertebrates

Freshwater macroinvertebrates are aquatic animals that have a crucial role in freshwater ecology and respond quickly to changes in water quality. Therefore, monitoring macroinvertebrates is useful to assess quality trends in freshwater ecosystems.

We propose amending the Freshwater NPS to require regional councils to monitor macroinvertebrates in appropriate¹ rivers and streams as part of councils' assessment of the national value of ecosystem health.

Where monitoring indicates freshwater objectives are not being met, regional councils are required to establish methods, for example action plans, to respond to the results.

1 Practicalities mean that macroinvertebrate monitoring can only be done in rivers or streams that are wadeable. Wadeable in this sense does not refer to quality but the physical characteristics of the river or stream, that is, it must be possible for someone to wade into the river and gather the necessary data.



3.3 Maintain or improve overall water quality

Regional councils have been required to maintain or improve overall water quality across their regions. This provides regional councils and their communities some flexibility when establishing freshwater objectives in their regions. It is currently unclear how regional councils can demonstrate that water quality will be at least maintained.

We propose limiting the concept of 'maintain or improve' to within a freshwater management unit, the scale at which regional councils and communities are addressing freshwater management. Freshwater management units are usually catchments or parts of catchments. We also propose clarifying that regional councils can demonstrate water quality is at least maintained if:

- freshwater objectives are set within the same attribute band as current water quality, or
- where attributes are not described in the Freshwater NPS, if the value is maintained to its current level.



3.4 Managing nitrogen and phosphorus

Nitrogen and phosphorus are nutrients that promote aquatic plant growth. In high quantities, nitrogen and phosphorus can promote excessive aquatic plant growth, causing harm to freshwater ecosystems and in very high quantities nitrogen can be harmful to human health. Dissolved inorganic nitrogen (DIN) and dissolved reactive phosphorus (DRP) are measures of nitrogen and phosphorus available for plant growth.

The Freshwater NPS requires councils to manage for periphyton (slime), but is silent on managing for DIN or DRP. We propose amending the Freshwater NPS to clarify that regional councils must establish in-stream objectives for concentrations of DIN and DRP when they are managing for the periphyton attribute.



3.5 Economic well-being

Fresh water is vital to New Zealand's economy. It is critical to the success and future of our primary industries and tourism sector. Concerns have been raised that the Freshwater NPS does not specifically oblige councils to consider implications for economic well-being before they establish environmental limits. Meeting the requirements of the Freshwater NPS has substantial economic impacts and it is important community discussions are open and transparent about the costs and benefits.

To address these concerns, we propose amending the Freshwater NPS to make clear that regional councils must consider the community's economic well-being when making decisions about water quantity, deciding what level or pace of water quality improvements will be targeted, and when establishing freshwater objectives.



3.6 The effect of national bottom lines on infrastructure

The Freshwater NPS requires regional councils to set freshwater objectives (ie, the desired state of fresh water using measurable characteristics such as *E. coli*) for all freshwater bodies in their region. For the two compulsory values of ecosystem health and human health these freshwater objectives must be set above national bottom lines unless the provisions of Policy CA3 or CA4² apply.

Regional councils can consider setting freshwater objectives below national bottom lines if current water quality is below national bottom lines and is caused by either naturally occurring processes or infrastructure (provided that infrastructure is listed in Appendix 3 of the Freshwater NPS).

Appendix 3 is currently empty and we do not propose populating it at this stage.

We propose to amend Policy CA3 to clarify that regional councils can only set freshwater objectives below national bottom lines for attributes that are currently below national bottom lines and only in the physical area where the infrastructure contributes to the degraded water quality. We also propose to amend Policy CA3 to make clear that councils can only set freshwater objectives below national bottom lines if it is reasonably necessary for the continued operation of the infrastructure.

² This proposal does not relate to Policy CA4.



3.7 Coastal lakes and lagoons

The Freshwater NPS applies to all fresh water but a footnote to the total nitrogen lakes attribute has caused confusion as to whether the lake attributes apply to coastal lakes and lagoons that intermittently open to the sea. To address this confusion, we propose removing the footnote and providing some direction about the unique monitoring requirements for these coastal lakes and lagoons.



3.8 Te Mana o Te Wai

Te Mana o Te Wai was introduced in the Freshwater NPS in 2014 but its meaning and effect in the Freshwater NPS is unclear. It encompasses the integrated and holistic health and well-being of a water body. When Te Mana o Te Wai is given effect, the water body will sustain the full range of environmental, social, economic and cultural values the community holds.

We propose further clarification of the meaning of Te Mana o Te Wai in the preamble, the inclusion of a descriptor in the section 'National significance of fresh water and Te Mana o Te Wai' and amending the names and some of the descriptions of the national values in Appendix 1 of the Freshwater NPS. We also propose a new objective and policy, requiring regional councils to consider and recognise Te Mana o Te Wai when giving effect to the Freshwater NPS. Clarification of how to implement Te Mana o Te Wai will be provided within Policy CA2.

Give us your feedback: Amending the Freshwater NPS

If these matters are not addressed, we think it could lead to issues such as degraded water quality, ineffective freshwater management, and lost economic opportunity. [Annex 1](#) of this document contains a marked up version of the Freshwater NPS incorporating these proposed changes and further information can be found in the [draft regulatory impact statement for the proposed amendments](#) and the [section 32 analysis of the proposed amendments](#). We want to hear your comments on these proposals.

4. Funding to improve fresh water

Targets and better data will help us prioritise for the future, and our new maps will give New Zealanders better information about water quality. But many of our waterways need action now.

Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments	Allocation
National bottom lines	Freshwater Improvement Fund	Our Land and Water National Science Challenge
	Stock exclusion	
Iwi rights and interests		

The Government has committed more than \$350 million to clean up or protect some of New Zealand's most iconic lakes and rivers. Over \$144m of this funding has been spent to date.

The map on the following page shows examples of Government investment in freshwater protection and clean ups.

Freshwater Improvement Fund

Last year the Government approved a \$100 million Freshwater Improvement Fund for projects that improve freshwater management. The fund is available for the next 10 years.

The aim is to make the biggest difference with the available funding. That's why we're focusing on water bodies (lakes, rivers, streams, groundwater and wetlands) in vulnerable catchments that are showing signs of stress but have not yet reached a 'tipping point' where it becomes more expensive and more difficult to restore these water bodies to good health.

Eligibility criteria for the fund are:

1. The project must contribute to the improvement of the management of New Zealand's freshwater bodies.
2. The project must meet one or more of the following:
 - achieve demonstrable co-benefits such as:
 - improved fresh, estuarine or marine water quality or quantity
 - increased biodiversity
 - habitat protection
 - soil conservation
 - improved community outcomes such as to recreational opportunity or mahinga kai

- reduction to current or future impacts of climate change

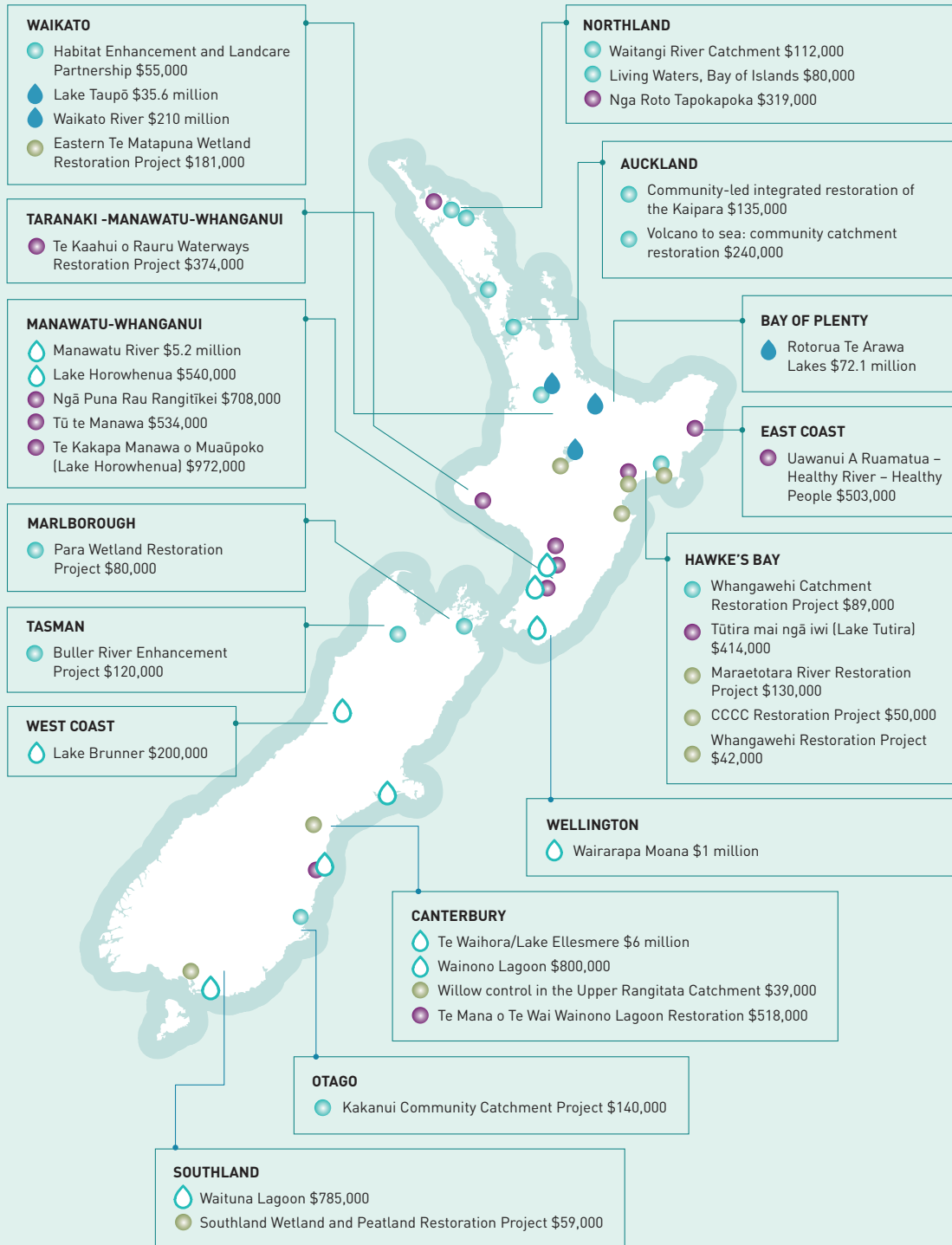
- reduced pressure on urban or rural infrastructure

- increase iwi/hapū, community, local government or industry capability and capacity in relation to freshwater management
- establish or enhance collaborative management of fresh water
- increase the application of mātauranga Māori in freshwater management
- include an applied research component which contributes to improved understanding of freshwater interventions and their outcomes.

3. The minimum request for funding is \$200,000 (excluding GST).
4. The fund will cover a maximum of 50% of the total project cost.
5. The project will be funded for a maximum period of up to 5 years after which the project objectives will have been achieved or the project will be self-funding.
6. The project must achieve benefits that would not otherwise be realised without the fund or are not more appropriately funded through other sources.
7. The effectiveness of the project and its outcomes will be monitored, evaluated and reported.
8. An appropriate governance structure is in place (or one will be established as part of the project).
9. The applicant must be a legal entity.

Applications for the Freshwater Improvement Fund are open now. Find out more at www.mfe.govt.nz/more/funding/freshwater-improvement-fund.

Examples of significant Government investment in freshwater protections and clean ups



KEY

- Community Environment Fund projects
- Te Mana o Te Wai Fund projects
- DOC Community Fund projects (2014/15)
- Fresh Start for Freshwater Clean-up Fund projects
- Other Crown funded clean-up and protection projects

5. Keeping stock out of our waterways

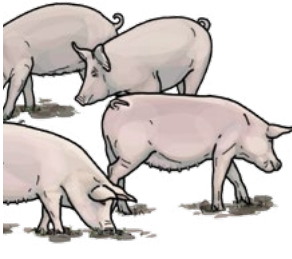



We know that livestock in our waterways can lead to problems with water quality, erosion and sediment, particularly in terms of health risk. We've proposed new requirements to stop livestock from entering streams, rivers, lakes and wetlands. For many waterways this will have an immediate benefit.

Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments	Allocation
National bottom lines	Freshwater Improvement Fund	Our Land and Water National Science Challenge
	Stock exclusion	
Iwi rights and interests		

We propose starting with excluding dairy cattle and pigs from most lakes, rivers and streams from 1 July 2017, with compulsory stock exclusion to follow on a staggered basis through to 2030, extending to include beef and deer and depending on land gradient.

These requirements would apply to the bed and banks of lakes and natural wetlands, and permanently flowing waterways on plains (including rivers, streams and drains). On rolling and steep land they only apply for waterways that are over 1 metre wide at any point.

Land owners unable to meet the requirements can apply for permission to instead develop a stock exclusion plan with their regional council. Land owners who fail to meet the requirements may face a fine of up to \$2000.

<h2>Pigs</h2>	<h2>Dairy cows [on milking platform]</h2>	<h2>Dairy support</h2>	<h2>Deer</h2>
			
<p>1 July 2017</p> <p>On steeper land, pigs must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2017</p> <p>On steeper land, dairy cattle on milking platforms must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On steeper land, dairy support cattle that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On steeper land, deer that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>
<p>1 July 2017</p> <p>On rolling land, pigs must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2017</p> <p>On rolling land, dairy cattle on milking platforms must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On rolling land, dairy support cattle must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On rolling land, deer that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.</p> <p>1 July 2030</p> <p>On rolling land, deer must be excluded from waterways over 1 metre wide, lakes and wetlands.</p>
<p>1 July 2017</p> <p>On the plains, pigs must be excluded from waterways over 1 metre wide, lakes and wetlands.</p> <p>1 July 2020</p> <p>On the plains, pigs must be excluded from all waterways, lakes and wetlands.</p>	<p>1 July 2017</p> <p>On the plains, dairy cattle on milking platforms must be excluded from waterways over 1 metre wide, lakes and wetlands.</p> <p>1 July 2020</p> <p>On the plains, dairy cattle on milking platforms must be excluded from all waterways, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On the plains, dairy support cattle must be excluded from all waterways, lakes and wetlands.</p>	<p>1 July 2022</p> <p>On the plains, deer that are break feeding must be excluded from all waterways, lakes and wetlands.</p> <p>1 July 2025</p> <p>On the plains, deer must be excluded from all waterways, lakes and wetlands.</p>

Beef cattle



1 July 2022

On steeper land, beef cattle that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.

1 July 2022

On rolling land, beef cattle that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.

