Te Whaitua o Kāpiti Implementation Programme

A Collaborative Implementation Plan to Improve our Freshwater Bodies

September 2024

He karakia mō te wai

Our call to action

Nō wai, tōku oranga?

He wai ki runga
He wai ki raro
He wai ki roto
He wai ki waho

Nō wai, tōku oranga?
Nōku, te oranga wai

Tukua kia rere
Tukua kia mau
Haumi e! Hui e!
Taiki e!

He karakia mō te wai

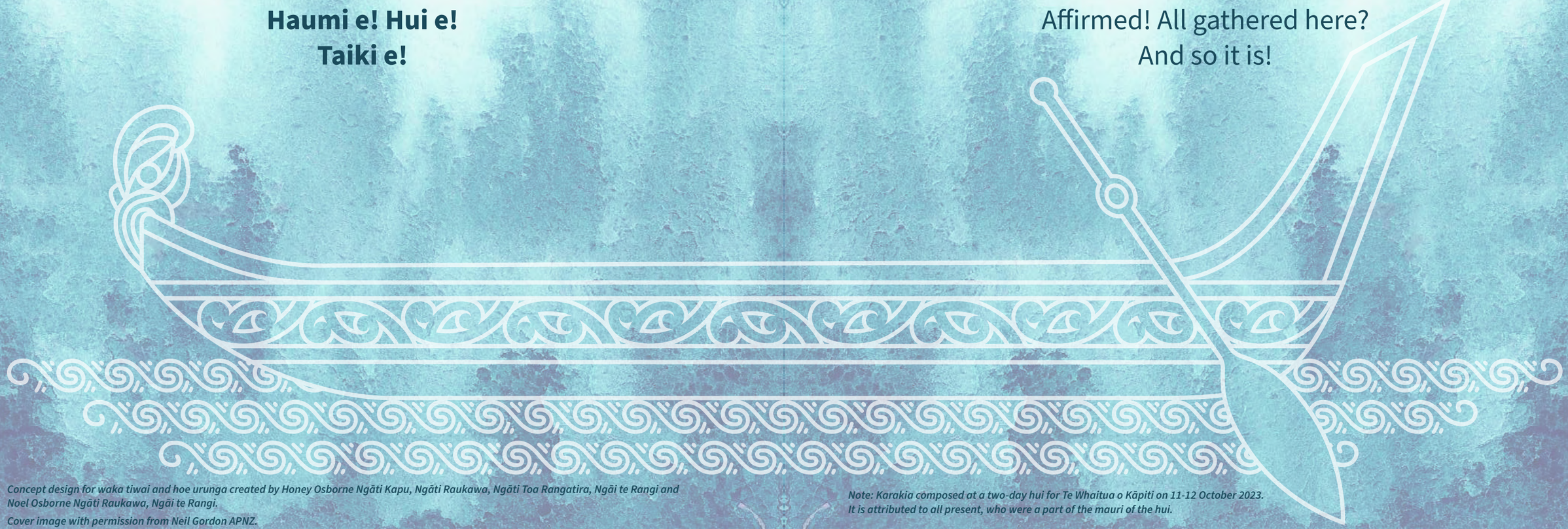
Our call to action

For whom does the well-being of water belong?

It is above
It is below
It is within
It is without

So, for whom does the well-being of water belong?
The well-being of water belongs to me.

Send it forth, let it flow
Send it forth, draw it near
Affirmed! All gathered here?
And so it is!



Concept design for waka tiwai and hoe urunga created by Honey Osborne Ngāti Kapu, Ngāti Raukawa, Ngāti Toa Rangatira, Ngāi te Rangi and Noel Osborne Ngāti Raukawa, Ngāi te Rangi.

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Note: Karakia composed at a two-day hui for Te Whaitua o Kāpiti on 11-12 October 2023. It is attributed to all present, who were a part of the mauri of the hui.

Ngā kai o roto

Contents

Abbreviated Terms

Abbreviation	Term
Action plan	Refers to a freshwater action plan prepared under clause 3.15 of the National Policy Statement for Freshwater Management 2020, or any other non-regulatory plan/tool
ASPM	Macroinvertebrate Average Score Per Metric
Committee	Te Whaitua o Kāpiti Committee
E. coli	Escherichia coli
DIN	Dissolved Inorganic Nitrogen
DoC	Department of Conservation
DRP	Dissolved Reactive Phosphorus
Fish-IBI	Fish Index of Biotic Integrity
FMU	Freshwater Management Unit
GIS	Geographical Information System
Greater Wellington	Greater Wellington Regional Council
HQI	Habitat Quality Index
KCDC	Kāpiti Coast District Council
L/s	Litres per second
MCI	Macroinvertebrate Community Index
NIWA	National Institute of Water & Atmospheric Research
NOF	National Objectives Framework
NPS-FM	National Policy Statement for Freshwater Management 2020
NRP	Natural Resources Plan for the Wellington Region
QMCI	Quantitative Macroinvertebrate Community Index
RMA	Resource Management Act 1991
RPS	Regional Policy Statement
WIP	Whaitua Implementation Programme

Glossary of Kupu Māori

Kupu Māori Term	English Language Description
Ara waka	Canoe pathways, passageways, courses, routes
ĀRT	The Confederation of Te Ātiawa ki Whakarongotai, Ngāti Raukawa, Ngāti Toa Rangatira
Ātiawa	Te Ātiawa ki Whakarongotai
Atua	Ancestor with continuing influence, God, Goddess, supernatural being, deity
Awa	River or stream
Heke	Migrations, migrational routes
Hoe waka	To paddle canoe/s
Huanga	Outcomes (for values)
Kai	Food
Kaimahi	Worker, staff member, employee
Kāinga	Home/s, dwelling, village, settlement, habitation
Kairaranga	Weaver
Kaitiaki	Guardian who protects, preserves, restores and enhances through customary tribal practices
Kaitiakitanga	The obligations of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations
Kānga wai	Fermented corn
Kauhoe	To swim, crew (of a canoe or ship), seaman
Kaupapa	Values, principles
Kawa	Customary protocols and etiquette upheld by whānau, hapū, and iwi to support the best practice management of a space, place, area or people
Ki uta ki tai	From the mountains to the sea
Kōhanga	Nest, nursery
Kōrero	To tell, say, speak, read, talk, address. A narrative, story, news, account, discussion, conversation, statement.
Kōrero tuku iho	Histories, stories of the past, traditions, oral traditions. Narratives gifted down (through generations)
Kotahitanga	Unity, working together towards the achievement of common goals

Kupu Māori Term	English Language Description
Kupu	Word
Kura	School/s, to be educated, schooled or attending schools
Mahi	Activity, occupation, to work, do, perform, make etc
Mahi pārekareka	Enjoyable, pleasant or entertaining activity/activities
Mahinga kai	The customary gathering of food and natural materials, the food and resources themselves and the places where those resources are gathered
Mana	Authority, control, influence
Mana whakahaere	The power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater
Mana whenua	Customary authority exercised by an iwi or hapu in an identified area
Manaakitanga	The process by which tangata whenua show respect, generosity, and care for freshwater and for others
Māra/Whakatupu kai	Garden, cultivation
Maramataka	Māori lunar calendar, calendar
Māramatanga	Understanding, insight, enlightenment, clarity
Mātanga Rongoā	Experienced, skilled practitioner in Māori wellbeing and medicine
Matariki	Matariki is a star cluster also known as the Pleiades, signifying the start of the new year
Mātauranga	The continuum of customary knowledge, systems, processes and practices succeeded by whānau, hapū and iwi to help understand, interpret and explain the dynamic and evolving world
Mauri	Life principle, life force, vital essence, special nature, a material symbol of a life principle, a tangible and intangible symbol or sign of the quality of a life principle; the essential vitality of a person, system, object or place
Mokopuna	Grandchild, grandchildren, descendent
Ngahere	Bush, forest
Ngāti Toa	Ngāti Toa Rangatira
NHoŌ	Ngā Hapū o Ōtaki
Pā	Fortified village, fort
Pā (tuna)	Weir to trap eels
Pā harakeke	Flax bush, generations
Papa Kāinga	Original home, home base, village, communal Māori land and communities
Papatūānuku	Mother earth, earth
Pātaka	Storehouse
Pēpi	Baby
Piharau	Lamprey

Kupu Māori Term	English Language Description
Puanga	Star also known as Rigel
Pūkengatanga	Contributing to a mātauranga (knowledge) continuum through the pursuit of excellence
Pūrākau	Story, storytelling
Pure	A ceremony for removing tapu
Rangatiratanga	Sovereignty, leadership, autonomy to make decisions, and self-determination
Raranga	Weave (ing), mats baskets etc
Rohe	Boundary, district, region, territory, area, border (of land)
Rohenga	Boundary
Rongoā	Rongoā is a customary body of knowledge, systems, processes and practices associated with healing, restoration and well-being. Rongoā relates to people and place and is validated by hapū and iwi, succeeded by wisdom keepers intergenerationally
Tāhuhu kōrero	Narrative/s that has been handed down; overarching narrative/s
Tamariki	Children, young, youthful, immature
Tānga te kawa	Tapu removal ceremony, striking with a branch of kawakawa, performing the kawa ceremony – when dedicating a new building or canoe
Taonga	Property, goods, possessions, effects, anything prized or of value
Taonga tuku iho	Those things that are highly prized and derived from iwi, hapū and whānau. They are whakapapa connected and are passed on from one generation to the next
Tapu	To be sacred, prohibited, restricted, set apart, forbidden, under atua protection
Tauranga waka	Landing places, landings for canoes, landings for waka
Taurite	Representative
Te Ao Tūroa	The natural world
Te Kotahitanga o Ātiawa	The united groups of Ātiawa
Te Mana o te Wai	Has the meaning as set out in clause 1.3 of the NPS-FM and articulated by the Committee in Section 4 of this WIP
Te Tiriti o Waitangi	The Treaty of Waitangi
Tikanga	Customary practices and behaviours held by whānau, hapū and iwi
Tohi	A ritual ceremony performed over a child in flowing water while petitioning the atua to endow the child with the desired mental and physical qualities Also to perform a certain ceremony before or after battle for the purpose of making the subject successful
Tohu Ahurea	Cultural indicator
Tuna	Eel

Kupu Māori Term	English Language Description
Tūpuna	Ancestor/s, ancestral
Ūkaipōtanga	The place or source of sustenance, origin or home
Urupā	Tribal burial ground, cemetery, or graveyard
Wāhi tapu	Burial grounds, tribal places where significant events have or continue to be observed requiring customary practices and protocols to protect and ensure safety or sanctity
Wāhi Whakarite	A place to prepare for an activity or event
Wāhi Whakawātea	A place used for the purposes of clearing, purging and dislodging physical and spiritual energy. Also for restoring wellbeing
Wai	Water
Wai tai	Salt water, sea water
Wai tapu	Sacred waters
Waiora	Health, soundness
Wairua	Spiritual; spirit; tangible and intangible transcendent capacity pertaining to people, places, events and situations
Wairuatanga	Spiritual existence or spirituality, spiritual dimension
Waka Ama	Outrigger canoe/s
Wānanga	Discussion, deliberation, consideration
Whaitua	Designated space or management area
Whakairi	Hang, suspend, elevate
Whakaoho Mauri	To awaken the life-force, life-principle, vital essence
Whakapapa	Genealogy, genealogical table, lineage, descent
Whakapiki	Improvement, raising, promotion, advancement
Whanaungatanga	Relationship, kinship, sense of family connection, obligations, collaborative efforts
Whare	House
Whenua	Land, country, placenta

Glossary of Te Whaitua o Kāpiti Terminology

Kāwanatanga House	The Crown House – Kāpiti Coast community representatives as articulated by the Committee in Section 3.3 of this WIP
Mana Whenua House	The Mana Whenua House – Ngā Hapū o Ōtaki, Te Ātiawa ki Whakarongotai and Ngāti Toa Rangatira representatives as articulated by the Committee in Section 3.4 of this WIP
Tiriti House	A forum that facilitates decision-making across representatives chosen by both mana whenua and kāwanatanga in the spirit of Te Tiriti o Waitangi partnership and articulated by the Committee in Section 3 of this WIP

Taurite Introductions

Dr Mahina-a-rangi Baker
Ātiawa, Ngāti Raukawa, Ngāti Toarangatira

Across all cultures, water brings people into an experience of divinity. Whether it is through our enjoyment of water spaces, whilst immersing ourselves in rivers, lakes and oceans, or through our ability to use it to grow and support life, both our own, and that which feeds our families and our society, or whether it's in the way we use water to cleanse ourselves and support our well-being: from our first experience of our mother's birthing waters and beyond, water supports every aspect of our lives.

This then calls on us to apply our deepest sense of responsibility and leadership to the task of protecting water and its broad value to our communities. The Kāpiti Whaitua have adopted the 'Treaty House Model' (Tiriti House Model) as our framework to guide our work and decision-making. It is a simple but profound model, that is appropriate for a place that is constitutionally grounded in the partnership between mana whenua and kāwanatanga (governance) that Te Tiriti o Waitangi established. This model recognises the need for three spaces of work and decision-making; one 'house' within which Council and the community apply their knowledge and develop positions on decision-making, equally, another 'house' within which mana whenua do the same, and a third 'Treaty House' where both groups come together to share their respective cultural perspectives and make decisions that reflect the very best insights from both worlds.

The resulting decisions that you will see in the Kāpiti Whaitua Implementation Programme (WIP) are therefore reflective of a process that has been inclusive, applied a great deal of rigour, and accessed deep intergenerational knowledge to the extent that I feel is rarely provided for in typical environmental planning processes.

One unique element of the WIP introduced by mana whenua is the attention to the role of social and cultural well-being to support the well-being of freshwater systems as a whole. Whilst this is a common feature of Māori approaches to water and environmental protection, we learned through our Treaty House process that there was key benefit in setting up a freshwater management system that paid attention to the social and cultural well-being of the whole community. Within the WIP, this includes monitoring the degree to which the community is able to have connection to their waterways, and the level of distress experienced by the community where degradation occurs. As mana whenua know from experience, when we are tasked with restoring and protecting the environment, we can have all the data and information about the poor state of the environment available, but if people are disconnected from the issues, or we don't understand how degraded environments actually impact peoples' day to day lives, it's very hard to effect behaviour change. This is a WIP that reflects an understanding that in the face of significant degradation of freshwater, people are the solution, not the problem.

I am confident that when implemented, the Kāpiti WIP will provide the long-needed change of approach our water has been calling to us for.

He oranga tangata, he oranga wai.
It is not just us that relies upon water,
our water is relying upon us.

Jenny Rowan QSO
Former Commissioner of the Environment Court
Former Mayor of the Kāpiti District Council

Healthy freshwater is fundamental to the survival and well-being of all life. Practicing sustainability in freshwater requires a whole-of-community approach, acknowledging our shared connection to the awa, spiritual values, recreational activities like fishing and leisure, and the importance of sharing our collective knowledge throughout the community.

The Kāpiti Coast is a unique environment comprised of historical wetlands, forests, rivers, foothills and mountains, and rare coastal dune ecosystems. The members of the Kāwanatanga House entered the Whaitua process with a deep understanding of the acute threat of climate change to our coastal community. The impacts of warmer temperatures, more extreme weather, and flooding on our sensitive landscape are only just beginning to be understood. As our population continues to grow, it is vitally important that our management of freshwater combines knowledge from both Western science and mātauranga Māori and is carried out in a way to manage these risks and ensure sustainable use for the future.

The Kāwanatanga House consists of a cross-section of the wider Kāpiti Coast community: farmers, politicians, regular community members, and experts in their various fields. Over the past 12 months this group has got to know one another, formed strong working and personal relationships, and come together to combine our collective aspirations and thinking to improve freshwater quality.

When the community members of the Kāwanatanga house were approached to take part in the Whaitua process, some community consultation had already taken place in the form of a survey. The final report was incredibly useful for the Kāwanatanga House, and we have drawn on it throughout this process to outline community values and aspirations for protecting and restoring freshwater for future generations.

Many of the streams and lakes in our district are in a degraded state, and our two rivers are in desperate need of attention. Despite many years of monitoring, continued deterioration has persisted due to a lack of effective action and enforcement. We are now facing many years of restoration. We acknowledge that these changes will take time, and although we would like to see improvements in our lifetime these changes will be for the benefit of future generations.

In one of the early Whaitua hui, the Mana Whenua House gave a presentation on mahinga kai which had an incredible impact on the whole Kāwanatanga House. Mana whenua experts shared their mātauranga to help us understand how water quality affects the health and sustainability of tuna (eel) in our waterways, and we carried that knowledge and emotional understanding throughout the Whaitua process. This full and immediate acceptance of mātauranga Māori from the Kāwanatanga House was critical to the success of this project, especially as it was new to many of us. With the resources and expertise of Greater Wellington heavily on the side of the Kāwanatanga House, we therefore sought to balance a critical assessment of the information we received layered alongside the knowledge brought by the Mana Whenua House. As a Tiriti House, considering mātauranga Māori equal

with Western science and local knowledge will lead to powerful outcomes based on a more holistic understanding of the health of our water.

Building on a history of strong relationships between Kāpiti Coast District Council and mana whenua, as well as many community discussions relating to the issues of water quality and usage, it was not only appropriate but essential that this process was worked inside a Tiriti House Model. The wisdom and perspective the Kāwanatanga House brought to the process has been complimented by a highly experienced and knowledgeable Mana Whenua House comprised of the three iwi/hapū with mana whenua status within this rohe. It has been a challenging and rewarding experience and a real privilege to be involved in a model that will bring a much better result for the Kāpiti community at large. The end result of this collective decision-making is powerful and important. We believe that this model should be the underpinning of all environmental decision-making processes in Aotearoa New Zealand.

In Te Whaitua o Kāpiti there is a real sense of environmental stewardship in our community, as evidenced by the huge number of community restoration groups dedicated to improving environmental outcomes in our district. However, we still have some way to go.

We hope that the wider community can draw from this Whaitua process and our learnings from working within a Tiriti House Model and form a deeper understanding of the connection we all share with the waterways in our district

That connection needs to be reinvigorated and sustained so that people not only understand how their water gets to the tap, but also the significance of that water and our collective responsibility for its health and well-being.

Experience shows us that when it comes to environmental concerns, we need a collective approach by all bodies with statutory responsibilities, working with all community groups. The Whaitua process is the latest step in this journey, and this conservation has had a particular edge of urgency to it. We need to clean up our waterways; that is the main aim of this statutory process. We need to nurture and resource people who are committed to improving the health of freshwater in Te Whaitua o Kāpiti. We need our local authorities to work in partnership with each other and mana whenua to share information and coordinate management and restoration of our waterways.

Royal Spoonbill. Photo: Craig Mckenzie, New Zealand Geographic

Facilitating Whaitua Kāpiti

Dr Kathie Irwin
Founder and CEO, Kathie Irwin and Associates

This project has been a long time coming in work of this kind. It represents a powerful response to a complex opportunity in Aotearoatanga, nation building. It sits at the nexus of three iwi, a Regional Council and a Local District Council, at a momentous period in this country's history.

Changes made through the Public Service Act 2020, the almost immediate take up of mātauranga pertaining to Matariki by a broad sector across New Zealand society and the increasing numbers of te reo Māori learners, across a range of ethnicities, are heartening signs of social change.

We had a chance to create a plan in this project that shines the light on a true pathway forward. By that I mean a sustainable pathway forward built on the mātauranga that Mana Whenua have held for centuries, and which they still hold, and the best of Western Science that the community will support to be applied.

Te Mana o Te Wai creates a unique space for the strategic vision of Te Tiriti o Waitangi / the Treaty of Waitangi to be realised in the Kāpiti Whaitua Implementation Plan. The implementation work needs to draw on a strong mātauranga Māori base to enable the mana of Te Tirohanga Māori to be evident. This project was generously resourced by mātauranga Māori experts who gave and gave and gave way beyond any reasonable project expectation. It is a heartfelt privilege to be part of such a deep knowledge exchange from people who have been researching their takiwā for decades.

The project was characterised by a powerful value base. Courage, integrity and heart were always in the room during this work. They were evident in a way that is seldom seen with such deep genuine care.

The project has covered so much ground. Sometimes the travelling has been easy, other times not so much so. What has always been present in the project is the strong leadership from the Taurite of the two Houses. I have been hugely impressed by the leadership of Dr Mahina Baker, Caleb Royal and Jenny Rowan. The chance to experience that leadership, over an eighteen-month period, will stay with me for the rest of my life. It really was life changing for which I am profoundly grateful. It has been a career highlight to sit amongst such leadership and integrity.

I've been heartened by the goodwill in the project and troubled by what it still takes to turn goodwill into good practice. There was room for stronger Tiriti/Treaty training earlier in the project than occurred. It seems trite to write but you can only lead a horse to water, you can't make it drink. Next time I'll need to design a different approach as the group who didn't think they needed training in this area really did.

I'd like to record special thanks to: Claire Gibb, who worked with meticulous attention to both the vision and the detail needed to move it to achieve what the Mana Whenua House sought; Whāia te kikorangi Caton, who worked tirelessly to keep the project moving with mana; and Michele Frank, who brought engagement to the project that was borne of head and heart in equal measure. To everyone we met and talked with and worked with across the journey that has been Whaitua Kāpiti, he mihi aroha. Turou Hawaiiki – may the force for social justice and equity be with us all!

SECTION 1

Purpose and Audience

1.1 Purpose of this Document

The primary purpose of this WIP is to present the collective Recommendations (see Section 8) and supporting rationale of Te Whaitua o Kāpiti Committee (Committee), to Greater Wellington Regional Council (Greater Wellington), for the purpose of improving the current state and management of freshwater in Kāpiti.

The Committee was established by Greater Wellington as an Advisory Board as part of fulfilling their obligations under the National Policy Statement for Freshwater Management 2020 (NPS-FM). The terms of reference for the Committee recognise the enduring tino rangatiratanga of mana whenua and so the purpose of this document is to reflect that partnership in the Recommendations.

The Recommendations focus the attention of decision-makers on Te Mana o te Wai, the fundamental concept in the NPS-FM, so the balance between the water, the wider environment and the community is restored and preserved. As mana whenua and community members themselves, the Committee seek to ensure that investment is directed into the practical and relatable enhancement of Te Mana o te Wai. Where regulatory processes and implementation, including monitoring are required, these are for the sole benefit of achieving the identified visions and environmental outcomes.

While the WIP has been prepared primarily to assist Greater Wellington, the Committee recognises the input of Kāpiti Coast District Council (KCDC) and that some Recommendations are relevant to their decision-making processes, in addition to those of other agencies and stakeholders.

"As the lifeblood of our ancestor Papatūānuku we need to ensure our awa are well. Why would we allow our ancestor to remain in hospital, only making her partially well again? We want her to be well and functioning."

1.2 WIP Audience

The scope of the Recommendations includes regulatory review, regulatory and procedural changes, information-gathering, including monitoring, the development of freshwater action plans in consultation with mana whenua and the community, advocacy and physical restoration works. The Recommendations are therefore primarily to direct the future partnership work of mana whenua (Ngā Hapū o Ōtaki, Te Ātiawa ki Whakarongotai and Ngāti Toa Rangatira), Greater Wellington, and KCDC. Recommendations have also been included to encourage co-ordination with, and participation by the Department of Conservation (DoC) as the manager of the Conservation Estate, as well as the wider community.

In setting a collective vision and objectives for each Freshwater Management Unit (FMU) (see Section 4), this WIP is also an important foundation for the wider community to understand Te Mana o te Wai within Kāpiti and to direct their own efforts supporting this work. There are a number of volunteer restoration groups throughout the Whaitua who already deliver environmental projects, including those to protect and restore freshwater. The Committee hope that this WIP will serve as a guide to strengthen their ongoing work. Greater Wellington and KCDC have a communication and education role in supporting this.

1.3 How to read this WIP

The structure of the WIP is as follows:

- **Sections 1.1 to 1.4** outline the purpose and audience for this WIP and next steps in the Whaitua process.
- **Sections 2.1 to 2.4** set out the history of wai in Te Whaitua o Kāpiti, rights and interests, and introduce the policy context which has guided this Whaitua process.
- **Section 3** introduces the Tiriti House Model, the Committee and its role, key decision-making tools, and considerations for the implementation of this WIP.
- **Section 4** outlines the Committee's expression of, and goals for managing freshwater in Te Whaitua o Kāpiti in accordance with, the six principles of Te Mana o te Wai.
- **Section 5** describes how Te Whaitua o Kāpiti has been geographically and spatially delineated into FMUs to inform the management of wai in Te Whaitua o Kāpiti.
- **Section 6** sets out the Committee's Recommendations that apply across the entirety of Te Whaitua o Kāpiti.
- **Section 7** sets out the Committee's Recommendations with regard to decisions that apply within individual FMUs in Te Whaitua o Kāpiti.

  Sections 6 and 7 also outline the Committee's approach to the decisions and Recommendations, expressing the overall aspirations for Te Whaitua o Kāpiti and direction on the required responses to freshwater degradation.
- **Section 8** contains the full set of the Committee Recommendations.
- **Appendices 1 to 10** contain supporting materials and context for decisions and Recommendations in this WIP.

1.4 What Comes Next?

It is critical to the Committee that their voice is clearly heard and that it endures beyond the completion of this WIP. The Committee have therefore undertaken actions and made Recommendations to ensure that this kaupapa is carried forward in a way that reflects Te Mana o te Wai.

Of particular importance to the Committee was providing content for the required Section 32 evaluation report that will support the proposed changes to the Regional Policy Statement for the Wellington Region (RPS) and the Natural Resources Plan for the Wellington Region (NRP). The Section 32 content is provided as an annex to this WIP. The content included sets out the relevant regulatory and policy context, a summary of the development of the WIP, identification of key issues and an evaluation of the Te Mana o te Wai objectives, long-term visions, environmental outcomes and target attribute states as described in this WIP.

The Committee's intent in providing this content as the starting point for the evaluation is to ensure the integrity of Recommendations in this WIP is upheld. In addition, the Section 32 content proposes a novel evaluation framework using the principles of Te Mana o te Wai, the guiding kaupapa through which all Recommendations have been developed. It is the desire of the Committee that this evaluation framework is carried through to the final Section 32 report.

Fundamental to the successful implementation of the WIP, is the recommended establishment of an ongoing committee to retain oversight of the delivery of the Recommendations. Their role is to ensure a consistent translation of the Recommendations into the deliverable actions

Together the WIP and the section 32 evaluation report content form the complete package of Recommendations of the Committee. This information can be viewed online at the Greater Wellington Regional Council website: www.gw.govt.nz/environment/freshwater

SECTION 2

Foundations

2.1 The Waters of Kāpiti

The waters of Kāpiti flowed cool and fresh from the mountains to the sea, mai uta ki tai. As the veins of Papatūānuku they sustained abundant communities of life – people, plants, fish, and invertebrates. Beginning in the steep, western slopes of the Tararua, the rivers cut valleys and gorges to reach the coastal plains. The plains were notable for their wetlands and network of navigable waterways.

Kāpiti was a dynamic place sustaining life through abundance. As the people migrated, so too did the rivers and the life within.

The unique identities of Ngā Hapū o Ōtaki, Te Ātiawa ki Whakarongotai and Ngāti Toa Rangatira (ĀRT) as mana whenua arises from this land and water. The journey of the ancestor named Haunui-a-Nanaia is widely known. During his pursuit of his wife, Wairaka, he named various tributaries and landmarks from Whanganui to Wellington. Tāhuhu kōrero connected to the rohe of ĀRT, which have been passed on through successive occupants of the land, provide invaluable insight into the natural history of Kāpiti.

Kenakena Pā next to the Waikanae River by JA Gilfillan, before 1847.[1]

1 Gilfillan, John Alexander, 1793-1863. Gilfillan, John Alexander, 1793-1864 :Wai-Kanae Pa and Kāpiti. [Before 1847]. Downes, Thomas William: Old Whanganui. Hawera, W. A. Parkinson, 1915. Ref: PUBL-0066-141. Alexander Turnbull Library, Wellington, New Zealand. natlib.govt.nz/records/23206108

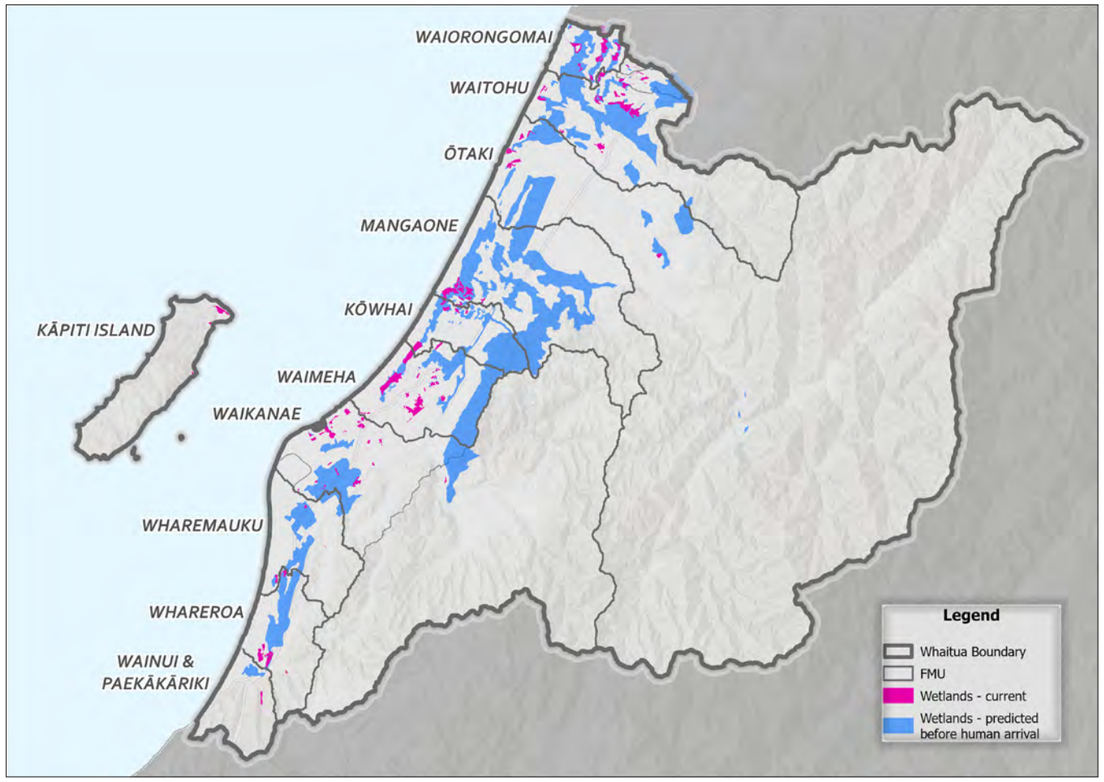


***Figure 1**: Historic extent of wetlands in Kāpiti.*

Whakapapa, or genealogical lineage, is also felt through connection to certain mahinga kai species, sites, and customary practices. It connects to the atua, or divine processes that physically manifest in the natural world.[2]

The abundance of life found in the waters of Kāpiti has dramatically decreased over the last 200 years. The Western settler approach to taming the landscape meant "The Great Swamp"[3] of native lowland forest was systematically cleared and drained between 1886 and the 1930s.[4] This impacted water temperatures, increased erosion and sedimentation, and severely reduced freshwater ecosystem habitat and species abundance. This approach continued into the 1980s and while 85 percent of wetlands in Kāpiti have been cleared, protection for the remaining 15 percent remains an ongoing struggle.

These clearances and draining allowed for the establishment of settlements, which then sought infrastructure to further restrict the dynamic movement of waterways, divert waterways and channel water for the management of human waste. In the 1990s, population growth in Kāpiti was among the highest in New Zealand.[5]

Urban development within Kāpiti has increasingly placed pressure on our waterways and the aquifers below. The infrastructure established to support these communities has failed to protect the health of freshwater ecosystems in Kāpiti. Water abstraction, stormwater and wastewater overflows, as well

2 Ātiawa. (2019). *Whakarongotai o te moana Whakarongotai o te wa. Kaitiakitanga Plan for Te Ātiawa ki Whakarongotai.*
3 Greater Wellington. (2003). *Wetland Action Plan.*
4 Greater Wellington. (1998). *Otaki Floodplain Management Plan for the Otaki River and its environment.*
5 KCDC. (2024). *Our district's history.*

Tuna infected with ringworm. Photo: Caleb Royal

Tuna disfigured by fungal infection. Photo: Caleb Royal

as leachate from landfills and industry has created uninhabitable freshwater environments. Most recently, the waters of Kāpiti have been disrupted by the construction of the Kāpiti Expressway.

Commercial abstraction of water started in the 1880s to support the Wellington to Longburn railway line. Subsequently, dairying became prevalent, with factories at Paraparaumu, Te Horo and Ōtaki. Horticulture dominated through the 1890s to 1930s around Ōtaki.[6]

These industries required the abstraction of both surface and groundwater to operate, as well as discharging pollutants to waterways including pathogens, nutrients, heavy metals, and sediment.

We know that the current state of freshwater in Kāpiti has impacted on ecosystem health. We also know that those impacts have been felt within our communities, including on spiritual health – te taha wairua, physical health – te taha tinana, mental and emotional health – te taha hinengaro and family and social health – te taha whānau. Mana whenua and the wider community continue to suffer from these impacts. Without a healthy and sustainable environment, the prosperity of Kāpiti suffers.

As mana whenua actively express their role as kaitiaki, the wider community is also seeking to come into balance with the waters of Kāpiti. Active restoration efforts can be seen by community and care groups throughout the Whaitua. However, many aspects of our current water management system are literally hidden from view, underground, in pipes, or through the absence of species or their habitat. It is only through intergenerational storytelling and active involvement with our awa that the waters of Kāpiti can be fully understood.

"[I want to see] a collective reverence for and understanding of the importance of freshwater s and spaces for humans and wildlife – that everyone sees themselves as the kaitiaki of our waterways and thinks about the activities they undertake in/on and around our water."

The Committee recognises that water is a taonga. Its mana is enduring and permanent and transcends our actions and relationship with it. The Committee also recognises the manaakitanga and care and respect relationship we all have with water which obliges us to take action to protect and restore it. Te Mana o te Wai provides a framework to understand the obligations of community and mana whenua to the wai; this WIP provides a pathway to fulfil those obligations.

This WIP therefore compels Greater Wellington and KCDC to fundamentally rethink their relationship with and obligations to water, as well as the way they communicate with and engage their community to take action.

As we look to the future, fulfilling our obligations to freshwater is likely to become more challenging with pressure from the changing climate and increases in our population. Therefore, the Recommendations of this WIP direct Greater Wellington and KCDC to partner with Ātiawa, NHoŌ and Ngāti Toa to demonstrate Tiriti-based leadership; not only to begin reversing current trends through better, more integrated management, but also to make significant headway in countering the effects of those future challenges on the life-giving waters of Kāpiti.

Siltation in the Waikanae River. Photo credit: Caleb Royal

2.2 Rights and Interests

The Committee recognise that wai is the life source of Papatūānuku. Wai has its own mauri and its own wairua. It is an intergenerational taonga for iwi, hapū, and Māori landowners.

The Committee also recognise that the whakapapa connection and kaitiaki responsibilities between mana whenua and the waters of Kāpiti cannot be broken or transferred. Mana whenua therefore hold enduring rangatiratanga and mana whakahaere within their rohe.

It is important to note that historical Māori land block interests be considered through the Kāpiti Whaitua catchment, including along the Mangaone.

"What is a PEPPERCORN LEASE? The lease holder must provide the freeholder with one peppercorn (yes the edible kind) each year as their rent! In reality, that means the leaseholder pays ZERO ground rent (excuse the pun). Between 1891 to 1893, five 1000 year leases were taken out by one leaseholder. If my maths is correct there are still 869 years left of the current leases! Expiring in the year 2893.[7]"

Rawhiti Higgott, Ātiawa ki Whakarongotai

As the Porirua ki Manawatū Inland Waterways Historical Report records, "the signing of Te Tiriti o Waitangi in 1840 guaranteed the tino rangatiratanga of hapū and iwi over their lands, forest, fisheries and other taonga, which included the inland waterways and their resources. In doing so, it acknowledged and affirmed the existing constitutional reality of the total political authority of hapū over themselves and full possession of their taonga waterways. Not all hapū signed, but a significant number did with over 500 rangatira from all around the country signing or marking the version written in Māori, and a small number the version written in English.

6 KCDC. (2024). *Our district's history.*

7 Rawhiti Higgott, Ātiawa ki Whakarongotai.

'The Māori signatories were declaring and cementing their own supreme authority, while acknowledging and defining the presence of the Crown and its citizens in their midst.'[8]

A number of prominent rangatira, both men and women, within the Porirua ki Manawatū inquiry district trusted the Queen of England and her official representatives at the time, and 44 of them placed their signature or mark on the Māori version at the following locations: Mana Island (two); Kāpiti Island (four); Waikanae (20); Ōtaki and Manawatū (18)."[9]

The Committee Tiriti House Model has provided an appropriate forum for the rights and interests of NHoŌ, Ātiawa, and Ngāti Toa to be expressed and upheld.

The Recommendations in this WIP serve to guide decision-makers on giving effect to Te Mana o te Wai, so the balance between the water, the wider environment and the community is restored and preserved. This reference to 'balance' does not signal a trade-off between Te Mana o te Wai and other goals. Rather, it emphasises that healthy water is a prerequisite for a healthy wider environment and community and therefore must be prioritised. Giving effect to Te Mana o te Wai requires Greater Wellington and KCDC to ensure their policies and plans provide for mana whenua rights and interests and that the Councils implement these Recommendations within the Tiriti House Model.

2.3 Treaty Settlements

The Crown has acknowledged and apologised for its actions to Ngāti Toa, to their ancestors, and to their descendants as recorded in the in the Ngāti Toa Rangatira Claims Settlement Act 2014. The Crown's apology states that it profoundly regrets that it has not always lived up to its obligations to Ngāti Toa Rangatira under Te Tiriti o Waitangi.

Te Ātiawa ki Whakarongotai and NHoŌ continue to work with the Crown through the settlement process.

The Ngāti Toa Rangatira Claims Settlement Act 2014 came into force on 23 April 2014. The Settlement Act requires a statutory acknowledgement of statutory areas, and of the statements of association and statements of coastal values made by Ngāti Toa Rangatira in respect of those statutory areas.

The Settlement Act sets out matters relating to the management and governance of Kāpiti Island. This includes the Kāpiti Island Strategic Advisory Committee (KISAC) that performs functions in relation to the Kāpiti Island reserve sites, with membership from Ngāti Toa and the DoC. The functions of the Committee include being consulted and providing advice on a range of environmental management issues relevant to Kāpiti Island reserve sites. Ngāti Toa representatives from the Mana Whenua House have led engagement with KISAC through the development of the WIP.

2.4 The Policy Context

This section of the WIP provides a high-level summary of the policy context that has guided this Whaitua process and the Committee's Recommendations.

As part of its intended reform of Aotearoa New Zealand's resource management system and legislation, the Government has signalled its intention to review and replace the NPS-FM, among other proposed changes. References to the NPS-FM and other legislation in this WIP refer to the versions that were in effect at the time of publication.

The Committee acknowledges this changing legislative framework. However, they also acknowledge the environmental pressures arising from climate change and increasing pressures for economic growth. The Committee is resolute in maintaining a strong commitment

8 Orange, C. (1987). *The Treaty of Waitangi*
9 Potter et al. (2017). *Porirua Ki Manawatū Inland Waterways Historical Report.*

to prioritising the health and well-being of water and ecosystems in order to safeguard the future prosperity of this Whaitua and its people.

2.4.1 Iwi Environmental Planning Documents

Iwi environmental planning documents are an expression of kaitiakitanga and provide an insight into the wealth of kōrero tuku iho and mātauranga held by hapū and iwi. The RMA requires that they are taken into account when regional policy statements and regional and district plans are prepared or changed.

While the Committee were incredibly fortunate to have kōrero tuku iho and mātauranga conveyed orally within the process, iwi environmental planning documents provide an important reference point. The iwi environmental planning documents relevant to Te Whaitua o Kāpiti are summarised as follows:

- *The Proposed Ngāti Raukawa te au ki te Tonga Ōtaki River and Catchment Iwi Management Plan (2000)* outlines the vision for Ngāti Raukawa te au ki te Tonga to exercise kaitiakitanga in respect of the Ōtaki River and its catchments. The plan provides policy direction to guide the fulfilment of that vision.
- *Whakarongotai o te moana Whakarongotai o te wā: Kaitiakitanga Plan for Te Ātiawa ki Whakarongotai (2019)* identifies the key kaupapa, huanga and tikanga values, objectives and policies of Ātiawa to guide kaitiakitanga. The document is internally focused in order to support the kaitiaki practice of the iwi, but also to inform other agencies.
- *Nga Korero Kaupapa mo Te Taiao: Policy Statement Manual for Kapakapanui: Te Runanga O Ati Awa ki Whakarongotai Inc (2001)* outlines the vision, intent and objectives for compliance with tikanga standards for protection and management of the environment as determined by Ātiawa with respect to disposal and treatment of effluent, stormwater runoff, heritage protection and management, and representation.
- *Te Haerenga Whakamua – A review of the District Plan Provisions for Māori: A Vision to the Future (2012)* sets out tangata whenua resource management aspirations and adjoining tikanga or policy suggestions for the Kāpiti Coast District. It was developed by ĀRT representatives to provide a Māori world view with respect to resource management in Kāpiti and looked to provide Council with a number of iwi aspirational statements, along with tikanga or proposed policies for the District Plan.

These documents clearly articulate the aspirations, tikanga and values of NHoŌ, Ātiawa, and Ngāti Toa, with respect to Mana Whakahaere, Kaitiakitanga and Manaakitanga within the Whaitua. They are clearly linked to the expression of the long-term visions, values, outcomes and Recommendations in this WIP.

2.4.2 National Policy Statement for Freshwater Management 2020

This WIP responds to the requirements of the NPS-FM. The NPS-FM provides national direction under the Resource Management Act 1991 (RMA) for managing freshwater quality and quantity in Aotearoa New Zealand. This WIP directs decision-makers to give effect to the NPS-FM requirements through timeframes and approaches determined by the Committee for Te Whaitua o Kāpiti.

A full summary of the NPS-FM direction that has informed the Committee's decision-making is provided in Appendix 1.

2.4.3 Whaitua and Committee Approach

Whaitua means designated space or management area. There are five whaitua within the geographical extent of the Greater Wellington region, as shown in Figure 2. Greater Wellington's programme to implement the NPS-FM involves the establishment of a committee within each whaitua. Each committee is tasked with making recommendations (in the form of a WIP) for how to give effect to the NPS-FM.

To date, WIPs containing regulatory and non-regulatory actions to improve the management of freshwater have been developed within Whaitua Te Whanganui-a-Tara (developed from 2018 to 2021), Te Awarua-o-Porirua (developed from 2014 to 2019), and Ruamāhanga Whaitua (developed from 2013 to 2018).

The Committee for Te Whaitua o Kāpiti was established in December 2022. In developing the WIP, the Committee considered the following[10]:

- Te Mana o te Wai
- Identification of the issues, challenges, and opportunities for integrated management, ki uta ki tai, of the waterways of Kāpiti
- A diversity of systems of values and knowledge, including mātauranga Māori
- The impacts of climate change
- The impacts of stormwater and wastewater
- The impacts of urban and rural land use and development
- Interactions between groundwater and surface water
- Interactions of freshwater with estuaries and other coastal environments
- Regulatory and non-regulatory actions.

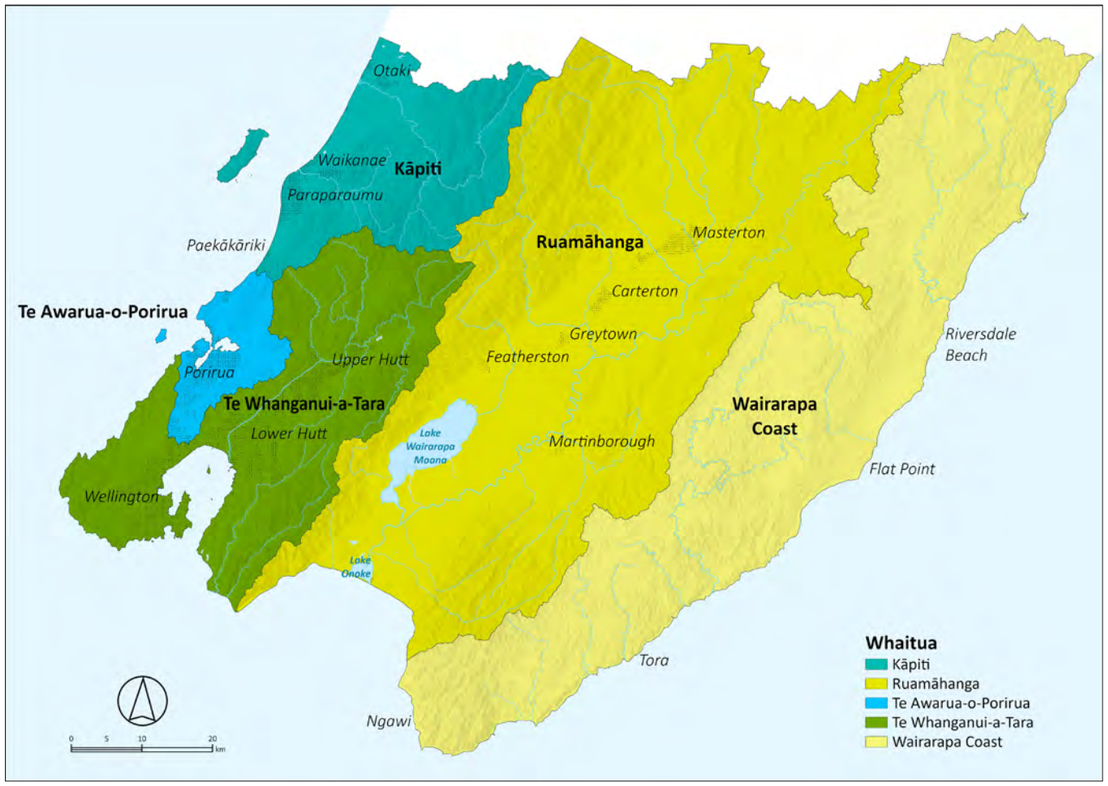


Figure 2: *Whaitua of the Greater Wellington Region.*

10 The matters were outlined in section 7.3 of the Committee's Terms of Reference and have been generally guided by the direction in the NPS-FM.

The Committee was guided by the following documents:

- Te Tiriti o Waitangi
- Resource Management Act 1991 (RMA)
- National Policy Statement for Freshwater Management 2020 (NPS-FM)
- Local Government Act 2002
- Iwi Environmental Management Plans
- Ngāti Toa Rangatira Claims Settlement Act 2014
- The requirements of other national direction.

The WIP has been developed using the collective mātauranga and knowledge of mana whenua and the community. A Tiriti House Model of consensus decision-making was used (see Section 3).

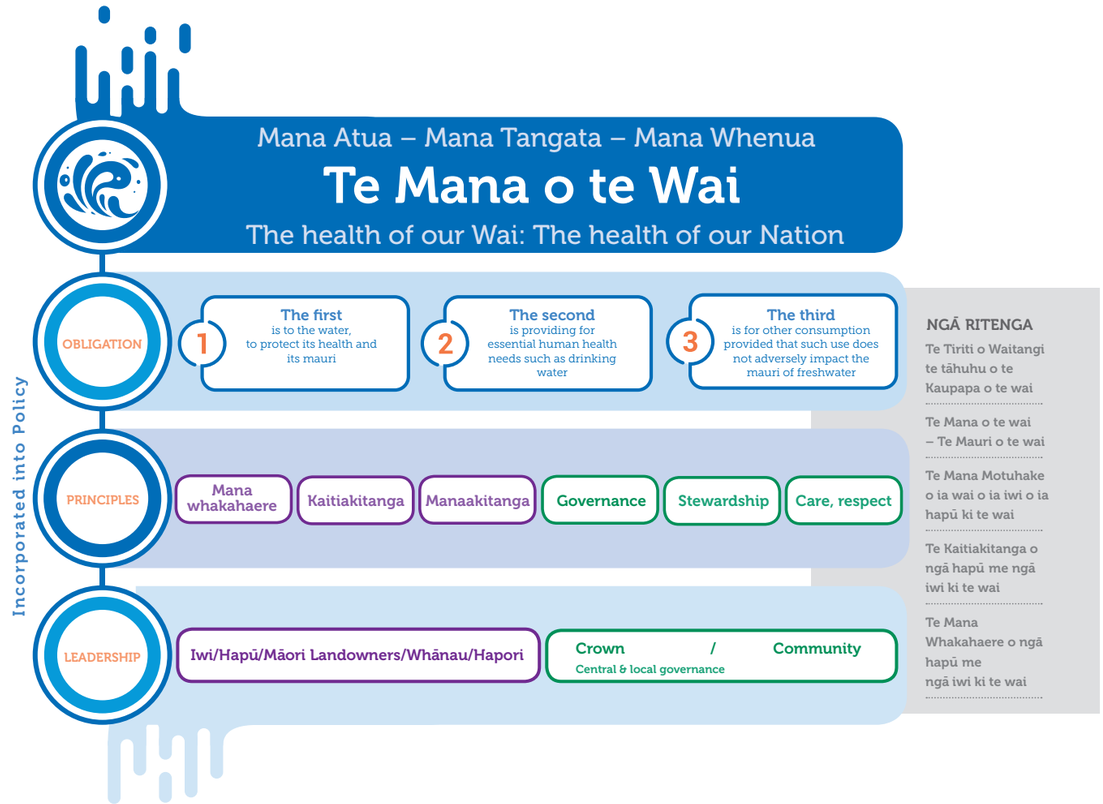


Figure 3: *2019 Te Kāhui Wai Māori report: environment.govt.nz/assets/Publications/Files/kahui-wai-maori-report.pdf*[12]

11 NPS-FM, clause 1.3(1).
12 NPS-FM, clauses 1.6(5) and 2.1(1).

2.4.4 Te Mana o te Wai

Te Mana o te Wai underpins the NPS-FM and is central to all decision-making on freshwater. Te Mana o te Wai recognises the fundamental importance of water, and that protecting the health of freshwater protects the health and well-being of the wider environment. Upholding Te Mana o te Wai protects the mauri of the wai.[11]

> *"Tell the adults to let the river be itself.*
> *The river has rights.*
> *No one should control it."*
> ***Community survey respondents, tamariki***

Te Mana o te Wai encompasses six principles relating to the roles of tangata whenua and other New Zealanders in the management of freshwater:[13]

- Mana whakahaere: the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater.
- Kaitiakitanga: the obligations of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations.
- Manaakitanga: the process by which tangata whenua show respect, generosity, and care for freshwater and for others.
- Governance: the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future.
- Stewardship: the obligations of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations.
- Care and respect: the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

The Committee have not only defined what those principles mean within Te Whaitua o Kāpiti, they have embodied them through the process of developing the WIP by considering the principles at every stage of the decision-making process. This has highlighted the importance of collective decision-making and action to shift the current approach to water management and improve our relationship with water.

2.4.5 National Objectives Framework

The Committee's work programme and key decisions for this WIP have been framed around the National Objectives Framework (NOF). The NOF is the 'engine room' of the NPS-FM and establishes a collaborative process for giving effect to Te Mana o te Wai.

Figure 4 provides an overview of the steps in the NOF process.

***Figure 4**: Overview of the NOF process set out in the NPS-FM.*

13 NPS-FM, clause 1.6(4).

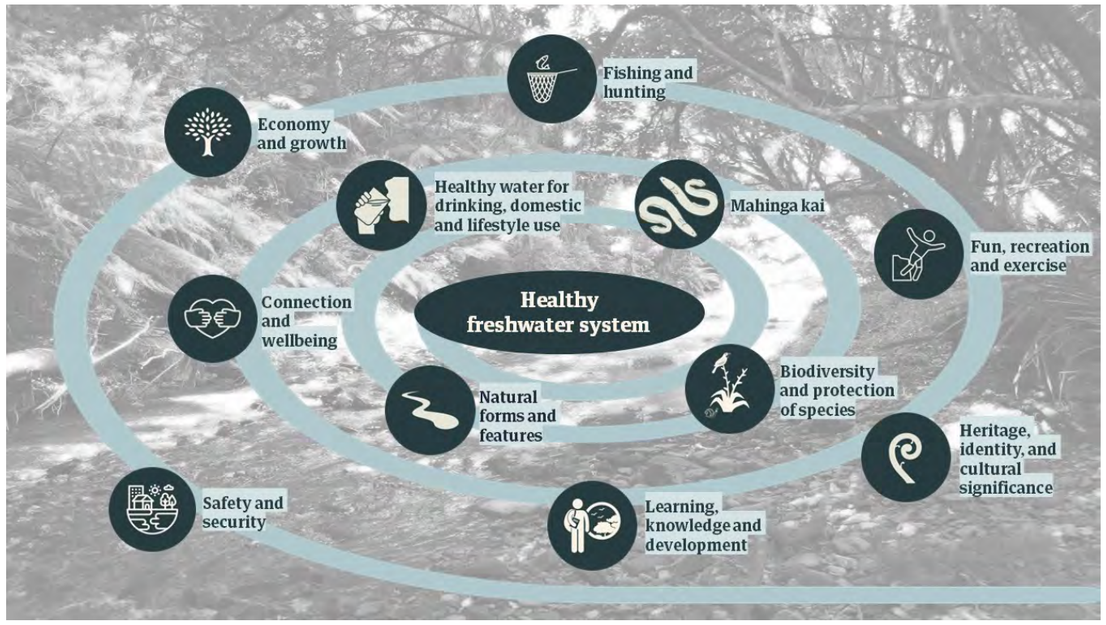


***Figure 5:** Communities' values for Kāpiti freshwater (Litmus report pg. 11).*

2.5 Community Freshwater Values and Aspirations

To inform the Committee's advice in this WIP, Greater Wellington commissioned a report on community perspectives regarding restoring and protecting freshwater throughout Te Whaitua o Kāpiti[14]. Information was collected via a community survey, workshops and interviews. The report presents information on the values which the community consider important and in need of protection, and details as to how the community considers rivers, streams, lakes and wetlands have significantly degraded and the effect of this degradation on their lives and well-being. It also provides community aspirations for protecting and restoring freshwater for future generations.

The values the community considered important and that should be provided for are set out in Figure 5.

In respect to freshwater management, the outcomes sought by the community included:

- "An adequate amount of water in each part of the water system 12 months a year, not only to supply our water needs but keep a supply in the rivers etc. to keep them healthy."
- "Catchments vegetated with native woody species stabilising them and minimising sedimentation and flooding extremes."
- "Developments that give practical priority to stormwater management and create places of natural beauty. Productive farmlands that thrive on well managed waterways. Reduction in pollution and from excessive draw – residential and industrial."
- "In 5 years' time all landowners minimise their use of impervious surfaces and are incentivised to covenant stream sides with appropriate planting. In 5 years' time there are incentives via rates or other means for large urban businesses to retro fit best practice stormwater management e.g., permeable parking surfaces, ponds, tanks, swales and wetlands."

14 Duckworth et al. (2023). *Have your say on the future of Kāpiti freshwater: Freshwater values and aspirations community research.*

- "Enough clean water resources stored to meet future water demands. Aquifer protected from contamination."[15]

The full report can be found on the Greater Wellington Regional Council website at www.gw.govt.nz/environment/freshwater/protecting-the-waters-of-your-area/whaitua-kapiti/

People swimming in the Ōtaki River. Photo: Litmus Report

15 Duckworth et al. (2023). *Have your say on the future of Kāpiti freshwater: Freshwater values and aspirations community research.*

SECTION 3

Our Process

3.1 The Tiriti House Model

The Tiriti House Model was developed by Professor Emeritus Whatarangi Winiata of Ngāti Raukawa.[16] The Committee humbly acknowledges the trust and support shown by the ĀRT Confederation and in particular the Winiata whānau in allowing the Committee to implement this model.

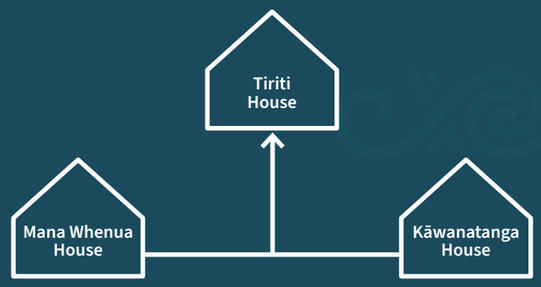


***Figure 6**: Diagram of the Tiriti House Model.*

The Tiriti House model is a decision-making model based on Te Tiriti o Waitangi (Te Tiriti) (see Figure 6). There are two houses in the model: a Mana Whenua House and a Kāwanatanga House. The model creates two levels of implementation. In the lower level the Mana Whenua and Kāwanatanga Houses create space for the two parties to wānanga their respective mātauranga/knowledge and to prepare their views to take to the upper Tiriti House for discussion and decision. The upper Tiriti House is the only decision-making House. The preparation of the views of the two Houses before they elevate to the upper Tiriti House is a critical feature of this model.

In this model the articles within Te Tiriti o Waitangi create a structure for a working relationship between two parties: a partnership. That partnership recognises both types of authority functioning together, and the Tiriti House is the place where the different types of authority come together; Rangatiratanga from the Mana Whenua House and Kāwanatanga from the Kāwanatanga House. Within the Tiriti House there is equal recognition of and input into decision-making from each authority, a high-level application of Article One of Te Tiriti o Waitangi.

A critical aspect of the Tiriti House model is the acknowledgement of Article Two of Te Tiriti o Waitangi, tino Rangatiratanga. This Article guarantees the mana of iwi to articulate mātauranga-a-whānau, a-hapū, and a-iwi. The structure of the model places mātauranga Māori alongside Western science and knowledge, a fundamental principle which was also expressed as a desire of the Committee with regard to freshwater management in Kāpiti in the future. Working within the Tiriti House Model has enabled the provisions of Article Three of Te Tiriti o Waitangi to be approached from a dual worldview perspective. This model does not direct a one-size-fits-all approach: by its very nature it enables shared outcomes to be created which are informed by both mātauranga-a-iwi and Western science.

16 Winiata, W. and Luke, D. (2021) *The Survival of Māori as a People. Wellington: Huia Publishers.*

The ĀRT Confederation and Whakatupuranga Rua Mano

The Whaitua process also drew on the long-term investment of the iwi of the ĀRT Confederation in *Whakatupuranga Rua Mano 1975-2000,* the twenty-five-year strategic plan of Ngāti Raukawa, Ngāti Toa Rangatira and Te Ātiawa ki Whakarongotai. Members of the Mana Whenua House have been raised in this strategic context and are well versed in iwi development and the machinations of Crown/Māori relations. They represent second-generation leadership of their respective iwi and are experts in their respective mātauranga, including a number being published authors and academically qualified in their fields.

The Whaitua process was able to call on these centuries-old inter-tribal relationships, the mātauranga of the iwi of the ĀRT Confederation—including the mātauranga generated through the marae and hapū base of *Whakatupuranga Rua Mano*—and the successful initiatives the iwi have already created, like Te Wānanga o Raukawa.[17] This exemplary work and the leadership of those in the Mana Whenua House was an essential contribution to the mahi of the Committee, without which the project could not have been completed in such a short timeframe.

3.2 Implementing the Tiriti House Model

In the second Tiriti House hui in March 2023, Pakake Winiata shared his knowledge of the Tiriti House decision-making model with the Committee.

Dr Kathie Irwin suggested that a caucus protocol be added to the meeting process. This would allow each House designated time to wānanga separately during a meeting when necessary, and then return to the agenda of the day to discuss and make decisions as a Tiriti House. This protocol was activated in a number of meetings to great effect. The two Houses also met and caucused separately outside of the Tiriti House meetings.

Each House also chose a member to act as its designated leader, the Taurite, a kupu Māori with a concept of matching, balance, and equivalence. The Taurite representative from each House supported the discussion, decision-making and upholding of tikanga within the Tiriti House. Dr Mahina-a-rangi Baker was chosen as the Taurite of the Mana Whenua House; when Dr Baker went on parental leave, Caleb Royal and subsequently Dr Aroha Spinks took over the Taurite role. Jenny Rowan was chosen as the Taurite of the Kāwanatanga House.

The Committee relied heavily on the Taurite to implement the Tiriti House model successfully, and to deliver the WIP in a timeframe of less than half than that of other Whaitua processes. The Taurite took the lead in individual House caucuses, as well as supporting the Tiriti House hui. All of these hui involved hours and hours of research and discussion, and resourcing was a constant issue and point of tension.

The leadership of the Taurite of the two Houses was outstanding. Their integrity and commitment to the highest levels of ethical conduct and behaviour, their intellectual rigour, and the gravitas which they brought to their respective roles was exemplary.

The Taurite led teams who were dedicated to representing their constituencies to the highest standards they could. These leaders skilfully navigated tension points and gaps in the knowledge brought to the table, and made space that allowed the Committee members to stretch and grow in their thinking as the process of the project unfolded. Ideas were tested, mātauranga-a-whānau, a-hapū, and a-iwi was powerfully presented and accepted in the meetings, and community voices were respectfully represented. Where decisions on outcomes were specific to certain waterways and FMUs, the iwi or hapū who hold mana whenua status in relation to those waterways led the process for the Mana Whenua House.

Within the context of Te Whaitua o Kāpiti, the Tiriti House has been a place of wānanga, discussion and debate with a view to achieving māramatanga, understanding. This process has required honesty, respect, and curiosity. It has also required a view to the past, present and future. Consistent with the Tiriti House model, the process to develop the WIP and Recommendations weaves and binds together two world views – that of mātauranga Māori and that of Western knowledge.

Ko wai mātou/Who are we: The Tiriti House

Twelve Committee members formed the Tiriti House, six from the Mana Whenua House and six from the Kāwanatanga House. The Tiriti House forum was skilfully facilitated by Dr Kathie Irwin, with tikanga managed in consultation with mana whenua.

The Committee members brought a range of combined expertise, including:

- seven members with mātauranga Māori
- two elected Councillors
- one member who had served as mayor of Kāpiti
- five members with environmental science qualifications
- two members with farming backgrounds
- one member with a professional planning background
- three trained Environmental Commissioners
- two Treaty of Waitangi researchers and expert witnesses
- one member with a Master's degree in economics
- one member who helped develop Te Mana o Te Wai on the Kahui Māori
- one rongoā expert.

The Committee was supported by an even bigger team of kaimahi and technical experts including policy advisors, planners, and scientists. The Committee would particularly like to thank Dr Russell Death and Dr Mike Joy for their support in this process.

The Whaitua Kāpiti Committee. L-R: Shane Parata, Sharlene Maoate-Davis, Cllr Jocelyn Prvanov, Monique Leith, Jenny Rowan, Dr Kathie Irwin (Facilitator), Kerry Walker, Dr Mahina-a-rangi Baker, Pātaka Moore, Dr Aroha Spinks, Caleb Royal. Apologies: Naomi Solomon, Cllr Penny Gaylor. Photo: Shanon Stevens

17 See Te Wānanga o Raukawa (wananga.com)

3.3 Who are we: The Kāwanatanga House

The Kāpiti Coast community representatives were:

Jenny Rowan
(Taurite – Kāwanatanga House)

I grew up in North Taranaki where 60-100 inches of rainfall each year was the norm. There was a constant flow of clean fresh water for all to enjoy, there was no talk of needing to conserve and protect the water ways and their ecosystems. That was in the 1950s and 1960s.

When l became Mayor of Inglewood in the mid-1980s, water was becoming an issue because old reticulation systems were breaking down and leakage was high. That process educated me about conserving water, but still not about the quality of water needed to sustain life in a healthy way; we assumed it would always be of that quality.

Later, as Duty Chair of the Taranaki Regional Council l was confronted with the reality that cowshed and commercial waste going into waterways was having a huge impact on the quality of the water and their ecosystems. Much needed to change, and planting along streams and rivers became the action plan to address this contamination. Sixteen years as an Environment Court Commissioner exposed me to the wider issues of degradation of our environment in Aotearoa, and to water being a major concern. When I came to live on the Kāpiti Coast in the early 2000s, it was no surprise to me that the main issues for the community was the quantity and quality of the local water.

When I became Mayor for Kāpiti in 2007, the Council set about securing a sustainable water supply for Paraparaumu and Waikanae, but still without effectively addressing the need to improve water quality. This is what the Whaitua project has been about, driven by Greater Wellington under the Tiriti House model.

My commitment to this WIP discussion stands on the knowledge that without a plan for a secure supply of clean water we, as humans, are at risk of simply not surviving. It is understanding this simple fact that was the main driver in bringing this WIP to our community.

Jocelyn Prvanov
(Kāpiti Coast District Councillor)

I am a second-term Ward Councillor for the Kāpiti Coast District Council and the Chair of the council's Climate and Environment Subcommittee. Previously, I was one of four community members on the Waikanae River restoration project, Waikanae Ki Uta Ki Tai. I also chaired a reserve focus group for many years and am currently the council representative on a number of Kāpiti Coast restoration groups.

I have a Master of Applied Science degree and I am an RMA hearing commissioner. I have also worked in the environmental space for central government. I was brought up on a farm and now live on a lifestyle block; I am well-connected to the land and those who live rurally and have a very good understanding of our impacts on the environment.

I have been privileged to be a member of the Kāpiti Whaitua committee. Although our journey hasn't been perfect, the outcome will be a game-changer in making a real positive long-term difference to our environment, especially our waterways.

Kerry Walker

I started farming in 1984, on 50 hectares in Te Horo. Since then, I have grown the farm to 120 hectares and 250 cows, using a low-input once-a-day milking operation until 2019 when the operation was converted to a low-input beef system. Between 1994-2004 I also held the lease on the Whareroa Dairy Farm at Queen Elizabeth Park, before it was decommissioned.

Outside the farm gate, I have been heavily involved in the dairy industry with roles on various dairy companies' shareholder groups, including as a member of the Dairy Environmental Leaders Forum. I have contributed to submissions on both district and regional plans, along with helping to shape the water management plan alongside local iwi, landowners, Forest and Bird, and other interest groups. In 1994 I completed the Kellogg's Rural Leadership Course at Lincoln University, and I have held a role on the Wellington Regional Farmers Reference Group since 2016.

I also have a developing interest in conservation, and wetland restoration in particular. Since 2010 I have restored and planted five hectares of wetland, with a total of 20 hectares earmarked for retirement from the farming operation to wetland. In addition, I have planted many metres of stream riparian planting and shelter belts.

Monique Leith

I am a Consultant Resource Management Planner and a full member of the New Zealand Planning Institute, with a proven track record in guiding complex and large-scale land development projects through resource management processes. Following several years of public and private sector experience across all facets of resource and environmental planning, I founded an environmental planning and land surveying consultancy, Leith Consulting in 2019, which has since grown to a team of 10. I am committed to community service: I am the Co-Chairwoman of the Kāpiti Coast Chamber of Commerce, where I lead business input to a number of community development projects such as the Economic Development Strategy, Kāpiti Workforce Plan, and Sustainable Business Network. I am also a Trustee for Work Ready Kāpiti, a charitable trust who run programmes and events to support local rangatahi to get work-ready. As a member of the Deaf community, I bring a different worldview and perspective. I am an accessibility advocate, a member of the Kāpiti Disability Advisory Group, and attended the International Initiative for Disability Leadership in Washington, D.C. I was born in Paraparaumu and raised in Waikanae, and I now live in Paraparaumu with my husband and two sons.

Pātaka Moore – Ngāti Raukawa, Ngāti Huia, Ngāti Pareraukawa

I have a background in resource and environmental planning and Māori resource development. Currently, I work as Pūkenga Matua (Lead Tutor) at the Ōtaki Campus of Te Wānanga o Raukawa (TWoR). Since 2001, I have been working within the kaitiakitanga team, as well as on other project work throughout our region including collecting oral history recordings of elders from throughout the ĀRT Confederation (Ātiawa, Raukawa, Toa Rangatira) about environmental injustice and aspects of culture and environment. My project colleagues and I hope that this material will become valued by future generations and will contribute to better management of our taiao. I work and live in Ōtaki with my wife and our four young children.

Penny Gaylor
(Wellington Regional Councillor)

I am the Kāpiti Coast representative for the Greater Wellington Regional Council and chair its Environment and Climate Committees. I am in my third term as a Councillor, and my second as Environment Committee Chair. I am also a member of Greater Wellington's Farming Reference Group, and the regional council's representative on the Wellington Stadium Trust.

Prior to my elected role at Greater Wellington, I was on the Kāpiti Coast District Council for two terms, and the chair of the KCDC Environment and Community Development Committee for both terms. My other roles in my community of Ōtaki include chair of the Ōtaki College Board, and owner of the Ōtaki Mail monthly newspaper.

I have an undergraduate degree in History and Politics, and a postgraduate Honours degree in Politics; I also studied journalism at the Wellington Polytechnic.

Supporting Kaimahi:

- Adele Dawson, Associate Resource Management Consultant
- Ames Donovan, Senior Advisor, Catchment
- Andy Brown, Team Leader, Knowledge Water
- Ben Thompson, Water Conservation and Trade Waste Officer
- Brent King, Team Leader, Evaluation and Insights
- Chloë Nannestad, Policy Advisor, Environmental Policy
- Claire Rewi, Manager, Mana Whenua Partnerships, Te Hunga Whiriwhiri
- Hayley Vujcich, Senior Policy Advisor, Environmental Policy
- Helli Ward, Senior Advisor, Integration and Insights
- Jack Mace, Director, Delivery
- James Blyth, Water Scientist and Director
- Jo Frances, Team Leader, Environmental Regulation
- Michele Frank, Kāpiti Catchment Manager
- Mike Thompson, Senior Scientist, Hydrology
- Nalini Singh, Business Planner, Catchment
- Nicola Patrick, Director, Catchment
- Penny Fairbrother, Senior Advisor, Integration and Insights
- Phill Barker, Senior Advisor, Catchment
- Rachel Pawson, Senior Policy Advisor, Environmental Policy
- Richard Shield, Senior Policy Advisor, Environmental Policy
- Rita O'Brien, Stormwater and Coastal Engineer
- Simon Scott, Senior Strategic Advisor
- Sheryl Miller, Kaitohu Matua Māori Engagement, Te Hunga Whiriwhiri
- Tania Parata, Director, Mana Whenua Partnerships, Te Hunga Whiriwhiri
- Tim Sharp, Manager Te Whanganui-a-Tara, Catchment
- Tim Stoddart, Senior Resource Management Consultant
- Theressa Murray, Transcription services
- Whāia te kikorangi Caton, Advisor, Catchment

Waikanae River. Photo: Sharlene Maoate-Davis

3.4 Who are we: The Mana Whenua House

Ka waihape atu ki te pūtake o Tararua
Ki Te Tuara o Te Rangihaeata
E kautere atu ana ngā wai tuku kiri o Ōtaki,
o Waitohu Ki ngā whenua tuku iho i mahuetia ai e rātou mā
E whakawhenua ai te noho a ngā uri whakatupu o Huia,
o Maiotaki, o Pare, o Koroki, o Kapumanawawhiti
E tau nei e!

Ngā Hapū o Ōtaki representatives & Taurite – Mana Whenua House 2024:
Caleb Royal
Dr Aroha Spinks

NGĀ HAPŪ O ŌTAKI
HE WAKA EKE NOA

Mai i Kūkūtauākī ki Whareroa,
tatu atu ki Paripari
Rere whakauta ngā tinitapu ko Wainui,
Ko Maunganui,
Pukemore, Kapakapanui, Pukeatua,
Ūngutu atu ki te pou whakararo ki
Ngāwhakangutu
Ko Te Ātiawa ki Whakarongotai e

Te Ātiawa ki Whakarongotai representatives:
Dr Mahina-a-rangi Baker (Taurite – Mana Whenua House 2023)
Sharlene Maoate-Davis

ĀTIAWA KI WHAKARONGOTAI

Mai i Miria te Kākara ki Whitireia,
Whakawhiti te Moana o Raukawa,
Ki Wairau, ki Whakatū

Ngāti Toa Rangatira representatives:
Naomi Solomon
Shane Parata

TE RŪNANGA O
TOA RANGATIRA

Supporting Kaimahi:

- Aaria Dobson-Waitere (Ngā Rauru-kii-tahi me Ngā Ruahinerangi); GIS specialist
- Aimee Rei-Bishop, (Ngāti Toa Rangatira); Kaiwhakahaere Te Mana Taiao
- Claire Gibb (Pākeha: Kōtirana, Ingarangi); Project Coordinator
- Jade Lee-Walker (Kai Tahu, Ngāti Porou, Ngāti Kahungunu, Moriori); Policy Advisor
- Torrey McDonnell (Pākeha: Kōtirana, Airihi, Huītene); Principal Planner
- Jordan Housiaux (Te Ātiawa ki Whakarongotai, Ngāti Toa Rangatira, Ngāti Raukawa ki te Tonga, Āti Haunui-a-Pāpārangi); Technical Advisor
- Melanie McCormick (Te Ātiawa ki Whakarongotai, Ngāti Toa Rangatira); Technical Advisor
- Dr Mike Joy (Pākehā, Tangata Tiriti, English and Irish descent) Researcher, Ecology and Environmental Science
- Jaida Howard (Ngāti Toa Rangatira); Resource Management Planning Assistant
- Rob van Duivenboden (Tangata Tiriti); Senior Planner
- Dr Russell Death; Quantitative Freshwater Ecologist

3.4.1 History of Mana Whenua in Kāpiti

In 1821 the migrations known as 'Te Heke Mai Raro' began. These were a number of migrations of Ngāti Toa from Kāwhia, Te Ātiawa from Taranaki, and Ngāti Raukawa from Waikato to the Kāpiti area. This culminated in the establishment of relationships and resource rights for the three iwi through raupatu, or conquest in their present-day rohe.