1 July 2030

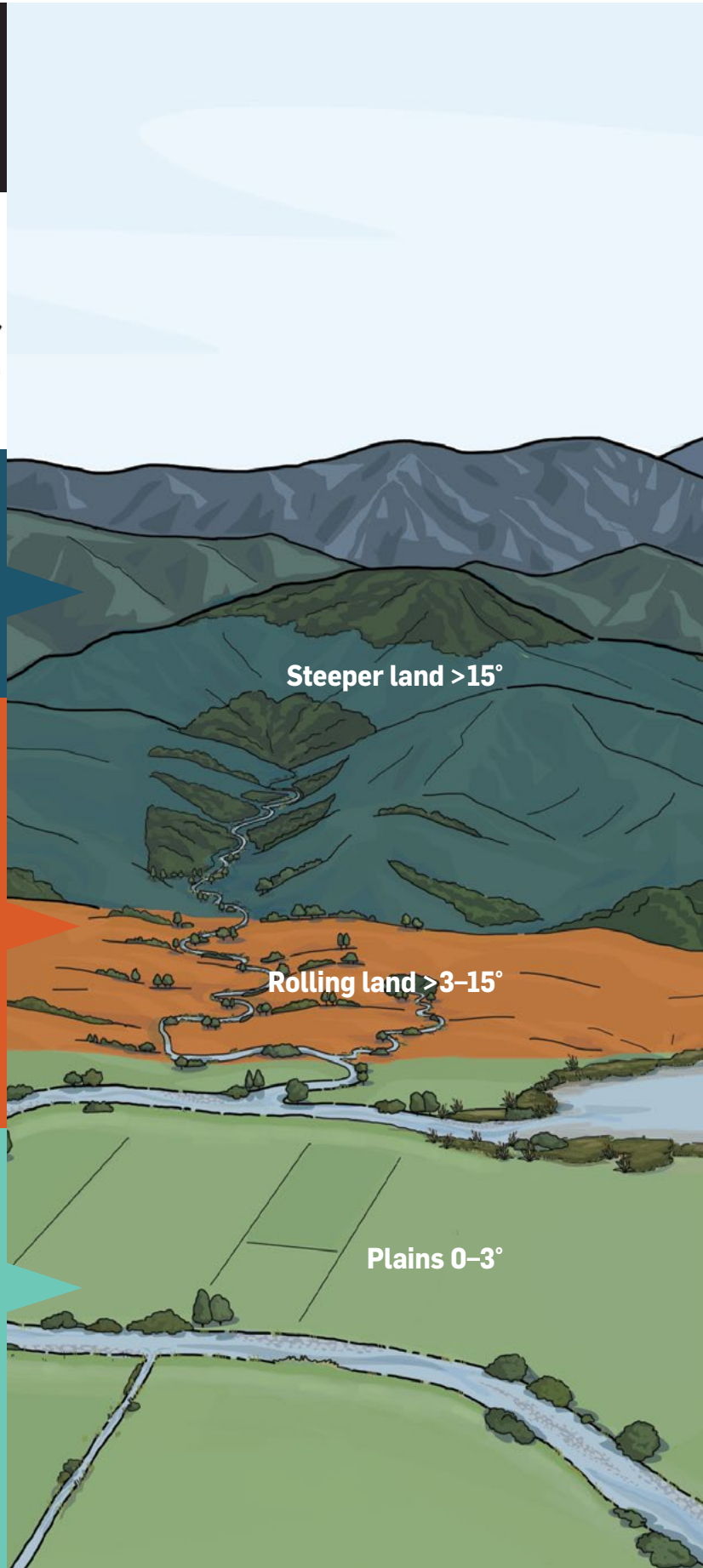
On rolling land, beef cattle that are break feeding must be excluded from waterways over 1 metre wide, lakes and wetlands.

1 July 2022

On the plains, beef cattle that are break feeding must be excluded from all waterways, lakes and wetlands.

1 July 2025

On the plains, beef cattle must be excluded from all waterways, lakes and wetlands.



Steeper land >15°

Rolling land >3-15°

Plains 0-3°

What's planned

Any regulation for stock exclusion will be drafted by the Parliamentary Counsel Office following this consultation. An outline of the proposal is provided here.³

Proposal for stock exclusion

Dairy cattle on milking platforms⁴ and farmed pigs must be excluded from water bodies (as defined below) by 1 July 2017 (see table 1).

Dairy support cattle⁵ (including third party dairy grazing), plus beef cattle and farmed deer, must be excluded from water bodies on land that has a slope of between 0 and 15 degrees, according to the Land Resources Inventory (LRI) slope dataset⁶, by the dates in table 1.

This information will be communicated to land owners and regional councils using an online interactive mapping tool.

In addition to the above, where strip-grazing (break feeding) is undertaken (ie, where stock are kept behind a temporary fence which is moved regularly to allow access to sections of the paddock at a time), dairy support cattle, beef cattle and deer in the paddock must be excluded from water bodies, regardless of slope of the land, by 1 July 2022.

To achieve the above, there must be in place an effective method of exclusion preventing stock access to water bodies.

3 The outline of the proposal is subject to further refinement.

4 The milking platform is the area of a dairy farm where dairy cattle being milked are kept on a daily basis during the milking season. This can include grazing.

5 Dairy support cattle are dairy cattle not being milked (young animals or mixed-aged cows) that are grazed off the milking platform either temporarily or throughout the year.

6 A national spatial dataset developed by Landcare Research that classifies land into slope classes 0-3°, 4-7°, 8-15°, 16-20°, 21-25° and over 25°.

Stock crossings

Cattle, deer and pigs are able to enter water bodies for the purpose of crossing from one side to the other as long as they are being supervised and are actively driven across the water body in one continuous movement, where this occurs less frequently than once per week. Stock crossings used once or more per week, must be bridged or culverted by 1 July 2019.

Water bodies

The stock exclusion requirements outlined above apply to the bed and banks of:

- a. waterways (rivers, streams and drains) that are permanently flowing, and where the active channel is over 1 metre wide at any point
- b. lakes as defined in the Resource Management Act (bodies of fresh water which are entirely or nearly surrounded by land)
- c. natural wetlands, as per the Resource Management Act definition (permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions) but not including wet pasture, or where water temporarily ponds after rain or pasture containing patches of rushes
- d. permanently flowing waterways (rivers, streams and drains) of any size on land with a slope of between 0 and 3 degrees as classified by the LRI slope dataset. Dairy cattle on milking platforms and pigs have until 1 July 2020 before they must be excluded from these smaller streams. For dairy support, beef cattle and deer the relevant deadline for exclusion on the plains relates to all waterways including streams wider than 1 metre.

The requirements do not apply to ephemeral surface flows that only exist after periods of rainfall. They also do not apply to artificial water bodies that do not flow into natural water bodies (eg, stock dams, irrigation storage ponds, effluent ponds).

Alternative option

Where a land owner is unable to meet the requirements set out above (eg, due to significant practical constraints), they may apply to the relevant regional council for permission to instead develop a 'stock exclusion plan'. This must set out where and when stock will be excluded from water bodies on their land, and where complete stock exclusion is not feasible, what alternative mitigations will be undertaken to manage the environmental impacts of stock access to water bodies. This could be standalone or form part of a wider farm environment plan or land environment plan and must be approved in writing by the regional council.

Enforcement

If a land owner does not meet the requirements above, they may be required by the regional council to pay an infringement fee of up to \$2000 for each instance of non-compliance. The regional council must allow the land owner a reasonable length of time to achieve compliance before any additional fines are given out.

In the case of repeat or serious breaches, regional councils can take other enforcement such as prosecution.

Regional council discretion

Regional councils are able to set more stringent requirements than outlined above.

Including a riparian buffer would be best management practice. Regional councils should consider whether riparian buffers should be required, particularly where water quality issues exist.

Table 1:

Farm/stock type	Plains (0-3 °)	Undulating / rolling land (>3-15 °)	Steeper land (>15 ° and over)
Dairy cattle (on milking platforms) and pigs	1 July 2017 for waterways over 1 metre wide on all slopes 1 July 2020 for waterways less than 1 metre wide on the plains		
Dairy support (on either land owned/leased by the dairy farmer or third party land)	1 July 2022 for all waterways on the plains regardless of size and waterways over 1 metre wide on rolling land		Only where break feeding, by 1 July 2022
Beef cattle and deer	1 July 2025 for all waterways regardless of size	1 July 2030 for waterways over 1 metre wide	
	Where break feeding, by 1 July 2022		

Give us your feedback: Keeping stock out of waterways

In March 2016, we sought public feedback on our intention to exclude stock from waterways. Further information can be found in the [draft regulatory impact statement for stock exclusion](#). We want to hear your comments on the detail of these proposals.

6. Future work programme

Along with the many proposals in this document there is significant work also underway on the next steps of our freshwater management programme.

Freshwater Reform Programmes		
2009 – 16	NOW	2017 onwards
Water metering	Swimming targets	Good management practices (urban and rural)
	Swimmability maps and website	
Freshwater NPS	Freshwater NPS amendments	
	Freshwater Improvement Fund	Our Land and Water National Science Challenge
National bottom lines	Stock exclusion	
	Iwi rights and interests	

6.1 Freshwater allocation

Since 2013, we've worked with the Land and Water Forum, the Iwi Leaders Group, and other partners to develop clearer direction for councils, to support them to maximise the economic opportunity from their fresh water, while working within environmental limits. This work is still in progress.

Officials are working with a Technical Advisory Group, established in 2016. In November, a review of allocation in different jurisdictions was produced. The Group is due to report back in late 2017, for Government, the Land and Water Forum and Freshwater Iwi Leaders Group consideration in 2018.

Better allocation of fresh water will ensure our freshwater resources are used as efficiently and equitably as is possible. It will also ensure our freshwater ecosystems will be protected and, if needed, enhanced.

6.2 Good management practices

Good management of fresh water, both in the urban and rural environments, is critical to improving our lakes, rivers and aquifers. Many land owners and developers are already leading the way when it comes to good practice of freshwater management. We have the opportunity to make these practices more widespread.

Working with our partners in councils and industry groups, the Government is working with relevant sectors to adopt good management practices – both in the rural and urban environments. We have provided funding for innovative projects through the Sustainable Farming Fund and the Primary Growth Partnership. We expect to have good management practices progressed in key sectors in 2019.

6.3 National Science Challenge – Our Land and Water

National Science Challenges are dedicated to breaking new ground in areas of science that are crucial to New Zealand's future.

One of 11 projects, the Our Land and Water Challenge receives up to \$96.9 million over 10 years. Hosted by AgResearch, it involves the six other Crown research institutes' research partners and five universities and affiliates.

The research focuses on projects such as:

- developing 'next generation' farming systems that deliver high profits with low environmental footprint through new speciality products, new forage, and new feed and infrastructure systems
- designing effective collaborative processes
- tools for achieving water limits.

Find out more on the [Ministry of Business, Innovation and Employment's website](#).

How to make a submission

The Government welcomes your feedback on the proposed amendments to the National Policy Statement for Freshwater Management and the stock exclusion proposals contained within this document. You are welcome to comment on other aspects of the document and all comments will be considered.

To ensure your point of view is clearly understood, you should explain your rationale and provide supporting evidence where appropriate.

There are two ways you can make a submission:

- Use our online submission tool, available at www.mfe.govt.nz/consultation/clean-water-2017.
- Type up or write out your own submission.

If you are posting your submission, send it to Clean Water Consultation 2017, Ministry for the Environment, PO Box 10362, Wellington 6143 and include:

- the title of the consultation (Clean Water Consultation 2017)
- your name or organisation name
- postal address
- telephone number
- email address.

If you are emailing your submission, send it to watersubmissions@submissionsmfe.govt.nz as a:

- PDF
- Microsoft Word document.

Submissions close at 5.00pm on Friday 28 April 2017.

Contact for queries

Please direct any queries to:

Phone: +64 4 439 7400

Email: watercomments@mfe.govt.nz

Publishing and releasing submissions

All or part of any written submission (including names of submitters), may be published on the Ministry for the Environment's website www.mfe.govt.nz.

Unless you clearly specify otherwise in your submission, the Ministry will consider that you have consented to posting of both your submission and your name on our website.

Contents of submissions may also be released to the public under the Official Information Act 1982 following requests to the Ministry for the Environment (including via email). Please advise if you have any objection to the release of any information contained in a submission and, in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information. We will take into account all such objections when responding to requests for copies of, and information on, submissions to this document under the Official Information Act.

The Privacy Act 1993 applies certain principles about the collection, use and disclosure of information about individuals by various agencies, including the Ministry for the Environment. It governs access by individuals to information about themselves held by agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry only in relation to the matters covered by this document. Please clearly indicate in your submission if you do not wish your name to be included in any summary of submissions that the Ministry may publish. The Ministry will not release other personal information (email address, phone numbers, or postal address).

Annex 1: Proposed amendments to the National Policy Statement for Freshwater Management 2014

Reader's note: For ease of reading, the first half of the Additional National Values table in Appendix 1 on pages 26-28 is shown in strike-out, and that content has been moved and is presented in its proposed new order within the table on pages 28-30.

NATIONAL POLICY STATEMENT for Freshwater Management 2014

issued by notice in gazette on 4 July 2014

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Preamble

Fresh water is essential to New Zealand's economic, environmental, cultural and social well-being. Fresh water gives our primary production, tourism, and energy generation sectors their competitive advantage in the global economy. Fresh water is highly valued for its recreational aspects and it underpins important parts of New Zealand's biodiversity and natural heritage. Fresh water has deep cultural meaning to all New Zealanders. Many of New Zealand's lakes, rivers and wetlands are iconic and well known globally for their natural beauty and intrinsic values.

The Treaty of Waitangi (Te Tiriti o Waitangi) is the underlying foundation of the Crown-iwi/hapū relationship with regard to freshwater resources. Addressing tāngata whenua values and interests across all of the well-beings, and including the involvement of iwi and hapū in the overall management of fresh water, are key to meeting obligations under the Treaty of Waitangi.

All New Zealanders have a common interest in ensuring the country's freshwater lakes, rivers, aquifers and wetlands are managed wisely.

New Zealand faces challenges in managing our fresh water to provide for all of the values that are important to New Zealanders. The quality, health, availability and economic value of our fresh waters are under threat. These challenges are likely to increase over time due to the impacts of climate change.

To respond effectively to these challenges and issues we need to have a good understanding of our freshwater resources, the threats to them and provide a management framework that enables water to contribute both to New Zealand's economic growth and environmental integrity and provides for the values that are important to New Zealanders.

Given the vital importance of freshwater resources to New Zealand and New Zealanders, and in order to achieve the purpose of the Resource Management Act 1991 (the Act), the Crown recognises there is a particular need for clear central government policy to set a national direction, though the management of the resource needs to reflect the catchment-level variation between freshwater bodies and different demands on the resource across regions. This includes managing land use and development activities that affect fresh water so that growth is achieved with a lower environmental footprint.

This national policy statement [recognises Te Mana o te Wai and](#) sets out objectives and policies that direct local government to manage water in an integrated and sustainable way, while providing for economic growth within set water quantity and quality limits. The national policy statement is a first step to improve freshwater management at a national level.

As demand for fresh water increases, it is vital to account for all freshwater takes and sources of relevant contaminants. The freshwater accounting requirements of this national policy statement will provide information for councils to use in establishing freshwater objectives and limits and in targeting their management of fresh water.

This national policy statement provides a National Objectives Framework to assist regional councils and communities to more consistently and transparently plan for freshwater objectives. [Te Mana o te Wai is an integral part of the framework that forms the platform](#) for community discussions about the desired state of fresh water relative to the current state. New Zealanders generally aspire to high standards for our waterways and outcomes that are better than those achieved under the status quo. Freshwater planning will require an iterative approach that tests a range of possible objectives and methods for their achievement, including different timeframes for achieving objectives. This is intended to ensure that the implications of proposed objectives are clear for councils and communities.

The national policy statement ~~sets national bottom lines for two compulsory values – ecosystem health and human health for recreation and minimum acceptable states for other national values. recognises acknowledges~~ iwi and community ~~values by recognising the range of iwi and community~~ interests in fresh water, including environmental, social, economic, and cultural values. [There are two compulsory values – ecosystem health and human health – and national bottom lines have been set for these values.](#)

[National bottom lines in the national policy statement are not standards to aim for. Where freshwater management units are below national bottom lines they must be improved to at least the national bottom line, or better, over time. It is up to communities and iwi, through councils, to determine the pathway and timeframe for ensuring freshwater management units meet the national bottom lines. Where changes in the way communities use water are required, the pace of those changes should take into account economic impacts. Improvements in freshwater quality may take generations depending on the characteristics of each freshwater management unit.](#)

[Freshwater objectives for a range of tāngata whenua values are intended to recognise Te Mana o te Wai.](#) Iwi and hapū have a kinship relationship with the natural environment, including fresh water, through shared whakapapa. Iwi and hapū recognise the importance of fresh water in supporting a healthy ecosystem, including human health, and have a reciprocal obligation as kaitiaki to protect freshwater quality.

~~Overall~~ [The national policy statement requires](#) freshwater quality within a ~~region-~~ [freshwater management unit must to](#) be maintained [at its current level \(where community values are currently supported\)](#) or improved [\(where community values are not currently supported\)](#). [For large lakes and rivers, the water quality in terms of E. coli levels must be improved.](#) This national policy statement allows some variability in terms of freshwater quality, ~~including between freshwater management units,~~ as long as the overall freshwater quality is maintained within a [region freshwater management unit.](#)

~~National bottom lines in the national policy statement are not standards that must be achieved immediately. Where freshwater management units are below national bottom lines, they will need to be improved to at least the national bottom lines over time. It is up to communities and iwi to determine the pathway and timeframe for ensuring freshwater management units meet the national bottom lines. Where changes in community behaviours are required, adjustment timeframes should be decided based on the economic effects that result from the speed of change. Improvements in freshwater quality may take generations depending on the characteristics of each freshwater management unit.~~

The Government wants New Zealand's rivers and lakes to be safe for swimming as often as possible. Specifically, it has set a target of 90% of rivers and lakes (as defined) to be swimmable by 2040. The expectation is that more of these rivers and lakes will be swimmable more of the time. The risks to human health from contact with fresh water must be reduced. There is an interim goal of 80% of these rivers and lakes to be swimmable by 2030.