Our united collective and whakapapa connections across the neighbouring iwi also provided us with the ability to access sites outside our own rohe, and share resources in accordance with tikanga Māori. The activity of mahinga kai is a central part of our way of life. Going out as a family to special places to fish or camp renews those whakapapa connections to place, to atua and to each other.

Certain kai are central to our identity and evoke whakapapa connections. Ensuring those kai are served at our marae for special events is a reflection of that identity. It also reflects the state of our physical and cultural well-being. As we are not separate from Te Taiao (the environment), the state of Te Taiao is an indicator of the health of the people.

The portion of Ngāti Raukawa that took up residency in the Kāpiti Coast, Horowhenua and Manawatū region is now known as the iwi of Ngāti Raukawa ki te Tonga, a faction with whakapapa links to those of Ngāti Raukawa that still remain in Waikato. A number of heke brought Ngāti Raukawa to this region (e.g. Te Heke Karere, Te Heke Whirinui, Te Heke Kariri-tahi, Te Heke Mairaro) where they continue to assert mana whenua today. Ngā Hapū o Ōtaki was formed by the five hapū of the Ōtaki district: Ngāti Huia ki Katihiku, Ngāti Kapu, Ngāti Pare, Ngāti Korokī, and Ngāti Maiōtaki.

The earliest accounts of Te Āti Awa in Kāpiti go back to the Kāhui Maunga collective that had spread itself from Taranaki and the Central Plateau region through to Te Upoko o te Ika. Since then, further waves of migration have occurred.

Ngāti Toa Rangatira are a Tainui iwi descended from the eponymous ancestor Toa Rangatira. Originally from Kāwhia, Ngāti Toa Rangatira migrated south under the leadership of Te Rauparaha, Te Pēhi Kupe, Te Rangihaeata, Te Whatarauihi Nohorua and other chiefs to establish customary rights in the region of Te Moana o Raukawa (Cook Strait), including the Kāpiti coast, in the 1820s. Ngāti Toa Rangatira includes Ngāti Haumia, a hapū based in the Paekākāriki area.

In 1822, the migrating iwi had moved south to their relations based in Okoki in northern Taranaki, in the Heke known as Tahutahuahi. Significant time was spent here gathering

support, by which in 1823 Ngāti Toa Rangatira and Taranaki iwi left on the Heke Tātarāmoa, including Ngāti Mutunga, Ngāti Tama and Te Ātiawa hapū of Ngāti Puketapu, Ngāti Rāhiri and Manukorihi. The chiefs who led the Taranaki component were Paremata-te-Wahapiro, Reretawhangawhanga, Wiremu Kingi Te Rangitāke, Te Whetū Tumokemoke, Te Matoha, Rangi Nohokau, Tuhata Patuhiki, Rautahi, Te Pakaiahi, Manukonga, Te Whakapaheke, Takaratai and Kawe, Kohiwi, Ngatata-i-te-rangi and others. Ngāti Tama came under the leadership of Te Puoho-o-te- Rangi and others.

The Heke travelled from Waitara via Whakaahurangi, an inland track to Pātea continuing south along the coast whereby passage through Ngāti Apa was sought before Kāpiti Island was secured through conquest. This led the way for continued Taranaki Heke, of which a large contingent of Taranaki iwi, arrived and settled on either side of the Waikanae River through to Whareroa in the south.

Collective whakapapa and kaupapa over the past 200 years between the three iwi has led to strong connections and the establishment of Te Ātiawa ki Whakarongotai Charitable Trust, Ngā Hapū o Ōtaki (hapū of Ngāti Raukawa mandated organisation within the district) and Te Rūnanga O Toa Rangatira. This iwi relationship is also commonly referred to as the ĀRT Confederation. ĀRT also co-developed Whakatupuranga Rua Mano and Te Wānanga o Raukawa, which has fostered expertise in mātauranga Māori, te reo Māori and enabled expert representation of its interests.

All awa in Te Whaitua o Kāpiti are valued through whakapapa, kōrero tuku iho, waiora, whakapiki, wairua, whakaoho mauri and rongoā. These relationships are complex, and there has been no intent to convey their nuance within the context of the WIP.

3.5 Tools for Decision-Making

River systems and their interactions with various influences are complex. Ensuring a holistic and evidence-based approach to understanding the cause of freshwater degradation and how freshwater environments may respond to change is critical for setting target attribute states under the NPS-FM.

A key tool adopted by the Committee to assist their decision-making was a Bayesian Belief Network (BBN) model.[18] A BBN is a network that can be developed to identify key components of a system and how each component is connected through cause-and-effect relationships. These relationships can then be tested to determine

18 Bayesian Belief Network models are graphical data structures that communicate causal information and provide a framework for describing and evaluating probabilities when there is a network of interrelated variables. (McClean, S. 2003. Encyclopaedia of Physical Science and Technology (Third Edition)).

Waikanae River Estuary. Photo: Sharlene Maoate-Davis

how changes in one component influences all other components.

BBN models are increasingly being used as decision-making tools in freshwater management because they provide a straightforward visual framework to examine various scenarios in relation to the different stressors affecting rivers. They can also be used to guide where interventions are needed based on critical relationships between components.

The Committee considered a BBN model was an effective tool to inform the setting of target attribute states for various river specific attributes, particularly due to its ability to assist in evidence-based decision-making and ability to incorporate mātauranga Māori. The Committee was also particularly interested in using the model to understand what changes within each attribute (component) would be required to improve a specific attribute state and to visualise the relationships between each attribute.

The BBN model was developed by Dr Russell Death[19] in collaboration with the Committee and is a representation of the various elements influencing freshwater receiving environments and the relationships between them in Te Whaitua o Kāpiti. Given the limited time to create and then use the model to determine target attribute states, the BBN only incorporates some components of the conceptual model developed by the Committee (see Appendix 2 and modelling report[20]). However, the components included were determined by the Committee as the most important to focus on with regard to their connections with the values identified, as well as for informing the location of management actions.

The model probabilities which reflect the relationship between components are built with artificial intelligence which learns the relationship based on data inputs. The data inputs included information from Greater Wellington's state of the environment monitoring sites, mātauranga Māori from the Mana Whenua House, and information collected by Dr Russell Death from over three decades of research, as well as supervision of university student projects in the Greater Wellington region.

The size of datasets is important to the functionality of BBN models as the more data points there are, the easier it is for the model to accurately determine relationships between components. For example, while the Committee included the mahinga kai attributes within the model, there was not enough quantitative data to get an accurate assessment of model predictions, therefore the reliability of these components of the BBN is likely to be poor until such time as there is further data gathered[21]. This demonstrates how the availability of monitoring data is critical to the accuracy and scope of the BBN model. It is also the reason why the BBN only relates to rivers and streams. There is insufficient information about lakes, groundwater, and wetlands in the Whaitua to provide information on the key drivers of environmental health for these receiving environments in the BBN.

Using the model, the Committee worked through the target attribute state setting process on an FMU-by-FMU basis. Quantitative Macroinvertebrate Community Index (QMCI) was identified as a key attribute, and it was used as the basis for making decisions. The state selected for QMCI then often dictated the states required for other attributes.

A full report on BBN modelling, the Kāpiti Whaitua model construction and use can be found at www.gw.govt.nz/environment/freshwater/

19 Death et al. (2015). *How good are Bayesian belief networks for environmental management? A test with data from an agricultural river catchment.*
20 Death, R. (2024). A Bayesian model to assist Te Whaitua o Kāpiti in developing freshwater ecosystem guidelines for streams and rivers in Kāpiti.
21 Death, R. (2024). A Bayesian model to assist Te Whaitua o Kāpiti in developing freshwater ecosystem guidelines for streams and rivers in Kāpiti.

3.6 Implementation of the WIP

As detailed in section 1.1, this WIP is a non-statutory document that outlines the Committee's collective Recommendations and their underlying rationale for managing freshwater in Te Whaitua o Kāpiti. It proposes various actions to improve freshwater quality, quantity, and ecosystems. This WIP serves as a guiding document and marks the beginning of the journey to give effect to Te Mana o te Wai in Kāpiti. Successful implementation of this WIP will require the co-ordination of various future processes, structures and decisions. Greater Wellington, in partnership with mana whenua, are responsible for delivering the outcomes sought in the Recommendations supported by KCDC, other agencies and stakeholders. Specifically, the Greater Wellington Kāpiti Catchment Manager is accountable for coordinating the effective delivery of the WIP Recommendations.

Implementing the WIP relies on ongoing partnership, relationships, engagement, and investment (including through Long Term Plan budgets). It is recognised that broader community and stakeholder input has been limited in this process to date. Conversations with certain organisations referenced in the delivery of actions are also yet to begin. Going forward, transparency about actions and ongoing opportunities for involvement is essential.

A number of the Recommendations direct changes to Greater Wellington's regulatory instruments, including the RPS and NRP. Preparing a regional plan change for Te Whaitua o Kāpiti will require substantial additional technical work, including gathering mātauranga and policy analysis to determine the plan provisions and elaborate on the Committee's Section 32 content to complete the Section 32 evaluation report.

This WIP highlights various information gaps which will need to be addressed as part of plan change development. For example, additional work is required to establish baseline states for attributes where they are currently unknown. Other policy analysis will be required to determine how best to integrate the Committee's recommended objectives into the regulatory framework and ensure there is a clear line of sight between the provisions.

Operating under a Tiriti House Model, the Committee has diligently provided Recommendations within tight timeframes on various matters required under the NPS-FM. This process has been guided by extensive caucusing, with a significant input of time and commitment of both Houses. However, no formal assessment of the costs, benefits or feasibility of individual or collective Recommendations has been conducted. Comprehensive assessments of the recommended (and any other) regulatory and non-regulatory methods will be necessary as part of the implementation of the WIP going forward.

This work is necessary to ensure that the intent of the Committee's Recommendations is upheld and translated into robust and appropriate regulation, supported by the best available information. Achieving the Committee's aspirations and desired environmental outcomes and target attribute states will require careful consideration of the most appropriate package of plan provisions, developed in partnership with mana whenua.

Many of the Committee's Recommendations are not reliant on a plan change process. As shown in Section 8, implementation of some actions can start immediately. These include matters such as monitoring, cross-agency collaboration and co-ordination, development of action plans, and community education programmes.

This WIP signals a long journey ahead to restore the health and well-being of wai and give effect to Te Mana o te Wai in Kāpiti. It is critical that everyone, from relevant agencies and stakeholders to the wider community, contributes to upholding the Committee's kaupapa and the mana of this WIP.

SECTION 4

Te Mana o Te Wai

This section of the WIP sets out the Committee's expression of Te Mana o te Wai. It outlines the Committee's approach to articulating the six principles of Te Mana o te Wai and the development of objectives describing how freshwater will be managed to implement this concept in Te Whaitua o Kāpiti.

Te Mana o te Wai underpins the NPS-FM and is central to all decision-making on freshwater. It encompasses six principles relating to the roles of tangata whenua and other New Zealanders in the management of freshwater. These are mana whakahaere, kaitiakitanga, manaakitanga, governance, stewardship, and care and respect.

Te Mana o te Wai contains a hierarchy of obligations that prioritises; first, the health and well-being of water bodies and freshwater ecosystems (Obligation 1); second, the health needs of people (such as drinking water) (Obligation 2); and third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future (Obligation 3).

The NPS-FM requires Greater Wellington to include an objective in its RPS to describe how the management of freshwater in the region will give effect to Te Mana o te Wai.[22] This must be developed through engagement with communities and tangata whenua to determine how Te Mana o te Wai applies to water bodies and freshwater ecosystems in the region.[23]

Implementing Te Mana o te Wai therefore requires understanding what the concept means in a particular place, based on the visions and tikanga of the people of that place. It is not only concerned with the outcome of achieving improved states for water bodies, but with also the process of working actively with mana whenua and engaging communities to develop what the local expression (or desired outcome) for water bodies should be.

4.1 Te Mana o te Wai in Te Whaitua o Kāpiti

4.1.1 Expression of the Six Principles

The Committee explored the concept of Te Mana o te Wai and its application in Te Whaitua o Kāpiti in depth over several hui in 2023. Both Houses agreed that the implementation of Te Mana o te Wai required transformational change. As a result, Kāpiti's communities would be faced with difficult decisions to uphold the hierarchy of obligations in Te Mana o te Wai.

Mana whakahaere, kaitiakitanga, and manaakitanga are the rights and obligations of tangata whenua to manage, protect, and use freshwater. These derive from their whakapapa relationship to that wai. Governance, stewardship, and care and respect reflect the role of all other New Zealanders. These principles inform the NPS-FM and its implementation. Both Houses shared their understanding and articulation of Te Mana o te Wai and the respective principles and how they apply in Te Whaitua o Kāpiti.

The Mana Whenua House spoke in depth to mana whakahaere, kaitiakitanga, and manaakitanga. They noted that references to "iwi authorities" under the RMA have been constraining and have not appropriately recognised mana. Mana whakahaere was articulated as a new approach to partnership, which recognises all groups with interests in freshwater as well as Te Mana o te Wai.

22 NPS-FM, clause 3.2(3).
23 NPS-FM, clause 3.2(1).

Kaitiakitanga was described by the Mana Whenua House as the ethic of protecting Te Taiao and a responsibility practiced as a function of rangatiratanga. This included through identifying relevant catchment values from a te ao Māori perspective and setting objectives and standards to be achieved for those values. Kaitiakitanga involves lifting the quality of water and achieving desired environmental outcomes to improve people's relationship with water.

Manaakitanga was explained by the Mana Whenua House as involving reciprocal, mana-enhancing relationships, sharing, and equity. Essentially, if we take from the environment, then we have to give back. Equity was identified as being integral to the hierarchy of obligations in Te Mana o te Wai. Where there are not enough resources to share, this indicates that manaakitanga has not been upheld.

The Kāwanatanga House discussed governance, stewardship, and care and respect. In relation to governance, strengthening regional and local government regulation was noted as a key outcome. The House highlighted the need for decision-makers to prioritise freshwater health, consider present and future impacts, and be responsible and accountable. While the NPS-FM refers to "governance", the Committee introduced the term "good governance" and defined this in the context of Te Mana o te Wai as follows: ***Good governance means that the decisions made and enforced by those with the authority to do are made according to consistent ethical standards, the best available data, and input from relevant stakeholders to include mana whenua/tangata whenua and the community. Good governance is recognisable by its transparency, accountability to mana whenua/tangata whenua and the community, and effectiveness in ensuring equitable and sustainable outcomes.***

The Kāwanatanga House described stewardship as the responsible and ethical management and protection of Te Taiao that all New Zealanders must uphold. They also highlighted the importance of considering rangatahi voices in the conversation, as it is the next generation that will fill decision-making roles in future. The Kāwanatanga House suggested that being a good steward of the environment involves transparency and education. It requires passing on intergenerational learning, knowledge, and mātauranga Māori to ensure the long-term sustainability and well-being of Te Taiao.

In relation to care and respect for water, Kāwanatanga House determined that this meant honouring the mana and intrinsic value of individual water bodies. It involved behaving with kindness, empathy and consideration, and making conscious choices to minimise negative impacts on the environment. The House discussed how communities have become disconnected from their wai. Care and respect, therefore, also involves educating communities about wai and their role in caring for and enhancing its health and well-being.

Following the kōrero of both Houses, the Committee workshopped a combined expression statement of Te Mana o te Wai and its six principles (see Appendix 3). Te Mana o te Wai was central to the development of the WIP and Recommendations, it was the guiding kaupapa for the Committee during their conversations and decision-making. All of the subsequent Committee Recommendations in this WIP must be interpreted through their expression of Te Mana o te Wai.

"We need to get the whole community behind 'water first'."

4.1.2 Objectives for Te Mana o te Wai

The Committee also developed and recommended two objectives for the RPS to describe how Te Mana o te Wai is to be given effect to in Te Whaitua o Kāpiti to fulfil the requirements in clause 3.2(3) of the NPS-FM with respect to this part of the region. While both te ao Māori and Western concepts were discussed, the Committee sought to weave these together within the objectives.

The first objective is focussed on the connection of the people of Kāpiti to water and seeks a transformation in the way in which water is viewed, valued, and respected. The Committee agreed that te ao Māori concepts in the objective should be accompanied by either a guiding principle or a prologue to address the current lack of recognition of these concepts in the current planning framework, and to ensure their effective implementation.

Te Mana o te Wai Objective 1:

Water management in Te Whaitua o Kāpiti gives effect to Te Mana o te Wai by transforming the legacy of seeing water as just as an asset, through a paradigm shift back to seeing healthy water as fundamental to the existence of all living things by upholding:

1. ***Mana atua:** The whole system of divinely interconnected atua (naturally occurring influences and processes) that comprise the holistic health of water systems, their mana and their mauri;*
2. ***Mana whenua:** The particular relationships between mana whenua, land, and water;*
3. ***Mana tangata**: Our integrity as individuals and communities within Kāpiti in the way that we use water to support our social, economic, and cultural well-being.*

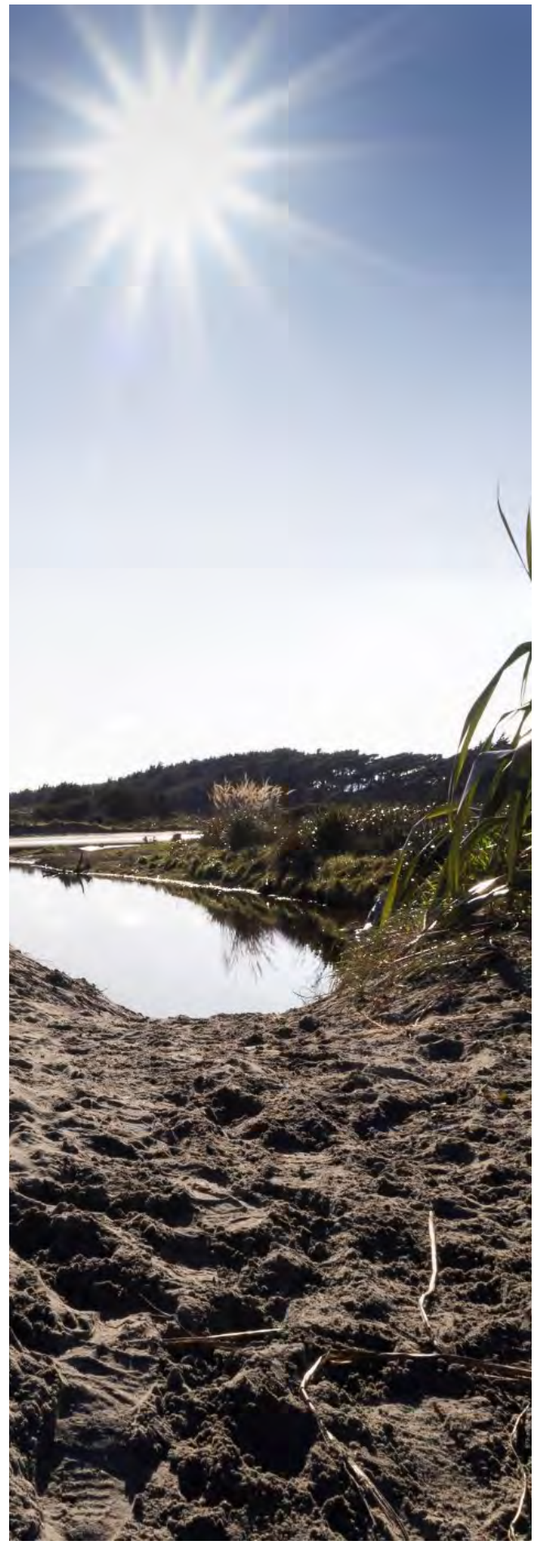
The second objective builds on the six principles of Te Mana o te Wai and expresses how each principle is to be implemented in freshwater management in order to give effect to Te Mana o te Wai within Te Whaitua o Kāpiti.

Te Mana o te Wai Objective 2:

Te Mana o te Wai is implemented through a Tiriti-based decision-making and implementation framework that provides for the recognition and application of both tikanga and mātauranga Māori and Western knowledge systems and regulation. Implementing Te Mana o te Wai requires the expression of its Principles by giving effect to:

1. ***Mana Whakahaere by:***
   a. *Recognising the rangatiratanga of mana whakahaere to water;*
   b. *Providing for mana whenua to collectively identify all relevant mana whakahaere, rights and interest holders, and their roles in relation to the care and use of water through processes consistent with tikanga Māori;*
2. ***Governance by:***
   a. *Ensuring decisions are transparent, informed by the best available information, and accountable to communities;*
   b. *Fostering active collaboration between government, mana whenua and communities to achieve equitable and sustainable outcomes;*
   c. *Managing land and water in a way that involves, and achieves the vision of, the communities of Te Whaitua o Kāpiti;*
3. ***Kaitiakitanga by:***
   a. *Limiting our use of water and impacts on water in a way that provides for ecosystem integrity;*
   b. *Recognising the interdependence of ecological, cultural, social, and economic well-being;*
   c. *Recognising the importance of observing and monitoring water values to understand their state;*
4. ***Stewardship by:***
   a. *Recognising that freshwater is a living being;*
   b. *Recognising the interdependent relationship between land use and the health of water and well-being of people;*
   c. *Pursuing outcomes that improve the health and well-being of Te Taiao for future generations;*
5. ***Manaakitanga by:***
   a. *Enhancing water values where we benefit from their use;*
   b. *Intervening promptly and effectively when water values are degraded below target attributes states;*
   c. *Sharing water equitably across communities;*
6. ***Care and Respect by:***
   a. *Promoting positive activities that protect, restore, or enhance water bodies and their ecosystems;*
   b. *Recognising the intrinsic values of water bodies and supporting their natural character and values; and*
   c. *Supporting positive relationships between people and water through education, improved access, and connection with water bodies.*

SECTION 4: Te Mana o Te Wai



Waitohu dune care. Photo: KCDC

SECTION 5

Freshwater Management Units

This section of the WIP sets out the Committee's recommendations for the spatial delineation of Freshwater Management Units (FMUs) in Te Whaitua o Kāpiti. It outlines the steps undertaken by the Committee to identify FMU and part-FMU boundaries and the key considerations and decisions that informed this process.

The NPS-FM focuses on mana whenua and community values and desired outcomes 'at place' and requires freshwater management units (FMU) to be identified for each region.[24]

FMUs can include all or any part of a water body or water bodies, and their related catchments. FMUs can also be split into part-FMUs to recognise where a specific site, river reach, water body or part of a body may require distinct management. The NPS-FM does not specify a method for identifying FMUs or part-FMUs. Rather, it enables them to be determined in a way that reflects the unique circumstances of each region.

5.1 Te Whaitua o Kāpiti FMUs

5.1.1 Individual House Perspectives

Each House presented the considerations and understanding that informed their proposed FMU boundaries.

Each of the three mana whenua within the Mana Whenua House presented the proposed spatial extent of FMUs as they related to their respective rohe, kaitiaki responsibilities, and other considerations. Several considerations for setting FMUs and identifying monitoring sites were discussed by the Mana Whenua House, including:

- Monitoring sites within FMUs must be representative of the entire FMU. This links with the size of FMUs, as the representative test may be more difficult to meet with larger FMUs.
- All water bodies with quality and quantity issues should be addressed within their own FMUs, where possible, so that there is detailed reporting and management responses specific to these areas.
- It is important for NOF decisions to be referred to the bodies or groups responsible for the management of certain areas. This establishes a case for ensuring FMU boundaries reflect where relevant bodies and groups exist.
- If long-term visions differ between place, then this provides clear direction as to where to set FMUs. It was acknowledged that the process for identifying FMUs can be iterative, and boundaries may change slightly in response to other decisions made by the Committee.
- Conversations should be distinct to catchment areas to bring an integrated level of community and tangata whenua perspectives. When Māori landowners are involved, the mana to do the work has to be recognised at that catchment scale and can't be lost or overlooked.
- Significant lakes in the Whaitua require a targeted approach and should be recognised as separate FMUs or part-FMUs.

The Kāwanatanga House presented on what is required in order to set FMUs from an RMA planning perspective and other key considerations, including:

- Cohesive management is a critical consideration of setting FMUs.
- The boundaries of hydrological catchments are a helpful starting point to inform FMU boundaries.
- Consideration should be given to similarities in land use and characteristics and therefore the likelihood of water quality responding in similar ways.
- The need for balance as a result of the number and size of FMUs is a key challenge. For example, where there are too few FMUs, a level of detail and place-based consideration is lost. Too many FMUs may create inefficiencies with regard to more monitoring, reporting, and administration which may remove resources from other aspects of freshwater management, as well create challenges with policy overlap and unnecessary detail in the management response.

5.1.2 Committee Identification of FMUs

The final delineation of FMU and part-FMU boundaries was agreed upon following comparisons of each House's proposed FMU boundaries and perspectives in the Tiriti House. Overall, eleven FMUs and three part-FMUs were identified by the Committee (see Figure 7). Full descriptions of each FMU are contained in Section 7 of this WIP. The spatial extent of these units has been informed by several considerations, including:

- Te Mana o te Wai and recognition of the mana and mauri of water bodies
- Iwi and hapū rohe boundaries, connections with place, and wāhi tapu
- Hydrological catchment boundaries, characteristics, and connections between water bodies and receiving environments (e.g., between groundwater and the coastal marine area)
- Similarities and differences in land and water use and management, slope, geology, climate, environmental state, pressures, and potential mitigations
- Location of freshwater values and important sites
- Appropriate spatial scales for setting freshwater objectives and limits and enabling integrated mana whenua and community action to improve water quality and quantity
- Requirements for monitoring sites and freshwater accounting and reporting.

Part-FMUs were identified for Tikotu and Waikanae Upper within the Waikanae FMU, and Lake Waitawa within the Waitohu FMU. While the identification of these part-FMUs was informed, in part, by sites of significance to mana whenua, both Houses agreed to their inclusion under the Tiriti House model. Tikotu is recognised as a significant tauranga waka site for Ātiawa and Ngāti Toa. Historically, Tikotu has had a different function and role from other nearby water bodies, such as the Wharemauku. Issues such as high levels of modification, discharges of contaminants, and the presence of weeds were highlighted by the Committee. While the management responses were predicted to be similar to those within the Waikanae FMU, the Committee considered it was important to acknowledge the Tikotu as a part-FMU for its significance to mana whenua, and specific restoration goals.

Ātiawa sought two separate management units for the lower and upper Waikanae within the overarching Waikanae FMU to ensure the protection of the pristine upper catchment and its drinking water supply.

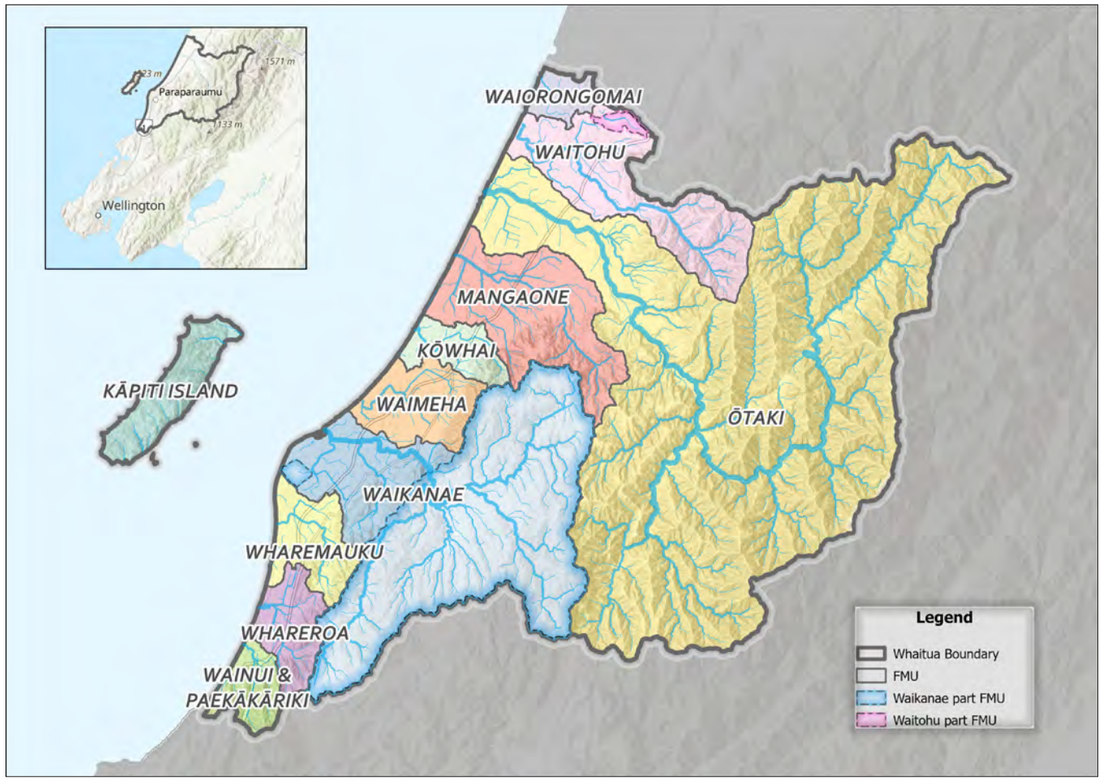


Figure 7: *FMUs in Te Whaitua o Kāpiti.*

This approach was also highlighted as an expression of mana whakahaere. The Committee agreed with this reasoning and the need for a part-FMU for Waikanae Upper.

Lake Waitawa is a small, shallow dune lake just north of Ōtaki which eventually discharges into the Waitohu Stream. Given the hydrological connection to the Waitohu, the Committee considered it was appropriate to keep this water body within the wider Waitohu FMU rather than as a separate FMU. However, in recognition of its status as wāhi tapu and wai tapu by Ngā Hapū o Ōtaki, its distinct management and adjacent Māori landowners, the Committee considered Lake Waitawa should be a part-FMU.

Kanae raukura, yellow eyed mullet.
Photo: David Muirhead, licensed under (CC BY-NC)

SECTION 6

Whaitua-wide Kōrero

This section of the WIP sets out the Recommendations of the Committee on aspects of the NOF process which apply across Te Whaitua o Kāpiti. These sections outline the Committee's approach to these NOF decisions, expressing their overall aspirations for Te Whaitua o Kāpiti and direction on what is required to respond to freshwater degradation. Section 7 below sets out the Committee's direction and Recommendations for each of their identified FMUs.

6.1 Values

The NPS-FM requires values to be identified for each FMU or part-FMU. The NPS-FM sets out four compulsory values of ecosystem health, human contact, threatened species, and mahinga kai which apply to every FMU. An additional nine values are included in the NPS-FM, which must be considered and applied to FMUs, if applicable. These are:

- Natural form and character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Hydro-electric power generation
- Animal drinking water
- Irrigation, cultivation, and production of food and beverages
- Wai tapu
- Commercial and industrial use.

The NPS-FM also has scope for additional values to be identified and applied, including kaupapa wai Māori/Māori freshwater values.

6.1.1 Identification of Values by the Committee

Identifying the values that applied to each FMU in Te Whaitua o Kāpiti took place at a two-day workshop in October 2023. The Committee split into groups with representatives from both Houses and worked with kaimahi to consider each value individually. The values identified by the Committee (including the compulsory values) and the reasons for those selecting the values are outlined below.

6.1.1.1 Four Compulsory Values (these apply to all FMUs)

Ecosystem health

Different water bodies support different types of ecosystems; for example, we expect to find flora and fauna specific to lakes, rivers, wetlands, or aquifers in each of these water bodies, and for each type of water body to have its own requirements around what level of flow or nutrient levels are best for the life that relies on it to thrive.

The ecosystem health value is applicable to all water bodies in all FMUs and part-FMUs, as all support various ecosystems. The ecosystem health value is comprised of five biophysical components: water quality, water quantity, habitat, aquatic life and ecological processes[25]. To realise this value, these five components must be measured, understood, and managed to ensure healthy freshwater ecosystems.

25 NPS-FM, Appendix 1A.

The Committee's understanding of the ecosystem health value was informed by Greater Wellington environmental monitoring[26], their own experiences and observations and the results of the Litmus survey[27]. This information is broadly collated below:

- Upper headwaters of rivers and streams located in the Tararua Ranges displayed the best water quality, and habitat and aquatic life were also found to be thriving.
- As rivers and streams flow from the foothills to the coast, ecosystem health tends to decline, with urban catchments the most degraded; this reflects environmental pressures such as stormwater and wastewater discharges, modification of waterways, and increased sedimentation.
- The larger Ōtaki and Waikanae rivers are in better health than most of the smaller streams and tributaries.
- Lake Waitawa and Lake Waiorongomai are in a poor state of ecosystem health.

Estuaries and wetlands in Te Whaitua o Kāpiti are vital habitat for birds, fish, and plants, including many threatened species; however, there is significant need to protect and restore these areas. Pressures include drainage and impacts from introduced predators.

Human Contact

The human contact value is applicable to all water bodies where people enjoy or want to experience direct physical connection with water at a variety of different levels and flows. This includes activities such as mahinga kai, as well as recreational activities such as swimming, boating, fishing, and waka.

Aspects of water quality and appearance which affect human contact with freshwater include pathogens such as *E. coli*, nuisance plant growth, algae, cyanobacteria, sediment, and water clarity.

The identification of specific water bodies in Te Whaitua o Kāpiti which are valued for human contact relied on the Litmus survey report and Schedule H[28] of the NRP, which identifies lakes and rivers used for recreation. The Committee discussed this information and their own experiences and observations regarding human contact with awa across the Whaitua. The human contact value applies in all FMUs and part-FMUs across Te Whaitua o Kāpiti, with a concentration of activities in the larger rivers of Ōtaki and Waikanae, along with some smaller streams.[29]

Threatened Species

The NPS-FM requires that water bodies which support a population of threatened species must be managed to ensure the protection and enhancement of the habitats and conditions necessary for those species to survive and recover.

The threatened species value has significant crossover with the ecosystem health value, and all components of that value must be managed alongside any specialised habitat or conditions required during the lifecycle of a threatened species.

Regional conservation assessments carried out by Greater Wellington[30] in partnership with mana whenua and informed by mātauranga Māori have identified the locations of many threatened species in Te Whaitua o Kāpiti, and this information is scheduled in the NRP and appended to the WIP as Appendix 4. Additional species have been added to Appendix 4 based on more recent understandings.

In discussing the threatened species value, the Committee noted the significant impact that was felt on aquatic life living downstream in coastal and estuarine habitats (such as shellfish at the mouth of the Whareroa Stream due to the concentration of environmental pressures upstream).

26 Greater Wellington. (2023). *River water quality and ecology annual report 2022/23*
27 Duckworth et al. (2023). *Have your say on the future of Kāpiti freshwater: Freshwater values and aspirations community research.*
28 Natural Resources Plan, Schedule H.
29 Mangapouri, Waitohu, and Wharemauku Streams and the Waiotauri, Ngatiawa, and Rangiora Rivers.
30 Greater Wellington website (2023). *Environmental data and information.*

There was also discussion about what species are classified as "threatened" according to the New Zealand Threat Classification System[31].

The NPS-FM directs that the threatened species value only includes those species that are "threatened" (that is, considered nationally critical, nationally endangered, or nationally vulnerable). Some species which the Committee considered important to be captured under this value, such as longfin tuna and the native swamp nettle (Urtica perconfusa), which was found in the Huritini Swamp, are not officially classified as threatened but as "at risk" and "declining" and as such are not captured under this value. Therefore, the Committee were concerned that this value as laid out in the NPS-FM fails to capture appropriate geographical nuance: either that of species which had been present but may be locally extinct, or which are not nationally threatened but are considered to be so locally by holders of place-specific knowledge and mātauranga.

Waikanae River – whitebaiting near the Otaihanga Boating Club. Photo: Sharlene Maoate-Davis

Achieving values such as ecosystem health and mahinga kai, and their associated water quality and habitat quality targets will work to improve the lives of all species dependant on freshwater in Kāpiti. However, to fully capture the potential for reintroducing locally extinct or severely declined species or identifying other species at severe risk of decline in Te Whaitua o Kāpiti, Recommendations to incorporate these aspects in partnership with mana whenua and the community have been included.

Mahinga Kai

This value provides for the safe harvest and consumption of freshwater species, as well as the places those species are found. The health and viability of mahinga kai species are important indicators of the health of the waterway; the relevant species should be abundant and present across all life stages.

The Committee expressed that the value of mahinga kai can be fully realised when the wai is wai ora/in good health. Then, the people can go to their water body and connect with the wai through the harvest of mahinga kai, knowing that food is provided for the people of the rohe. When the wai is paru/dirty, the people cannot connect with their water body.

Mahinga kai is vitally important for tangata whenua, allowing tikanga, culture and traditions to be upheld and mātauranga to be enriched and passed between generations.

In Te Whaitua o Kāpiti, where mahinga kai values apply has been determined by the Mana Whenua House based on their mātauranga, and explained further below.

31 Department of Conservation. (2024). *NZTCS New Zealand Threat Classification System.*

6.1.1.2 Other Values (Apply to Specific FMUs)

The Committee has identified other values that apply to each of the FMUs. The nine non-compulsory values to be considered in the NPS-FM were used as a starting point, but the Committee has also identified additional values, including defining kaupapa wai Māori/Māori freshwater values.

Natural Form and Character

The NPS-FM describes natural form and character as relating to the natural qualities of water bodies which people value. These include biophysical, ecological, geological, and morphological aspects, the natural location of water bodies and courses of rivers, the presence of species, the colour and clarity of the water, and the natural movements of water.

In identifying to which FMUs this value applies, the Committee considered these various qualities of particular water bodies including aesthetic features, the presence of indigenous flora and fauna and cultural significance. Based on these considerations and the Committee's knowledge of valued water bodies across Te Whaitua o Kāpiti it was decided that the natural form and character value applies to all identified FMUs.

Drinking Water Supply

There are several FMUs in Kāpiti where water bodies are used to meet people's drinking water needs. Water suitable for drinking must be managed to be free of contamination, including bacteria and pathogens, and have aesthetic values which communicate that it is safe to drink: clarity, taste, and smell.

There was significant discussion regarding the large number of private bores in Te Whaitua o Kāpiti, which also meet drinking water needs alongside water supply managed by KCDC in areas such as Waikanae, Paraparaumu, and Raumati.

Due to the prevalence of private and municipal bores for drinking water across Te Whaitua o Kāpiti, and the supply of drinking water from both the Waikanae and Ōtaki rivers, it was decided that the drinking water supply value applies to 10 FMUs and two part-FMUs across Te Whaitua o Kāpiti.[32]

Transport and Tauranga Waka

This value refers to water bodies within FMUs which are navigable and include places to launch waka and watercraft, as well as appropriate or historical places where waka would land.

The Committee identified seven FMUs and three part-FMUs where this value applies, noting in particular knowledge provided by the Mana Whenua House regarding the historical importance of the Tikotu part-FMU as a vital site for tauranga waka.[33]

Bonnie and Clyde, Te Horo. Photo: Mel Bowker

32 Wainui and Paekākāriki, Waikanae, Waikanae Upper, Waimeha, Kōwhai, Mangaone, Ōtaki, Waitohu, Waiorongomai, Lake Waitawa, and Kāpiti Island.
33 Whareroa, Tikotu, Waikanae, Waikanae Upper, Waimeha, Mangaone, Ōtaki, Waitohu, Waiorongomai, and Lake Waitawa.

Fishing

The fishing value applies to water bodies in FMUs or part-FMUs which support fisheries of appropriate stocks of desirable species (those which are allowed to be caught and eaten).

The Committee discussed locations in Te Whaitua o Kāpiti where whitebaiting or fishing is valued. The value applies to nine FMUs and two part-FMUs.[34]

Hydro-electric Power Generation: not applicable in Te Whaitua o Kāpiti

The Committee considered this value, including the option of applying it to the Waikanae FMU to account for the future potential of building a dam. As this value does not apply to any FMUs at present, the Committee ultimately decided that the hydro-electric value should not apply in Te Whaitua o Kāpiti. In particular, the Mana Whenua House note international data[35] detailing poor ecosystem outcomes from dams, especially for fish passage. The Mana Whenua House continue to oppose the building of dams on waterways as it is not consistent with Te Mana o Te Wai.

Animal Drinking Water

This value applies to FMUs which meet the drinking water needs of farmed animals, including safety and palatability. Te Whaitua o Kāpiti supports farming and lifestyle blocks with livestock, and the Committee spent some time discussing the FMUs where they had knowledge of people keeping animals and drawing on the water bodies in their area for their water supply.

The animal drinking water value was identified as applying to seven FMUs and two part-FMUs.[36]

Irrigation, Cultivation, and Production of Food and Beverages

This value provides for any and all irrigation needs in Te Whaitua o Kāpiti, including for food crops, non-food crops (such as fibre and timber), pasture, sports fields, and recreational areas. The Committee noted the importance of this value in encompassing rural activities such as farming and horticulture, as well as lifestyle properties and accompanying small-scale activities such as gardening.

Based on Committee' members knowledge of land use practices in Te Whaitua o Kāpiti, it was decided that the irrigation, cultivation, and production of food and beverages value applies to eight FMUs and two part-FMUs.[37]

Wai Tapu: Succeeded by Wāhi Tapu

The NPS-FM value of wai tapu recognises and captures the places in FMUs where rituals and ceremonies are performed, or places of special significance to tangata whenua.

In discussion, the Mana Whenua House raised that the wai tapu value as written and described in the NPS-FM does not accurately reflect their interpretation of tapu and noa.

The operative NRP (2023) recognises wāhi tapu (sacred places) rather than wai tapu, and Schedule C (sites of significance to mana whenua) includes several scheduled water bodies with this value. These water bodies were identified by Greater Wellington's six mana whenua partners, including those whose ancestral rohe includes Te Whaitua o Kāpiti.[38]

As such, the Committee agreed to adopt the value of wāhi tapu to replace the NPS-FM value of wai tapu. The Mana Whenua House identified this value as applying to two FMUs and one part-FMU,[39] as well as the additional five FMUs containing sites scheduled in the NRP[40].

34 Wainui/Paekākāriki, Kōwhai, Mangaone, Wharemauku (noting the poor quality and highly modified streams), Tikotu, Waikanae, Waikanae Upper, Waimeha, Ōtaki, Waitohu, Waiorongomai, and Lake Waitawa.
35 Grill et al. (2019). *Mapping the world's free-flowing rivers.*
36 Waikanae, Waikanae Upper, Waimeha, Kōwhai, Mangaone, Ōtaki, Waitohu, Waiorongomai, and Lake Waitawa.
37 Wharemauku, Waikanae, Waikanae Upper, Waimeha, Kōwhai, Mangaone, Ōtaki, Waitohu, Waiorongomai, and Lake Waitawa.
38 Ngā Hapū o Ōtaki, Te Ātiawa ki Whakarongotai, and Ngāti Toa Rangatira.
39 Waikanae, Lake Waitawa, and Kāpiti Island.
40 Ōtaki, Mangaone, Waitawa, Kōwhai, Waitohu, and Whareroa.

Commercial Use, Industrial Use, and Residential Use

The NPS-FM value of commercial and industrial use recognises FMUs which provide for economic use by businesses, people, and industry.

In discussion, the Committee used their knowledge of land use and business activity in Te Whaitua o Kāpiti to determine where the commercial and industrial use value applied. The Committee has split the NPS-FM value into two separate values to recognise and capture the different impacts on waterways from these types of land use. This split was also intended to capture the Committee's direction that industrial activity remains contained within the FMUs where it is currently established, to limit environmental stressors.

In caucus, the Kāwanatanga House came to a consensus that a third value of residential use was necessary in order to recognise the fundamental role waterways play in Kāpiti supporting residential activities. It was acknowledged that water bodies play an important role in receiving runoff from impervious surfaces and new development, as well as being managed to alleviate flood risks to property.

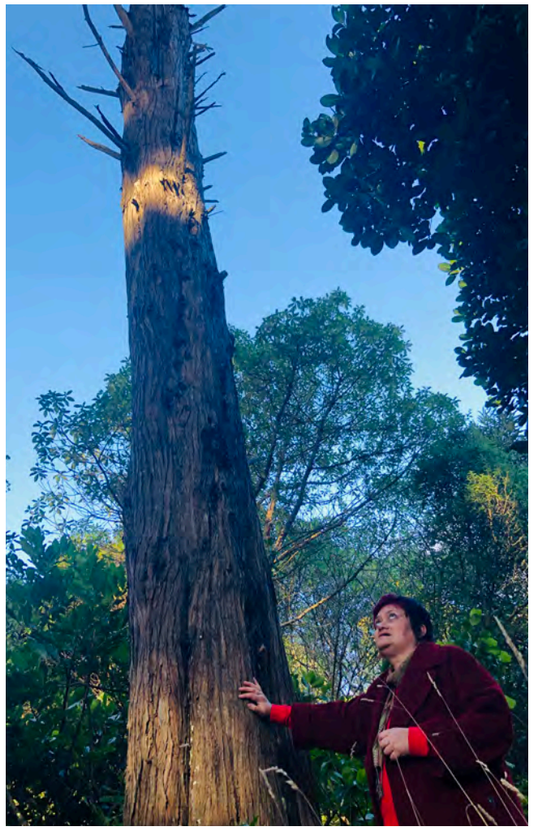
The Kāwanatanga House and the Mana Whenua House discussed the need for this value in the October hui, and a consensus was reached to include this as an additional value across Te Whaitua o Kāpiti.

Using their knowledge of Te Whaitua o Kāpiti, the Committee determined the following application of these values:

- Commercial use value applies to six FMUs and two part-FMUs.[41]
- Industrial use value applies to four FMUs.[42]
- Residential use value applies to all FMUs and part-FMUs, except Kāpiti Island.

Kaupapa Wai Māori/Māori Freshwater Values

In caucus, the Mana Whenua House identified an additional nine kaupapa wai Māori/Māori freshwater values. These nine values are understood to apply across all FMUs and were drawn from the mātauranga of the Mana Whenua House based on several sources[43,44] and various kōrero. The Kāwanatanga House agreed to accept these values and their application across the Whaitua. Each of these values is described below.



Whareroa FMU, Carmen and remnant kahikatea forest, Wairuatanga. Photo: Sharlene Maoate-Davis

41 Wharemauku, Waikanae, Waikanae Upper, Waimeha, Mangaone, Ōtaki, Waitohu, and Lake Waitawa.
42 Mangaone, Waimeha, Waikanae, and Wharemauku.
43 Hutchings et al. (2012). *Hua Parakore: An indigenous food sovereignty initiative and hallmark of excellence for food and product production.*
44 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.*

Wairua

Wairua is a particular aspect of full health and well-being, one that encompasses mental, spiritual, and emotional well-being. This is reflected not just in humans, but also in the health of freshwater and the interconnected relationships between humans and water

For successive generations, the fundamental connection to water has been paramount. Water-based activities, such as gathering mahinga kai being beside or engaging in the immersion in water are essential to manage and improve wairua in people. If the wai is not safe, flowing or healthy, the connection cannot be made and a diminishing of wairua occurs.

For the value of wairua to be upheld, the water must be clean and healthy, tikanga surrounding water bodies must be known and upheld, and activities to connect with water must be accessible and safe for mana whenua.[45]

> "Tī ara mai te pūtahitanga o te wai
> Tō mātāpono, Tō matatika
> Ka koropupū te waipuna ki roto
> Ka hora atu te waipuna ki waho
> Ti ara ra. Ti, ti, ti, hā!
>
> *Awaken the convergence of our two waters*
> *May we be guided by our ethical ways*
> *and principled action*
> *So that our collective wellspring*
> *is imbued inherently,*
> *And manifested throughout our community.*
> *Awaken. All life is awoken!"*[46]

Whakapapa

Understandings of whakapapa include identity and relational connections between people and Te Taiao, the cyclical connection between all things across time.

Whakapapa to freshwater is important, both in the sense that individual water bodies are tūpuna which inform the identity of iwi and hapū, and in iwi and hapū understandings of particular atua as representations of the interrelated processes in the freshwater cycle.

Whakapapa with regard to freshwater may also be understood as recognition of the water of which we are all made, that humans and the wai to which they whakapapa are one in this sense. The central place of waterways in nourishing people through mahinga kai is another thread of whakapapa to freshwater.

To uphold the value of whakapapa, mana whenua must be able to uphold this essential connection with freshwater, and it must be protected and respected by the wider community.[47]

Mana

Mana can be understood as authority, power, and economic and social security. Mana is gained and upheld through the actions of people, and also inherited through whakapapa. This is seen in the meaning of mana whenua, which grants tino rangatiratanga.

Mana is also upheld through acknowledgement of the mana of others, through manaakitanga, respect, and care; this includes the mana of freshwater. The mana of iwi and hapū is intrinsically tied to the health and well-being of the wai for which they are kaitiaki.

Mahinga kai is also linked to this value; if the wai is unable to support healthy populations of mahinga kai, iwi and hapū are unable to practice manaakitanga, thereby affecting mana. For the value of mana to be upheld, mana whenua must be able to practice tino rangatiratanga in decisions affecting freshwater in full partnership under Te Tiriti o Waitangi and participate in mahinga kai.[48]

> *"Hī heke tuna, ka poua te aruhe,*
> *tākaingia i te Raurekau.*
> *Fish the migrating eel, stake it with*
> *bracken fern, wrap it in Coprosma."*[49]

45 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.* (pp. 114-118).
46 Passage from a karakia by Sharlene Maoate-Davis, Waikanae ki Uta ki Tai.
47 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water*. (pp. 108-114).
48 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.* (pp. 119-124).
49 The Rongoa Collective of the A.R.T. Confederation & Te Whakaminenga o Kāpiti Maramataka 23-34, Tirotiro kau au. Paengawhāwhā/ April 2024.

Te Ao Tūroa

The literal meaning of Te Ao Tūroa is "the enduring world". It encapsulates the patterns of living systems which restore and maintain balance, the natural order of things. For ecosystems to be in balance, all atua representing the processes of the natural world must be well. The natural character of the environment is also honoured through recognition of this value. The value of Te Ao Tūroa speaks to humans' connection to the natural environment and the adaptations and changes that must be made to our management systems to allow balance to be restored to freshwater ecosystems.

For this value to be upheld, the behaviour by all people and use of freshwater must be regulated to respect Te Ao Tūroa, and the natural character and processes of water bodies must be protected and enhanced, including habitat for aquatic species and harmony within the wider ecosystem.[50]

Mauri

Mauri is the life force, the energy required for vitality and growth of processes and systems. Wai is understood as fundamental to all life through whakapapa, and therefore the state of the mauri of the wai influences the mauri of all other life. Nurturing and enhancing the mauri of the wai is a fundamental aspect of kaitiakitanga for mana whenua. Mauri is also affected by imbalances in Te Ao Tūroa (such as nutrient imbalances in a waterway).

To uphold the value of mauri, waterways must be clean and healthy, free of pollutants and with appropriate flows and levels to support mahinga kai and ecological biodiversity; this will then be reflected in the vitality and health of the people.[51]

"E mārama ana tātou ki a mauri i te wā e tūtakarerewa ana – mauri rere. Pērā anō tātou i te wā e oho ana te mauri – mauri oho. He rerekē rawa atu tēnei i te mauri e moe ana – mauri noho. Nā reira ko te mauri tau he mauri taurite. Katoa ēnei āhua o te mauri e tohu ana i te oranga, i te kanorautanga.

We can become aware of mauri when it is unsettled – mauri rere. We can also become aware of mauri when we're awoken by its energy – mauri oho. This is very different from a dormant state – mauri noho. And so, the state of mauri tau is a balanced life force. All these states of mauri are signs of vitality and diversity."[52]

Māramatanga

Māramatanga is the insight or enlightenment that comes from practice, from being in the world. With regard to freshwater, this includes a holistic understanding of the connectedness of all things, ecosystems, and humans.

The value of māramatanga is intimately tied to freshwater, as the well-being of the water reflects the well-being of the knowledge of the water bodies. The knowledge, the māramatanga, is in itself a natural system like an ecosystem, and must be looked after accordingly. The health of the water bodies is therefore reliant on this value being realised.

Māramatanga is upheld when it and those who hold it are respected and protected, when it can be developed and passed between generations, and when decision-making about freshwater is informed by māramatanga.[53]

50 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.* (pp. 130-134).
51 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.* (pp. 134-139).
52 Mauri Tūhono ki Te Upoko o Te Ika. (2024). *Framework Te Reo.*
53 Baker, M. (2019). T*e Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.* (pp. 124-129).

Rongoā

The value of rongoā encompasses customary knowledge, systems, processes and practices pertaining to healing, health and well-being. Iwi and hapū of Te Whaitua o Kāpiti understand rongoā through their whakapapa, drawing from tribal pūrākau (creation narratives), iwi kōrero, and traditions across the region.

Rongoā is a holistic approach to health and well-being, including spiritual, physical, mental, and emotional health.[54] This knowledge is held by Matanga Rongoā (healing specialists) as well as within whānau and hapū, succeeded between generations. This includes understanding the nature of restorative well-being practices premised in Te Taiao and encompassing "mai uta ki tai" from the mountains, forests, rivers to the sea.

The value of rongoā includes kaitiakitanga in building relationships with the whenua and ngahere (forests) which are the pātaka (storehouses) of rongoā.[55] The value of rongoā to freshwater is through the purity and quality of wai necessary for the utilisation in ceremonial activities such as tohi (dedications); whakairi (blessings); pure (cleansing); whakawātea (clearings); and the collection of freshwater for medicinal purposes.

Customary well-being practices also include rongoā rākau (healing plants) such as the tikanga and kawa around harvesting and using these rongoā rākau both for the land, waterways, and the benefits of humans. Local rongoā practices are undertaken according to maramataka (lunar system of time), which governs the optimum times to access, harvest, and gather wai and rongoā rākau. Seasonal rongoā approaches are also upheld to ensure optimum vitality within the natural systems including the observances of Puanga and Matariki.

The degradation of whenua and wai impacts the ability to engage in rongoā, these traditional health and well-being practices.

"..Ki a Puanga Kai Rau, ki a Matariki
Ahunga Nui
Tō mata tini me pā ki roto, Tō mata tini me pā ki waho,
Kia horahia te kura, he kura nui, he kura roa,
He kura takatū, mai i a Rongotaketake
Ka rongo te pō, Ka rongo te ao
Ka rongo i te ahikaaroa, i tūārangi te whakaeke nei…

To Puanga and Matariki, bringing forth aspirations of kindness and generosity,
May your divine countenance be imbued inherently, manifesting itself throughout the community
So that goodwill is declared, may it be strong and enduring
An enduring gift established on the pillar of peace
Resounding through times of hardship and in times of abundance
Resounding are the fires of ancestral connection, from times immemorial that ascend forth…"

Raranga

Local kairaranga (weavers) know the inherent value of harakeke, as this customary body of knowledge is premised upon whakapapa and pūrākau and determined by successive tribal knowledge and traditions across the region.

The value of raranga/weaving captures the traditional skill of weaving. Once a necessity central to most facets of tribal life, raranga is now a revered artform, both practical and beautiful. With localised knowledge, raranga is usually undertaken using freshwater plant life such as harakeke/flax, pingao/sedge, toetoe/tussock grasses and kiekie/climbing native vine, to name a few. All are considered a taonga.

54 Ātiawa. (2022). *Maramataka launch 2022-23: Mahi rongoā by the moon.*
55 KCDC. (2022). Hemaima Carkeek Wiremu and Sharlene Maoate-Davis on Kaitiakitanga and Rongoā.

For the value of raranga to be upheld, mana whenua need to be able to practice kaitiakitanga with respect to freshwater management to ensure that raranga plants are abundant and accessible, and that pruning and harvesting are carried out following tikanga principles to ensure healthy plants.[56]

Mātauranga Māori

Mātauranga Māori may broadly be understood as the continuum of Māori knowledge: traditional, contemporary, and ongoing. It reflects a te ao Māori understanding about the world and how to be in and engage with it.

Mātauranga Māori encompasses specific areas of understanding such as mahinga kai, astrology, rongoā, horticulture, fishing, and others. It is a kaupapa (values-based) knowledge system, and the creation and application of mātauranga can be understood as the realisation of Māori kaupapa (Māori values) and an expression of te ao Māori.

The value of mātauranga Māori is upheld when mātauranga is protected, respected, upheld in decision-making, resourced for further development, and allowed to be transferred in full between generations.[57]

This value is important for how decisions on freshwater management are made and also reflects the need for wai to be in a state of good health in order to support intergenerational knowledge transfer and cultural activities such as gathering mahinga kai.

6.1.2 Summary

In total, the Committee identified 23 values, including nine additional kaupapa wai Māori/Māori freshwater values (grouped here as "kaupapa wai Māori/Māori freshwater values") and one additional value of residential use.

These and the FMUs and part-FMUs to which they apply are appended as Appendix 5.

6.2 Ngā Moemoea – Long-term Visions

The NPS-FM requires that each region develops long-term visions for the freshwater bodies in its region, to be included as objectives in the RPS58. The long-term visions should describe what the community and mana whenua want the freshwater bodies of Te Whaitua o Kāpiti to look like in the future. The visions are the bridge between the Te Mana o te Wai objectives, which describes how the hierarchy of obligations will be applied in freshwater management, and the environmental outcomes objectives, which outline the specific outcomes for individual water bodies to achieve the long-term visions.

6.2.1 Expression of Long-term Freshwater Visions by the Committee

Over several caucuses and meetings between August and September 2023, the two Houses discussed the content of their drafted long-term visions. Each House had approached the task slightly differently according to the values and aspirations they were endeavouring to capture.

The Kāwanatanga House drafted a single overarching long-term vision detailing the desired future for all of the water bodies of Te Whaitua o Kāpiti. The vision drew from the hierarchy of Te Mana o te Wai, alongside the three Crown principles of governance, stewardship, and care and respect. The Kāwanatanga House also drew from the Litmus survey report[59] to ensure that the draft vision reflected the goals outlined by the wider Kāpiti Coast community.

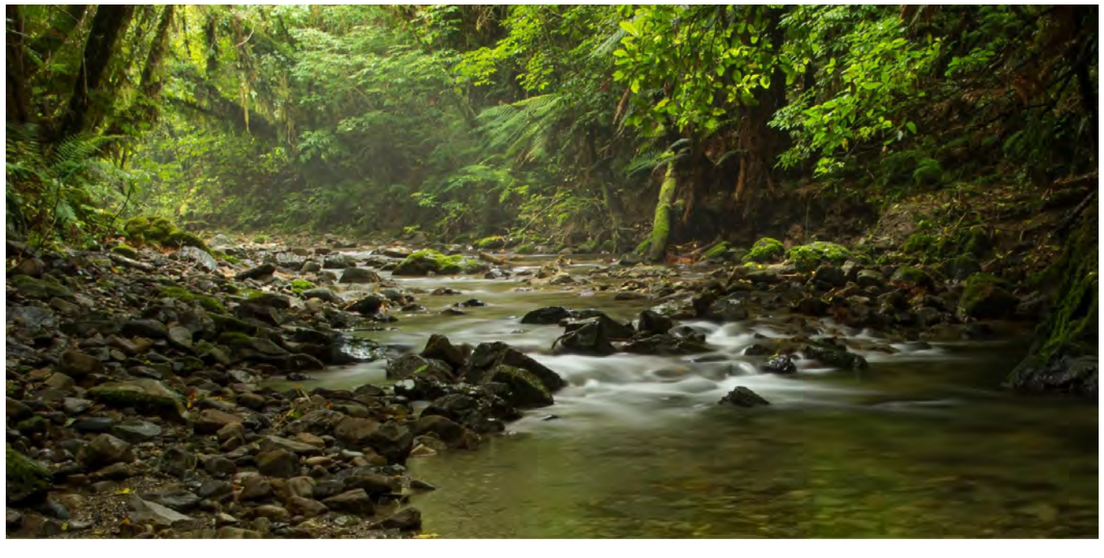
The Mana Whenua House drafted long-term visions for each FMU in order to capture specific goals and values for individual water bodies and recognise the different environmental pressures impacting each FMU. Drafting different long-term visions for each FMU also allowed the mana of individual water bodies to be recognised and upheld, as the differing needs of those water bodies could be specifically addressed. This approach also allowed iwi and hapū representatives to draw on their own mātauranga and enact kaitiakitanga by reflecting on the long-term visions of wai ora/freshwater health for the awa in their rohe.

At the September 2023 Tiriti House Committee hui, the Committee workshopped the visions and discussed the different approaches taken.

The Committee determined that both an overarching vision and specific FMU visions were required. The Mana Whenua House drafted an overarching vision to merge with that prepared by the Kāwanatanga House. The Mana Whenua House's overarching vision drew on expressions of ten kaupapa from Te Wānanga o Raukawa, a tikanga Māori tertiary education provider in Ōtaki.[60] These kaupapa included:

- Te Reo Māori (recognising that the Māori language is a taonga/treasure)
- Whakapapa (connections between people and the land across generations)
- Manaakitanga (demonstrating mana-enhancing behaviour, kindness)
- Wairuatanga (the spiritual dimension present in people's lives and connections)
- Ūkaipōtanga (belonging, the significance of connection with land and place)
- Pūkengatanga (the pursuit of excellence, embracing challenge in pursuit of mātauranga, the provision of high-quality programmes and services)
- Kotahitanga (unity, strength in cooperation)
- Rangatiratanga (demonstration of character and qualities such as responsibility, integrity, and generosity)
- Whanaungatanga (achievement through collaboration and strong connections)
- Kaitiakitanga (the obligation to nurture and protect people and place).

The overarching vision below reflects the amalgamation of visions prepared by both Houses and represents how the Tiriti House Model has guided decision-making. FMU-specific long-term visions are set out in Section 7.



Mangaone. Photo: KCDC

56 KCDC. (2022). *Learning about harakeke care.*
57 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.*
58 NPS-FM, clause 3.3.
59 Duckworth et al. (2023). Have your say on the future of Kāpiti freshwater: Freshwater values and aspirations community research.
60 Founded in 1981 by the Raukawa Marae Trustees, education and learning at Te Wānanga o Raukawa is guided by the principles of the iwi development strategy Whakatupuranga Rua Mano, which was produced by the three iwi of the ĀRT confederation: Ngāti Toa Rangatira, Te Āti Awa ki Whakarongotai, and Ngāti Raukawa ki te tonga.

Vision 1: Overarching Tiriti House Vision

By 2040 in Te Whaitua o Kāpiti:

1 *All freshwater bodies including repo/wetlands, awa/rivers and streams, wai whenua/groundwater, moana/lakes, and wai puna/springs:*
   a. *Are healthy, thriving, sustainably managed, full of life;*
   b. *Are managed through a whole-of-system approach and have improved resilience to the impacts of climate change, including responses based on mātauranga Māori;*
   c. *Sustain ecosystems and habitats that are restored and nurtured to support diverse and abundant native freshwater species, including mahinga kai species where appropriate;*
   d. *Are clean, shaded, protected by enhanced riparian planting, and free of rubbish;*
   e. *Have restored natural forms and features, upholding the mana of the wai/waters by increasing their freedom to flow and express their natural character, including connections to other water bodies and wetlands and flows to the sea;*
   f. *Are allowed the space needed to express their natural flows and forms, including where urban development occurs;*
   g. *Their health and mauri is prioritised through the adoption of best management practices to reduce discharge of nutrients, sediment, and other contaminants;*
   h. *Are managed so that the spiritual realm of wairua and the mana of atua/deities are protected;*

2. *Kōtahitanga/unity is expressed through the weaving of shared community values, including recognition of wai/water as the foundation of all life and a well-developed understanding of the whakapapa of wai/water within all FMUs and part-FMUs;*

3. *Relationships between mana whenua rangatiratanga and kāwanatanga are based on Te Tiriti o Waitangi and good governance guides all decision-making regarding the management of all FMUs and water bodies in Te Whaitua o Kāpiti, including coordination of management and restoration work and the sharing of knowledge and knowledge systems;*

4. *Mātauranga Māori is protected, respected, prioritised, and resourced to undertake new research, increase knowledge, provide education, encourage pūkengatanga/the pursuit of excellence, and ensure transmission between generations;*

5. *Ūkaipōtanga/belonging is flourishing as an expression of identity for mana whenua and the wider community, such that:*
   a. *Waterways are a conduit for whakawhanaungatanga/relationship building, where community connections and relationships with the wai/water foster a sense of pride in belonging to the area;*
   b. *Te Reo Māori is celebrated through the original names of waters, places, flora, and fauna in all signage and publications;*
   c. *The role of mana whenua as active kaitiaki, and the responsibility of care of the wider community as stewards of Kāpiti's water bodies are equally recognised, protected, resourced, respected, and allowed to be enriched and transferred in full between generations;*
   d. *The tūrangawaewae/rights of residence of whānau and hapū and their role as intergenerational Rōpū tuku iho tangata tiaki for their wai are recognised;*
   e. *Cultural and spiritual practices, tikanga, and mātauranga, including harvesting mahinga kai, rongoā and raranga are respected, supported, and upheld to allow mana whenua to connect with their whakapapa, fulfil manaakitanga and kaitiakitanga responsibilities, uphold the mana of the wai, and share and transfer these across generations; and*

6. *Good governance ensures careful and respectful use of freshwater to meet human health needs and support prosperous communities alongside well-resourced and robust monitoring to ensure sustainable use.*

6.3 Ngā huanga – Environmental Outcomes

This section of the WIP explains the approach for determining environmental outcomes and describes those outcomes which apply across Te Whaitua o Kāpiti.

The NPS-FM requires environmental outcomes be set for each value that applies to an FMU or part-FMU and included as objectives in regional plans.[61] The Committee's expression of the environmental outcomes was informed by the Te Mana o te Wai and long-term freshwater vision objectives. A table with a high-level explanation of how the environmental outcomes give effect to the long-term visions is appended as Appendix 6.

Similar to the process followed to develop the visions, the Kāwanatanga House and the Mana Whenua House both brought their own mātauranga and knowledge to the Tiriti House to discuss and agree on the outcomes.

6.3.1 Expression of Environmental Outcomes by the Committee

Over several caucuses and meetings, the two Houses discussed the content of the environmental outcomes. The Committee decided on a number of Whaitua-wide outcomes for those values that apply across the Whaitua and for some overarching issues such as climate change. These outcomes set out the Committee's ambitions for these themes and sit alongside the environmental outcomes described for each FMU.

The Whaitua-wide outcomes therefore cover:

- Mana whenua outcomes
- Ecosystem health
- Human contact
- Threatened species
- Natural form and character
- Fishing
- Urban and rural land use
- Climate change

"Outcomes need to be transformed in order to give effect to Te Mana o te Wai."

The environmental outcomes that apply across the Whaitua are as follows:

Outcome 1 – Mana Whenua Outcomes

By 2040, Kāpiti's groundwater, rivers, lakes, natural wetlands, estuaries, harbours, and coast are managed so that:

1. *Mana whenua are active Tiriti partners and decision-makers with regards to any new developments that relate to or affect wai ora (the health of water);*
2. *Mana whenua know their whakapapa to the waterways, and to each other. This in turn enables them to uphold their whakapapa obligations as kaitiaki;*
3. *All mana whenua-recognised korero tuku iho, sites of significance, and associated names are respected, and protective mechanisms are implemented;*
4. *There is an holistic and integrated approach to water management, in particular managing the effects of stormwater and water abstraction on mahinga kai and other customary wai practices, that considers the interconnectedness of all elements of the environment, including land, air, and water ki uta ki tai;*

61 NPS-FM, clauses 3.9(2) and 3.9(3).

5. *People understand their relationship with all wai – the water above and below the ground. All water, including groundwater, is protected for future generations;*
6. *The intrinsic values of freshwater are preserved and protected simply because it exists and is part of the Earth's natural heritage and the life blood of Papatūānuku;*
7. *The cultural value of freshwater inspires artistic works that promote appreciation and protection of water resources, including pūrākau;*
8. *Mauri (life force) is maintained and enhanced as the health and well-being of water are essential for the health and well-being of all living things;*
9. *There is a reliance on patterns and tohu (signs) to guide kaitiaki decision-making;*
10. *Biodiversity is strong in that the full suite of mahinga kai species are healthy and abundant; and*
11. *The complexity and nuance of whakapapa relationships are recognised and conveyed through intergenerational knowledge transfer, kaitiakitanga and access to practice cultural activities including rongoā, mahinga kai and other restorative actions.*

Outcome 2 – Ecosystem Health (Surface Water)

By 2040 Kāpiti's rivers, lakes and natural wetlands support healthy functioning freshwater ecosystems, including:

1. *Water that is cool and clear, with reduced contaminant and nutrient inputs;*
2. *Hydrological flows or levels, including flow variability and habitat conditions that meet the habitat, feeding, breeding and migratory requirements of indigenous species; and*
3. *A greater abundance and diversity of healthy biota across all life stages.*

Outcome 3 – Ecosystem Health (Groundwater)

By 2040 groundwater flows, levels and water quality support healthy freshwater ecosystems in groundwater and connected surface water bodies in Kāpiti, including:

1. *Nitrate-nitrogen concentrations in aquifers that are maintained, or improved where concentrations in connected surface water bodies do not meet the national bottom line;*
2. *Other contaminants and nutrient loads which affect groundwater are managed to improve the health of groundwater;*
3. *Sustained mean annual groundwater levels and aquifer pressures that are not in long-term decline; and*
4. *Aquifers that are managed to avoid salt-water intrusion and consolidation.*

Outcome 4 – Human Contact

By 2040, the quality of freshwater in Kāpiti's water bodies is cleaner to protect the health of people for contact recreation, and flows in rivers and water levels in lakes support recreational activities.

Outcome 5 – Threatened Species

By 2040, indigenous threatened species in Kāpiti are protected and their presence, size distribution across species, abundance, survival, and recovery is enhanced to improve the viability of their population and their threat classification.

Outcome 6 – Natural Form and Character

By 2040, the form and function of freshwater bodies in Kāpiti, their riparian margins and connected estuaries is improved so that:

1. *Their natural processes, connections and behaviours are reflected to the greatest practicable extent;*
2. *The values of existing braided reaches of rivers are protected;*
3. *The extent and condition of indigenous riparian vegetation is increased and improved;*
4. *The habitats of indigenous species are protected and improved;*
5. *Streams, springs, and wetlands are naturally connected, so that the waterways are resilient when there is pressure on water quality or water quantity; and*
6. *The natural character of rivers, lakes and natural inland wetlands, and their margins is preserved and protected, and restoration is encouraged where natural character values have been compromised.*

Outcome 7 – Fishing

By 2040, communities of Kāpiti are able to harvest fish species from water bodies for safe human consumption and the habitats of valued fishing species are protected and enhanced insofar as it is consistent with the protection of indigenous and threatened species.

Outcome 8 – Urban and Rural Land Use

By 2040 in Kāpiti, provided the health and well-being needs of water bodies and freshwater ecosystems and human health needs are being upheld:

1. *Freshwater supports the economic well-being of the district, including agricultural, commercial, and industrial uses, tourism, and scientific research;*
2. *Clean water is available to meet the drinking water requirements of stock; and*
3. *Water is available for existing and future urban activities that rely on freshwater for use or as a receiving environment.*

Outcome 9 – Climate Change

By 2040, freshwater bodies, their riparian margins, and aquatic biodiversity of Kāpiti are providing greater regulation and resilience to assist in reducing the effects of climate change, including a reduction in the risk of flooding and erosion to human life and property.

6.4 Attributes (Measures) for Values

The NPS-FM requires that attributes are identified for each value that applies to an FMU or part of an FMU. Appendices 2A and 2B of the NPS-FM list a number of compulsory attributes for the ecosystem health and human contact values that must be used, including attributes that apply only to rivers or only to lakes. Other attributes can be identified for any compulsory value and where practicable, attributes must be selected for all other applicable values.

6.4.1 Identification of Attributes

Both Houses brought their own mātauranga and knowledge to the Tiriti House to discuss which measures (attributes) were appropriate to assess the identified values. Overall, the consensus was that the NPS-FM already includes a number of compulsory attributes which addresses many of the values and the focus should be on any remaining gaps. The Committee utilised the BBN model, which centred the discussion around those attributes with the clearest relationships to the values identified by the Committee. What could be included in the model was dictated by the level of available information.

6.4.1.1 Additional Attributes for Ecosystem Health

The Committee confirmed that three additional attributes are required for assessing ecosystem health: dissolved copper, dissolved zinc, and dissolved inorganic nitrogen (DIN), which is comprised of ammonia, nitrate, and nitrite. The Committee also discussed an attribute for measuring habitat; however, after further consideration it was determined that this matter is better addressed via the Recommendations.

Dissolved copper and dissolved zinc are two metals that are common in urban areas and often pose the greatest toxicity risk in receiving environments impacted by urban stormwater runoff, due to their contribution to stormwater contaminant loads. They can also be used as a proxy for other contaminants in urban runoff and provide a basis for managing urban stormwater discharges.

Greater Wellington has developed attribute bands (A to D) for dissolved copper and dissolved zinc similar to those for many compulsory attributes in the NPS-FM (see Appendix 7). The Committee have recommended these attribute bands are used to incorporate dissolved copper and dissolved zinc as additional attributes in the future plan change.

Dissolved inorganic nitrogen (DIN) for ecological health (as opposed to nitrate toxicity) is recommended as an additional attribute. The Committee considered the NPS-FM attribute for nitrate (toxicity) was not sufficiently protective as it relates to thresholds of toxicity where species are lost, rather than more moderate impacts.

To gather data on nitrate levels in streams across Te Whaitua o Kāpiti, the Mana Whenua House organised kaimahi to collect samples of water from water bodies in each FMU (excepting Kāpiti Island). These samples were brought to the full Committee meeting on 1 November 2023 where Dr Mike Joy tested them with a portable nitrate reader. The below figure shows the results of the monitoring and the numerous water bodies that are below 1mg per litre.

This exercise provided real-time information for the Committee on the state of streams within various FMU with respect to nitrates. It was also an effective demonstration of the ability of mana whenua to quickly mobilise across Te Whaitua o Kāpiti to undertake monitoring.