Monitoring plans are intended to be practical and affordable. It is not possible for regional councils to monitor every drop of fresh water. Monitoring against freshwater objectives need only be undertaken at representative sites within a region as identified by regional councils. Monitoring plans are also intended to recognise the importance of long term trends in data.

Setting enforceable quality and quantity limits is a key purpose of this national policy statement. This is a fundamental step to achieving environmental outcomes and creating the necessary incentives to use fresh water efficiently, while providing certainty for investment. Water quality and quantity limits must reflect local and national values. The process for setting limits should be informed by the best available information and scientific and socio-economic knowledge.

Once limits are set, freshwater resources need to be allocated to users, while providing the ability to transfer entitlements between users so that we maximise the value we get from water. Where water resources are over-allocated (in terms of quality and quantity) to the point that national and local values are not met, we also need to ensure that over-allocation is reduced over agreed timeframes.

The New Zealand Coastal Policy Statement 2010 addresses issues with water quality in the coastal environment. The management of coastal water and fresh water requires an integrated and consistent approach.

This preamble may assist the interpretation of the national policy statement.

Review

The Minister for the Environment intends to seek an independent review of the implementation and effectiveness of this national policy statement in achieving all its objectives and policies and in achieving the purpose of the Act, no later than 1 July 2016. The Minister shall then consider the need to review, change or revoke this national policy statement. Collection of monitoring data to inform this review will begin at least two years prior to the review.

~~This preamble may assist the interpretation of the national policy statement.~~

National significance of fresh water and Te Mana o Te Wai

This national policy statement is about recognising the national significance of fresh water for all New Zealanders and Te Mana o te Wai.

A range of community and tāngata whenua values, including those identified as appropriate from Appendix 1, may collectively recognise the national significance of fresh water and Te Mana o te Wai as a whole. The aggregation of community and tāngata whenua values and the ability of fresh water to provide for them over time recognises the national significance of fresh water and Te Mana o te Wai.

Title

This national policy statement is the National Policy Statement for Freshwater Management 2014.

Commencement

This national policy statement will take effect 28 days after the date of its issue by notice in the New Zealand Gazette.

National significance of fresh water and Te Mana o te Wai

The matter of national significance to which this national policy statement applies is the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.

The health and well-being of our freshwater bodies is vital for the health and well-being of our land, our resources (including fisheries, flora and fauna) and our communities.

Te Mana o te Wai is the integrated and holistic well-being of a freshwater body.

Upholding Te Mana o te Wai acknowledges and protects the mauri of the water. This requires that in using water you must also provide for Te Hauora o te Taiao (health of the environment), Te Hauora o te Wai (health of the water body) and Te Hauora o te Tangata (the health of the people).

Te Mana o te Wai incorporates the values of tangata whenua and the wider community in relation to each water body.

The engagement promoted by Te Mana o te Wai will help the community, including tangata whenua, and regional councils develop tailored responses to freshwater management that work within their region.

By recognising Te Mana o te Wai as an integral part of the freshwater management framework it is intended that the health and well-being of freshwater bodies is at the forefront of all discussions and decisions about freshwater, including the identification of freshwater values and objectives, setting limits and the development of policies and rules. This is intended to ensure that water is available for the use and enjoyment of all New Zealanders, including t̄angata whenua, now and for future generations.

Interpretation

In this national policy statement:

“Attribute” is a measurable characteristic of fresh water, including physical, chemical and biological properties, which supports particular values.

“Attribute state” is the level to which an attribute is to be managed for those attributes specified in Appendix 2.

“Compulsory values” mean the national values relating to ecosystem health and to human health for recreation included in Appendix 1 and for which a non-exhaustive list of attributes is provided in Appendix 2.

“Contact with fresh water” means [all recreational contact with water on a spectrum from activities involving occasional immersion to those involving frequent immersion.](#)

“Efficient allocation” includes economic, technical and dynamic efficiency.

“Environmental flows and/or levels” are a type of limit which describes the amount of water in a freshwater management unit (except ponds and naturally ephemeral water bodies) which is required to meet freshwater objectives. Environmental flows for rivers and streams must include an allocation limit and a minimum flow (or other flow/s). Environmental levels for other freshwater management units must include an allocation limit and a minimum water level (or other level/s).

“Existing freshwater quality” means the quality of the fresh water at the time the regional council commences the process of setting or reviewing freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4.

“Freshwater management unit” is the water body, multiple water bodies or any part of a water body determined by the regional council as the appropriate spatial scale for setting freshwater objectives and limits and for freshwater accounting and management purposes.

“Freshwater objective” describes an intended environmental outcome in a freshwater management unit.

“Freshwater quality accounting system” means a system that, for each freshwater management unit, records, aggregates and keeps regularly updated, information on the measured, modelled or estimated:

- a) loads and/or concentrations of relevant contaminants;
- b) sources of relevant contaminants;
- c) amount of each contaminant attributable to each source; and
- d) where limits have been set, proportion of the limit that is being used.

“Freshwater quantity accounting system” means a system that, for each freshwater management unit, records, aggregates and keeps regularly updated, information on the measured, modelled or estimated:

- a) total freshwater take;
- b) proportion of freshwater taken by each major category of use; and
- c) where limits have been set, proportion of the limit that has been taken.

“Freshwater take” is a take of ground or surface fresh water whether authorised or not.

“Immersion” means [human immersion in fresh water](#).

“Large rivers and lakes” means, for the purposes of Objective A3, Policy A5, Policy CA2(f) (iaaa), [rivers that are fourth order or above, and lakes larger than 1.5 kilometres in perimeter on average](#).

“Limit” is the maximum amount of resource use available, which allows a freshwater objective to be met.

“Minimum acceptable state” [means is, where specified in Appendix 2](#), the minimum level, [specified in Appendix 2](#), at which a freshwater objective may be set in a regional plan in order to provide for the associated national value.

“National bottom line” means, [where specified](#), the minimum acceptable state for the compulsory values specified in Appendix 2.

“National value” means any value described in Appendix 1.

“Naturally occurring processes” means processes that could have occurred in New Zealand prior to the arrival of humans.

“Outstanding freshwater bodies” are those water bodies identified in a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values.

“Over-allocation” is the situation where the resource:

- a. has been allocated to users beyond a limit; or
- b. is being used to a point where a freshwater objective is no longer being met.

This applies to both water quantity and quality.

~~**“Secondary contact”** means [people’s contact with fresh water that involves only occasional immersion and includes wading or boating \(except boating where there is high likelihood of immersion\)](#).~~

~~**“Suitable for immersion more often”** means [reducing the frequency and magnitude of E. coli exceedances over time, according to the monitoring methodology included in Appendix 5](#).~~

“Target” is a limit which must be met at a defined time in the future. This meaning only applies in the context of over-allocation.

“Value” means:

- a) any national value; and
- b) includes any value in relation to fresh water, that is not a national value, which a regional council identifies as appropriate for regional or local circumstances (including any use value).

Terms given meaning in the Act have the meanings so given.

AAA. Te Mana o te Wai

Objective AAA1

To consider and recognise Te Mana o te Wai in the management of fresh water.

Policy AAA1

By every regional council making or changing regional policy statements and plans to consider and recognise Te Mana o te Wai, noting that:

- a) Te Mana o te Wai recognises the connection between water and the broader environment - Te Hauora o te Taiao (health of the environment), Te Hauora o te Wai (health of the waterbody) and Te Hauora o te Tangata (the health of the people; and
- b) local and regional values identified through engagement and discussion with the community, including tangata whenua must inform the setting of freshwater objectives and limits.

A. Water quality

Objective A1

To safeguard:

- a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and
- b) the health of people and communities, at least as affected by secondary contact with fresh water;

in sustainably managing the use and development of land, and of discharges of contaminants.

Objective A2

The overall quality of fresh water within a region is freshwater management unit is maintained or improved while:

- a) protecting the significant values of outstanding freshwater bodies;
- b) protecting the significant values of wetlands; and
- c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated;

then providing for economic well-being, including productive economic opportunities, within environmental limits.

Objective A3

The quality of fresh water in large rivers and lakes is improved so the risk to human health is reduced and they are suitable for immersion more often.

Policy A1

By every regional council making or changing regional plans to the extent needed to ensure the plans:

- a) establish freshwater objectives in accordance with Policies CA1-CA4 and set freshwater quality limits for all freshwater management units in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:
 - i. the reasonably foreseeable impacts of climate change;
 - ii. the connection between water bodies; and
 - iii. the connections between freshwater bodies and coastal water; and
- b) establish methods (including rules) to avoid over-allocation.

Policy A2

Where freshwater management units do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory), in a way that considers the sources of relevant contaminants recorded under Policy CC1, to assist the improvement of water quality in the freshwater management units, to meet those targets, and within a defined timeframe.

Policy A3

By regional councils:

- a) imposing conditions on discharge permits to ensure the limits and targets specified pursuant to Policy A1 and Policy A2 can be met; and
- b) where permissible, making rules requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

Policy A4 and direction (under section 55) to regional councils

By every regional council amending regional plans (without using the process in Schedule 1) to the extent needed to ensure the plans include the following policy to apply until any changes under Schedule 1 to give effect to Policy A1 and Policy A2 (freshwater quality limits and targets) have become operative:

- "1. When considering any application for a discharge the consent authority must have regard to the following matters:*
- a. *the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water; and*
 - b. *the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.*
- 2. When considering any application for a discharge the consent authority must have regard to the following matters:*
- a. *the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their **secondary** contact with fresh water; and*
 - b. *the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their **secondary** contact with fresh water resulting from the discharge would be avoided.*

3. *This policy applies to the following discharges (including a diffuse discharge by any person or animal):*
 - a. *a new discharge; or*
 - b. *a change or increase in any discharge –*
of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.
4. *Paragraph 1 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.*
5. *Paragraph 2 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 takes effect."*

Policy A5

By every regional council making or changing regional plans to the extent needed to ensure the plans:

- a) identify large rivers and lakes and whether they are suitable for immersion and;
- b) state what improvements will be made to large rivers and lakes so they are suitable for immersion more often and over what timeframe.

For purposes of A5(a), **suitable for immersion** means large rivers and lakes in Attribute State A, B or C in the *E. coli* attribute table in Appendix 2 of this national policy statement.

B. Water quantity

Objective B1

To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water, [while providing for economic well-being, including productive economic opportunities.](#)

Objective B2

To avoid any further over-allocation of fresh water and phase out existing over-allocation.

Objective B3

To improve and maximise the efficient allocation and efficient use of water.

Objective B4

To protect significant values of wetlands and of outstanding freshwater bodies.

Policy B1

By every regional council making or changing regional plans to the extent needed to ensure the plans establish freshwater objectives in accordance with Policies CA1-CA4 and set environmental flows and/or levels for all freshwater management units in its region (except ponds and naturally ephemeral water bodies) to give effect to the objectives in this national policy statement, having regard to at least the following:

- a) the reasonably foreseeable impacts of climate change;
- b) the connection between water bodies; and
- c) the connections between freshwater bodies and coastal water.

Policy B2

By every regional council making or changing regional plans to the extent needed to provide for the efficient allocation of fresh water to activities, within the limits set to give effect to Policy B1.

Policy B3

By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.

Policy B4

By every regional council identifying methods in regional plans to encourage the efficient use of water.

Policy B5

By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.

Policy B6

By every regional council setting a defined timeframe and methods in regional plans by which over-allocation must be phased out, including by reviewing water permits and consents to help ensure the total amount of water allocated in the freshwater management unit is reduced to the level set to give effect to Policy B1.

Policy B7 and direction (under section 55) to regional councils

By every regional council amending regional plans (without using the process in Schedule 1) to the extent needed to ensure the plans include the following policy to apply until any changes under Schedule 1 to give effect to Policy B1 (allocation limits), Policy B2 (allocation), and Policy B6 (over-allocation) have become operative:

- “1. When considering any application the consent authority must have regard to the following matters:*
 - a. the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem; and*
 - b. the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.*
- 2. This policy applies to:*
 - a. any new activity; and*
 - b. any change in the character, intensity or scale of any established activity –*
that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).
- 3. This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.”*

C. Integrated management

Objective C1

To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment.

Policy C1

By every regional council: managing fresh water and land use and development in catchments in an integrated and sustainable way, so as to avoid, remedy or mitigate adverse effects, including cumulative effects.

- a) recognising the interactions, ki uta ki tai (from the mountains to the sea) between fresh water, land, associated ecosystems and the coastal environment; and
- b) managing fresh water and land use and development in catchments in an integrated and sustainable way, so as to avoid, remedy or mitigate adverse effects, including cumulative effects.

Policy C2

By every regional council making or changing regional policy statements to the extent needed to provide for the integrated management of the effects of the use and development of:

- a) land on fresh water, including encouraging the co-ordination and sequencing of regional and/or urban growth, land use and development and the provision of infrastructure; and
- b) land and fresh water on coastal water.

CA. National Objectives Framework

Objective CA1

To provide an approach to establish freshwater objectives for national values, and any other values, that:

- a) is nationally consistent; and
- b) recognises regional and local circumstances.

Policy CA1

By every regional council identifying freshwater management units that include all freshwater bodies within its region.

Policy CA2

By every regional council, [following discussion with communities, including tāngata whenua](#), applying the following processes in developing freshwater objectives for all freshwater management units:

- a) considering all national values and how they apply to local and regional circumstances;
- b) identifying the values for each freshwater management unit, which
 - i. must include the compulsory values; and
 - ii. may include any other national values or other values that the regional council considers appropriate (in either case having regard to local and regional circumstances); and
- c) identifying:
 - i. for the compulsory values or any other national value for which relevant attributes are provided in Appendix 2:
 - A. the attributes listed in Appendix 2 that are applicable to each value identified under Policy CA2(b) for the freshwater body type; and
 - B. any other attributes that the regional council considers appropriate for each value identified under Policy CA2(b) for the freshwater body type; and
 - ii. for any national value for which relevant attributes are not provided in Appendix 2 or any other value, the attributes that the regional council considers appropriate for each value identified under Policy CA2(b) for the freshwater body type;
- d) for those attributes specified in Appendix 2, assigning an attribute state at or above the minimum acceptable state for that attribute, where a minimum acceptable state is specified;

- e) formulating freshwater objectives:
 - i. in those cases where an applicable numeric attribute state is specified in Appendix 2, in numeric terms by reference to that specified numeric attribute state; or
 - ii. in those cases where the attribute is not listed in Appendix 2, in numeric terms where practicable, otherwise in narrative terms;
 - [iia. in those cases where a freshwater objective seeks to maintain overall water quality in accordance with Objective A2, by every regional council ensuring:](#)
 - [a. where an attribute is listed in Appendix 2, that freshwater objectives are set at least within the same attribute state as existing freshwater quality; and](#)
 - [b. where an attribute is not listed in Appendix 2, that freshwater objectives are set so that values identified under Policy CA2\(b\) will not be worse off when compared to existing freshwater quality; and](#)
 - iii. on the basis that, where an attribute applies to more than one value, the most stringent freshwater objective for that attribute is adopted; and
- f) considering the following matters at all relevant points in the process described in Policy CA2(a)-(e):
 - [iaaa. how to improve the quality of fresh water in large rivers and lakes so the human health risk is reduced and they are suitable for immersion more often;](#)
 - [iaaab. how to provide for economic well-being, including productive economic opportunities, within the context of environmental limits;](#)
 - i. the current state of the freshwater management unit, and its anticipated future state on the basis of past and current resource use, [including community understandings of the health and well-being of the freshwater management unit;](#)
 - ii. the spatial scale at which freshwater management units are defined;
 - iii. the limits that would be required to achieve the freshwater objectives;
 - iv. any choices between the values that the formulation of freshwater objectives and associated limits would require;
 - v. any implications for resource users, people and communities arising from the freshwater objectives and associated limits including implications for actions, investments, ongoing management changes and any social, cultural or economic implications;
 - vi. the timeframes required for achieving the freshwater objectives, including the ability of regional councils to set long timeframes for achieving targets; and
 - vii. such other matters relevant and reasonably necessary to give effect to the objectives and policies in this national policy statement, in particular [Objective AAA1 and Objective A2.](#)

Policy CA3

By every regional council ensuring that freshwater objectives for the compulsory values are set at or above the national bottom lines for all freshwater management units, unless the existing freshwater quality of the freshwater management unit is already below the national bottom line [for an attribute or attributes](#) and the regional council considers it appropriate to set the freshwater objective below the national bottom line [for that attribute or attributes](#) because:

- a) the existing freshwater quality is caused by naturally occurring processes; or
- b) any of the existing significant infrastructure [\(that was operational on 1 August 2014\)](#) listed in Appendix 3 contributes to the existing freshwater quality; [and](#)
 - i. [setting freshwater objectives below a national bottom line is reasonably necessary to realise the benefits provided by the listed infrastructure; and](#)
 - ii. [the freshwater objective applies only to the water body, multiple water bodies or any part of a water body, where the listed infrastructure contributes to the existing water quality.](#)

For the purpose of CA3(b)(i) **benefits provided by listed infrastructure** means the [positive effects of the infrastructure on the well-being of the community and can include, but are not limited to, renewable electricity generation, employment and economic well-being.](#)

Policy CA4

A regional council may set a freshwater objective below a national bottom line on a transitional basis for the freshwater management units and for the periods of time specified in Appendix 4.

CB. Monitoring plans

Objective CB1

To provide for an approach to the monitoring of progress towards, and the achievement of, freshwater objectives- [and the values identified under Policy CA2\(b\)](#).

Policy CB1

By every regional council developing a monitoring plan that:

- a) establishes methods for monitoring progress towards, and the achievement of, freshwater objectives established under Policies CA1-CA4;
- aa) [establishes methods for monitoring the extent to which the values identified under Part CA2\(b\) are being provided for in a freshwater management unit. These methods must at least include:](#)
 - i. [E.coli exceedances over time as specified in Appendix 5;](#)
 - ii. [the monitoring of macroinvertebrate communities;](#)
 - iii. [measures of the health of indigenous flora and fauna;](#)
 - iv. [information obtained under Policy CB1\(a\) and Policy CC1; and](#)
 - v. [Mātauranga Māori;](#)
- b) identifies a site or sites at which monitoring will be undertaken that are representative for each freshwater management unit; ~~and~~
- c) recognises the importance of long-term trends in monitoring results- [and the relationship between results and the overall state of fresh water in a freshwater management unit; and](#)
- d) [establishes methods, for example action plans, for responding to monitoring that indicates freshwater objectives will not be met and/or values will not be provided for in a freshwater management unit.](#)

Policy CB2

[By every regional council taking reasonable steps to ensure information gathered in accordance with Policy CB1 is available to the public, regularly and in a suitable form.](#)

CC. Accounting for freshwater takes and contaminants

Objective CC1

To improve information on freshwater takes and sources of freshwater contaminants, in order to:

- a) ensure the necessary information is available for freshwater objective and limit setting and freshwater management under this national policy statement; and
- b) ensure information on resource availability is available for current and potential resource users.

Policy CC1

By every regional council:

- a) establishing and operating a freshwater quality accounting system and a freshwater quantity accounting system for those freshwater management units where they are setting or reviewing freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4; and
- b) maintaining a freshwater quality accounting system and a freshwater quantity accounting system at levels of detail that are commensurate with the significance of the freshwater quality and freshwater quantity issues, respectively, in each freshwater management unit.

Policy CC2

By every regional council taking reasonable steps to ensure that information gathered in accordance with Policy CC1 is available to the public, regularly and in a suitable form, for the freshwater management units where they are setting or reviewing, and where they have set or reviewed, freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4.

Objective CC1 and Policies CC1 and CC2 will take effect 24 months from the date of entry into effect of the National Policy Statement for Freshwater Management 2014.

D. Tāngata whenua roles and interests

Objective D1

To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

Policy D1

Local authorities shall take reasonable steps to:

- a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;
- b) work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and
- c) reflect tāngata whenua values, and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.

E. Progressive implementation programme

Policy E1

- a) This policy applies to the implementation by a regional council of the [a-policy objectives and policies](#) of this national policy statement.
- b) Every regional council is to implement the [policy objectives and policies](#) as promptly as is reasonable in the circumstances, and so it is fully completed by no later than 31 December 2025.
- ba) A regional council may extend the date in Policy E1(b) to 31 December 2030 if it considers that:
 - i. meeting that date would result in lower quality planning; or
 - ii. it would be impracticable for it to complete implementation of a policy by that date.
- c) Where a regional council is satisfied that it is impracticable for it to complete implementation of a policy fully by 31 December 2015, the council may implement it by a programme of defined time-limited stages by which it is to be fully implemented by 31 December 2025 or 31 December 2030 if Policy E1(ba) applies.
- d) Any programme of time-limited stages is to be formally adopted by the council by 31 December 2015 and publicly notified.
- e) Where a regional council has adopted a programme of staged implementation, it is to publicly report, in every year, on the extent to which the programme has been implemented.
- f) ~~Any programme adopted under Policy E1 c) of the National Policy Statement for Freshwater Management 2011 by a regional council is to be reviewed, revised if necessary, and formally adopted by the regional council by 31 December 2015, and publically notified.~~
- f) [Any programme adopted under Policy E1\(c\) of the National Policy Statement for Freshwater Management 2011 or under Policy E1\(c\) of the National Policy Statement for Freshwater Management 2014 by a regional council is to be reviewed, revised if necessary, formally adopted by the regional council by 31 March 2018, and publicly notified.](#)

APPENDIX 1: National values and uses for fresh water

COMPULSORY NATIONAL VALUES

Te Hauora o te Wai / the health and mauri of water

Ecosystem health

The freshwater management unit supports a healthy ecosystem appropriate to that freshwater body type (river, lake, wetland, or aquifer).

In a healthy freshwater ecosystem ecological processes are maintained, there is a range and diversity of indigenous flora and fauna, and there is resilience to change.

Matters to take into account for a healthy freshwater ecosystem include the management of adverse effects on flora and fauna of contaminants, changes in freshwater chemistry, excessive nutrients, algal blooms, high sediment levels, high temperatures, low oxygen, invasive species, and changes in flow regime. Other matters to take into account include the essential habitat needs of flora and fauna and the connections between water bodies. [The health of flora and fauna may be indicated by measures of macroinvertebrates.](#)

Te Hauora o te Tangata / the health and mauri of the people

Human health for recreation

[As a minimum, the freshwater management unit will present no more than a moderate risk of infection to people when they are wading or boating or involved in similar activities that involve only occasional immersion in the water. Other contaminants or toxins, such as toxic algae, would not be present in such quantities that they would harm people's health.](#)

[In freshwater management units where a community values more frequent immersion in the water such as swimming, white-water rafting, or water-skiing, the risk of infection will be no more than moderate. In some freshwater management units, the risk of infection to people undertaking any activity would be no greater than what would exist there under natural conditions.](#)

[In a healthy water body, people are able to connect with the water through a range of activities such as swimming, waka, boating, fishing, mahinga kai and water-skiing, in a range of different flows.](#)

[Matters to take into account for a healthy water body for human use include pathogens, clarity, deposited sediment, plant growth \(from macrophytes to periphyton to phytoplankton\), cyanobacteria, and other toxicants.](#)

ADDITIONAL NATIONAL VALUES

Te Hauora o te Taiao / the health and mauri of the environment

Natural form and character – Where people value particular natural qualities of the freshwater management unit.

Matters contributing to the natural form and character of a freshwater management unit are its visual and physical characteristics that are valued by the community, including its flow regime, colour, clarity, morphology or location. They may be freshwater management units with exceptional, natural, and iconic aesthetic features.

Mahinga kai / food gathering, places of food

Mahinga kai – Kai are safe to harvest and eat.

Mahinga kai generally refers to indigenous freshwater species that have traditionally been used as food, tools, or other resources. Mahinga kai provide food for the people of the rohe and these sites give an indication of the overall health of the catchment.

For this value, kai would be safe to harvest and eat and knowledge transfer is present (intergenerational harvest). In freshwater management units that are highly valued for providing mahinga kai, the desired species are plentiful enough for long-term harvest and the range of desired species is present across all life stages.

Mahinga kai – Kei te ora te mauri (the mauri of the place is intact).

For this value, freshwater resources would be available and able to be used for customary use at some places (but not everywhere). In freshwater management units that are highly valued for providing mahinga kai, resources would be available for use, customary practices able to be exercised to the extent desired, and tikanga and preferred methods are able to be practised.

Fishing – The freshwater management unit supports fisheries of species allowed to be caught and eaten.

For freshwater management units valued for fishing, the numbers of fish would be sufficient and suitable for human consumption. In some areas, fish abundance and diversity would provide a range in species and size of fish, and algal growth, water clarity and safety would be satisfactory for fishers. Attributes will need to be specific to fish species such as salmon, trout, eels, lamprey, or whitebait.

<p>Mahi māra / cultivation</p>
<p>Irrigation and food production—The freshwater management unit meets irrigation needs for any purpose.</p> <p>Water quality and quantity would be suitable for irrigation needs, including supporting the cultivation of food crops, the production of food from domesticated animals, non-food crops such as fibre and timber, pasture, sports fields and recreational areas. Attributes will need to be specific to irrigation and food production requirements.</p>
<p>Animal drinking water—The freshwater management unit meets the needs of stock.</p> <p>Water quality and quantity would meet the needs of stock, including whether it is palatable and safe.</p>
<p>Wai Tapu / Sacred Waters</p>
<p>Wai tapu—Wai tapu represent the places where rituals and ceremonies are performed. Rituals and ceremonies include, but are not limited to, tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu (placing of raahui), whakanoa (removal of raahui), and tuku iho (gifting of knowledge and resources for future generations).</p> <p>In providing for this value, the wai tapu would be free from human and animal waste, contaminants and excess sediment, with valued features and unique properties of the wai protected to some extent. Other matters that may be important are that identified catchments have integrity (there is no artificial mixing of the wai tapu) and identified taonga in the wai are protected.</p>
<p>Wai Māori / municipal and domestic water supply</p>
<p>Water supply—The freshwater management unit can meet people's potable water needs.</p> <p>Water quality and quantity would enable domestic water supply to be safe for drinking with, or in some areas without, treatment.</p>
<p>Āu Putea / economic or commercial development</p>
<p>Commercial and industrial use—The freshwater management unit provides economic opportunities to people, businesses and industries.</p> <p>Water quality and quantity can provide for commercial and industrial activities. Attributes will need to be specific to commercial or industrial requirements.</p>
<p>Hydro-electric power generation—The freshwater management unit is suitable for hydro electric power generation.</p> <p>Water quality and quantity and the physical qualities of the freshwater management unit, including hydraulic gradient and flow rate, can provide for hydro-electric power generation.</p>

He ara haere / navigation

Transport and tauranga waka – The freshwater management unit is navigable for identified means of transport.

Transport and tauranga waka generally refers to places to launch waka and water craft, and appropriate places for waka to land (tauranga waka).

Water quality and quantity in the freshwater management unit would provide for navigation. The freshwater management unit may also connect places and people including for traditional trails and rites of passage, and allow the use of various craft.

Te Hauora o te Wai

Wai tapu

Wai tapu represent the places where rituals and ceremonies are performed, or where there is special significance to iwi and/or hapū.

Rituals and ceremonies include, but are not limited to, tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu (placing of raahui), whakanoa (removal of raahui), and tuku iho (gifting of knowledge and resources for future generations).

In providing for this value, the wai tapu would be free from human and animal waste contaminants and excess sediment, with valued features and unique properties of the wai protected. Other matters that may be important are that there is no artificial mixing of the wai tapu and identified taonga in the wai are protected.

Mahinga kai – Kei te ora te mauri (the mauri of the place is intact)

For this value, freshwater resources would be available and able to be used for customary use. In freshwater management units that are valued for providing mahinga kai, resources would be available for use, customary practices able to be exercised to the extent desired, and tikanga and preferred methods are able to be practised.

Te Hauora o te Taiao

Natural form and character

Where people value particular natural qualities of the freshwater management unit.

Matters contributing to the natural form and character of a freshwater management unit are its visual and physical characteristics that are valued by the community, including:

- i. its biophysical, ecological, geological, geomorphological and morphological aspects;
- ii. the natural movement of water and sediment including hydrological and fluvial processes;
- iii. the location of the water body relative to its natural course;
- iv. the relative dominance of indigenous flora and fauna;
- v. the presence of culturally significant species;
- vi. the colour of the water; and
- vii. the clarity of the water.

They may be freshwater management units with exceptional, natural, and iconic aesthetic features.

Te Hauora o te Tangata

Fishing

The freshwater management unit supports fisheries of species allowed to be caught and eaten.

For freshwater management units valued for fishing, the numbers of fish would be sufficient and suitable for human consumption. In some areas, fish abundance and diversity would provide a range in species and size of fish, and algal growth, water clarity and safety would be satisfactory for fishers. Attributes will need to be specific to fish species such as salmon, trout, eels, lamprey, or whitebait.

Mahinga kai – Kai are safe to harvest and eat

Mahinga kai generally refers to indigenous freshwater species that have traditionally been used as food, tools, or other resources. It also refers to the places those species are found and to the act of catching them. Mahinga kai provide food for the people of the rohe and these sites give an indication of the overall health of the water.

For this value, kai would be safe to harvest and eat. Transfer of knowledge would occur about the preparation, storage and cooking of kai. In freshwater management units that are used for providing mahinga kai, the desired species are plentiful enough for long-term harvest and the range of desired species is present across all life stages.

Transport and tauranga waka

The freshwater management unit is navigable for identified means of transport.

Transport and tauranga waka generally refers to places to launch waka and water craft, and appropriate places for waka to land (tauranga waka).

Water quality and quantity in the freshwater management unit would provide for navigation. The freshwater management unit may also connect places and people including for traditional trails and rites of passage, and allow the use of various craft.

Extractive uses

Water supply

The freshwater management unit can meet people's potable water needs.

Water quality and quantity would enable domestic water supply to be safe for drinking with, or in some areas without, treatment.

Animal drinking water

The freshwater management unit meets the needs of stock.

Water quality and quantity would meet the needs of stock, including whether it is palatable and safe.

Irrigation and food production

The freshwater management unit meets irrigation needs for any purpose.

Water quality and quantity would be suitable for irrigation needs, including supporting the cultivation of food crops, the production of food from domesticated animals, non-food crops such as fibre and timber, pasture, sports fields and recreational areas. Attributes will need to be specific to irrigation and food production requirements.

Hydro-electric power generation

The freshwater management unit is suitable for hydro-electric power generation.

Water quality and quantity and the physical qualities of the freshwater management unit, including hydraulic gradient and flow rate, can provide for hydro-electric power generation.

Commercial and industrial use

The freshwater management unit provides economic opportunities to people, businesses and industries.

Water quality and quantity can provide for commercial and industrial activities. Attributes will need to be specific to commercial or industrial requirements.

APPENDIX 2: Attribute tables

Value	Ecosystem health		
Freshwater Body Type	Lakes		
Attribute	Phytoplankton (Trophic state)		
Attribute Unit	mg/m ³ (milligrams chlorophyll-a per cubic metre)		
Attribute State	Numeric Attribute State		Narrative Attribute State
	Annual Median	Annual Maximum	
A	≤2	≤10	Lake ecological communities are healthy and resilient, similar to natural reference conditions.
B	>2 and ≤5	>10 and ≤25	Lake ecological communities are slightly impacted by additional algal and/or plant growth arising from nutrients levels that are elevated above natural reference conditions.
C	>5 and ≤12	>25 and ≤60	Lake ecological communities are moderately impacted by additional algal and plant growth, or phytoplankton biomass, arising from nutrients levels that are elevated well above natural reference conditions. Reduced water clarity likely to affect habitat available for native macrophytes.
National Bottom Line	12	60	
D	>12	>60	Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state (without macrophyte/seagrass cover), due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes.
Note: For lakes and lagoons that intermittently open to the sea, the median is to apply both during periods when the lake/lagoon is open and during periods when the lake/lagoon is closed. Based on a rolling median of at least 12 samples for each situation (ie, open or closed), and assuming a regular (eg, monthly) monitoring regime.			