While the NPS-FM provides other avenues for managing DIN[62], the Committee determined an additional attribute with associated target attribute states at lower concentrations is required. The attribute confirmed by the Committee is based on the draft NPS-FM 2020, where a DIN attribute was included; this attribute was later removed from the final document. The DIN bands are appended as Appendix 8 and ensure that more moderate impacts on ecological communities are considered, rather than only addressing levels of nitrate which cause macroinvertebrate or fish species to be lost.

62 Clause 3.13 of the NPS-FM requires the setting of instream concentrations and exceedance criteria or instream loads for nitrogen and phosphorus.

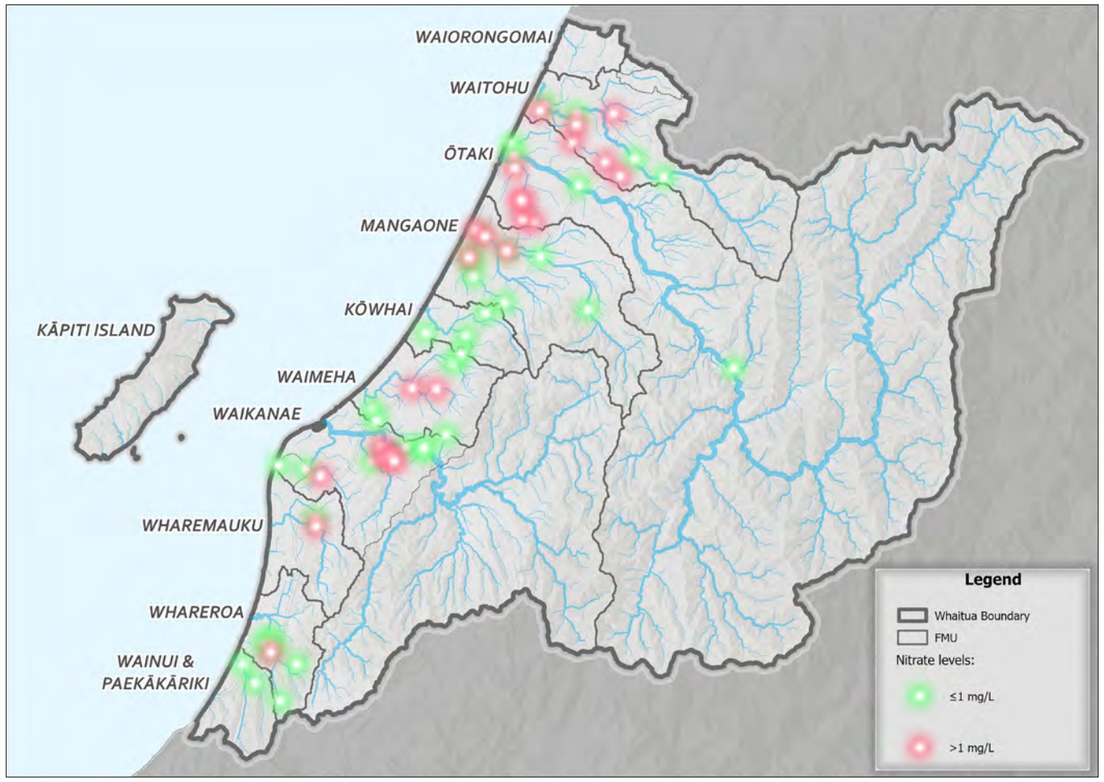


Figure 8: *Nitrate monitoring results.*

Assessing Habitat Quality

At the second December Tiriti House hui the Committee discussed habitat and methods of assessing habitat quality. The NPS-FM requires management of habitat as part of the ecosystem health value, defining habitat as follows: *"the physical form, structure, and extent of the water body, its bed, banks and margins; its riparian vegetation; and its connections to the floodplain and to groundwater."*[63] The Committee has identified improving habitat quality as an important aspiration in the long-term visions and environmental outcomes.

Dr Russell Death delivered a presentation on quantifying habitat quality, referring to both the Natural Character Index (NCI), including measures such as floodplain width and sinuosity (how windy a river is), and the Habitat Quality Index (HQI), including measures such as types of flows (for example, riffles and runs). The Committee discussed the difference between waterways with good water quality but little or no viable habitat for aquatic fauna (such as a heavily channelised waterway), and a waterway with poor water quality but plenty of viable habitat. Despite the poorer water quality, the latter waterway is more likely to support aquatic life.

In light of their concerns about habitat modification and the need for habitat restoration, the Committee sought a measure

63 NPS-FM, Appendix 1A.

of habitat quality in order to assess progress and success of the delivery of the WIP. The Committee considered that the HQI was an appropriate attribute to achieve this and tasked kaimahi with fitting their aspirations into a regulatory framework.

Further work by kaimahi determined that the HQI measure, at this point, is not sufficiently developed for use as an attribute to assess habitat as intended by the Committee. Further work is required to determine a suitable habitat quality assessment tool, and a recommendation has been included in section 6.8 to progress this. The development of this habitat quality tool will be informed by Committee discussions on the measurable characteristics of improving habitat quality, including:

- Improving natural habitat in heavily modified waterways
- Reintroducing pools, riffles, sinuosity and natural meandering
- Removing macrophytes and sediment
- Enhancing riparian planting and overhanging vegetation
- Undercutting banks
- Instream wood and rocks.

6.4.1.2 Attributes for Mahinga Kai

The Committee decisions on attributes for assessing the mahinga kai value were led by the Mana Whenua House. In determining what additional attributes were necessary, the Mana Whenua House identified the gaps between the elements of the mahinga kai value and the NPS-FM compulsory attributes. These gaps were broadly identified as:

- Ensuring mahinga kai is safe
- Ensuring that there is an abundance of mahinga kai
- The understanding that availability and practice of mahinga kai supports mana whenua culture.

Together the Committee decided that four additional attributes were required to assess mahinga kai. These are as follows:

- Heavy metals
- Campylobacter
- Tuna condition and abundance
- Mahinga kai cultural aggregate.

Managing water quality for the presence and concentration of heavy metals was considered by the Committee as an important additional attribute for ensuring the safety of mahinga kai practices and the abundance of mahinga kai. Discussions centred on the influence of urban land use and contaminated land impacts on water quality. Some localised issues, such as arsenic being present in watercress in certain areas, were also identified. The suite of heavy metals recommended is arsenic, cadmium, chromium, lead, mercury, and nickel.

No bands have been proposed for assessment; rather, a simple achieve/not achieved approach is suggested, with limits set using the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000[64]). All metals would be assessed together, and all would need to meet the water quality limit for the "achieve target" to be met.

The second attribute for ensuring mahinga kai is safe is a measure of campylobacter. The Committee noted that the presence of campylobacter on watercress makes it unsafe for consumption. When mahinga kai cannot be gathered, there is a loss of knowledge and this impacts on the continuing practice of mahinga kai, which results in people becoming disconnected from their awa.

64 ANZECC & ARMCANZ. (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

The Committee considered an attribute measuring the presence of campylobacter on watercress, but determined there was insufficient information to utilise this in the BBN model; the measure could not be reliable due to issues such as seasonality (i.e., watercress does not grow year-round) and a lack of watercress growing in some locations.

As an alternative, the Committee proposed to use a measure of campylobacter presence in water, which could be modelled and was deemed to better reflect the safety of undertaking mahinga kai practices and consuming mahinga kai. As with measurements of the presence and concentration of heavy metals, the attribute is proposed to be an achieved/not achieved measure. The limit, units of measurement, and statistical analysis are not yet determined, and is anticipated to be further developed during the plan change process.

"When you can't harvest or have contact with water, this creates a loss of knowledge and impacts the practice of mahinga kai. And when you can't participate in mahinga kai our people are disconnected from the awa and their history."

The Committee decided, based on mana whenua expert advice, that tuna is one of the best measures to express targets for the state of mahinga kai in an FMU. The proposed tuna condition and abundance attribute is also an achieved/not achieved measure.

Tuna is a species where there is an established monitoring approach that is practical to apply. Tuna can be caught overnight and then assessed for their health. Further, the Committee considered that tuna was a useful attribute as they can be measured year-round, rather than having to rely on seasonal presence like other mahinga kai species such as inanga or watercress. Additionally, good quality tuna require other species to be abundant to provide sufficient food sources, so they are a useful indicator of wider mahinga kai and ecosystem health.

The proposed tuna condition and abundance attribute was confirmed at the February 2024 hui. The attribute is based on catching at least 4 edible and good quality tuna. The criteria used to determine tuna edibility and health are their weight and whether they are free of sores and parasites. The size of shortfin tuna is to be over 700 grams. Longfin tuna caught are to be over 1.5 kilograms. To achieve the 4 edible and good quality tuna target, tuna may be either shortfin or longfin, or a combination of both, provided the respective weight limits are met.

Dried eels on pātaka-tuna, Raukawa marae, Otaki. Adkin, George Leslie, 1888-1964.[65]

The final mahinga kai attribute proposed is based on a gap identified reflecting the social importance of mahinga kai. The attribute is proposed to be a "cultural aggregate" which reflects:

- Intergenerational knowledge transfer
- Environmental distress
- Connection with nature.

It is proposed that surveys for each matter would be carried out and the median scores of each aggregated to represent the social element of mahinga kai. The Committee consider that

65 Photographs of New Zealand geology, geography, and the Māori history of Horowhenua. Ref: PA1-f-005-386. Alexander Turnbull Library, Wellington, New Zealand. [/records/22538889](https://natlib.govt.nz/records/22538889)

a social attribute is important for ensuring critical aspects of the mahinga kai value are provided for, but also as a measure of social licence to implement non-regulatory actions. For example, if the social attribute score is high, it is likely to reflect greater connection between the community and wai. It is therefore likely that there is greater "buy-in" for non-regulatory initiatives to improve freshwater. This is particularly important in actioning non-regulatory interventions, which require societal or behavioural changes.

The first component of the aggregate attribute is the intergenerational knowledge transfer of mātauranga Māori and tikanga, which involves a survey determining participants' knowledge of harvesting and preparing mahinga kai. The second is the environmental distress survey, investigating participants' views on the impact environmental changes have had on their well-being. The third survey, connection with nature, considers participants' relationship to the environment by determining the frequency at which they participate in activities in contact with nature. Each survey uses the Likert scale (rating scale) with a range of 1 to 5. The attribute is a combined score of all three surveys.

The Committee discussed if this cultural aggregate attribute could or should be measured for the whole community or just mana whenua. Both Houses agreed that the whole community wanted similar outcomes; for example, most people fishing on the Waikanae and/or living near it felt connected to the awa. However, the Mana Whenua House considered that while aspects of the cultural aggregate attribute could be inclusive of the entire community, there was nonetheless an element specific to Māori. For example, making certain values being inclusive of everyone risked diluting the value of the tikanga that surrounded mahinga kai practices.

The Committee agreed that a different social measure was needed to assess the wider community connection to Te Taiao and values around 'mahinga kai'. Further development of this attribute is required, and a placeholder has been noted in the proposed attributes in Appendix 9. A recommendation to complete this work has also been included in Section 6.8.

"When our environment is polluted , we can see this in ourselves as humans, just like the tuna. If our taiao is unwell, then we are unwell, in healing the whenua, we in turn heal ourselves."

The Committee's mahinga kai attributes are innovative and unique and are not found in any other regional plan in Aotearoa New Zealand. Given this novel approach and the time constraints of the Whaitua process, there are some information gaps on how to effectively incorporate the attributes into the NRP. As such, further work will be undertaken as part of the plan change process to ensure they are properly integrated and deliver the Committee's desired outcomes for mahinga kai. A recommendation is included to ensure this work is completed in partnership with mana whenua.

6.4.2 Attributes for Te Whaitua o Kāpiti

The Committee's full set of recommended attributes for Te Whaitua o Kāpiti are set out in Appendix 9. This identifies the compulsory attributes as defined in the NPS-FM and an additional 7 attributes required to express targets and measure the extent to which the ecosystem health and mahinga kai values are being realised.

6.5 Site Identification and Special Features

The NPS-FM requires a number of sites and special features to be identified, if present, within each FMU. This includes sites to be used for monitoring, primary contact sites, the location of habitats of threatened species, outstanding water bodies, and natural inland wetlands.[66] The Committee has not been able to complete this identification process; therefore, further identification will be required during plan change development. However, the Committee did discuss monitoring across Te Whaitua o Kāpiti on a number of occasions, as well as considering and discussing appropriate monitoring locations for the attribute suite.

6.5.1 Monitoring Sites

The NPS-FM states that monitoring sites must be located at sites that are either, or both of the following:

"(a) representative of the FMU or relevant part of the FMU

(b) representative of one or more primary contact sites in the FMU."

With regards to monitoring sites relating to kaupapa wai Māori/Māori freshwater values, monitoring sites may instead reflect one or more kaupapa wai Māori/Māori freshwater values and must be determined in collaboration with tangata whenua[67].

Freshwater monitoring and monitoring sites were a significant matter the Committee discussed. Several viewpoints were expressed

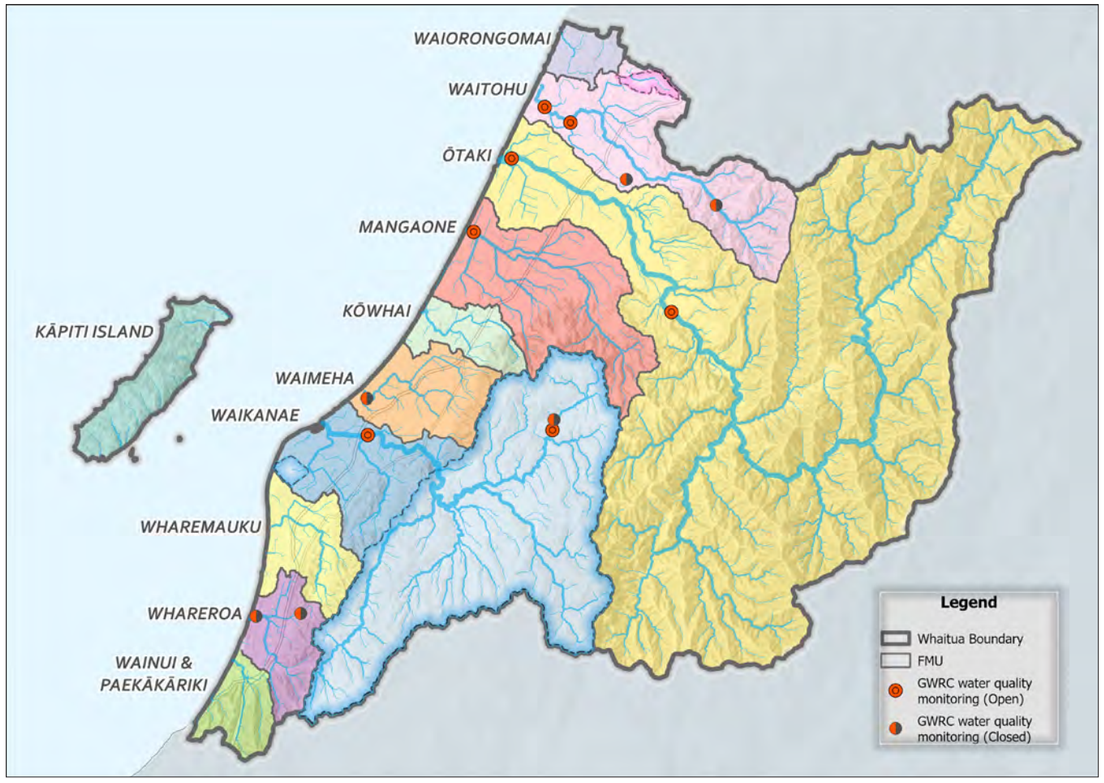


Figure 9: *Map of GWRC water quality monitoring sites.*

66 NPS-FM, clause 3.8.
67 NPS-FM, clause 3.8.

clearly and repeatedly, including the need for additional monitoring. The Committee considered that this was needed to better understand the state and trends of the freshwater environment, the causes of degradation, and accurate measurement of progress toward desired environmental outcomes.

In determining monitoring sites for FMUs, the Committee received information from Greater Wellington about their monitoring programme, including the current and closed monitoring sites (see Figure 9). Greater Wellington hold data for many of the NPS-FM compulsory attributes at these locations which means it is a relatively straightforward task to determine baseline state. This historical information can also be used to understand and interpret any future changes in the environment.

However, the Committee noted several issues with the current Greater Wellington monitoring sites, including:

- The lack of monitoring sites in the Waiorongomai FMU
- The current Mangapouri site does not detect all contaminants
- Many sites are chosen for ease of access and are not necessarily in the optimal locations for obtaining information.

The Committee considered that there needs to be a more holistic approach to monitoring to integrate with aspects of human well-being and mahinga kai, and that this will require changes to the freshwater monitoring approach across Te Whaitua o Kāpiti.

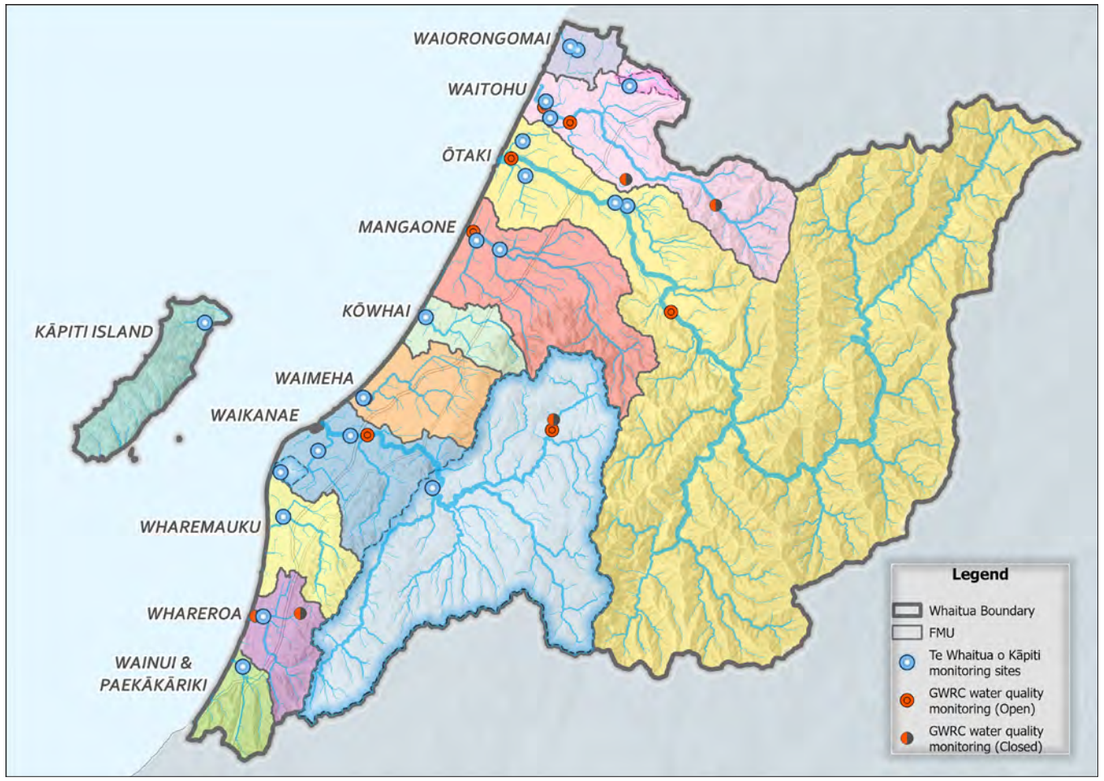


Figure 10: *Comparison of existing and recommended monitoring sites.*

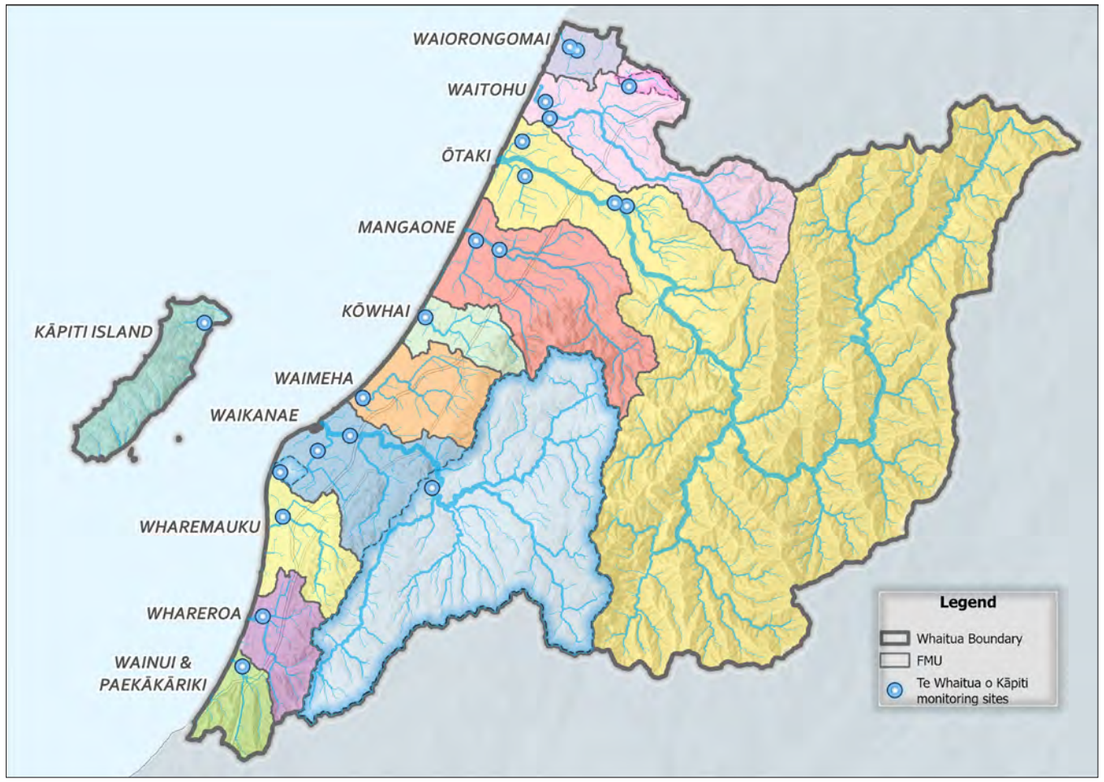


Figure 11: *Recommended monitoring locations in Te Whaitua o Kāpiti.*

The Mana Whenua House presented data on mahinga kai monitoring that has occurred within Te Whaitua o Kāpiti. The House also provided a map of proposed monitoring sites, which were selected as being able to provide good, representative information on the mahinga kai attributes while aligning as closely as possible with the existing Greater Wellington monitoring sites (within 150m where practicable) (see Figure 10).

The Committee discussed using either the Greater Wellington or the Mana Whenua House monitoring sites or having different sites to assess different attributes. The costs of monitoring potentially increasing due to doubling up on monitoring locations (where the same information would need to be collected at both existing Greater Wellington and Mana Whenua House proposed sites) was noted, along with options to manage those costs, such as by delegating monitoring requirements to mana whenua, or adopting different monitoring methods.

For the purpose of setting target attribute states, target attribute states for all attributes (except mahinga kai attributes) have been determined at available existing Greater Wellington monitoring site locations[68], or an inferred location. For example, there is no Greater Wellington monitoring site established in the Kōwhai catchment and therefore a lowland rural site has been inferred, but a site will need to be selected. The monitoring sites in Figure 11 have been used for setting mahinga kai target attribute states.

The future monitoring programme, including monitoring site locations will be finalised during the plan change development. The

68 Current and closed monitoring sites.

Committee recommends that the sites as shown in Figure 11 are used for monitoring and assessing target attribute states. Adopting these sites may require some transitional steps to manage implications on data gathering and data records. Specific Recommendations on this programme are set out in Section 6.8.[69]

6.6 Target Attribute States

The NPS-FM requires that target attribute states are identified for every attribute in order to achieve the environmental outcomes. These targets set the detailed directions for where, what, and when improvements to water quality are required, or at what state water quality is required to be maintained.

6.6.1 Committee Approach to Decision-making

The Committee approached the identification of target attribute states recognising that many awa were in a degraded state and they required significant improvement to give effect to Te Mana o te Wai. A transformational change was seen to be needed in order to achieve the aspirations of the Committee.

Reflecting the Committee's expression of Te Mana o te Wai, the target attribute states are the implementation of those principles and the detailed application of the long-term visions and environmental outcomes. These decisions are a demonstration of mana whakahaere/governance as these targets set the trajectory for management. Target attributes states represent what is required to care for Te Taiao and protect the environment for future generations.

Rivers and Streams

Baseline State/Current State

The Committee received advice from technical experts on the baseline state and current state of attributes in the NPS-FM based on available information (monitoring data and modelling).[70]

For some compulsory attributes there was insufficient monitoring data or modelling capability to determine the baseline or current states, and further work is required in order to obtain adequate information.[71]

Baseline states are also required to be set for the additional attributes confirmed by the Committee. In some locations, Greater Wellington hold information on dissolved copper, dissolved zinc, and dissolved inorganic nitrogen concentrations, but further monitoring or modelling will be required to ensure baseline states are determined for all FMUs. For the additional mahinga kai attributes, although the Mana Whenua House hold some information about the current state, further data is required to be collected, particularly for the cultural aggregate. A recommendation has been included in Section 6.8 to address this.

Target Attribute States

The approach for setting target attribute states for rivers and streams centred around the use of the BBN. To create the BBN the Committee, together with Dr Death, developed an initial conceptual model of freshwater in Kāpiti. This conceptual model represents the various elements identified by the Committee as influencing freshwater outcomes, and the relationships between these elements. The resulting flow chart, appended as Appendix 2, was then used by Dr Death to inform the development of the BBN.

The BBN does not include all of the elements in the conceptual model or all attributes in Appendix 9 which were identified by the Committee. This is due to the limited time to develop and then use the model to decide target attribute states, as well as the level of available information for each attribute. The BBN does include elements/attributes the Committee determined were fundamental for addressing freshwater degradation, including habitat quality, dissolved oxygen, and upstream land use. QMCI/MCI specifically was identified as a significant attribute, and it was often used as the basis for making decisions on other attributes included in the BBN (DIN, DRP and deposited fine sediment). Further development of the model to support the plan change process is ideal; this may include refining the model with additional data.

Using the model, the Committee worked through the target attribute state setting process on an FMU-by-FMU basis. Committee discussions were dynamic, teasing out how the current or baseline states compared to the desired environmental outcomes, understanding what the potential drivers for current state were, and considering possible options for improving freshwater quality. Overall, the Committee sought to be aspirational yet pragmatic in their target-setting, while also considering the achievability of the desired freshwater state over time.

As the BBN did not model all attributes, alternative approaches for setting target attribute states were used. For a number of the other compulsory attributes[72] and dissolved copper and dissolved zinc, Greater Wellington kaimahi were able to suggest targets to align with the Committee's decisions on QMCI/MCI. Suggested target attribute states were provided to the Committee where there is a reasonable level of confidence regarding the alignment of the attribute states with the MCI/QMCI attribute.

The suggested targets were based on the better of:

- The national bottom line.
- The equivalent of the MCI/QMCI target set by the Committee.
- Maintaining the better of baseline state or current state.

The Committee reviewed the approach and the suggested target attribute states and generally accepted the recommendations from kaimahi. Where a different target has been selected, this has been highlighted along with the Committee's rationale in Section 7 below.

For the *E. coli* attributes, periphyton, and dissolved oxygen, the Committee considered the available information on baseline state and current state, or lack thereof, and the values applicable in each FMU for determining the target attribute states. Key rationale for the FMU decisions is set out in Section 7 below.

For ecosystem metabolism, further work is required to collect data and determine a framework for interpreting monitoring results, therefore specific targets have not been set. The recommended target attribute state that applies across the Whaitua is explained in Section 6.6.4.

Lakes, Wetlands and Groundwater

The BBN could not be used for the Committee's decisions regarding target attribute states for lakes, wetlands, or groundwater due to a lack of monitoring data, therefore the Committee relied on mātauranga Māori and advice from kaimahi and on how to address these receiving environments.

For lakes, the Committee was advised that identifying priority lakes for setting target attribute states and subsequent restoration activities would be a pragmatic method for managing lake water quality. All other lakes would still be managed in the NRP via an objective seeking progressive improvement, and by the wider rule framework. Kaimahi worked with the Taurite from each House to select the priority lakes and determine the target attribute states. Kaimahi proposed four lakes for setting target attribute states: Waiorongomai, Waitawa, Ngārara and Ngātōtara, all of which the Committee accepted. The target attribute states for these lakes are set out in Section 6.6.3 below. Target attribute states were selected to improve to the national

69 Recommendation 3 and Recommendation 9
70 See Appendix 10, Table 14 for a summary of the technical datasets used to determine baseline and current attribute states.
71 Main data gaps exist for campylobacter, deposited sediment, macrophyte abundance, periphyton, dissolved oxygen, ecosystem metabolism and for the Wainui FMU.
72 Ammonia (toxicity), Nitrate (toxicity), Suspended Fine Sediment, Macroinvertebrates 2 of 2 (ASPM).

bottom line, or to reflect the aspirations of the Committee for the lakes.

With regards to wetlands, as there are no attributes for wetlands identified in the NPS-FM, there is no requirement to set target attribute states specifically for wetlands. As the NPS-FM includes a number of other requirements for monitoring and managing wetlands, a number of Recommendations in the WIP do relate to wetland management, but these does not include proposed target attribute states.

Similarly, in relation to groundwater the NPS-FM does not include specific attributes for aquifers and there is insufficient information regarding groundwater ecosystems and the effects of contaminants on them to set target attribute states. Management approaches to achieve target attribute states for rivers and streams will also benefit groundwater quality. Additionally, the highly connected nature of groundwater and surface water means groundwater quality will be managed to achieve the environmental outcomes for surface water set by the Committee. There are also several environmental outcomes in the WIP which address the management and protection of aquifers to maintain and improve their health. Recommendations regarding groundwater and aquifers are included in Section 6.8 to address these information gaps and manage risks to water quality.

6.6.2 Target Attribute States for Mahinga Kai

Unlike the majority of the attributes in the NPS-FM, the attributes selected to assess mahinga kai do not have bands but rather adopt a binary assessment where the target attribute state is either achieved or not achieved. The proposed target attribute states set for those monitoring sites shown in Figure 11 are set out in Table 1.

Table 1: *Target attribute states for mahinga kai attributes*

Parameter	Unit	Statistic	Baseline State	Target Attribute State
Campylobacter	TBC	Absence	Insufficient information	Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC[73]		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

6.6.3 Target Attribute States for Lakes

As noted above, the Committee has made decisions on target attribute states for four specific lakes and then applied decisions to all other lakes in the Whaitua. There is very limited information available about the current state of lakes in Kāpiti, as Greater Wellington currently does not undertake regular lake monitoring. Some modelling information is available, however not all NPS-FM attributes are modelled.

What is known is that there are a number of pressures on Kāpiti's lakes including catchment land uses, drainage, urban development, and pest species. Available information on lake trophic levels indicates that monitored lakes were classified as eutrophic (high nutrient enrichment) or supertrophic (very high nutrient enrichment). Lake Waitawa and Lake Waiorongomai lake-bottom sediment assessments indicate degradation, and that Lake Waitawa suffers algal blooms.

73 To be based on ANZECC standards.

Despite their poor state, lakes in the Whaitua are highly valued and are of particular significance to mana whenua. Lakes were historically an important food source and today are still used as places for recreational activities and to connect with nature.

The Committee's aspirations for lakes in the Whaitua is to see their overall improvement to support ecosystem, cultural, and social well-being. In addition to reflecting the environmental outcomes sought by the Committee, the selected target attribute states recognise these aspirations along with the current poor quality and significant efforts that will be required to improve them. For this reason, some target attribute states seek improvement to a C state or the national bottom line, or to a B state which aligns with the narrative attribute state descriptions in the NPS-FM and the outcomes sought by the Committee. The recommended target attribute states are set out in Appendix 10.

6.6.4 Target Attributes States for Ecosystem Metabolism

The ecosystem metabolism attribute is not fully developed with an interpretation framework like other compulsory NPS-FM attributes. Greater Wellington also do not have sufficient data about this attribute. Therefore, setting FMU target attribute states is not possible and the Committee has adopted a similar approach as taken in Plan Change 1 to the NRP, which is to recommend that the ecosystem metabolism attribute is maintained or improved until there is information available to define target attribute states. A recommendation has been included in Section 6.8 to set and notify target attribute states for ecosystem metabolism to achieve the environmental outcomes in the WIP.

6.6.5 Target Attribute States for *E. Coli* at Primary Contact Sites

The NPS-FM requires target attribute states for *E. coli* to be set at primary contact sites. Primary contact sites are defined as follows:

> *"a site identified by a regional council that it considers is regularly used, or would be regularly used but for existing freshwater quality, for recreational activities such as swimming, paddling, boating, or watersports, and particularly for activities where there is a high likelihood of water or water vapour being ingested or inhaled."* [74]

In discussing values, the Committee noted a number of commonly used water bodies and received information from kaimahi on community recreation use identified from the Litmus survey report. Water bodies of particular importance included:

- Ōtaki River
- Waikanae River
- Mangapouri Stream
- Mangaone Stream
- Waitohu Stream
- Waiotauri River
- Ngatiawa River
- Rangiora River
- Maungakotukutuku Stream
- Reikorangi Stream
- Wharemauku Stream
- Wainui Stream.

While particular rivers and streams were discussed, specific sites were not selected as being "primary contact sites".[75] The NPS-FM sets out a number of requirements for monitoring and management of primary contact sites. This includes setting a target attribute state for *E. coli* which differs to that set more generally at other monitoring sites.

74 NPS-FM, section 1.4.
75 PS-FM, clauses 3.2 and 3.27.

The primary contact site attribute sets a higher level of water quality, and more frequent monitoring is required during the bathing season. Additionally, if water quality exceeds the national bottom line, the regional council is required to notify the public that the site is not suitable for primary contact.

Having primary contact sites is fundamental to re-establishing local connection and relationships between people and the awa. This needs to be central to all ongoing work. Three primary contact sites are already monitored by Greater Wellington[76], and the Committee adopts these but seeks that further sites are incorporated in partnership between Greater Wellington and mana whenua. Target attribute states for these sites in accordance with Table 22 in Appendix 2B of the NPS-FM are not determined in this WIP.

"When we go swimming, we are swimming with our tūpuna."[77]

The Committee's overall direction is to see water quality in Te Whaitua o Kāpiti improved to enable contact recreation. This is expressed in the long-term visions and environmental outcomes. The Committee recognise the level of effort required to achieve this aspiration and the need to prioritise interventions. Further engagement on the locations of additional primary contact sites, their management and prioritisation for action is required. Recommendations on this are set out in Section 6.8.

6.7 Timeframes for Achieving Target Attribute States, Environmental Outcomes, and Long-term Visions

The NPS-FM requires that timeframes are set for achieving target attribute states and long-term visions.[78]

The Committee consider that the WIP serves as a call to action to halt further freshwater decline and make the improvements necessary to achieve healthy freshwater and freshwater ecosystems that can support the well-being of mana whenua and the wider community. The Committee seek that the timeframes adopted for long-term visions, environmental outcomes, and target attribute states acknowledge the necessity for substantial investment and effort by lead agencies and the community to achieve the required freshwater improvements, but ultimately reflect the imperative for prompt action.

While the timeframes for observing changes to target attribute states may vary considerably, each shorter-term action is critical to achieving longer-term timeframes and to achieving Te Mana o te Wai.

With this basis in mind, the Committee has proposed timeframes for achieving long-term visions and environmental outcomes. The timeframes range from 2024 for the Kāpiti Island FMU, which is considered to already achieve the proposed outcomes, out to 2050 to achieve the visions and outcomes for the Waitohu FMU and Lake Waitawa.

76 Ōtaki River at Old SH1, Waikanae River at Jim Cooke Park and Waikanae River at old SH1.
77 Mana Whenua House member, from Tiriti House hui notes.
78 NPS-FM, clauses 3.3(1) and 3.11(5).

Some of the rationale for selecting these timeframes include:

- A need to urgently improve water quality due our reliance on healthy ecosystems for social, cultural, and economic well-being
- A requirement to see change within a generation and improve the state of freshwater and ecosystems for future generations, in accordance with tikanga Māori
- A desire to maintain and increase the momentum of mahi already underway to address the risks of further urban development and the impacts of climate change
- Encouraging innovation and technology advances in order to meet the goals outlined in outcomes and visions.

Timeframes for target attribute states have not been identified, including where any interim targets may be required. The Committee note that further work will be required to determine the appropriate "ambitious and reasonable" timeframes, but consider the call set out in this WIP for urgent change to reverse environmental degradation reflects the Committee's expectations as to those timeframes.

Tikotu Stream diversion to Mazengarb.
Photo: Sharlene Maoate-Davis

6.8 Responses

Responses or interventions will be required to achieve the target attribute states, environmental outcomes, and long-term visions recommended by the Committee. The Committee's recommended responses are proposed regulatory and non-regulatory Recommendations, which have been prepared with the aim of implementing Te Mana o te Wai in Kāpiti.

The responses are framed at two scales: those that apply across the Whaitua, and those that apply in specific FMUs and respond to more localised matters. This section of the WIP describes the Committee's approach to identifying responses and outlines the Whaitua-wide Recommendations.