Value	Ecosystem health		
Freshwater Body Type	Lakes		
Attribute	Total Nitrogen (Trophic state)		
Attribute Unit	mg/m ³ (milligrams per cubic metre)		
Attribute State	Numeric Attribute State	Narrative Attribute State	
	Annual Median	Annual Median	
	Seasonally Stratified and Brackish*	Polymictic	
A	≤160	≤300	Lake ecological communities are healthy and resilient, similar to natural reference conditions.
B	>160 and ≤350	>300 and ≤500	Lake ecological communities are slightly impacted by additional algal and/or plant growth arising from nutrients levels that are elevated above natural reference conditions.
C	>350 and ≤750	>500 and ≤800	Lake ecological communities are moderately impacted by additional algal and plant growth, <u>or additional phytoplankton and macroalgae</u> , arising from nutrients levels that are elevated well above natural reference conditions.
National Bottom Line	750	800	
D	>750	>800	Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state (<u>without macrophyte/ seagrass cover</u>), due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes.
* Intermittently closing and opening lagoons (ICOLs) are not included in brackish lakes.			
Note: For lakes and lagoons that intermittently open to the sea, the median is to apply both during periods when the lake/lagoon is open and during periods when the lake/lagoon is closed. Based on a rolling median of at least 12 samples for each situation (ie, open or closed), and assuming a regular (eg, monthly) monitoring regime.			

Value	Ecosystem health	
Freshwater Body Type	Lakes	
Attribute	Total Phosphorus (Trophic state)	
Attribute Unit	mg/m ³ (milligrams per cubic metre)	
Attribute State	Numeric Attribute State	Narrative Attribute State
	Annual Median	
A	≤10	Lake ecological communities are healthy and resilient, similar to natural reference conditions.
B	>10 and ≤20	Lake ecological communities are slightly impacted by additional algal and plant growth arising from nutrients levels that are elevated above natural reference conditions.
C	>20 and ≤50	Lake ecological communities are moderately impacted by additional algal and plant growth, or additional phytoplankton and macroalgae , arising from nutrients levels that are elevated well above natural reference conditions.
National Bottom Line	50	
D	>50	Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state (without macrophyte/seagrass cover), due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes.
Note: For lakes and lagoons that intermittently open to the sea, the median is to apply both during periods when the lake/lagoon is open and during periods when the lake/lagoon is closed. Based on a rolling median of at least 12 samples for each situation (ie, open or closed), and assuming a regular (eg, monthly) monitoring regime.		

Value	Ecosystem health		
Freshwater Body Type	Rivers		
Attribute	Periphyton (Trophic state)		
Attribute Unit	mg chl-a/m ² (milligrams chlorophyll-a per square metre)		
Attribute State	Numeric Attribute State (Default Class)	Numeric Attribute State (Productive Class¹)	Narrative Attribute State
	Exceeded no more than 8% of samples ²	Exceeded no more than 17% of samples ²	
A	≤50	≤50	Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime or habitat.
B	>50 and ≤120	>50 and ≤120	Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat.
C	>120 and ≤200	>120 and ≤200	Periodic short-duration nuisance blooms reflecting moderate nutrient enrichment and/or alteration of the natural flow regime or habitat.
National Bottom Line	200	200	
D	>200	>200	Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat.

1. Classes are streams and rivers defined according to types in the River Environment Classification (REC). The Productive periphyton class is defined by the combination of REC "Dry" Climate categories (ie, Warm-Dry (WD) and Cool-Dry (CD)) and REC Geology categories that have naturally high levels of nutrient enrichment due to their catchment geology (ie, Soft-Sedimentary (SS), Volcanic Acidic (VA) and Volcanic Basic (VB)). Therefore the productive category is defined by the following REC defined types: WD/SS, WD/VB, WD/VA, CD/SS, CD/VB, CD/VA. The Default class includes all REC types not in the Productive class.

2. Based on a monthly monitoring regime. The minimum record length for grading a site based on periphyton (chl-a) is 3 years.

Note:

[The attribute for nitrate toxicity is not applicable in rivers that support periphyton growth. Before using this attribute to set an objective for periphyton, maximum concentrations of dissolved inorganic nitrogen and dissolved reactive phosphorus will need to be determined for the freshwater management unit. The maximum concentrations of dissolved inorganic nitrogen and dissolved reactive phosphorus will also need to consider the sensitivity of downstream environments.](#)

Value	Ecosystem health		
Freshwater Body Type	Rivers		
Attribute	Nitrate (Toxicity)		
Attribute Unit	mg NO ₃ -N/L (milligrams nitrate-nitrogen per litre)		
Attribute State	Numeric Attribute State		Narrative Attribute State
	Annual Median	Annual 95th Percentile	
A	≤1.0	≤1.5	High conservation value system. Unlikely to be effects even on sensitive species.
B	>1.0 and ≤2.4	>1.5 and ≤3.5	Some growth effect on up to 5% of species.
C	>2.4 and ≤6.9	>3.5 and ≤9.8	Growth effects on up to 20% of species (mainly sensitive species such as fish). No acute effects.
National Bottom Line	6.9	9.8	
D	>6.9	>9.8	Impacts on growth of multiple species, and starts approaching acute impact level (ie, risk of death) for sensitive species at higher concentrations (>20 mg/L).

Value	Ecosystem health		
Freshwater Body Type	Lakes and rivers		
Attribute	Ammonia (Toxicity)		
Attribute Unit	mg NH ₄ -N/L (milligrams ammoniacal-nitrogen per litre)		
Attribute State	Numeric Attribute State		Narrative Attribute State
	Annual Median*	Annual Maximum*	
A	≤0.03	≤0.05	99% species protection level: No observed effect on any species tested.
B	>0.03 and ≤0.24	>0.05 and ≤0.40	95% species protection level: Starts impacting occasionally on the 5% most sensitive species.
C	>0.24 and ≤1.30	>0.40 and ≤2.20	80% species protection level: Starts impacting regularly on the 20% most sensitive species (reduced survival of most sensitive species).
National Bottom Line	1.30	2.20	
D	>1.30	>2.20	Starts approaching acute impact level (ie, risk of death) for sensitive species.
* Based on pH 8 and temperature of 20°C.			
Compliance with the numeric attribute states should be undertaken after pH adjustment.			

Value	Ecosystem health		
Freshwater Body Type	Rivers (below point sources)		
Attribute	Dissolved Oxygen		
Attribute Unit	mg/L (milligrams per litre)		
Attribute State	Numeric Attribute State		Narrative Attribute State
	7-day mean minimum ¹ (Summer Period: 1 November to 30 th April)	1-day minimum ² (Summer Period: 1 November to 30 th April)	
A	≥8.0	≥7.5	No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites.
B	≥7.0 and <8.0	≥5.0 and <7.5	Occasional minor stress on sensitive organisms caused by short periods (a few hours each day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species.
C	≥5.0 and <7.0	≥4.0 and <5.0	Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrate species being lost.
National Bottom Line	5.0	4.0	
D	<5.0	<4.0	Significant, persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.
<p>1. The mean value of 7 consecutive daily minimum values.</p> <p>2. The lowest daily minimum across the whole summer period.</p>			

Value	Human health for recreation		
Freshwater Body Type	Lakes and rivers		
Attribute	<i>E. coli</i> *		
Attribute Unit	<i>E. coli</i> /100 mL (number of <i>E. coli</i> per hundred millilitres)		
Attribute State	Numeric Attribute State	Sampling Statistic	Narrative Attribute State
A	≤260	Annual median	People are exposed to a very low risk of infection (less than 0.1% risk) from contact with water during activities with occasional immersion and some ingestion of water
		95th percentile	People are exposed to a low risk of infection (up to 1% risk) when undertaking activities likely to involve full immersion.
B	>260 and ≤540	Annual median	People are exposed to a low risk of infection (less than 1% risk) from contact with water during activities with occasional immersion and some ingestion of water.
		95th percentile	People are exposed to a moderate risk of infection (less than 5% risk) when undertaking activities likely to involve full immersion. 540/100ml is the minimum acceptable state for activities likely to involve full immersion.
C	>540 and ≤1000	Annual median	People are exposed to a moderate risk of infection (less than 5% risk) from contact with water during activities with occasional immersion and some ingestion of water.
National Bottom Line	1000	Annual median	People are exposed to a high risk of infection (greater than 5% risk) from contact with water during activities likely to involve immersion.
D	>1000	Annual median	People are exposed to a high risk of infection (greater than 5% risk) from contact with water during activities with occasional immersion and some ingestion of water (such as wading and boating).
*Escherichia coli			

Value	Human health for recreation	
Freshwater Body Type	Lakes and rivers	
Attribute	<i>Escherichia coli</i> (<i>E. coli</i>)	
Attribute Unit	<i>E. coli</i> /100 mL (number of <i>E. coli</i> per hundred millilitres)	
Attribute State	Numeric Attribute State	Narrative Attribute State
	Exceedance of the <i>E. coli</i> threshold 540 <i>E. coli</i>/100 ml	
A (Blue)	Exceeds the <i>E. coli</i> threshold less than 5 percent of the time	The river or lake is excellent for swimming. The estimated risk of <i>Campylobacter</i> infection is less than 50 cases in every 1,000 exposures.
B (Green)	Exceeds the <i>E. coli</i> threshold between 5 percent and 10 percent of the time	The river or lake is good to swim in most of the time. The estimated risk of <i>Campylobacter</i> infection is likely higher than 50 cases in every 1,000 exposures.
C (Yellow)	Exceeds the <i>E. coli</i> threshold between 10 percent and 20 percent of the time	The river or lake is fair to swim in some of the time. The estimated risk of <i>Campylobacter</i> infection is likely higher than 50 cases in every 1,000 exposures.
D (Orange)	Exceeds the <i>E. coli</i> threshold between 20 percent and 30 percent of the time	The river or lake is intermittently suitable to swim in. The estimated risk of <i>Campylobacter</i> infection is likely higher than 50 cases in every 1,000 exposures.
E (Red)	Exceeds the <i>E. coli</i> threshold more than 30 percent of the time	The river or lake is not safe to swim in.
Note: Attribute state must be determined using a minimum of 100 samples, collected on a regular basis regardless of weather conditions, over a maximum of 10 years.		

Value	Human health for recreation	
Freshwater Body Type	Lakes and lake fed rivers	
Attribute	Cyanobacteria - Planktonic	
Attribute Unit	Biovolume - mm ³ /L (cubic millimetres per litre) OR Cell Count - cells/mL (cells per millilitre)	
Attribute State	Numeric Attribute State	Narrative Attribute State
	80th percentile*	
A	<p>≤0.5 mm³/L biovolume equivalent for the combined total of all cyanobacteria OR</p> <p>≤500 cells/mL of total cyanobacteria</p>	Risk exposure from cyanobacteria is no different to that in natural conditions (from any contact with fresh water).
B	N/A	
C	<p>>0.5 and ≤1.8 mm³/L biovolume equivalent of potentially toxic cyanobacteria OR</p> <p>>0.5 and ≤10 mm³/L total biovolume of all cyanobacteria</p>	Low risk of health effects from exposure to cyanobacteria (from any contact with fresh water).
National Bottom Line	<p>1.8 mm³/L biovolume equivalent of potentially toxic cyanobacteria OR</p> <p>10 mm³/L total biovolume of all cyanobacteria</p>	
D	<p>Biovolume equivalent of >1.8 mm³/L of potentially toxic cyanobacteria OR</p> <p>>10 mm³/L total biovolume of all cyanobacteria</p>	Potential health risks (eg, respiratory, irritation and allergy symptoms) exist from exposure to cyanobacteria (from any contact with fresh water).
<p>* The 80th percentile must be calculated using a minimum of 12 samples collected over 3 years.</p> <p>30 samples collected over 3 years is recommended</p>		

APPENDIX 3: Existing infrastructure for the purposes of Policy CA3(b)

[Editor's note: This appendix is currently empty.]

APPENDIX 4: Freshwater management units and periods of time for transition under Policy CA4

[Editor's note: This appendix is currently empty.]

APPENDIX 5: Monitoring methodologies for Policy CB1

Monitoring requirements for *E. coli*

During the bathing season (as specified in the regional plan), sampling frequency must be at least weekly.

If a single sample collected during the bathing season is greater than 260 *E. coli* per 100mL:

- a) sampling frequency must be increased to daily until a sample less than 260 *E. coli* per 100mL is collected; and
- b) the regional council must notify the public.

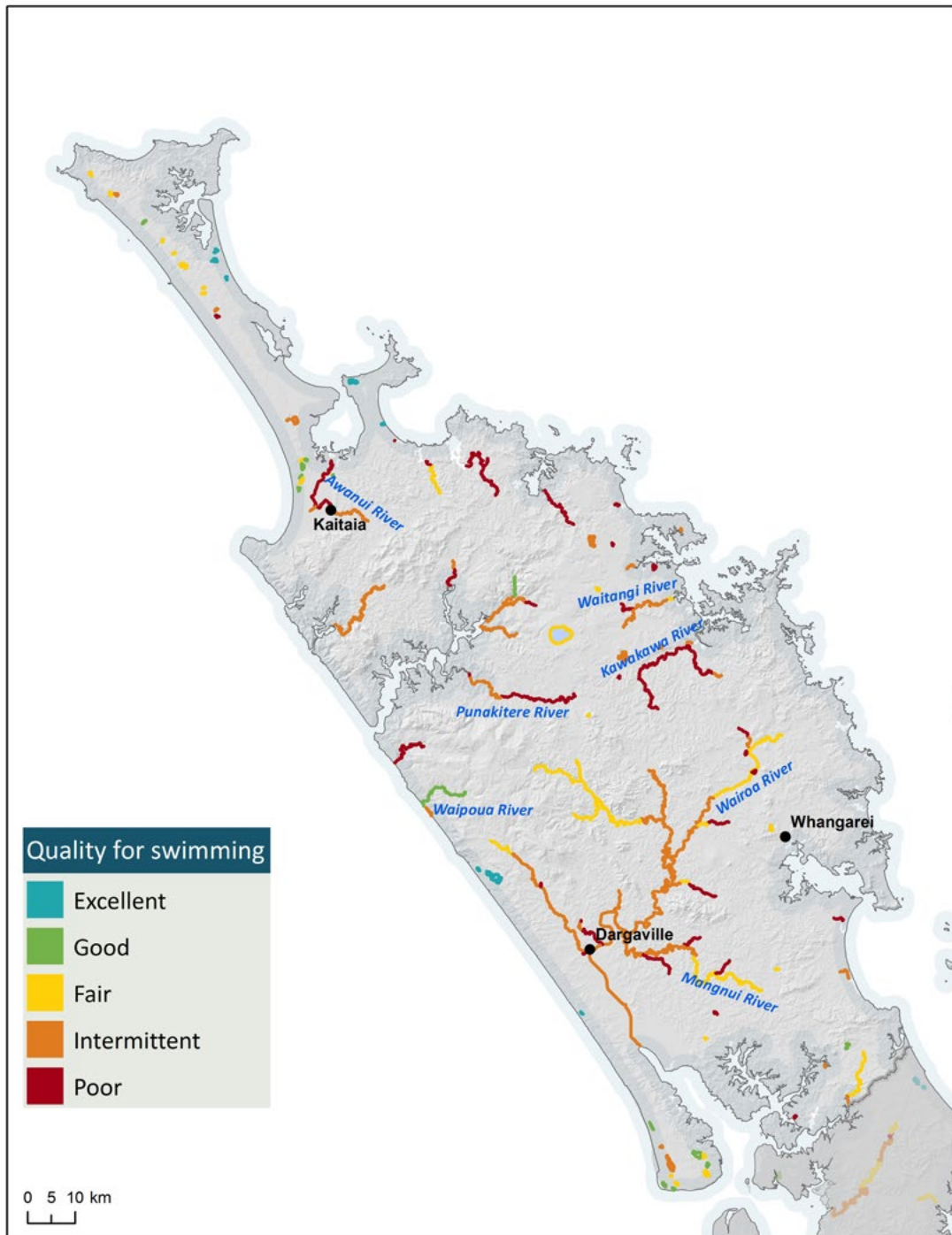
If a single sample collected during the bathing season is greater than 540 *E. coli* per 100mL:

- a) sampling frequency must be increased to daily until a sample less than 260 *E. coli* per 100mL is collected; and
- b) the regional council should inform the medical officer of health, and notify the public that the site is unsuitable for recreation.

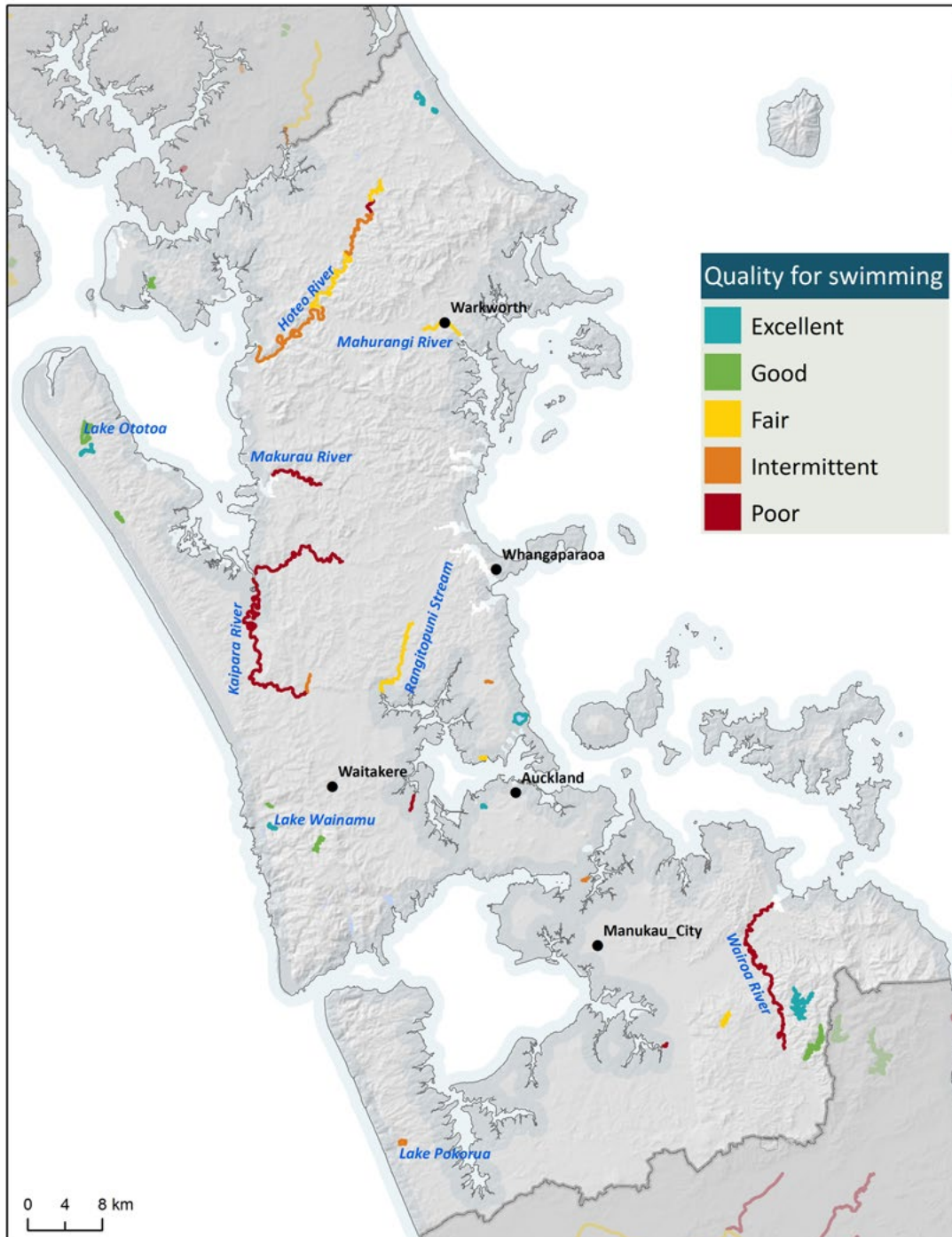
Outside of the bathing season (as specified in the regional plan), sampling frequency must be at least monthly.