6.8.1 Background

Throughout the Whaitua process, the Committee discussed responses required to improve freshwater quality and ecosystem health based on their knowledge of the current state of FMUs, drivers of resource management issues, and the relative success of historical management approaches. The Committee's ideas for potential interventions, both at a Whaitua-wide scale and by FMU were collated by kaimahi as discussions progressed.

In December 2023, the Committee worked through each FMU to identify potential responses to form Recommendations in this WIP. This discussion was informed by:

- Current state data
- Expert knowledge provided by both the Kāwanatanga House and the Mana Whenua House
- Expert opinion of Dr Death
- Expert information from subject matter experts from Greater Wellington and Kāpiti Coast District Council.

The Committee also used the BBN to focus thinking on potential actions necessary to address different attributes. While not all of the attributes/components identified by the Committee were reflected in the BBN, amending various attributes/components gave a useful indication of the likelihood that achieving improvements in one attribute would lead to improvements in others where there was a relationship. Dr Death also provided his expert opinion as to the key drivers between suggested responses and attribute states. There was an understanding that a package of responses would be required to achieve the environmental outcomes, long-term visions, and target attribute states.

From Committee discussion, it was evident there were several overarching principles for how interventions to achieve target attribute states should be undertaken:

- Partnership: Councils and mana whenua need to partner with the community generally across all responses where appropriate. The Kāwanatanga House discussed the enormous amount of voluntary work undertaken by catchment and care groups across the District, and the need to harness this energy to realise environmental outcomes determined by the Committee.
- Climate change: Climate change will have implications across all of the Recommendations. The Committee noted that these implications need to be front-of-mind during implementation and based on the latest scientific predictions of the effects of climate change.
- Co-ordination: Co-ordination, particularly of monitoring is required as there is a need to allocate finite resources and budgets of organisations carefully.

As the Committee's expression of Te Mana o te Wai is the cornerstone of NOF implementation in Te Whaitua o Kāpiti, these principles have been used to frame the Whaitua-wide responses. Each proposed intervention is grouped under the relevant principles to which they give effect.

Each recommendation sets out the actions required, the relevant agencies or groups which lead or support the implementation of those actions, and timeframes for commencing that work. While Greater Wellington, mana whenua, Kāpiti Coast District Council and members of the community from the Kāwanatanga House have been involved in developing these Recommendations, some actions are reliant on other organisations and will require partnership with various stakeholders and individuals. Further engagement with these organisations and stakeholders will be required throughout the implementation of this WIP.

Due to the tight timeframes the Committee has worked to, it has not been possible to undertake a formal and thorough evaluation of the potential costs, benefits or feasibility of individual or collective responses proposed. This analysis will need to occur during plan change development.

6.8.2 Mana Whakahaere and Governance

6.8.2.1 Committing to the Whaitua Implementation Programme Recommendations

The first set of WIP Recommendations relate to giving effect to the NPS-FM in plans as a priority and set out the key regulatory requirements identified by the Committee. This is required to be done as soon as reasonably practicable by Part 4 of the NPS-FM. While the Government extended the RMA deadline for giving effect to the NPS-FM[79] from 31 December 2024 to 31 December 2027, the Committee has consistently worked towards providing a WIP to Greater Wellington with sufficient time to enable changes to the NRP and the RPS to be notified by December 2024.

The Mana Whenua House in particular outlined their desire to keep to this deadline to ensure urgency in the delivery of Te Mana o te Wai and uphold obligations under Te Tiriti o Waitangi. There was also discussion about the fact that other Whaitua in the region were progressed ahead of Kāpiti, and the need for equitable effort and resourcing for this Whaitua.

To ensure a consistent translation of the Committee's Recommendations into deliverable actions, whether regulatory or non-regulatory, an important Recommendation to support committing to the WIP is to establish an oversight committee. As outlined in Section 1.4, the purpose of this group is to enable Committee members to retain some oversight of the implementation of the WIP.

Mana whenua rights and interests were important considerations for the Committee in the context of minimum flow and water allocation within Te Whaitua o Kāpiti. There was discussion about how opportunities for mana whenua rights and interests could be provided for at various levels in freshwater management, including through specific water allocations for mana whenua and active involvement in decision-making. To achieve this, the Committee's Recommendations include a specific recognition for mana whenua in allocation under Obligation 2, the health needs of people, with regard to the development of their lands for papakāinga and kura, among other uses. The recommendation also includes provision of a first right of refusal of a 20 percent share of the Obligation 3 allocation. The figure of 20 percent is based on the allocation for Māori in the fisheries settlement.

The Committee consider that committing to the implementation of the WIP to achieve the long-term visions, environmental outcomes, and target attribute states will require:

- Proactive communication of the content of the WIP to staff in Greater Wellington, stakeholders, and the community to ensure there is a clear understanding of freshwater issues in Kāpiti
- Holding those accountable for delivering the implementation of Recommendations
- Co-ordination of effort, including work programmes, budgets for efficient delivery and interrelated decision-making processes
- Progression of work to identify the range of regulatory and non-regulatory actions that will be required to achieve the Committee's aspirations
- Finalisation of a number of specific, identified tasks
- Ensuring effective monitoring and compliance and enforcement of both existing regulation, such as the stock exclusion requirements under the NRP and the Resource Management (Stock Exclusion) Regulations 2020, and new regulation imposed to implement the WIP such as water sensitive urban design infrastructure
- Pursuing how mana whenua rights and interests in freshwater can be provided for, particularly with regard to the allocation of freshwater.

79 Section 80A(4)(b) of the RMA was amended in January 2024 by the Resource Management (Natural and Built Environment and Spatial Planning Repeal and Interim Fast-track Consenting) Bill ('Repeal Act'), which gained Royal Assent on 22 December 2023.

Key for WIP Recommendations:

- Mana Whenua
- Greater Wellington
- Kāpiti Coast District Council
- Department of Conservation
- Whaitua Kāpiti Oversight Committee
- Community/relevant stakeholders

Recommendation 1

Greater Wellington upholds the mana of the WIP by:

a. Receiving and considering the adoption of the Recommendations in this WIP and the accompanying section 32 content, and acknowledging Te Tiriti framework in which the Recommendations were developed;

b. Directing their staff to read this WIP and proactively use it to inform all advice and decision-making across all its functions, including Biosecurity, Emergency Management, Environment, Flood Protection, Harbours, Land Management, Parks and Forests, Pollution control, Transport, and Water supply;

c. Providing resourcing to support staff to understand the WIP, including resourcing to engage with mana whenua;

d. Undertaking immediate proactive communication of the WIP with stakeholders, community, and partners through a variety of channels, including a video, to promote the Committee's vision and long-term outcomes including their expression of Te Mana o te Wai. This is to enable ongoing dialogue and accountability for implementation and will involve Committee members and mana whenua partners (to the extent they wish to be involved);

e. Enabling Te Whaitua o Kāpiti Committee members to retain oversight for the delivery of WIP Recommendations and ensuring the Committee is formalised and funded for its implementation by Greater Wellington by 31 August 2024; and

f. Developing and maintaining a WIP monitoring programme to support the delivery of this WIP and the Committee oversight process.

Lead:	Support:	
●	●	August 2024

Recommendation 2

Notify changes to the Regional Policy Statement for the Wellington Region (RPS) and Te Tikanga Taiao o Te Upoko o Te Ika a Maui/the Natural Resources Plan for the Wellington Region (NRP) to implement the Recommendations contained in Te Whaitua o Kāpiti WIP including:

a. Te Mana o Te Wai and long-term freshwater vision objectives for Te Whaitua o Kāpiti into the RPS; and

b. Freshwater management units and part freshwater management units, monitoring sites, environmental outcome objectives, target attribute states, environmental flows and levels, limits, rules, and methods for Te Whaitua o Kāpiti into the NRP.

Lead:	
● ●	December 2024

Recommendation 3

Identify, develop, and implement further necessary regulatory and non-regulatory actions to give effect to the National Policy Statement for Freshwater Management 2020 (NPS-FM) and to achieve target attribute states, and environmental outcomes in this WIP. This shall include:

a. Establishing baseline information for all new target attribute states;

b. Identifying additional primary contact monitoring sites, in addition to existing monitored primary contact sites;

c. Setting target attribute states for the E. coli attribute as per Table 22 in Appendix 2B of the NPS-FM;

d. Developing a new social attribute to understand the wider community's values in connecting with the environment;

e. Developing, setting and notifying target attribute states for ecosystem metabolism to achieve the environmental outcomes of this WIP;

f. Developing and implementing Freshwater Action Plans;

g. Remove the permitted activity rule in the Natural Resources Plan, except for those provided for under section 14(3)(b) of the RMA, that allows water to be taken from a water body within Te Whaitua o Kāpiti without resource consent. This process will consider:

   i. The inclusion of a controlled activity rule for small water takes, to enable monitoring, reporting, and cost recovery;

   ii. Any one-off or infrequent uses of water where water takes should be enabled as permitted activities, or where permitted volumes should be reduced; and

   iii. Any transition period, if appropriate, to phase in the requirement for resource consents under (a).

h. Investigating regulatory or non-regulatory actions on matters such as:

   i. Setting limits on resource uses necessary to achieve target attribute states and action plans;

   ii. Rural land use including agriculture, horticulture, and forestry to reduce contaminant loads including nutrients and sediment;

   iii. Sediment control through earthworks rules, and identification and management of works on erosion-prone land;

   iv. Stormwater and wastewater networks;

   v. Activities in and adjacent to streams such as flood control works, open channel clearance, and gravel extraction;

   vi. Expanding the requirement for Freshwater Farm Plans, or similar management plans, to smaller properties such as lifestyle blocks and market gardens with disproportionate impact on surrounding waterways;

   vii. Phasing out any over-allocation and avoiding future over-allocation;

   viii. Further restrictions to prevent the loss of existing natural inland wetlands, including preventing the use of the offsetting and compensation elements of the effects management hierarchy to progress land development; and

   ix. The need for nutrient and pathogen discharge quality standards for new on-site wastewater systems, rather than relying on the AS/NZS On-site domestic wastewater management.

Lead:	Support:	
● ●	●	December 2024

Recommendation 4

Improve coordination of freshwater management and restoration work and budgets across organisations involved in freshwater management in Kāpiti to contribute to achieving the long-term freshwater visions, environmental outcomes, and target attribute states laid out in this WIP in time to influence each organisation's 2025-26 annual budget and then ongoing Long Term Plans.

Lead:	
	June 2025

Recommendation 5

Ensure that consent compliance, monitoring, and enforcement practices are improved by:

a. Improving monitoring and enforcement of stock exclusion requirements under the NRP and the Resource Management (Stock Exclusion) Regulations 2020;

b. Undertaking monitoring of compliance with permitted activity standards in the NRP;

c. Developing improved protocols by December 2025 for regularly sharing information on contaminated and potentially contaminated land to ensure that the Selected Land Use Register best reflects up to date knowledge of contaminated land;

d. In relation to water sensitive urban design:

   i. Compliance monitoring of resource consents that require the use of water sensitive urban design practices to ensure those practices are successful, focusing on correct installation and ongoing maintenance to ensure effective operation;

   ii. Reviewing the Kāpiti Coast District Plan provisions requiring rainwater tanks on new developments to ensure they are fit for purpose with regard to lot size and infrastructure needs, reducing costs and adverse environmental effects, and improving water security;

e. In relation to natural wetlands (which includes coastal wetlands):

   i. Improved compliance and enforcement of conditions on resource consents relating to the management of natural wetlands and coastal wetlands; and

   ii. Improved methods to evaluate the success of any natural wetland offsetting projects undertaken as part of the effects management hierarchy are implemented where appropriate.

Lead:	Support:	
		December 2025

Recommendation 6

Advocate for funding and resourcing from Central Government to undertake research into aquifer ecosystem health in Te Whaitua o Kāpiti, including into the risks of emerging contaminants[80] on groundwater and human health.

Lead:	Support:	
		March 2026

80 Emerging contaminants are synthetic or naturally occurring compounds or microbes that are generally not monitored in the environment but have the ability to negatively influence ecological or public health. They include medicines, personal care or household cleaning products, and lawn care and agricultural products, among others.

Recommendation 7

Ensure mana whenua and agencies are partners in the management of freshwater by developing and implementing a Memorandum of Understanding (MOU) or similar by December 2024 to:

a. Provide mana whenua with the technical and resourcing support from Greater Wellington to undertake mahinga kai monitoring, as well as monitoring of any other attributes in this WIP where they want to or are able to lead this monitoring.

b. Review, improve, and establish protocols on the following:

   i. Collaboration on State of the Environment monitoring and reporting;

   ii. Collaboration on pre-application meetings;

   iii. Assessment and processing of resource consent applications;

   iv. Compliance, monitoring, and enforcement of resource consents;

   v. Developing standard resource consent conditions to be applied to relevant resource consents to implement the Recommendations of this WIP;

   vi. Communication between mana whenua and councils for resource consenting and the use of Te Wahi portal; and

   vii. The use and interpretation of te ao Māori values, including where they form part of the planning framework.

Lead:	Support:	
		December 2024

Recommendation 8

Provide for mana whenua rights and interests in freshwater in Te Whaitua o Kāpiti, including by:

a. Establishing a specific water allocation for mana whenua to use and administer, as a right of first refusal of 20% of the allocation set as part of Obligation 3 of the hierarchy in Te Mana o te Wai, after the health and well-being of the awa, freshwater ecosystems, and mahinga kai species (Obligation 1), and the health needs of people (Obligation 2), are provided for;

b. Embedding the principles of mana whakahaere, kaitiakitanga, manaakitanga, and mātauranga Māori in freshwater allocation and the consenting process, including through active involvement of mana whenua in decision-making (to the extent they wish to be involved); and

c. Recognising papakāinga, kōhanga, and kura in Obligation 2 of the hierarchy.

Lead:	
	December 2024

6.8.2.2 The Baskets of Knowledge

The importance of monitoring and knowledge gathering was a constant theme throughout Committee meetings. Discussions noted matters such as:

- The need to ensure mātauranga Māori is given the same weight as Western science in freshwater management in Kāpiti
- Improved information about Kāpiti's freshwater, whether collected through Western science or through mātauranga, is fundamental to inform future decision-making and drive environmental improvements
- Action needs to be taken based on all available information, including traditional knowledge and local experiences, rather than relying solely on Western scientific methods that may delay achieving improved outcomes due to the burden of data collection and analysis required to create an evidence base.

Mātauranga Māori is a taonga tuku iho. It is a uniquely Māori cultural system of knowledge. The recent rise of open data and data technologies has greatly increased the risks of indigenous data misappropriation and misuse[81]. Indigenous data sovereignty states that data is subject to the laws of the nation from which it is collected. It recognises that Indigenous Peoples have inherent rights and responsibilities to Indigenous data.[82]

Harakeke and toitoi, Waikanae Estuary (Kōtuku Park side, Paraparaumu). Photo: Sharlene Maoate-Davis

81 Kukutai, T (2023) Indigenous data sovereignty – A new take on an old theme, Science Vol. 382, No. 6674
82 Royal Society Te Apārangi. (2023) *Mana Raraunga Data Sovereignty.*

With the increased use of mātauranga Māori to inform Kāpiti's freshwater management, the Mana Whenua House are mindful of the need to maintain Māori data sovereignty. This is important as Māori have a whakapapa connection to waterways, and therefore data relating to waterways is a taonga. Māori data sovereignty is a concept that recognises that Māori data should be subject to Māori governance and should support tribal sovereignty and the realisation of Māori and iwi aspirations.[83] To provide for Māori data sovereignty, the Committee includes a recommendation to develop and implement protocols as a priority to ensure appropriate access and sharing of Māori data. This will ensure the quality and integrity of Māori data is maintained and safeguarded.

One issue with current data identified by the Committee relates to the identification of 'naturally soft-bottomed streams'. The NPS-FM identifies specific river environment classes as 'naturally soft-bottomed', exempting these water bodies from the requirement to achieve target attribute states, including through action plans, for deposited fine sediment.[84] In Te Whaitua o Kāpiti several water bodies, such as the Waitohu, are classified by the NPS-FM as 'naturally soft-bottomed'. However, the Committee considers this is incorrect, drawing on local knowledge which states that historically these water bodies were cobble-bottomed, although some lower stretches are now heavily affected by decades of deposited sediment. The Committee recommends identifying and mapping water bodies that were historically cobble-bottomed to ensure these water bodies are not limited by the NPS-FM classification and are subject to appropriate management responses to improve water quality.

Through Committee conversations, a number of other information gaps were identified in understanding the current state of freshwater, freshwater ecosystems, and causes of degradation, as well as opportunities to better share and communicate information. Several Recommendations seek to fill these gaps and describe methods for resolving them. These cover matters including:

- The requirements for monitoring in the NPS-FM
- Partnership between Greater Wellington and mana whenua in developing and implementing a monitoring programme to understand needs for improving the health of freshwater ecosystems and mahinga kai
- Communication of information and monitoring data
- Māori data sovereignty
- Delineation of lakes, identifying historically cobble-bottomed streams, understanding groundwater systems and estuaries, and improving data on private wells and permitted water takes.

83 Te Mana Raraunga. (2024). *Our Data, Our Sovereignty, Our Future.*
84 NPS-FM, Tables 16 and 25.

Recommendation 9

Design and implement a knowledge programme, including state of the environment and plan effectiveness monitoring, to track progress towards targets and re-evaluate regulatory and non-regulatory responses. The monitoring programme shall:

a. Be equally informed by mātauranga Māori and Western science knowledge collection, including frameworks, protocols and practices so that the knowledge collected provides the benefit of both knowledge systems;

b. Incorporate new and confirmed monitoring sites recommended in this WIP, including new primary contact monitoring sites identified in accordance with Recommendation 3;

c. Identify and implement additional investigations, interventions, and monitoring needed to better understand the causes and effects of poor water quality to inform future management;

d. Ensure information is gathered to create a baseline state for any target attributes without sufficient information to determine a baseline, and new target attributes introduced by the WIP from 2024;

e. Develop a programme to undertake monitoring surveys of cultural and social attributes including:

   i. Monitoring mahinga kai cultural aggregate attributes identified in this WIP;

   ii. iMonitoring the wider community social attribute; and

f. Require the results of RMA section 35 monitoring relating to freshwater management in Te Whaitua o Kāpiti are proactively communicated with mana whenua, the Kāpiti Coast community, and Kāpiti Coast District Council, both through workshops led by relevant staff and the publication of easily digestible reports including online content.

Lead:	December 2024

Recommendation 10

Develop and implement a specific long-term monitoring programme to provide the data required to determine the needs of freshwater ecosystems and mahinga kai and inform the ongoing management of environmental flows and levels (including groundwater and lakes). This monitoring programme will incorporate measures of mātauranga Māori and take into account several matters, including but not limited to:

a. Mana whenua cultural connections with the awa;

b. The presence, distribution, and habitat requirements of mahinga kai and other taonga species;

c. Potential impacts of climate change;

d. Algal blooms;

e. Fish deaths;

f. The relationship between water quality and quantity, including concentrations of contaminants.

Lead: Support:	December 2024

Recommendation 11

Improve knowledge of freshwater environments and methods necessary to support the achievement of environmental outcomes and target attribute states by:

a. Investigating a mechanism of defining and/or delineating lakes in the region for the purposes of prioritising monitoring and environmental management;

b. Identifying and mapping streams that were historically cobble-bottomed that are incorrectly classified as being naturally soft-bottomed in accordance with Appendix 2C of the NPS-FM;

c. Enhancing information about the connectivity of groundwater and surface water, including natural wetlands, to understand the influence of groundwater on the target attribute states. This should include:

   i. Identifying areas in Te Whaitua o Kāpiti where groundwater connectivity with surface water bodies is high, prioritising areas where nitrate concentrations in groundwater or surface water pose risks to ecological health, or where there is saline intrusion;

   ii. Undertaking additional targeted investigations necessary to understand the interaction between groundwater and surface water and/or management responses required to achieve target attribute states;

   iii. If acceptable amounts of surface and groundwater quality and quantity data exist, then the Whaitua Kāpiti groundwater model rebuild should be expanded to be an integrated surface and groundwater flow and quality model to better understand the transport of contaminants such as nitrate-nitrogen;

   iv. Identifying any actions, including regulatory changes necessary to ensure target attribute states are achieved; and

d. Improving data on existing private wells, including permitted takes, by December 2025 in Te Whaitua o Kāpiti, including their location, depth, and water quality, including through actions such as:

   i. Using social media or other education programmes to encourage landowners to supply information and data to Greater Wellington;

   ii. Undertaking targeted leaflet drops to properties in areas where there is limited information currently held; and

   iii. Carrying out site visits with the permission of landowners to locate private wells and test water quality.

Lead: Support:	December 2025

Recommendation 12

Develop and implement protocols to ensure appropriate access and sharing, to ensure Māori data sovereignty is upheld with respect to any data produced by Māori, and data that are about Māori and the environments they have relationships with.

Lead:	December 2024

Recommendation 13

Ensure that knowledge is available to inform decision-making, including but not limited to policy and consenting decisions and mahinga kai tikanga by:

a. Giving mātauranga Māori the same weight as Western science in decision-making, so that it is embedded in policy and consenting processes of both councils;

b. Ensuring appropriate availability of knowledge and information via a living map52 that provides successive and current data and information to support kaitiaki decision-making and integrated management of risk in the catchment;

c. Ensuring the management of freshwater takes into account the modelled impacts of climate change, as well as any adaptation works undertaken in the catchment such as managed retreat/planned relocation, and soft and hard engineering;

d. Designing and managing a database of natural wetland offsetting projects undertaken as part of the effects management hierarchy to monitor and evaluate the success of implementation, including a data management protocol to ensure data is appropriately shared with Kāpiti Coast District Council, mana whenua, and relevant stakeholders; and

e. Requiring timely and meaningful sharing of information and forward planning with all relevant agencies with regard to the setting and implementation of environmental flows and levels and take limits.

Lead:	December 2024

6.8.2.3 Reconnection with Te Taiao

Improving how people connect with waterways was a recurring theme throughout Committee meetings. The Committee consider that when people engage with waterways, they are more likely to understand the issues that their wai are facing and support their protection and restoration. This was viewed as particularly important where improvements rely heavily on changing behaviours.

Reconnection with Te Taiao is especially important for mana whenua, due to their intrinsic whakapapa connection to waterways. There are many historical and present-day kāinga and mahinga kai sites along Kāpiti's waterways that have been accessed to sustain and nourish the whānau that reside there. Mana whenua want to redress trauma associated with the degradation and disconnection to waterways. As outlined earlier, the Committee seeks to uplift and incorporate mātauranga Māori into management of wai; for example, one recommendation relates to applying the maramataka to restoration planting.

The Recommendations below seek to improve peoples' connection to Kāpiti's waterways.

Ōtaki tributary past Katihiku Marae. Photo: Dr Aroha Spinks

Recommendation 14

Develop a programme to provide education and support to ensure that where planting and pest control will impact waterways, all restoration planting and pest control, including that which is required through consenting, will be informed by the local maramataka to ensure integrated and coordinated restoration efforts across Te Whaitua o Kāpiti so that the right plant is in the right place at the ideal time. This education and support may include:

a. Annual production of a local maramataka, led by Kāpiti Coast mana whenua (ĀRT) in collaboration with Kāpiti Coast District Council;

b. Training for Council staff, contractors, and community;

c. Education materials including investigating online resources such as GIS applications and a mobile app; and

d. Development of Council policies and processes to provide funding for pest management and planting in accordance with the maramataka.

Lead:	August 2024

Recommendation 15

Establish reliable funding to implement an intergenerational healing and restoration programme premised in rongoā mātauranga-ā-iwi. The programme will continue to redress trauma associated with the degradation and disconnection to waterways, and instil wai ora across current and future generations, providing opportunities for learning from pēpi through to kaumātua. The programme is Taiao-based education, seasonal and mai uta ki tai. The programme will be funded and developed through a seasonal approach.

Lead: Support:	June 2024

Recommendation 16

Develop and implement a programme to improve community and mana whenua understanding of their connection and obligation to the wai of Kāpiti. This should include:

a. Enhancing mana whenua understanding of their connection through sharing whakapapa kōrero tuku iho and the complexity and nuance of whakapapa relationships, including through the production of educational resources;

b. Educating the Kāpiti community about the value, uses, and state of freshwater in Kāpiti so they understand the hierarchy of obligations in and principles of Te Mana o te Wai and the decision-making approach of Greater Wellington and Kāpiti Coast District Council;

c. An education campaign including community education days and the production of educational resources, such as permanent and maintained on-site signage in prominent locations in each of the FMUs, a dedicated web page (including information on where drinking water is sourced and the history and significance of wai), and annual social media campaigns (for a minimum of three years);

d. Te reo me ngā tikanga and mātauranga is incorporated through all education strategies; signage, naming, community events/education days, and other resources;

e. Promoting Greater Wellington's established Wetlands Programme for landowners, which provides funding, advice, and support to restore and protect wetlands on private property and Māori land; and

f. Resourcing and promoting groups including Māori landowners and community groups undertaking wetland restoration and pest management.

Lead: Support:	December 2024

6.8.3 Kaitiakitanga and Stewardship

6.8.3.1 Protecting Wai for our Tamariki and Mokopuna

The Committee's Recommendations for protecting wai for future generations are focused on decision-making on, and implementation of the policy framework. Two matters are addressed: water quantity and allocation; and evaluating how activities are being undertaken in accordance with the regulation.

Water quantity limit setting and allocation principles were discussed by the Committee in March 2024. The Committee's kōrero and their recommendation on the water quantity framework is centred around implementing the hierarchy of obligations within Te Mana o te Wai.

"Freshwater needs to be fresh. Healthy freshwater should be bottom line."

The Committee considered the water quantity values and uses under each of the three obligations of Te Mana o te Wai. The Committee has clarified that mahinga kai species are to be considered in Obligation 1 (the health and well-being of water bodies and freshwater ecosystems), and immersion activities sit within Obligation 2 (the health needs of people) of the hierarchy.

The Recommendations specify how Te Mana o te Wai is to be applied to water quantity management, directing approaches to water allocation regimes, as well as considerations for limit setting. Of particular note is:

- Setting environmental flows and levels for all waterways at 80 percent of Mean Annual Low Flow (MALF) to support the health and well-being of freshwater ecosystems
- Taking a precautionary approach by applying an additional buffer of 35 percent of MALF for mahinga kai and an additional buffer of 35 percent of MALF for climate change to the environmental flow
- Taking a precautionary approach by applying a take limit of 10 percent of MALF
- Investigating areas where new takes from aquifers for the purpose of recharging or augmenting surface water flows should be avoided, and expressly prohibiting this activity in the Ōtaki River. It was acknowledged that this recommendation should not extend to the existing Waikanae River groundwater recharge scheme. The intent of this Recommendation is to avoid adverse effects on cultural values from the mixing of waters which impacts on the health and well-being of water bodies. Mana whenua consider that this is important to ensure that the mana of individual water bodies is respected, as from a te ao Māori perspective each water body has its own mauri, spiritual energy and identity. Mixing of two water bodies places the health of both water bodies at risk and disturbs the balance of the ecosystem. This matter is therefore considered to sit under Obligation 1 of Te Mana o te Wai
- Investigating ways to drive innovation and incentivise certain uses of water that are sustainable and efficient. Care is required to ensure there are no equity issues
- Investigating a more equitable replacement for the 'first-in-first-served' approach to water allocation.

The additional buffers to provide for climate change and mahinga kai were proposed by the Mana Whenua House and adopted by the Committee. The Committee considered that this approach would best provide for Te Mana o te Wai and the full suite of values, including mahinga kai. The Committee highlighted how wai is the lifeblood of Papatūānuku and related the existing minimum flow settings as keeping this ancestor in hospital, only making her partially well again. Giving more water back to the river is required to ensure she is well and functioning.

The recommended approach to allocation draws on centuries of lived experience and mātauranga Māori in the Kāpiti Coast. Some of this is oral tradition provided by the Mana Whenua House, and some has been recorded as part of:

- academic studies
- evidence provided at Waitangi Tribunal enquiries
- research undertaken by crown research institutes
- reports commissioned by local and central government agencies
- reports commissioned by mana whenua.

Environmental management plans and research from within Kāpiti seek to ensure adequate flow in waterways to sustain diverse and abundant mahinga kai. For example, Baker (2019)[85] finds that traditional technical water allocation processes focus on supporting the colonial value of 'industry' while marginalising the multiple other integrated water values held by local indigenous communities in relation to water.

The Mana Whenua House considers that mahinga kai is vulnerable to pressures from abstraction, and as such proposed an additional buffer to protect this taonga, which was accepted by the full Committee. Te Ātiawa ki Whakarongotai's kaitiakitanga plan[86] seeks to ensure "there is adequate flow in waterways to sustain diverse and abundant mahinga kai."

There has been a significant amount of research into climate change and the impacts it is predicted to have on waterways and communities with regard to the Kāpiti Coast. A report on predicted impacts of climate change in the Wellington Region by the National Institute of Water & Atmospheric Research (NIWA) (2017)[87] shows the region's climactic changes will include: increased temperature, greater minimum and maximum temperatures, fewer rainy days per year, but increased intensity of rainfall events, and increases in drought frequency. The report states:

> *"Many species are at risk from climate-related impacts such as river water abstraction for irrigation and hydroelectric power schemes. Changes to climate will exacerbate the impacts and risks on New Zealand's and Wellington Region's biodiversity, with the major impact (aside from pests, under biosecurity below) being on habitat changes due to air temperature changes…"*

Mahinga kai is sensitive to pressures, including those from the effects of climate change. A recent report[88] states that:

> *"…predicted impacts of climate change on taonga freshwater species needs to be factored in to effectively manage, enhance and conserve taonga species in Aotearoa-New Zealand both now and in the future."*

The report found that climate change, especially drought, temperature and severe weather, are key threats to three taonga species: longfin eel/tuna, shortfin eel/tuna and kōaro. The Committee considers that this research indicates that a specific allocation is required to ensure that the forecasted impacts of climate change are factored into the allocation regime for all waterways.

A report prepared for the Whaitua Kāpiti process by Cawthron[89] states that the existing minimum flow and core allocation rule in the NRP, if applied to the Ōtaki River (which currently has a near-natural flow regime), "would present a very high risk of detrimental effects on instream ecology" (page 9).

85 Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water.*
86 Ātiawa. (2019). *Whakarongotai o te moana Whakarongotai o te wa. Kaitiakitanga Plan for Te Ātiawa ki Whakarongotai.*
87 NIWA. (2017). *Climate change and variability – Wellington Region. Prepared for Greater Wellington Regional Council.*
88 Egan et al. (2020). *Climate change vulnerability assessment of selected taonga freshwater species: Technical report.*
89 Holmes R. 2024. *Environmental flow investigation for Whaitua Kāpiti. Nelson: Cawthron Institute. Cawthron Report 3812A. Prepared for Greater Wellington Regional Council.*

It also cites research on natural flows, which finds that "minimum flows and allocation limits that ensure natural flows are altered by no more than 10% can be considered environmentally conservative (precautionary) (i.e. the natural structure and function of riverine ecosystems will be maintained with minimal changes)." (page 16). The intent of this WIP in terms of setting a new environmental flow and take regime is to drive behaviour change, including farming practices, to build in environmental resilience to climate change.

The Committee also discussed an appropriate allocation approach, including the findings above regarding the current NRP minimum flow and core allocation rule and the risks of altering natural flows by more than 10 percent. The Committee ultimately decided to align the water take limit for Obligations 2 and 3 with this figure in order to best give effect to Obligation 1.

With regard to the implementation of regulation, the Committee seek improved monitoring and enforcement of stock exclusion requirements, permitted activity rules, and resource consents in relation to natural wetlands.

Recommendation 17

All decision-making on setting environmental flows and levels and take limits in Te Whaitua o Kāpiti must prioritise:

a. First, the health and well-being of water bodies, freshwater ecosystems including mahinga kai species (Obligation 1);

b. Second, the health needs of people (such as drinking water) (Obligation 2); and

c. Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future (Obligation 3).

Lead:	December 2024

Sacred kingfisher – Kōtare. Auckland, December 2013. Photo: Bartek Wypych

Recommendation 18

Review and, where necessary, revise the environmental flows and levels and take limits within each FMU to implement the hierarchy of obligations identified in Recommendation 17. This process shall be guided by the following principles:

a. To achieve Obligation 1:

   i. Set environmental flows and levels for all waterways by:

      1. Applying 80 percent of Mean Annual Low Flow (MALF) in all rivers and streams;

      2. Protecting mahinga kai species and tikanga tuku iho by applying an additional 35% of MALF buffer in addition to the environmental flow calculated under (1);

      3. Responding to the potential changes in flows and levels from climate change by applying an additional 35% of MALF buffer in addition to the environmental flow calculated in (1) and (2);

   ii. Avoid any new abstraction of groundwater from aquifers for the purpose of augmenting surface water flows to prevent adverse effects on cultural values from the mixing of waters. and prohibit the recharging of the Ōtaki River with groundwater;

   iii. Protecting and managing aquifer ecosystems to allow them to fulfil their role in the hydrological cycle, including connections to other water bodies;

   iv. Identifying specific water bodies where new water abstractions need to be restricted to provide for the health and well-being of water bodies, freshwater ecosystems, and mahinga kai;

b. To achieve Obligation 2:

   i. Recognising and providing for immersion activities as additional health needs of people, including but not limited to swimming;

   ii. Investigating potential prioritisation of use under human health needs. If it is required, activities such as drinking water, sanitation and hygiene, health and harvesting of mahinga kai, fishing, essential community facilities, papakāinga, and others related to wairua, mauri, and spiritual sustenance will be considered;

   iii. Protecting and managing aquifers to prevent the intrusion of salt water and emerging contaminants, avoid consolidation, and ensure that pressures are suitable for water supply;

   iv. Accommodating projected population growth and climate change where appropriate;

c. To achieve Obligation 3:

   i. investigating opportunities and developing criteria for prioritising and incentivising certain uses of water that fall under this obligation, particularly where they are sustainable, efficient, and provide for the social, economic and cultural well-being of people and communities, now and in the future; and

   ii. the investigation under (c)(i) will involve engagement with the community and stakeholders to ensure there are no unintended consequences in a prioritisation system.

Lead: Support:	December 2024

Recommendation 19

Undertake the following actions in relation to water allocation and use:

a. To achieve Obligations 2 and 3 as identified in Recommendation 17, apply a take limit of 10 percent of MALF as part of water allocation regimes for all rivers and streams, and:
   i. Within the take limit in (a), provide for an allocation for mana whenua as a right of first refusal as per Recommendation 8; and
   ii. Review take limits at a minimum of every 10 years to ensure these are set to appropriately account for changing environmental conditions.

b. Improved data collection on water take volumes and uses, including takes permitted under section 14(3)(b) of the RMA, in order to provide more accurate and transparent accounting of water use. This will involve requirements for metering on all water takes, including telemetry for takes from bores;

c. Requirements for common consent conditions on water permits, with a trigger to step down or cease abstraction in an FMU when an issue is identified in monitoring of another consent in the FMU (such as saline intrusion);

d. Aligning consent expiry dates and reviewing all water permits on a staged FMU-by-FMU (or part-FMU) basis to understand the impact of cumulative abstraction on the health of the awa and dependent ecosystems, and to transition to a more equitable allocation framework. Priority for reviews will be given to catchments with the highest level of over-allocation and/or adverse effects on water bodies. Review of consents should occur upon renewal in the first instance, or otherwise under s128 of the RMA if the FMU or part-FMU is over-allocated and there is no upcoming renewal within 5 years of the plan change becoming operative; and

e. Investigating a replacement to the "first-in-first-served" approach to processing water permits and allocating water. This will be informed by the water permit reviews undertaken under (c), and in investigating a replacement must consider alternative methods for providing more equitable allocation of resources, including but not limited to specific policy direction within FMUs to prioritise particular water uses or activities above others.

Lead:	December 2024

6.8.3.2 Habitat Enhancement and Restoration

The Committee acknowledged that most waterways in Kāpiti have been heavily modified by humans, especially lowland streams and wetlands. Therefore, habitat enhancement and restoration is a key priority for the Committee. This group of Recommendations responds to the Committee's strong desire to see on-the-ground improvements to habitat, particularly in habitats supporting mahinga kai.

Whareroa FMU: Pātaka rongoā restoration. Photo: GWRC

Recommendation 20

Develop and implement and provide ongoing funding for a programme for the enhancement and restoration of mahinga kai to achieve the long-term visions and environmental outcomes, and address issues outlined in this WIP for all water bodies:

a. Restore mauri so that there is a great abundance of mahinga kai;

b. Enhance mahinga kai, including for, but not limited to:
   i. Historic ngahere (forests);
   ii. Repo (wetlands);
   iii. Pā harakeke (flax plantings);
   iv. Rongoā plants;
   v. Kai moana and kai awa including tuna, inanga, and piharau (lamprey);

c. This programme shall:
   i. Be developed by June 2025 (funding for programme development in 2025-26 financial year;
   ii. Incorporate of measures of mātauranga Māori;
   iii. Investigate and identify potential mahinga kai sites and species and any actions needed to establish habitat or species;
   iv. Set a timeline for implementing all identified actions based on priority; and
   v. Outline a monitoring programme to assess the effectiveness of implemented actions.

Lead: Support:	June 2025

Recommendation 22

Develop, implement and provide ongoing funding for a restoration programme for the enhancement of habitat of all water body types. This programme shall:

a. Be developed by June 2025 (funding for programme development in 2025-26 financial year);

b. Incorporate measures of mātauranga Māori;

c. Seek to enhance ecosystem health;

d. Investigate and identify opportunities and actions to protect, restore, or enhance habitats including:
   i. Potential for restoring the natural form of modified streams, for example re-establishing natural meanders and daylighting piped streams;
   ii. Sites that require enhancement to meet habitat quality targets;
   iii. Actions for effective habitat enhancement or species establishment that can be applied to identified sites over time, agreeing good practice management for stream and channel maintenance, gravel extraction, silt, and vegetation clearance, alteration or removal of structures and restoration planting;
   iv. Identifying species at severe risk of decline and identifying locally extinct species and the potential for reintroduction;

e. Set a timeline for implementing all identified actions based on priority; and

f. Outline a monitoring programme to assess the effectiveness of implemented actions.

Lead: Support:	June 2025

Recommendation 23

Design and initiate the following pest and weed control programmes, with actions including:

a. As a high priority, undertake active removal of exotic aquatic weeds (e.g., hornwort, oxygen weed) with priority given to "hot spots" identified by the programme;

b. Active control of pest populations that contribute to poor water quality, including geese, carp, perch, rudd, gambusia, brown trout and tench; and

c. Active control of any other species identified in partnership.

Lead:  Support: 	December 2026

6.8.3.3 Protecting the Values of our Natural Inland Wetlands and Estuaries

The historical loss of wetlands in Kāpiti has been extensive, as outlined earlier in this report. Similar degradation has occurred to estuaries in the Whaitua due to physical changes, surrounding land use, and freshwater quality degradation. The Committee consider that there needs to be immediate interventions to halt further degradation and achieve net gains.

Recommendation 24

Progress the effective management and protection of natural inland wetlands in Te Whaitua o Kāpiti, including:

a. Providing support and advice on responding to changes due to climate change, including from rising or falling groundwater levels and interactions with flood management and flooding;

b. Investigating alternative models of management and ownership to protect wetlands from development;

c. Investigating options to adapt existing and future infrastructure design to allow natural processes to occur within natural inland wetlands without damaging infrastructure in wetlands;

d. Promoting best practice and educating developers on adding economic and aesthetic value when incorporating water sensitive urban design, such as incorporating existing or offset or constructed wetlands into new developments; and

e. Investigating where stormwater may be discharging into natural inland wetlands, assessing the effects on those wetlands including measures of mātauranga Māori, and alternative discharge options.

Lead: 	December 2025

Recommendation 25

Advocate to central government through annual correspondence and formal submissions for the protection and restoration of natural inland wetlands, coastal wetlands, and peatlands to be included in the Emissions Trading Scheme.

Lead: 	December 2026

Recommendation 26

Investigate and implement actions to improve the ecosystem and cultural health of estuaries in Te Whaitua o Kāpiti. The investigation should consider necessary actions (beyond those identified in this WIP) to manage/resolve:

a. Habitat loss, including the reductions in the area of salt marsh, cockle beds, and other habitats;

b. Undertaking estuarine restoration;

c. Water quality degradation including issues caused by sediment inputs;

d. Catchment flow alterations including estuarine mouth management and stream course alterations;

e. The presence of introduced weeds and nuisance algae;

f. Human disturbance of wildlife;

g. Reductions in the area of salt marsh, including undertaking estuarine planting to restore salt marsh area; and

h. Investigating and implementing policies and rules to improve the health of estuaries.

Lead:  Support:	December 2025

6.8.4 Manaakitanga and Care and Respect

6.8.4.1 Restoring the Mana of Ara Wai

The Committee has identified several responses required to restore the mana of ara wai. These interventions address the need to change the way in which awa are viewed, giving them greater respect and acknowledgement in accordance with Te Mana o te Wai.

Recommendation 27

Develop and implement measures to acknowledge unnamed awa/streams, including establishing a programme of work to ensure that traditional names are returned to the awa, and ensuring Te Reo Māori is upheld through appropriate signage and respected as part of the community's identity.

Lead: 	December 2025

6.8.4.2 Changing Established Practices and Adopting Best Management Approaches

The Committee considered that changing behaviours and adopting best management practices is critical to achieve visions and outcomes. These Recommendations identify several areas of freshwater management where improvements in processes or management can be completed. The Committee were particularly keen to see better management of onsite wastewater systems (such as septic tanks). The Committee viewed poorly performing septic tanks as posing a high risk to water quality, an issue that is not well addressed at present.

Recommendation 28

Develop and implement a pollution prevention programme by December 2026 aimed at avoiding contaminants entering the public or a private stormwater system. The pollution prevention programme could include:

a. Identification of catchments or hot spots within catchments that contribute a high dissolved copper and/or dissolved zinc load in stormwater discharges;

b. Prioritising high contaminant loss catchments or hot spots for actions to reduce contaminant loads entering the stormwater network;

c. Working with specific industries or suppliers to raise awareness of the risks of certain activities or products to stormwater quality with the aim of avoiding discharges of contaminants into stormwater drains; and

d. Investigating new or expanded initiatives to reduce the contaminant load of heavy metals entering the stormwater system, or removing contaminants from the stormwater network, such as increasing street sweeping frequency, installing new treatment devices and maintaining awareness of new innovative solutions.

Lead: Support:	December 2026

Recommendation 29

Investigate and implement a permitting system, such as a warrant of fitness system or bylaw, to ensure onsite wastewater disposal systems are correctly maintained. This will be supported by an education programme for septic tank owners to raise awareness of how to correctly use and maintain onsite wastewater systems. This could include, for example, a leaflet drop to all septic tank owners with guidance, a social media campaign, or a website with easy to follow guidance for correct use and maintenance.

Lead:	December 2025

Recommendation 30

Develop and implement an education programme for people undertaking open channel/modified waterways maintenance and clearance. The implementation programme should include actions such as:

a. Meeting with operators and landowners to provide advice on specific clearance sites; and

b. Promoting the application of Good Practices for the Mechanical Management of Highly Modified Waterways 2022.

Lead:	December 2025

Recommendation 31

Review and update the Kāpiti Coast District Council 2003 Sustainable Water Use Strategy to better provide for relevant long-term visions, values, and environmental outcomes in this WIP, including providing for Te Mana o te Wai.

Lead: Support:	December 2026

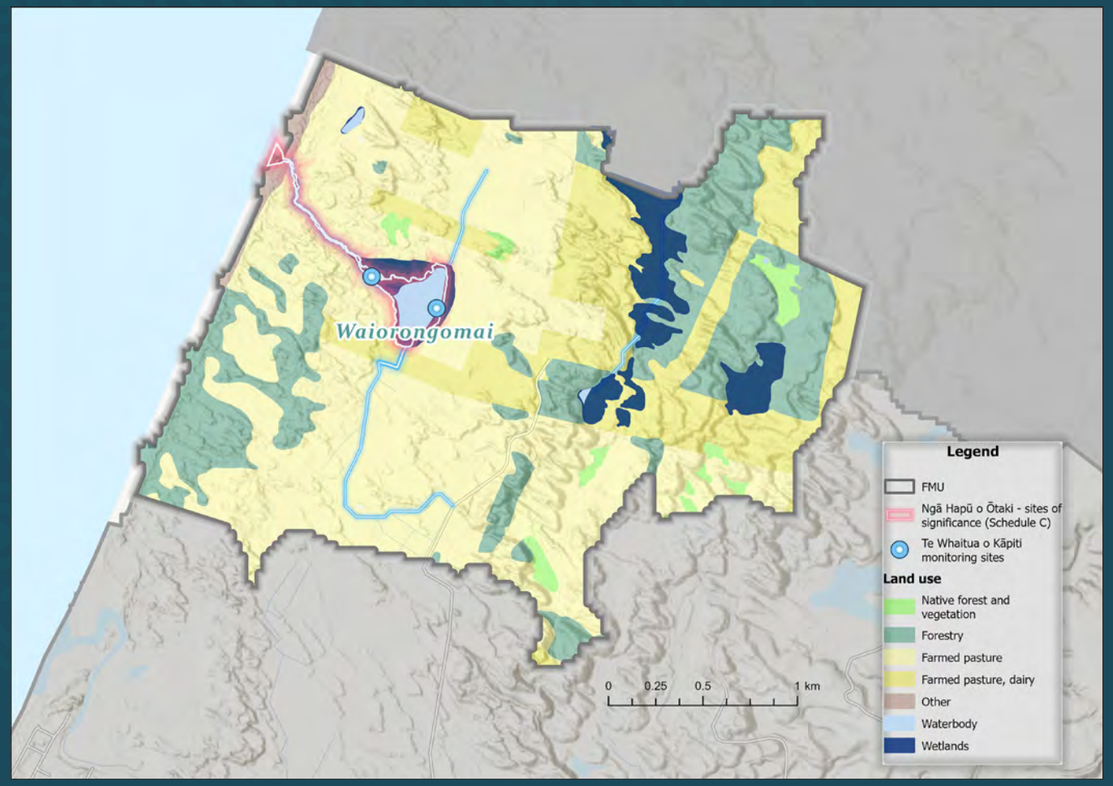
SECTION 7

Freshwater Management Unit Kōrero

Royal spoonbill – Kōtuku ngutupapa. Ashley River estuary, Canterbury, March 2014. Photo: Steve Attwood

7.1 Waiorongomai

FMU



7.1.1 Values, Pressures, and Current State

Lake Waiorongomai is a small and shallow coastal lake which flows directly into the Tasman Sea. The Waiorongomai FMU is approximately 700 hectares. The catchment surrounding Lake Waiorongomai is predominantly used for pastoral farming, with dairy farming and sheep and beef production being the dominant land uses in the FMU. Waiorongomai was part of a much larger post-dune complex but historic drainage in the area has occurred and it is now the last remaining lake.

> *"The lake was right up, beautiful clean clear lake water… Even seals and penguins – all sorts came up the stream to the lake. You had the white heron, or the kōtuku visit the lake too."*
>
> ***Tanira Cooper on Lake Waiorongomai[90]***

90 Pg. 309, Spinks, A. (2018). Restoring the mauri of coastal dune lake ecosystems: The case study of Lake Waiorongomai, Ōtaki Aotearoa/ New Zealand. Doctoral thesis submitted to Massey University.

For NHoŌ Waiorongomai was a very significant site for tapu practices, mahinga kai, and spiritual activities. Historically, Waiorongomai was able to support people due to significant mahinga kai resources. Due to environmental degradation, these activities can no longer be practiced. The values associated with Waiorongomai include mahinga kai, tānga te kawa, puna raranga, puna rongoā, papa kāinga, pā, tohu ahurea, wāhi whakawātea and wāhi whakarite.

The values identified by the Committee for the Waiorongomai FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Commercial use
- Residential use

Waiorongomai north. Photo: Tiana Hakaraia Morgans

Waiorongomai southwest. Photo: Dr Aroha Spinks

There is local evidence to suggest that tuna are stressed within this FMU and this is reflected in the monitoring of tuna health and abundance. Current data based on local expertise confirms that the target attribute state is not being met. This is also reflected in the monitoring of the mahinga kai cultural aggregate, which indicates the current median is only 2/5.

There is insufficient monitoring data to assess baseline states or current states in the Lake Waiorongomai FMU, therefore modelling has been used to estimate current state at a lowland rural stream site. According to the modelling results, DRP and *E. coli* states are predicted to be below the national bottom line. The MCI state suggests moderate pollution or nutrient enrichment (C band), while ammonia is within the A band and nitrate in the B band.

The available monitoring data and modelling results indicate the FMU is severely degraded. This suggests a need for significant attention and restoration efforts to improve attribute states and at least achieve national bottom lines.

7.1.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's ambitions for the Waiorongomai FMU involve achieving ecological resilience, sustainable use and recognising mana whenua values. The Committee seek an improved freshwater environment that supports ecosystems and the cultural well-being of NHoŌ.

Vision 2: Long-term Freshwater Vision for Lake Waiorongomai

By 2040, all water bodies in the Lake Waiorongomai FMU are in a state of resilient health and wai ora and:

1. *The wider community's recognition of and reverence for the lake and its mana are upheld and maintained into the future, including its mauri and importance for mana whenua and the uri/descendants of Raukawa and the connections of the wider community via use and enjoyment of the lake;*
2. *Lake Waiorongomai is protected, supported, and restored to a state of abundance including its importance to mana whenua as a pātaka kai/storehouse of food;*
3. *The mana of Lake Waiorongomai is upheld through the increased ability of whānau, hapū, and iwi to safely harvest mahinga kai to manaaki others; and*
4. *The restoration of the lake and its streams and connections to the sea are led by a kaupapa Māori framework and that framework is supported, respected, and resourced according to its needs.*

Outcome 10 – Waiorongomai

By 2040, the Waiorongomai FMU is managed so that:

1. *Ngā Hapū o Ōtaki are frequently returning, utilising, and engaging with the Lake and surrounding waters;*
2. *Ngā Hapū o Ōtaki undertake unimpeded intergenerational knowledge transfer of traditional practices such as harvesting and preparing mahinga kai, rongoā, raranga, and whakairo;*
3. *The water quality and surrounding habitats support healthy and abundant mahinga kai;*
4. *Biodiversity and native species are thriving;*
5. *Traditional preparation of tuna delicacies from Lake Waiorongomai is regularly served in Ngā Hapū o Ōtaki households, fed to manuhiri at marae events and taken as koha to events outside the rohe; and*
6. *The Waiorongomai Stream is free flowing to the sea all year round.*

In setting target attribute states, the Committee has used mātauranga Māori as presented by the Mana Whenua House . A monitoring site has been selected in the lake. The target attribute states have been determined to achieve good ecological health, including B state for MCI/QMCI (see Appendix 10). The Committee considered setting the attribute state at A, but considered that reverting back to native forest was likely the only means to achieve this, which is not realistic. Deposited fine sediment was noted as being of particular concern as members of the Committee had personally observed high deposited sediment levels in the FMU. A C state was selected which reflected the scale of the issue, whilst seeking to improve outcomes.

Decisions for *E. coli*, periphyton, and dissolved oxygen reflect the importance of mahinga kai and the Committee's understanding of tuna being stressed, as well as aspirations for safe recreational use.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.1.3 Responses

The Committee consider that there are number of responses required to achieve target attribute states; specifically:

- Stock exclusion and removal of exotic pest species are priority actions for the catchment
- Removal of macrophytes are a significant issue in the lake, as they allow further deposition of sediment by preventing it from moving out to the sea, and thereby reduce viable habitat for aquatic species, as well as making restoration more difficult. The Committee considers the removal of macrophytes is the "best bang for buck" for improving water quality and habitat in this FMU based on the BBN.

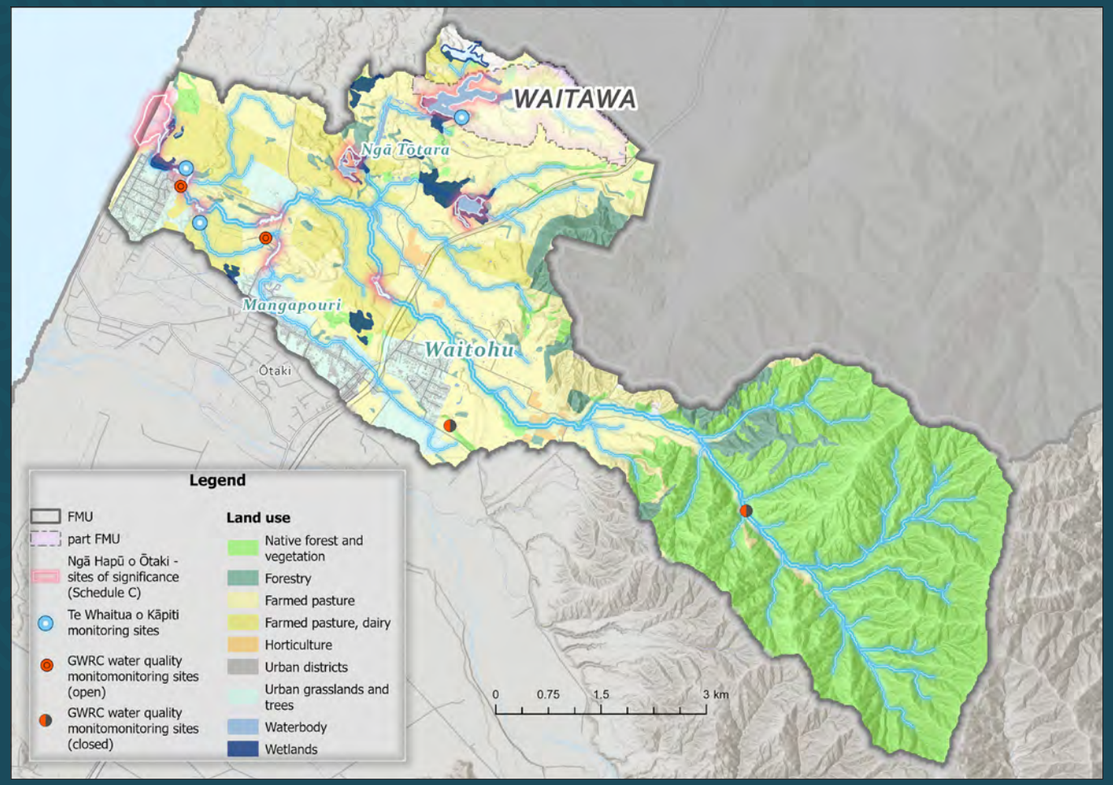
The Whaitua-wide Recommendations will assist in implementing these responses, but the Committee also consider that these actions and other appropriate interventions need to be captured in an action plan.

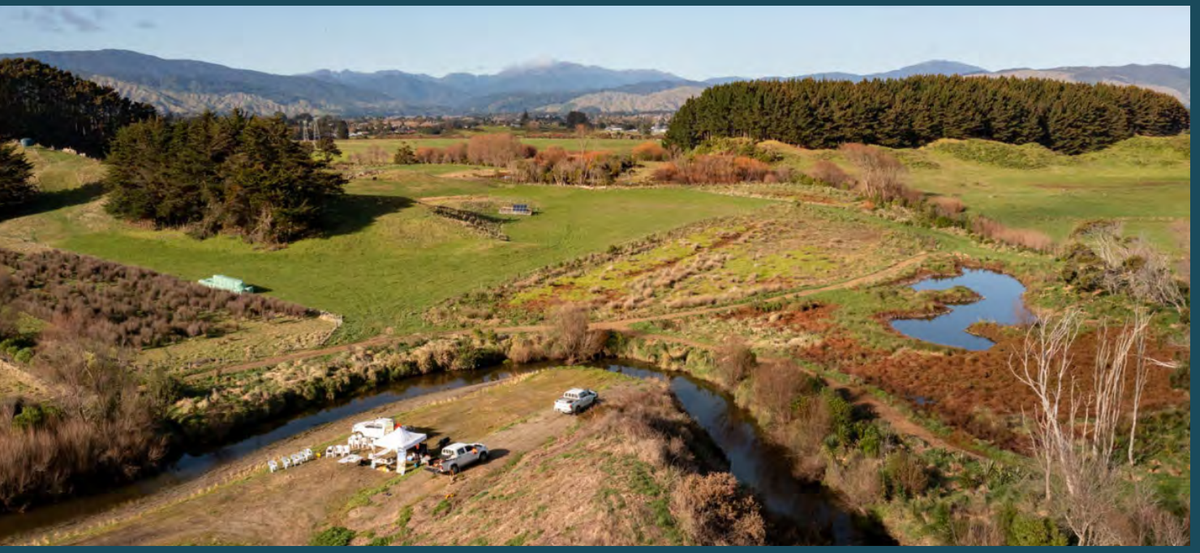
Recommendation 32	
Monitor and investigate the ecological health of the waterways of the Waiorongomai FMU and prepare and begin implementation of an action plan, incorporating measures of mātauranga Māori.	
Lead: Support:	December 2025

Waiorongomai (southeast). Photo: Aaria Dobson-Waitere

7.2 Waitohu

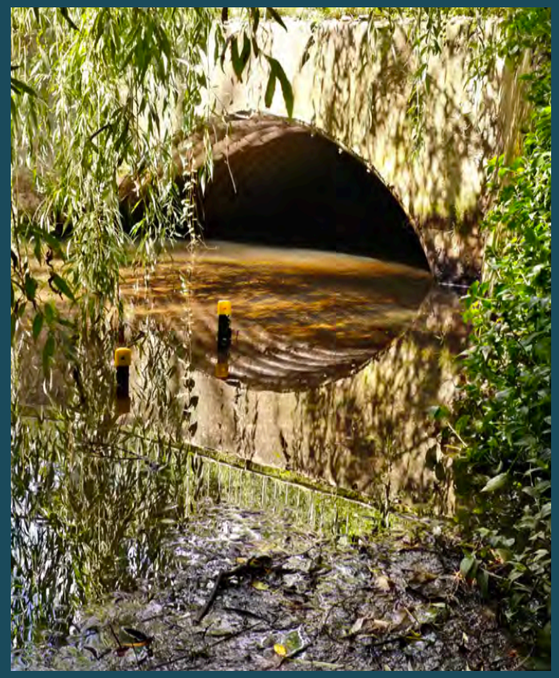
FMU





Waitohu Planting Day. Photo: GWRC

Waitohu Planting Day. Photo: GWRC



Mangapouri Stream, downstream west.
Photo: Tiana Hakaraia Morgans

Waitohu stream and mouth. Photo: GWRC

7.2.1 Values, Pressures, and Current State

The Waitohu FMU is approximately 5,700 hectares and comprises of two part-FMUs, the wider Waitohu catchment and the Waitawa part-FMU which covers the catchment of Lake Waitawa.

For NHoŌ, the Mangapouri Stream holds values for papakāinga, ara waka, mahinga kai, wai ora, kauhoe, wāhi whakawātea and wāhi whakarite. The Waitohu Stream has values of mahinga kai, ara waka, puna raranga, wai ora, kauhoe, kaukau, ngā mahi parekareka i/ki te wai, puna rongoā, urupā, pā, papakāinga and tohu ahurea. Values for Waitawa include wāhi tapu, urupā, tohu ahurea, wai ora, puna raranga, hoe waka, waka ama.[91]

"We grew up understanding to always look after the creek and it'll look after you." (Uncle Mickey Carkeek on his childhood experiences of the Mangapouri Stream)[92]

Land use transitions from forests and low-intensity farming in the upper catchment in the foothills of the Tararua Ranges, to dairy farming and lifestyle properties near the coast. Key water bodies include Waitohu Stream and tributaries, and the Ngā Tōtara and Mangapouri Streams. The Mangapouri Stream flows through the township of Ōtaki before joining the Waitohu Stream near the coast. Lake Waitawa (part-FMU) is a shallow and small dune lake. Both Waitohu Stream and the Waitohu Estuary are ecologically significant, with the estuary providing essential habitat for indigenous fish, migratory birds, and waterfowl.

Waitohu Stream. Photo: Dr Aroha Spinks

The values identified by the Committee for the Waitohu FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Greater Wellington monitoring data indicates that nitrogen (ammonia and nitrate toxicity) concentrations reflect relatively good water quality, however, other attributes indicate degradation. Suspended fine sediment and dissolved reactive phosphorus levels are below the national bottom line in the lower Waitohu and Mangapouri Streams (see Appendix 10). Additionally, MCI/QMCI attributes and *E. coli* states are also below the national bottom lines in these areas (see Appendix 10).

91 NRP, Schedules B and C.
92 Pg. 98, Tahi ki a Maru: Water, fishing and tikanga in Ngāti Raukawa ki te Tonga. Te Tākupu, Te Wānanga o Raukawa Ōtaki (2018).

Tuna is currently able to be found in sufficient abundance and in healthy condition in this FMU[93]. However, wider cultural needs are not being met due to environmental degradation, including the ability of people to safely connect and interact with the environment to nourish their wairua. A distressed environment results in people feeling distressed, and it also limits the ability to undertake intergenerational knowledge transfer. Currently, data collected on the mahinga kai cultural aggregate attribute shows a median of 2/5[94].

Other than the Mangapouri Stream which receives runoff from the Ōtaki township, copper and zinc concentrations in the other water bodies in the FMU are expected to be low[95]. Concentrations of copper and zinc in the Mangapouri Stream are within the B or C band.

The Committee discussed nutrient enrichment in the FMU, particularly in smaller, spring-fed streams associated with pastoral and urban land use. Several contributing factors to poor water quality are identified in the Greater Wellington Waitohu Catchment Plan, including poor land management practices, riverbed disturbance, point source discharges, ineffective relationships, and issues with high phosphorus levels in the soil due to previous market gardening.

Lake Waitawa is observed to have poor environmental quality with nitrogen, phosphorus, cyanobacteria, submerged plants, and dissolved oxygen attributes also below national bottom lines. Lake Waitawa's poor health is attributed to runoff from an agricultural catchment, while the estuary is under moderate pressure from flow restrictions, flooding, poor water quality, vehicle use, and managed mouth openings. These findings emphasize the need for targeted restoration efforts, particularly in managing nutrient loads and addressing specific sources of contamination.

Lake Waitawa, northeast. Photo: Kaea Hakaraia-Hosking

In relation to water quantity, 17 percent of the Waitohu surface catchment management unit take limit has been allocated, and 9 percent of the Waitohu groundwater catchment unit take limit has been allocated.

7.2.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for the Waitohu and Lake Waitawa are to achieve healthy freshwater environments that are resilient and support community vitality. The Committee seek ecological restoration, cultural revitalisation, and an honouring of mana whenua connections and traditional practices.

93 Based on mana whenua observations/monitoring.
94 Intergenerational knowledge transfer (2/5), environmental distress (2/5) and connection (3/5).
95 There are less than the required samples which may cause potentially unreliable assessment of state.

Vision 3: Long-term Freshwater Vision for Waitohu and Lake Waitawa

By 2050, all water bodies in the Waitohu FMU and Lake Waitawa part-FMU are in a state of resilient health and wai ora and:

1. *Tributaries including the Mangapouri, Ngā Tōtara, and Waiorangi are managed so that they are in a state of good health to contribute to the good health and uphold the mana of the Waitohu Stream;*
2. *The cultural practices and tikanga associated with the Waitohu Stream, including educational, play, and mahinga kai activities, are revitalized and protected to allow mana whenua and the wider community to connect with the awa;*
3. *The Waitohu Stream is managed in a way that provides for indigenous fish passage and natural migration from the mountains to the sea all year round;*
4. *The wider community's understanding of and reverence for the lake and its mana are upheld and maintained into the future, including its mauri and importance for mana whenua as a wāhi tapu;*
5. *Lake Waitawa is free of introduced fish species and aquatic pest plant species; and*
6. *Use of the lake for community recreation and tauranga waka is supported, protected, and carried out with appropriate recognition of its cultural significance for mana whenua as a wāhi tapu.*

Outcome 11 – Waitohu

By 2040, the Waitohu FMU is managed so that:

1. *Ngā Hapū o Ōtaki know their whakapapa and historic connections to the Waitohu Stream and its tributaries;*
2. *Ngā Hapū o Ōtaki are partners in decision-making with regards to any new action plans and developments;*
3. *Ngā Hapū o Ōtaki undertake unimpeded intergenerational knowledge transfer on traditional practices such as harvesting and preparing mahinga kai, rongoā, raranga, whakairo, and uku;*
4. *Swimming, mahinga kai, and primary contact recreation is supported in the Waitohu and Mangapouri Streams;*
5. *Streams, springs, and wetlands are naturally connected, so that the waterways are resilient when there is pressure on water quality or water quantity;*
6. *The Waitohu Stream and tributaries improve in water quality to safely support mahinga kai, cultural practices, and community and recreational activities;*
7. *The Mangapouri Stream is safe to use for the preparation of kānga wai, and the water quality is suitable for the year-round storage of tuna (boxes);*
8. *The Waitohu Stream is free flowing to the sea all year round; and*
9. *Transport and tauranga waka takes place, waterways are navigable, and locations for launching and landing waka are accessible for watercraft.*

To achieve these ambitions, target attribute states for the Waitohu FMU have been identified for three different sites: Forest Park on the Waitohu Stream located at the base of the Tararua foothills[96]; Norfolk Crescent which is close to the mouth; and Mangapouri Stream at Bennetts Road.

In setting the target attribute states the Committee noted:

- MCI/QMCI is already in the A state at the Forest Park site and therefore must be maintained. To achieve good ecological health, the Norfolk Crescent and Mangapouri sites must be improved from a D state to a B state. This is aspirational but recognises the actions needed to realise environmental improvement.
- Deposited fine sediment is a significant attribute in this catchment. This attribute is already at an A state at Forest Park which is sought to be maintained. For both the Norfolk Crescent and Mangapouri sites, this must be improved to an A state in order to support ecological health.
- Dissolved reactive phosphorus has been shown via the BBN model to have a lesser influence on QMCI than other attributes. Achieving an A attribute state is unlikely to have any material impact on environmental health, therefore a target attribute state of B across the FMU is sought to support healthy freshwater. This is particularly aspirational for the Mangapouri which is currently in a D state.
- Target attribute states for suspended fine sediment, dissolved copper, and dissolved zinc are sought to be improved to either an A or B state to achieve the MCI/QMCI targets.
- An A target attribute state is sought for dissolved oxygen and periphyton at the Forest Park site, and a B state for the other two locations as these sites hold mahinga kai values for being used for mahinga kai gathering and for food storage. Additionally, the Mangapouri catchment has seen restoration work and is used by children for swimming; therefore improving *E. coli* attributes to at least a C (or Fair grade) is considered important.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.2.3 Responses

Identifying nutrient enrichment as a significant issue in the FMU, the Committee discussed that the likely source is land uses, specifically dairy farming which occurs in parts of the FMU. The Committee consider there is a need to limit nitrates in streams, particularly through source control of nitrogen inputs on land. Potential methodologies to cap and reduce nitrogen inputs were discussed by the Committee, similar to those used in other parts of the country.

The Committee decided to recommend priority actions specific to the Waitohu FMU to reduce DIN levels, especially within the Mangapouri. The Committee consider land use activity change is likely to be necessary and that this needs to be investigated, including a potential cap on the amount of nitrogen that can be applied on a farm. This cap should be developed based on best expert advice and the Committee suggest a sinking lid on this cap so that target attribute states such as DIN can be achieved.

Riparian planting was discussed as a potential management option as it can reduce phosphorus, sediment and pathogen inputs but it is less effective at reducing nitrogen inputs. This is because nitrogen mainly leaches through the soil profile rather than being transported over land in runoff. The Committee's Recommendations for riparian planting therefore are to primarily address phosphorus, sediment and *E. coli*.

96 Closed Greater Wellington monitoring site.

The Committee also recommended actions specific to the Waitohu FMU; in particular, for gravel extraction and education about Lake Waitawa being wāhi tapu to ensure the mana of the waterways and the cultural significance of Lake Waitawa is recognised and protected.

Recommendation 33

Investigate the ecological health of Lake Waitawa and Ngātōtara Lagoon and tributaries, and prepare and begin implementation of action plans, incorporating measures of mātauranga Māori and including the following:

a. As a high priority, actions to reduce DIN levels especially where it is entering the Mangapouri. For example, investigating land use practice change to achieve nutrient limits including a potential nitrogen input cap and sinking lid approach to achieve targets;

b. Actions to ensure gravel extraction is carried out in a way that does not impede/delay the achievement of environmental outcomes; and

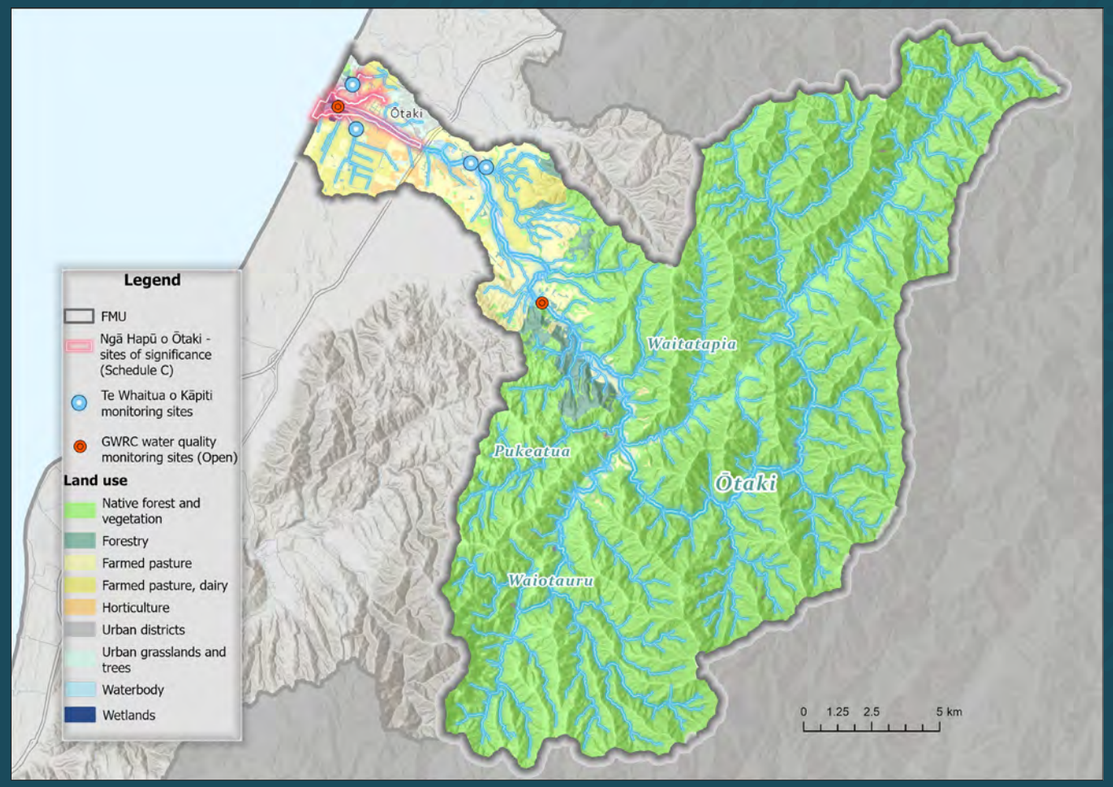
c. Education for the wider community about Lake Waitawa so that visitors to the lake understand that it is wāhi tapu and contains an urupā, and the significance of these to ensure cultural health and safety.

Lead:	Support:	December 2025

Lake Waitawa west. Photo: Kaea Hakaraia-Hosking

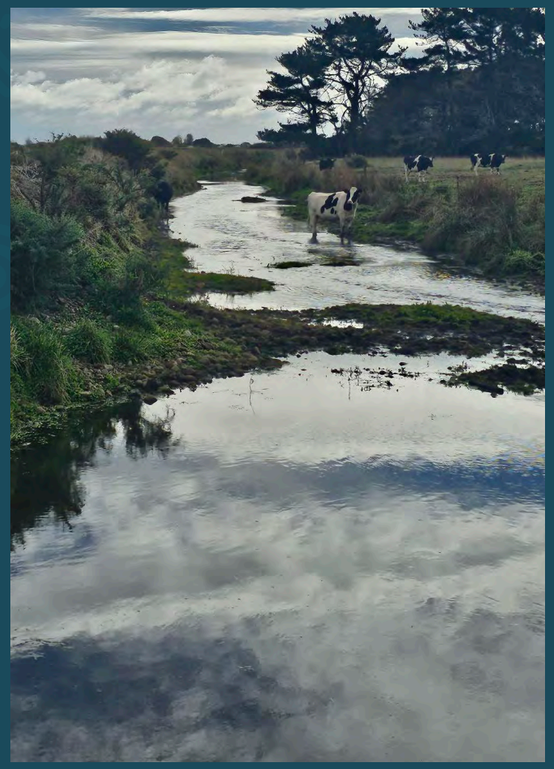
7.3 Ōtaki

FMU

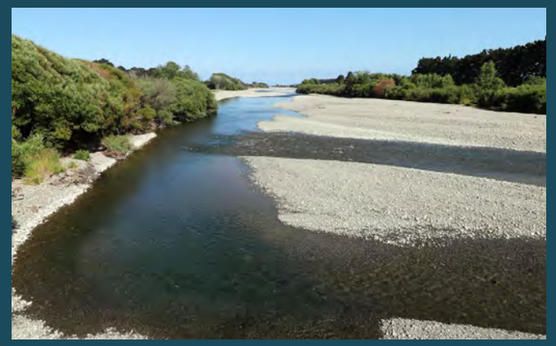


Lake Waitawa, west. Photo: Kaea Hakaraia-Hosking

Looking toward Kāpiti Island and Ōtaki River mouth. Photo: KCDC



Cows impacting water quality in Kāpiti. Photo: Caleb Royal



Ōtaki River. Photo: KCDC

Pahiko downstream west. Photo: Tiana Hakaraia Morgans

7.3.1 Values, Pressures, and Current State

The Ōtaki FMU is the largest in Te Whaitua o Kāpiti, covering approximately 36,000 hectares. A significant portion of the FMU is in the Tararua Ranges. The Ōtaki River is fed by three major tributaries: the Waitatapia and Pukeatua Streams, and the Waiotauru River. The river takes its full form at the Ōtaki Forks, flowing through the Ōtaki Gorge before exiting onto the plains. The lower catchment is situated between the Waitohu and Mangaone catchments, and the river narrows, receiving contributions from smaller spring-fed streams like the Ngātoko and Rangiuru. An extensive network of drainage channels also cross the lower FMU.