Annex 2: Regional swimming maps

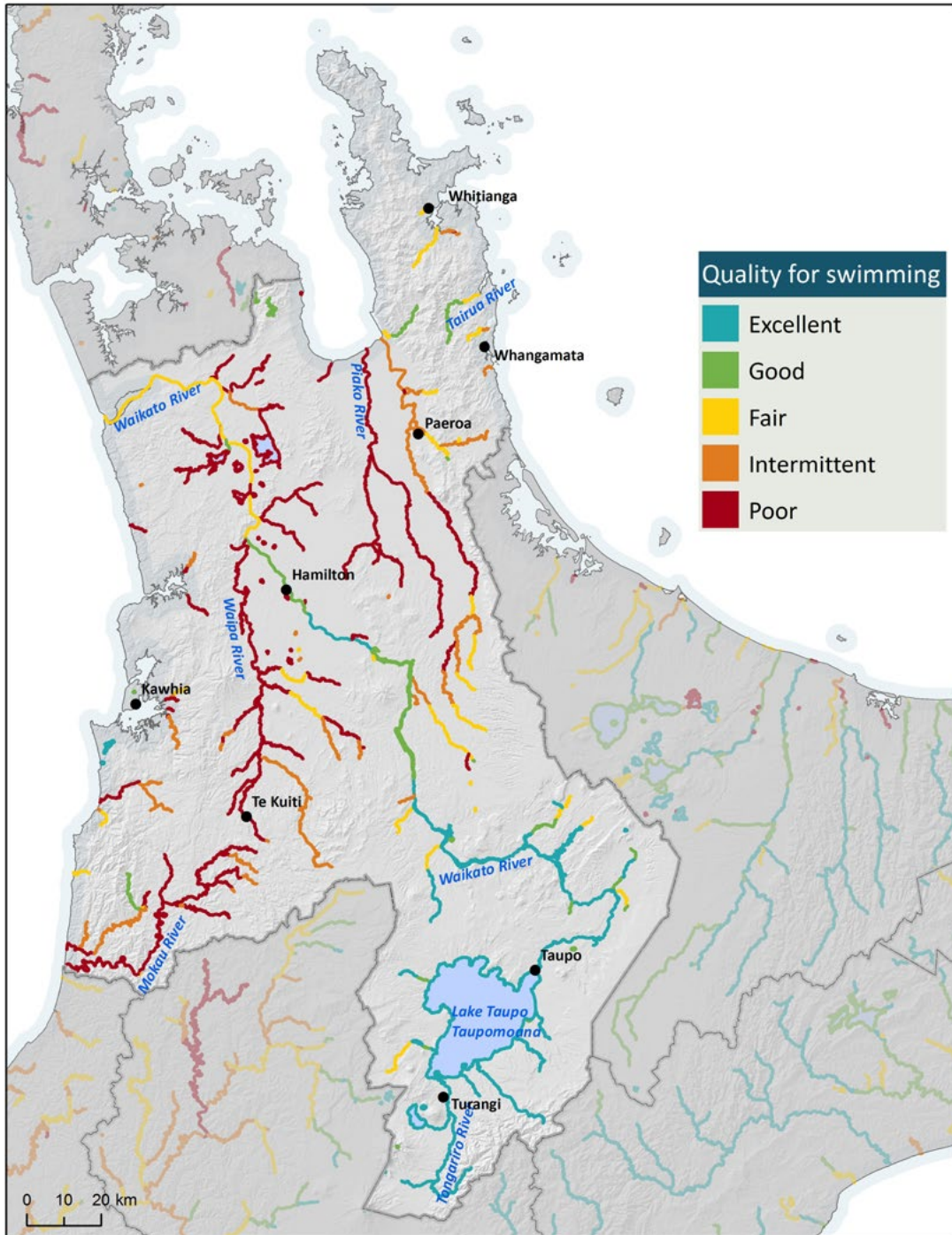
Regional swimming map – Northland



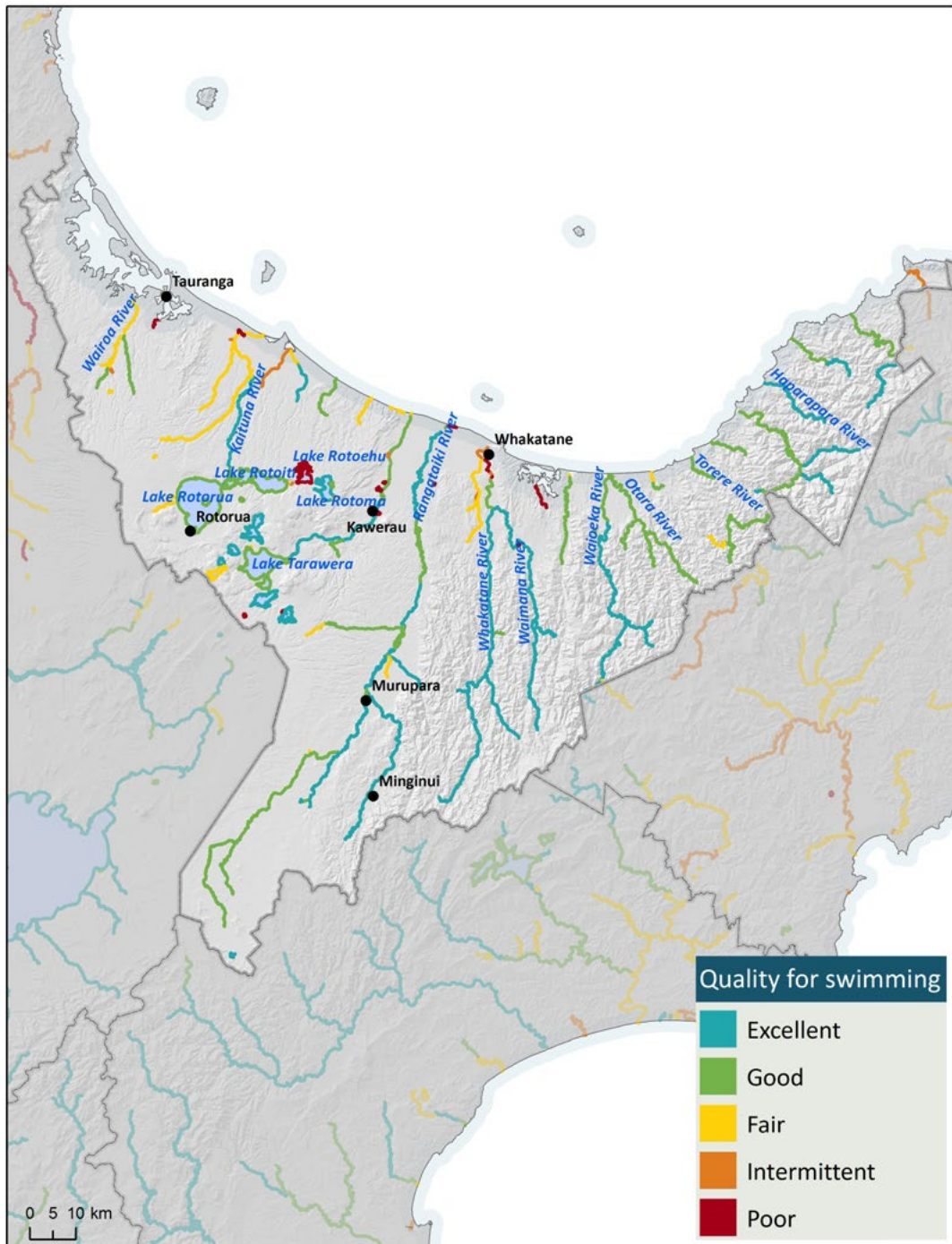
Regional swimming map – Auckland



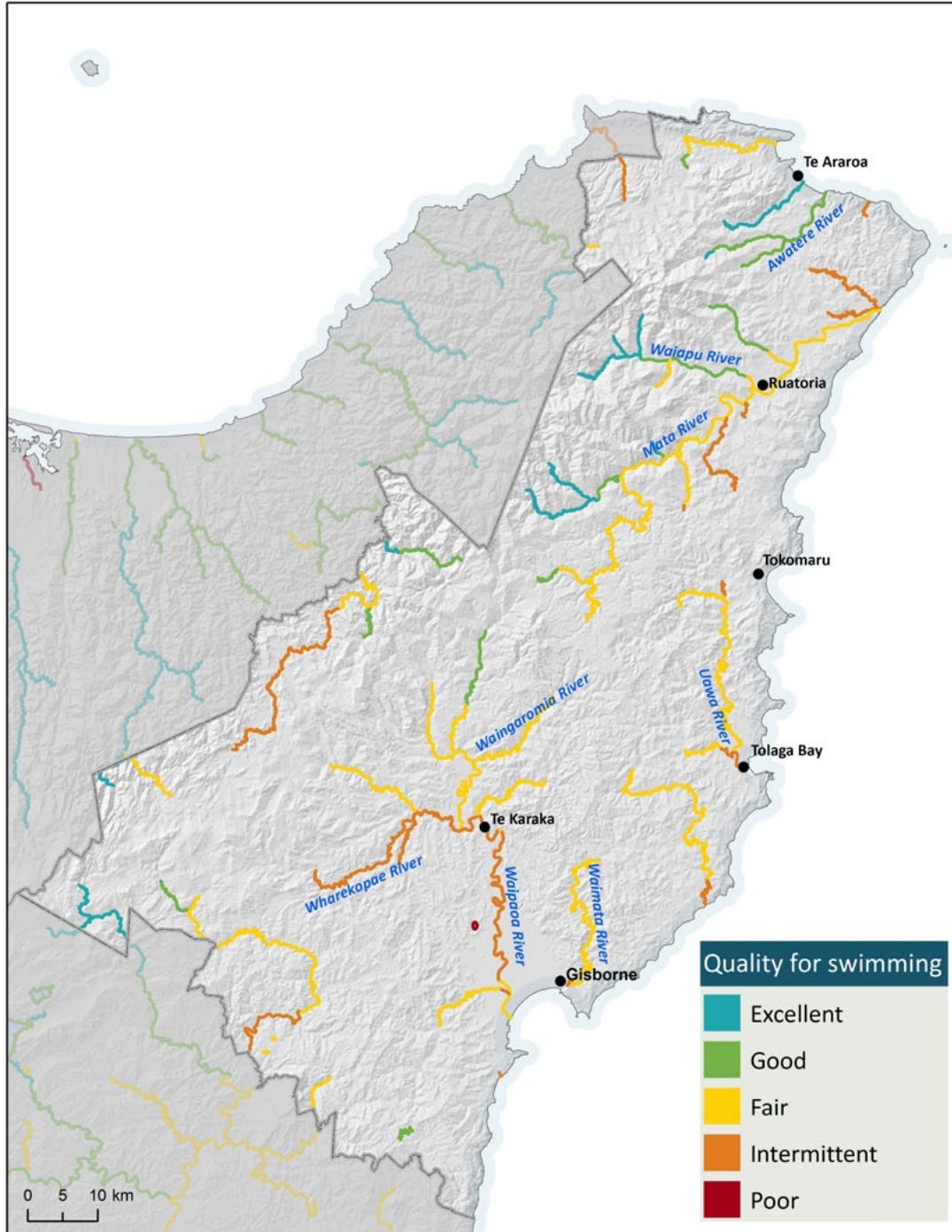
Regional swimming map – Waikato



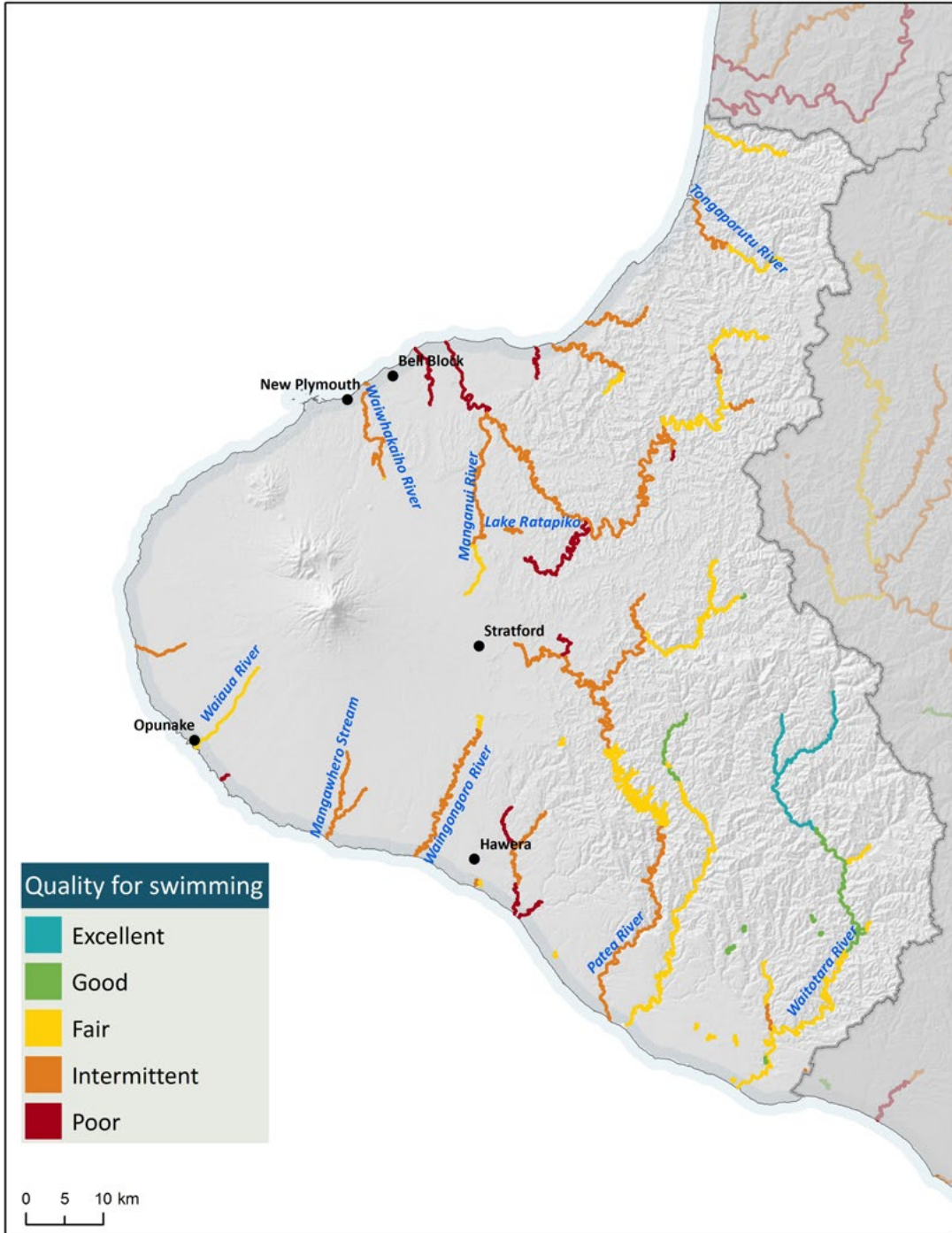
Regional swimming map – Bay of Plenty



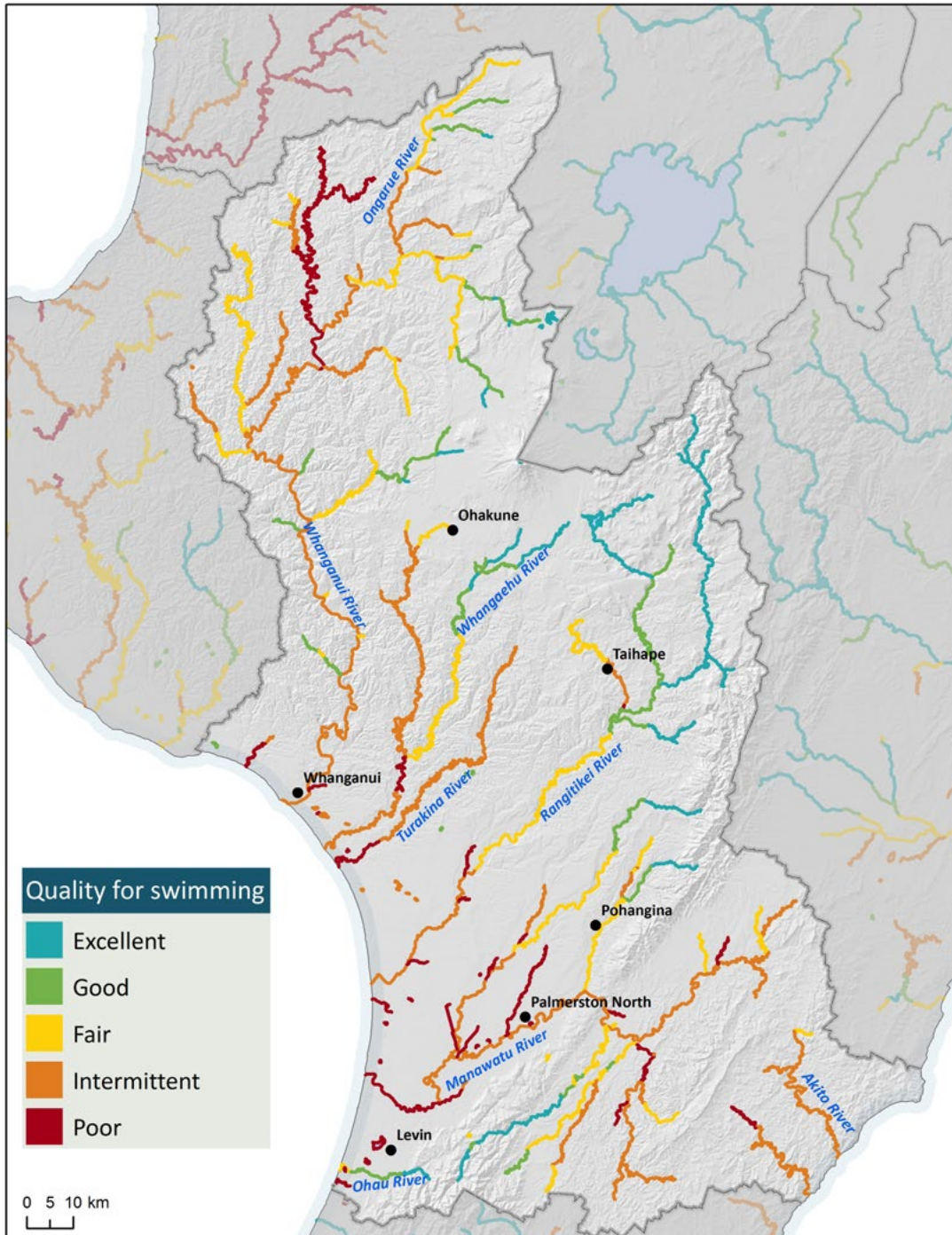
Regional swimming map – Gisborne



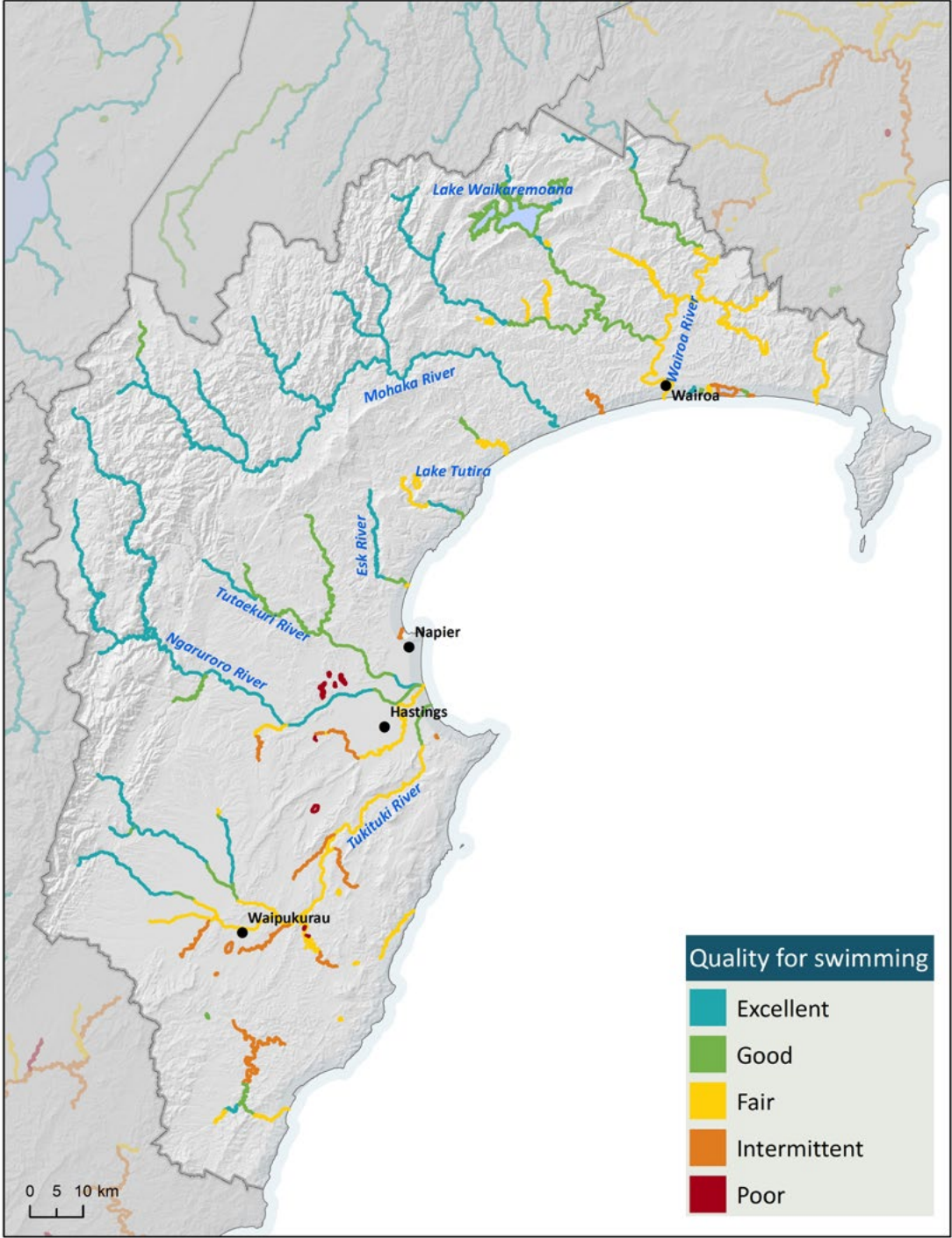
Regional swimming map – Taranaki



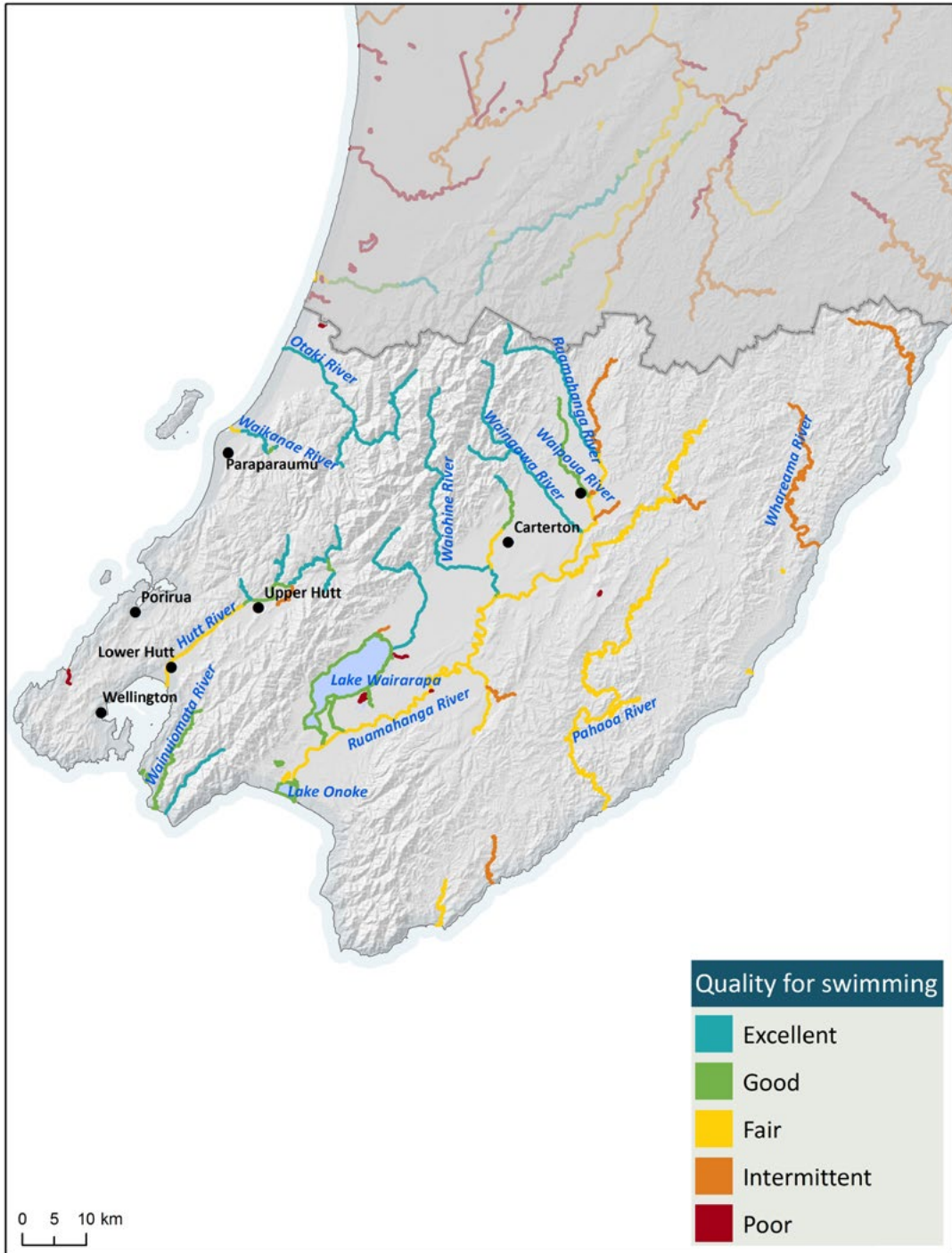
Regional swimming map – Manawatu-Whanganui



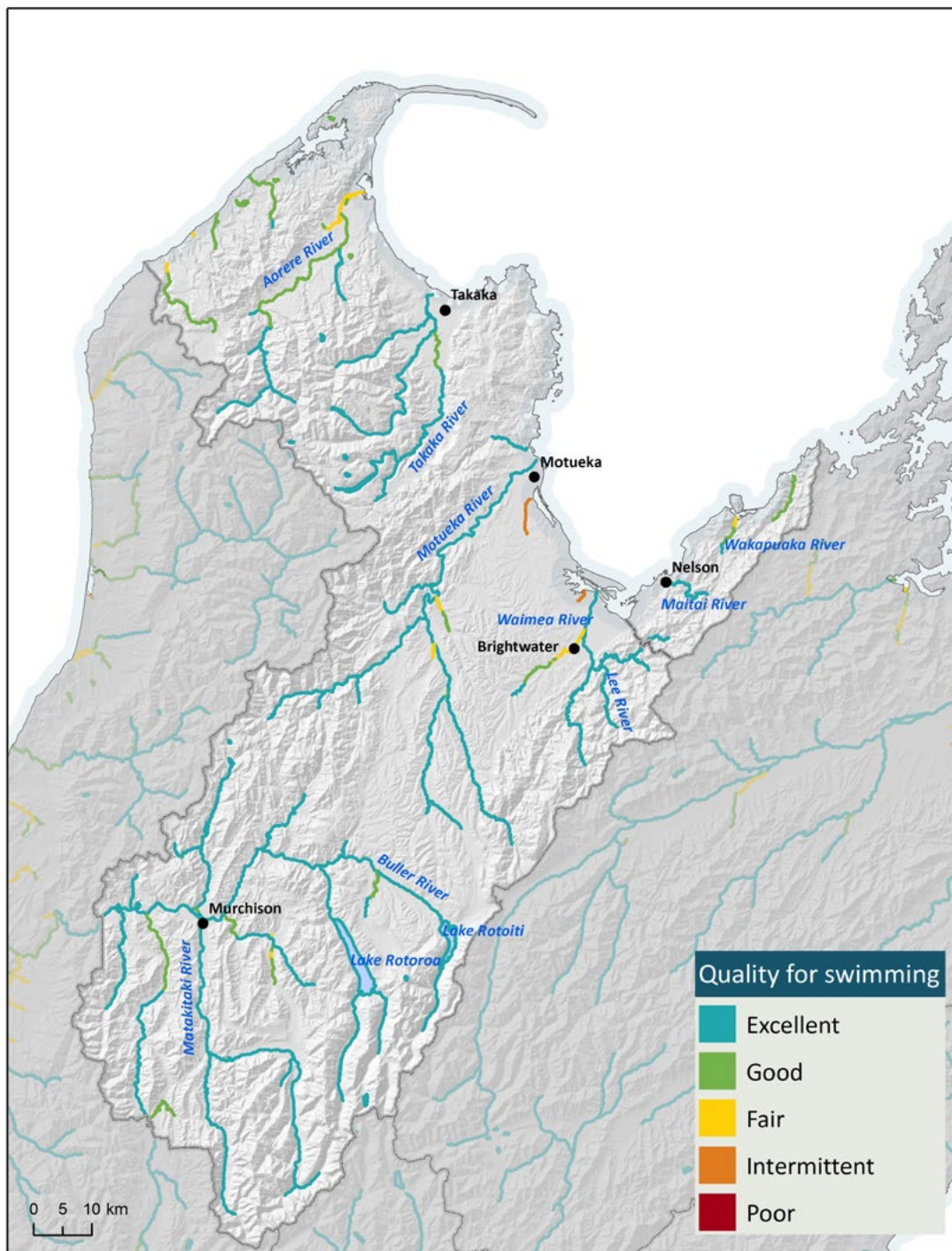
Regional swimming map – Hawke's Bay



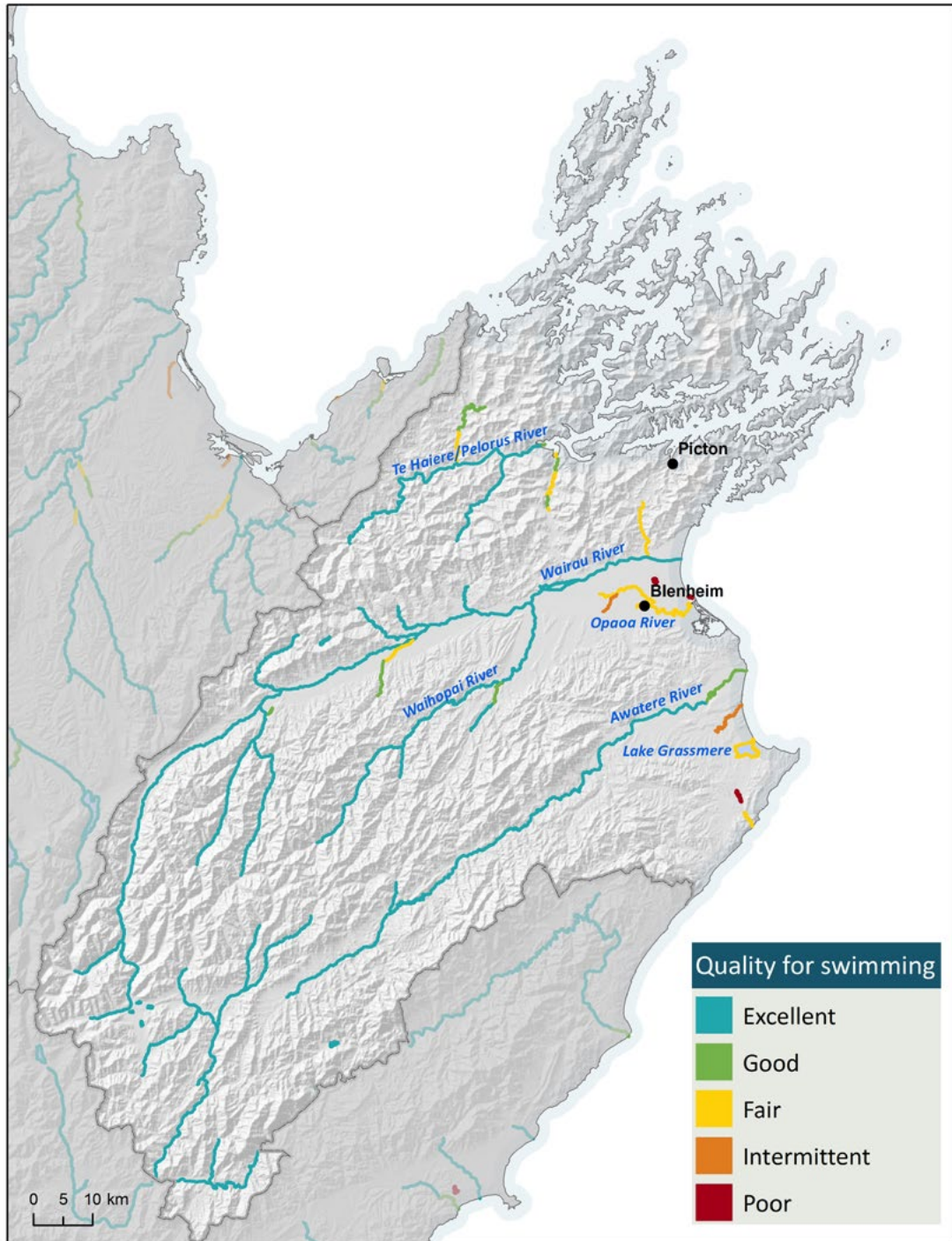
Regional swimming map – Wellington



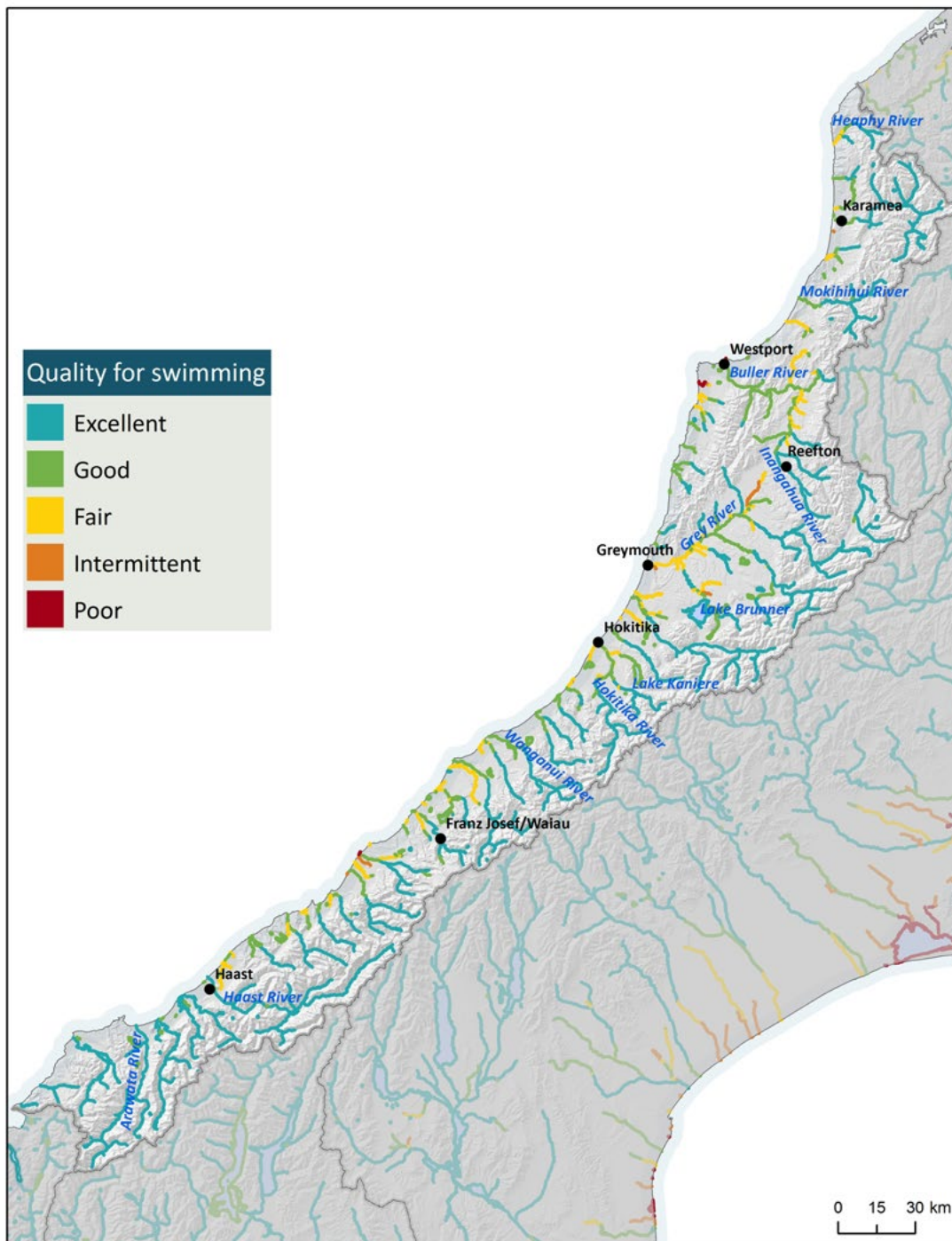
Regional swimming map – Tasman and Nelson



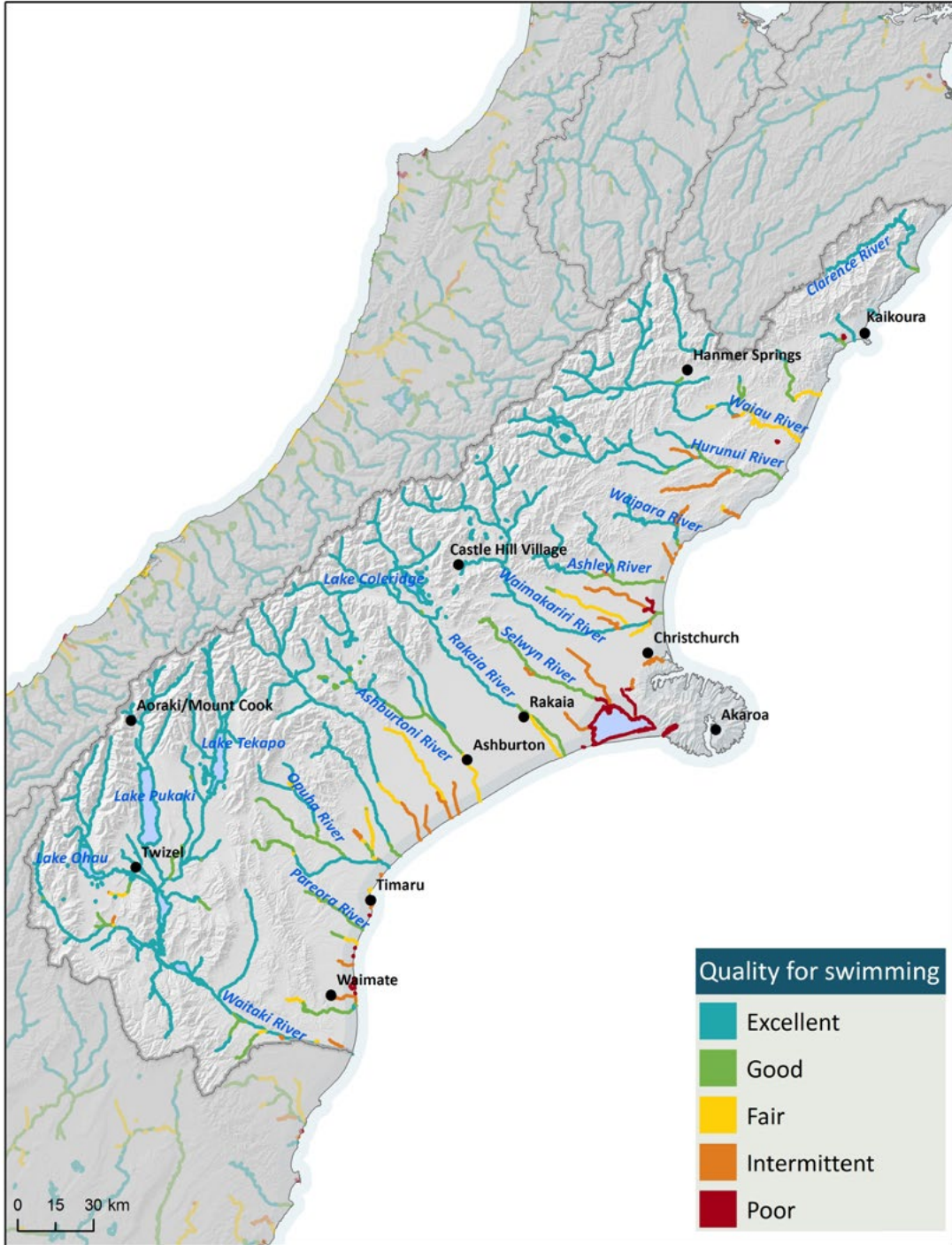
Regional swimming map – Marlborough



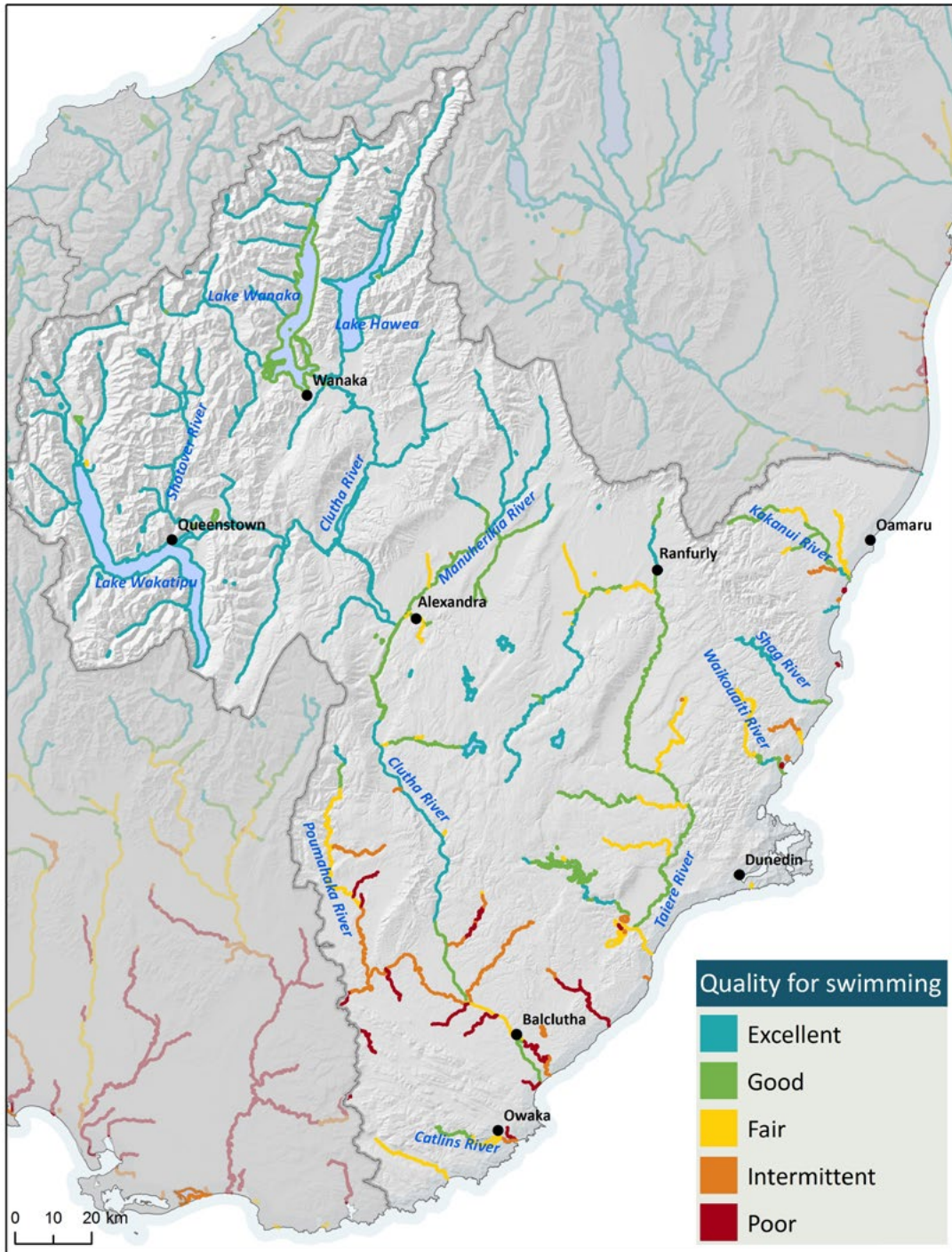
Regional swimming map – West Coast



Regional swimming map – Canterbury



Regional swimming map – Otago



Regional swimming map – Southland