For NHoŌ, the river and estuary historically supported extensive kai and its clean waters were unrivalled for whakawātea, whakarite, and whakahaere practices. The values associated with the Ōtaki River are mahinga kai, tānga te kawa, puna raranga, puna rongoā, papa kāinga, pā, tohu ahurea, wāhi whakawātea, and wāhi whakarite. Mukukai is a significant taniwha to Ngā Hapū o Ōtaki, a kaitiaki associated with the Ōtaki River and the surrounding coastline. Mukukai is also known as “he taniwha horo waka” (a canoe swallowing taniwha). This taniwha is a central figure of the Ōtaki River and appears near the mouth of the river. The appearance of Mukukai signifies a year of plentiful food in our ocean and waterways.

Land use in the catchment is mostly conservation, as the majority is in the Tararua Forest Park. The remaining land use comprises a mix of sheep, beef, and deer farming, along with some exotic forestry, and lifestyle properties. Nearer the coast, land use shifts to predominantly dairy farming and lifestyle blocks, with some urban and horticultural use. The Ōtaki River ultimately reaches its mouth at Ōtaki Beach and estuary.

The upper Ōtaki River is listed as an outstanding water body in the NRP. The rest of the Ōtaki River and its tributaries are also recognised in the NRP as significant indigenous ecosystems.

The Ōtaki River holds significance as a vital habitat for indigenous bird species, including several threatened or at-risk species. It also contains significant fisheries.

The Ōtaki Estuary covers around 19 hectares and has limited habitat diversity due to factors such as a coarse and mobile bed, salinity fluctuations, strong water currents, and a scarcity of salt marsh.

Ōtaki tributary past Katihiku Marae. Photo: Dr Aroha Spinks

The Ōtaki River is one of the main water bodies used for human contact in Te Whaitua o Kāpiti. The river is monitored to ensure their safety for primary contact. Toxic algae blooms are relatively common in the summer months as warmer temperatures, increased sunshine, and nutrient levels combine to create an environment where algae can thrive, and low rainfall prevents algae from being flushed downstream.

The values identified by the Committee for the Ōtaki FMU are:

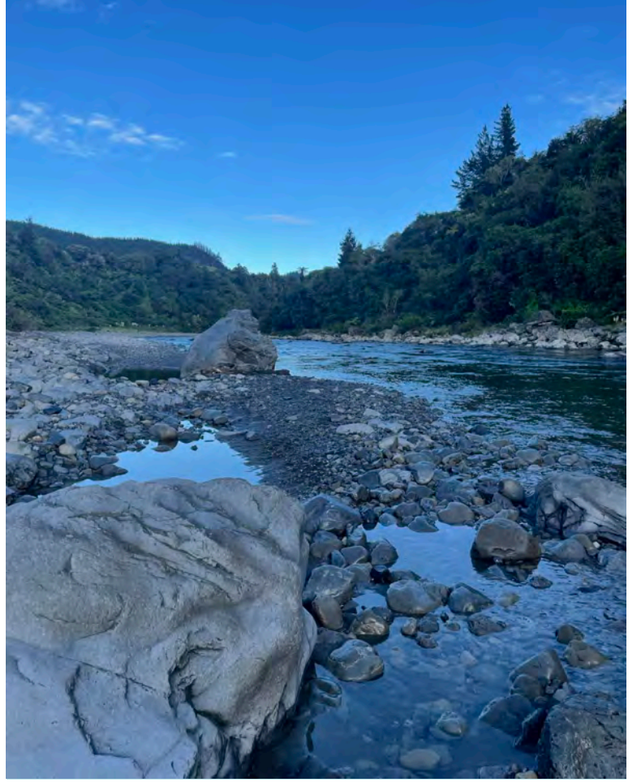
- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character

- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Tuna is currently able to be caught in sufficient abundance and in a healthy condition, as local monitoring demonstrates the proposed target attribute state is achieved. However, the mahinga kai cultural aggregate target is not being achieved and current information indicates this is at a median of 3/5. While this is better than other FMUs, it still indicates social distress regarding environmental impacts and potential challenges with the intergenerational transfer of mātauranga.

In terms of water quality, the current state of the Ōtaki River generally appears to support ecosystem health, with the majority of the compulsory attributes in the NPS-FM falling within the A or B bands (see Appendix 10). However, there are some data gaps, and available information suggests that macroinvertebrates may possibly fall in the B or C bands indicating mild to moderate organic pollution. Unfortunately, no data is available for dissolved copper and dissolved zinc concentrations, or the ecosystem metabolism attribute.

Efforts have been undertaken in the lower reaches of the river to mitigate flooding, involving the construction of rock walls, debris fences, and cross-blading to maintain a straight channel. In this lower section of the river, gravels from the ranges also accumulates, necessitating gravel extraction from the riverbed to reduce flood risk.



Upper Ōtaki. Photo: Dr Aroha Spinks

In the estuary, pressures are considered moderate and are primarily a result of flood control measures, terrestrial weed invasion, and vehicle use.

With regards to water quantity, 63.4 percent of the Ōtaki surface water catchment unit take limit has been allocated. The Te Horo groundwater catchment unit is also partially located within the Ōtaki FMU, and 38 percent of the take limit from the Te Horo groundwater catchment has been allocated.

7.3.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's vision and outcome for the Ōtaki FMU involve the holistic health of the environment and preserving or expanding cultural practices. The Committee seek an improved freshwater environment, including biodiversity and natural character values to support the cultural well-being of NHoŌ and the wider community.

Vision 4: Long-term Freshwater Vision for Ōtaki:

By 2035, all water bodies in the Ōtaki FMU are in a state of resilient health and wai ora and:

1. *The wider community's recognition of and reverence for the entire Ōtaki River and its mana are upheld and maintained into the future, including its mauri and importance as a taonga and source of identity for mana whenua, and the connections between the awa/river and the wider community including use and enjoyment;*
2. *Both mana whenua and the wider community have a deep recognition of and appreciation for the role of the Ōtaki River in supporting the ecological, social, cultural, and economic values of the community, including recharging aquifers and local springs;*
3. *Cultural and spiritual practices and mātauranga within the Ōtaki FMU, including harvesting mahinga kai, are respected, supported, and upheld to allow mana whenua to fulfil manaakitanga and kaitiakitanga responsibilities and share and transfer these across generations; and*
4. *Tributaries including the Rangiuru, Pahiko, and Waimanu are managed so that they contribute to the health and uphold the mana of the Ōtaki River.*

Outcome 12 – Ōtaki

By 2035 the Ōtaki FMU is managed so that:

1. *Ngā Hapū o Ōtaki and the wider community know Ngāti Raukawa whakapapa, historic connections, and cultural practices associated with the Ōtaki River and its tributaries;*
2. *Ngā Hapū o Ōtaki sites of significance and associated names and kōrero are respected and protected;*
3. *Ngā Hapū o Ōtaki undertake unimpeded intergenerational knowledge transfer of traditional practices such as harvesting and preparing mahinga kai, rongoā, raranga, and whakairo;*
4. *Traditional preparation of inanga delicacies is regularly served in Ngā Hapū o Ōtaki households, fed to manuhiri at marae events, and taken as koha to events outside the rohe;*
5. *The waters of the Upper Ōtaki River are protected and remain in pristine condition including being free from dumped rubbish;*
6. *Biodiversity and native species are thriving;*
7. *The Ōtaki River and tributaries improve in water quality to safely support mahinga kai, cultural practices, community, and recreational activities;*
8. *The Ōtaki River flows to the sea are maintained all year round and any future aquifer takes due to urban growth in the region do not affect the flow rates;*
9. *Inanga spawning sites are identified and actively restored with suitable species to support inanga spawning habitat;*
10. *All water bodies are naturally connected, to ensure the ongoing protection and resilience of ecosystems;*
11. *Migratory fish passage is unimpeded by human induced physical or chemical barriers; and Transport and tauranga waka take place, waterways are navigable, and locations for launching and landing waka are accessible for watercraft.*

The target attribute states for the Ōtaki FMU have been selected at two sites based on current Greater Wellington monitoring locations. Both sites are on the Ōtaki River; one site is located at Pukehinau at the foothills of the Tararua ranges, the second site is located at the river mouth.

Given water quality of the Ōtaki River is reasonably good, the majority of the target attribute states seek to maintain that level of water quality (see Appendix 10). Due to this, an A target attribute state has been selected for most targets.

MCI/QMCI at the river mouth has been set at a B state recognising that at this level good ecological health will be achieved and that getting to an A state at this location would likely require significant changes to urban and rural land uses. The baseline state for ASPM (Macroinvertebrate Average Score Per Metric) is B state and this will require some improvement in order to meet the A target attribute state, as will the concentration of suspended fine sediment which is also sought to be improved from a B to an A attribute state.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.3.3 Responses

The Committee considered that the priority response for the Ōtaki River is to improve natural character, particularly in relation to management of the tributaries of the Ōtaki River. The Committee considered the required interventions were:

- Ecological restoration to mitigate any potential issues arising from nitrogen. If the riparian habitat is improved to better shade the stream, it will improve the habitat in those tributaries.
- Giving the river more space. The Committee discussed the role of the current Ōtaki Floodplain Management Plan which dates back to 1998, and the need to review this to support achieving target attribute states.

The Committee also discussed groundwater nitrogen concentrations and potential associated ecological and human health effects. There are agreed Whaitua-wide groundwater Recommendations which seek to investigate this issue further.

Recommendation 34

Develop and implement an action plan to achieve outcomes, including:

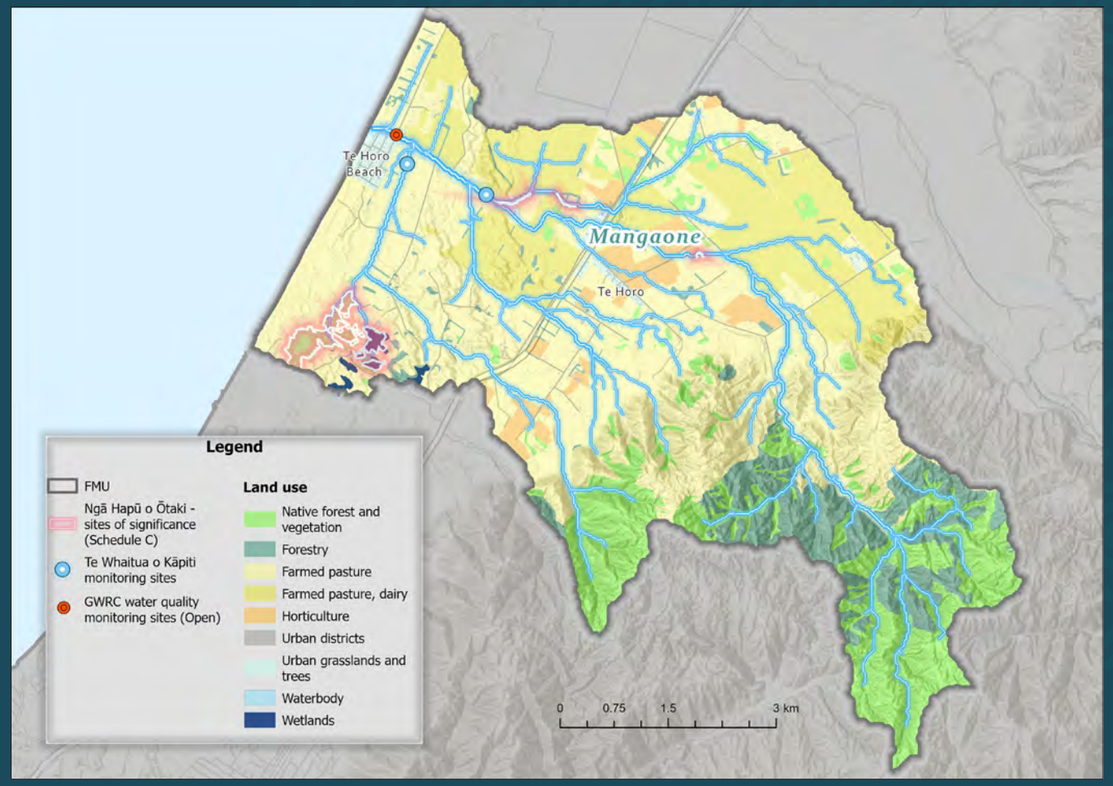
d. Ensuring Ngā Hapū o Ōtaki are a decision-maker with regard to actions and proposed developments alongside the Ōtaki River and tributaries; and

e. As a high priority, reviewing and updating the Ōtaki Floodplain Management Plan to identify any changes required to achieve target attribute states.

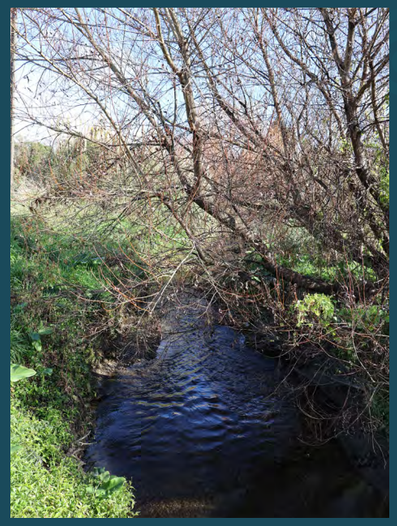
Lead: (NHoŌ):	December 2025

7.4 Mangaone

FMU



'Caution: unsafe water quality' sign by the Mangaone. Photo: KCDC



Mangaone downstream. Photo: Kaea Hakaraia-Hosking

7.4.1 Values, Pressures, and Current State

The Mangaone FMU covers an area of approximately 5,000 hectares. The Mangaone Stream originates in the Tararua Forest Park foothills and flows towards the Mangaone Estuary at Te Horo Beach. In the lower reaches, the Mangaone Stream is characterised by slow flows, macrophyte dominance, and a soft sediment bed. The catchment includes several small spring-fed tributaries that flow into the Mangaone Stream. Historically, the Mangaone Stream flowed into the Ōtaki River, however previous modification and straightening has resulted in the current day flow path.

For NHoŌ, the Mangaone Stream holds values for wai ora, ara waka, mahinga kai, puna rongoā, puna raranga, wāhi whakawātea, wāhi whakarite, wāhi tapu, papakāinga, puna raranga, puna rongoā, kauhoe, and tohu ahurea.

Land use in the area is predominantly pastoral, with sheep, beef, dairy, and deer farming the most common activities. Forestry operations occur in the Tararua Range foothills, while lifestyle properties and a small portion of urban land cover occur in Te Horo and Te Horo Beach.

The Committee members noted that Mangaone lagoon is a popular spot for children to swim and play in, despite significant levels of pollution.

The values identified by the Committee for the Mangaone FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Tuna abundance and health achieves the proposed target attribute state, however the mahinga kai cultural aggregate score for the Mangaone is only 1/5. This indicates that there is a significant social impact of environmental degradation within this FMU, resulting in loss of connection with Te Taiao, challenges with the intergenerational knowledge transfer, and social distress.

The Mangaone Stream currently exhibits signs of environmental degradation, as several attributes fall below the national bottom lines (see Appendix 10). This includes dissolved reactive phosphorus, MCI/QMCI, and *E. coli* states. Suspended fine sediment levels are also in the C band, while ammonia and nitrate states are within the B band. Of particular concern are the increasing trends in ammoniacal nitrogen, suggesting growing pressure on the stream's ecosystem. The exact cause of this trend remains unclear, but it may be linked to potential changes in land use above the monitoring site.

The Mangaone Estuary at the stream mouth is a small urban estuary spanning 0.4 hectares and is primarily stream-dominated. It is well-flushed when its mouth is open, but it often becomes blocked, requiring artificial opening to mitigate flooding. In unmanaged conditions, a shallow lagoon typically forms. However, the estuary faces challenges such as a coarse and mobile bed, limited habitat diversity, salinity fluctuations, and channelisation which contribute to low estuarine productivity and biodiversity.

In terms of water quantity, 100 percent of the Mangaone surface water catchment unit take limit has been allocated. The Te Horo groundwater catchment unit is also partially located within the Mangaone FMU and 38 percent of the take limit from the Te Horo groundwater catchment has been allocated.

7.4.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for the Mangaone FMU are to achieve healthy freshwater environments which have improved water quality, support diverse and abundant mahinga kai species and which have a natural form and functions. The Committee seek for the community to have a deeper connection with the waterways in the FMU, being kaitiaki for the environment, and reflecting the principle of manaakitanga.

Vision 5: Long-term Freshwater Vision for Mangaone:

By 2040, all water bodies in the Mangaone FMU are in a state of resilient health and wai ora and:

1. *Cultural and spiritual practices and mātauranga within the Mangaone FMU, including rongoā and harvesting mahinga kai, are respected, supported, and upheld to allow mana whenua to fulfil manaakitanga and kaitiakitanga responsibilities and share and transfer these across generations;*
2. *The water bodies of the Mangaone FMU are managed and restored in such a way that whānau, hapū, and the wider community have a sense of pride and ūkaipōtanga/belonging to the area;*
3. *The wider waterscape, including tributaries, drains, and wetlands is restored, protected, and managed to support an abundance of mahinga kai, specifically piharau, kōkopu, kōura, and tuna;*
4. *The Mangaone Stream is safe for swimming and other recreational activities in the parts of the awa where these are valued by mana whenua and the wider community; and*
5. *Communities are educated and aware of the environmental pressures on and water management issues with the water bodies in the Mangaone FMU.*

Outcome 13 – Mangaone

By 2040 the Mangaone FMU is managed so that:

1. *Ngā Hapū o Ōtaki and the wider community know Ngāti Raukawa whakapapa, historic connections, and cultural practices associated with the Mangaone Stream and its tributaries;*
2. *Ngā Hapū o Ōtaki undertake unimpeded intergenerational knowledge transfer on traditional practices such as harvesting and preparing mahinga kai, rongoā, raranga, and whakairo;*
3. *Traditional preparation of mahinga kai is seasonally served in Ngā Hapū o Ōtaki households, fed to manuhiri at marae events, and taken as koha to events outside the rohe;*
4. *Biodiversity and native species are thriving;*
5. *The Mangaone Stream and tributaries improve in water quality to safely support mahinga kai, cultural practices, community, and recreational activities;*
6. *The Mangaone Stream flows to the sea are maintained all year round and any future water supply takes do not affect flow rates;*
7. *Wetlands are restored and protected; and*
8. *All water bodies are naturally connected to ensure the ongoing protection and resilience of ecosystems. Where awa/rivers are modified and channelised, particular attention is given to where a more natural form and flow might be restored.*

Target attribute states have been selected for one site in the Mangaone FMU, located at the Sims Road Bridge which is just upstream from the coast. This is a current Greater Wellington monitoring location.

In their discussions, the Committee recognised the significantly poor state of the Mangaone Stream and its likely impact on the social well-being of the community. The Committee debated the level of improvement required and the difficulty of achieving high standards. Given the current state of freshwater within the FMU, the Committee selected target attribute states that seek improvement of water quality to at least meet the national bottom line for MCI/

QMCI and DRP and maintaining other attributes at their current state which will support achieving improvements in MCI/QMCI (see Appendix 10).

An A target attribute state for nitrate toxicity is sought across the Whaitua and this will require water quality improvement within the Mangaone FMU, as the baseline state is a B. In relation to dissolved copper and dissolved zinc, the Committee opted to nominate a B target attribute state rather than aligning these attributes with the MCI/QMCI target attribute state, as the narrative states described in Appendix 7 better reflected the outcomes sought for mahinga kai within this FMU.

Finally, for *E. coli*, periphyton, and dissolved oxygen, the target attribute states selected reflect that the awa is significant for mahinga kai and community swimming and there is a lot of human interaction.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.4.3 Responses

The primary concern of the Committee for the Mangaone FMU is how nitrates and *E. coli* are significantly affecting ecological health in the Mangaone Stream. The Committee considers that these issues may be primarily influenced by only a few properties. As such, the Committee were mindful of ensuring any Recommendations did not unfairly restrict or punish all land users.

With this in mind, the priority response for this FMU is to reduce DIN. This may involve land use change to achieve nutrient limits. The Committee therefore seek to prioritise nitrate reduction in this catchment by way of investigating the need for land use changes and a potential nitrogen input cap and sinking lid approach to achieve targets.

Recommendation 35

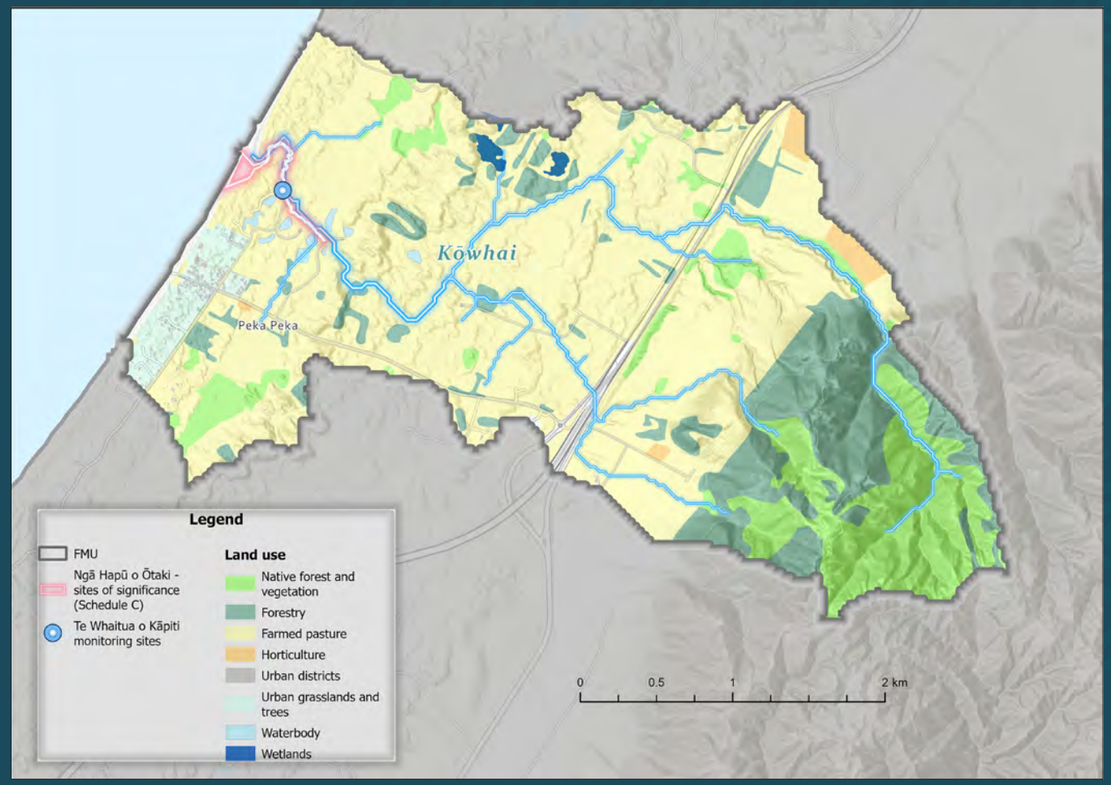
Develop and implement an action plan to achieve outcomes including:

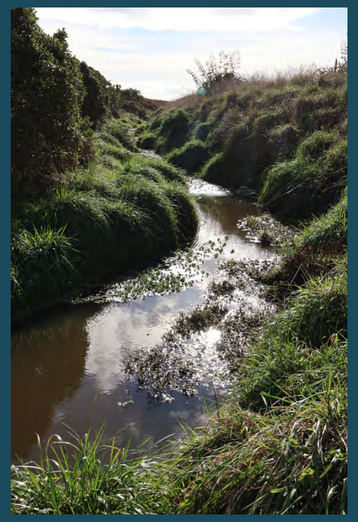
a. Ensuring Ngā Hapū o Ōtaki are a decision-maker with regard to actions and proposed developments alongside the Mangaone Stream and associated wetlands and tributaries; and

b. As a high priority, undertaking actions to reduce DIN levels; for example, investigating land use change or other methods to achieve nutrient limits including a potential nitrogen input cap and sinking lid approach, as well as amending existing permitted activity rules.

Lead: (NHoŌ) Support: (AKW)	December 2025

7.5 Kōwhai
FMU





Kōwhai Stream, looking downstream. Photo: Kaea Hakaraia-Hosking

Kōwhai Stream, looking downstream. Photo: Kaea Hakaraia-Hosking

7.5.1 Values, Pressures, and Current State

The Kōwhai Stream[97] is the main water body in the Kōwhai FMU which covers an area of approximately 1,200 hectares. The stream originates in the Tararua Range outside of the conservation estate and is joined by several small spring-fed tributaries before reaching its mouth at the Kōwhai Stream Estuary in Peka Peka.

For NHoŌ, the Kōwhai Stream holds values for mahinga kai, ara waka, papa kāinga, puna raranga, tohu ahurea, kauhoe, wai ora, wai tai, wāhi whakawātea, wāhi whakarite. This stream also holds significant value for Ātiawa including waiora, iwi kōrero, mahinga kai, rongoā, pātaka kai, puna oranga, whakaritenga, and whare wānanga.

Streams in this FMU have undergone significant modifications, including straightening, channelisation, and the drainage of historic wetlands. There is now an extensive network of drains that require regular maintenance works. Given the significant loss of wetlands that has occurred, the remnant wetlands that remain are highly valued by Ātiawa and Ngā Hapū o Ōtaki. Both Ātiawa and Ngā Hapū o Ōtaki retain sensitivity toward this awa and attribute their own historical knowledge, understanding, and practices pertaining to the continued kaitiakitanga of this awa.

In the upper catchment, land use is a mix of indigenous and plantation forest cover, alongside low-intensity sheep and beef farming. As the stream flows closer to the coast, the land use transitions to predominantly dairy farming and lifestyle properties. Sedimentation is a particular concern within the FMU, and observations by the Committee note that sources of this input vary, including from imported fill.

The values identified the Committee for the Kōwhai FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Tuna abundance and health has been monitored in this FMU and the results show the proposed target attribute state is currently being achieved. Despite this, environmental degradation has impacted wider community well-being with the mahinga kai cultural aggregate result being only 1/5. This indicates that there is a loss of connection with Te Taiao, difficulties passing on mātauranga, and social distress.

Unfortunately, there is a lack of monitoring data to determine the current and baseline attribute states within the Kōwhai FMU. Modelled data has been used to estimate the current attribute states for some attributes where modelling information is available. The modelling indicates that DRP and *E. coli* levels are below the national bottom lines. Ammonia falls within the A band, while nitrate is categorised in the B band. Additionally, the MCI is predicted to be within the C band.

With regards to water quantity, at present only 2L/s is consented from the Kōwhai catchment, which is approximately 17 percent of the default take limit. The Te Horo groundwater catchment unit is also partially located within the Kōwhai FMU and 38 percent of the take limit from the Te Horo groundwater catchment has been allocated.

97 Te Kōwhai was historically known as Tauwharenīkau.

7.5.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for the Kōwhai FMU are to realise healthy and resilient freshwater environments that foster cultural connections, knowledge and practices. Restored wetlands, natural forms and functions of water bodies, as well as thriving biodiversity is sought.

Vision 6: Long-term Freshwater Vision for Kōwhai:

By 2040, all water bodies in the Kōwhai FMU are in a state of resilient health and wai ora and:

1. *The connectivity of people and place is preserved so that shared history, boundaries, sites of significance, names, and kōrero from different iwi, hapū, whānau, and whakapapa can be transferred between generations;*
2. *The intergenerational succession of mātauranga Māori is able to be upheld and transferred through practices of mahinga kai;*
3. *The wider community's recognition and reverence for the Kōwhai Stream and its mana are upheld, including its mauri and importance to mana whenua and connection to the wider community through use and enjoyment of the awa;*
4. *Wetland habitat is restored to a state of abundance and reconnected to the awa, and the wider community understands the importance of and is connected to these waterscapes;*
5. *The Kōwhai Stream has freedom to flow, reflecting the flow of water, people, and knowledge through the natural variation of the wai/water over time; and*
6. *Use of the wai for community and mana whenua values such as fishing are recognised and provided for so that all may benefit.*

Outcome 14 – Kōwhai

By 2040, the Kōwhai FMU is managed so that:

1. *The importance of Kōwhai as a boundary between Te Ātiawa ki Whakarongotai and Ngāti Raukawa is recognised, publicly accessible and understood by all, with both iwi sharing mana whenua status;*
2. *Mana whenua know their whakapapa to the Kōwhai, and to each other;*
3 *All sites of significance and associated names and kōrero are respected and protected;*
4. *Te Ātiawa ki Whakarongotai, Ngā Hapū o Ōtaki, and the wider community feel connected to the Kōwhai. The environment is a place that supports this connection. It is clean, calm, safe and conflict free;*
5. *Puna wai are identified and protected and natural patterns observed and protected;*
6. *People of Te Ātiawa ki Whakarongotai and Ngā Hapū o Ōtaki have access to mahinga kai sites;*
7. *Fishing sites are accessible, and knowledge is handed down through generations;*
8. *Mana whenua are partners in decision-making with regards to any new urban developments;*
9. *Kōwhai provides a physical space where a diverse array of mātauranga Māori is created and handed down including science, history, and stories;*
10. *All generations of Te Ātiawa ki Whakarongotai and Ngā Hapū o Ōtaki hold knowledge on harvest and preparing mahinga kai;*
11. *Habitat that is required to support mahinga kai and other native species is available, including inanga spawning habitat;*
12. *There is a reliance on patterns and tohu/environmental indicators to guide kaitiaki decisions made within the Kōwhai;*
13. *Biodiversity is strong in that the full suite of mahinga kai species can be found in the Kōwhai, including pipi and toheroa;*

14. *Streams, springs, and wetlands are naturally connected, so that the waterways are resilient when there is pressure on water quality or water quantity;*
15. *Wetlands are restored and protected; and*
16. *Particular attention is given to where the awa is modified or channelised, returning aspects of natural form and character through planting and naming where appropriate.*

Given there is no monitoring site currently within the Kōwhai FMU, the target attribute states have been determined for a lowland rural site as this location best captures upstream land uses. A representative monitoring location will be chosen and monitored to implement the target attribute states.

In their discussion on the target attribute states for this FMU the Committee observed pressures on freshwater within the FMU and adopted an ambitious but pragmatic approach to determining the level of improvement required. MCI/QMCI was modelled to be at a C state currently, but the Committee discussed that their observations suggest it could currently be below the national bottom line. Due to the significant effort which will be necessary to realise an improvement in MCI/QMCI, the Committee selected a C target attribute state (see Appendix 10). The target attribute state for deposited fine sediment was set at a B state to recognise the stream was originally a hard-bottomed stream, although the Committee acknowledged that it may not be possible to fully restore the natural characteristics.

Dissolved copper and dissolved zinc target attribute states were determined by the Committee's assessment of the narrative states against the mahinga kai outcomes sought, rather than aligning them with the MCI/QMCI targets as in other FMUs. Similarly, the suspended fine sediment target chosen was a B state as opposed to a C state as the Committee sought to be more aspirational (see Appendix 10). Fish IBI was set at an A state based on catch observations.

E. coli, periphyton and dissolved oxygen states were selected by the Committee to reflect the significance of the stream as a mahinga kai site, including historical importance due the presence of pā and papakāinga. There is also a strong present-day connection between the community and the awa.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

Tuna ready to be released after tagging. Photo: Stuart Mackay, NIWA

7.5.3 Responses

As outlined in the vision and outcomes, the Kōwhai is of significant cultural value including as a shared traditional boundary between Te Ātiawa ki Whakarongotai and Ngāti Raukawa. It has been heavily modified by rural land uses, and mana whenua and the community have lost their connection to the awa. As such, the Committee's primary response for the FMU is for the development and implementation of an action plan, with a particular focus on strengthening connections to the awa.

Recommendation 36

Develop and implement an action plan to achieve outcomes including:

a. Developing a storehouse of kōrero to recognise, understand and strengthen collective ties to the Kōwhai, including recognising and acknowledging the importance of Kōwhai as a shared boundary between Te Ātiawa ki Whakarongotai and Ngāti Raukawa;

b. Creation of a network of iwi kaitiaki and community stewards to connect restoration and monitoring work so that Te Ātiawa ki Whakarongotai, Ngā Hapū o Ōtaki and the wider community feel connected to the Kōwhai, including the ability to undertake customary activities including mahinga kai and passing on mātauranga Māori;

c. Considering regulating for increased development setbacks for buildings, structures and earthworks to improve natural character; and

d. Reestablishing rākau Kōwhai as key tohu along the banks.

Lead:	December 2025

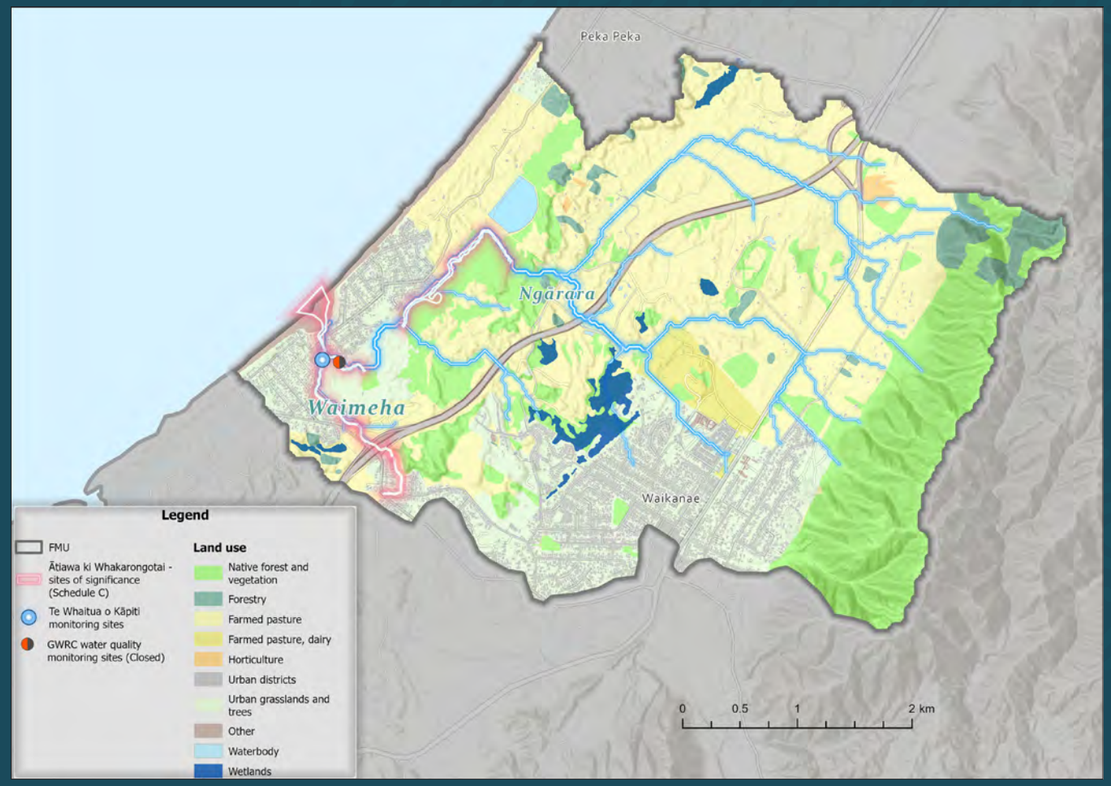
Glass eels. Photo: Lana Young, NIWA

“Rangatiratanga of mana whenua”

Whareroa restored wetland. Photo: Sharlene Maoate-Davis

7.6 Waimeha

FMU



Waimeha Stream, looking upstream (east). Photo: Tiana Hakaraia Morgans

Waimeha Stream, looking downstream (west). Photo: Tiana Hakaraia Morgans

7.6.1 Values, Pressures, and Current State

The Waimeha FMU is approximately 1,900 hectares. The Waimeha Stream is the main water body in this FMU. It originates in the foothills of the Tararua Range outside the conservation estate and comprises two main arms; the Waimeha Stream, which is puna-fed in some places, and the Ngārara Stream.

For Ātiawa, the Waimeha has been a significant source of mahinga kai both currently and historically. A significant number of mahinga kai sites are located on the stream in addition to pā, papakāinga and townships located along its banks. The significant relationship with the Waimeha forms an important part of the identity of Ātiawa. The Waimeha Stream and lagoon has significant value for wai ora, wai tai, mahinga kai, pā tuna, pātaka kai, and the continued expression of ūkaipōtanga. The Ngārara Stream has significant values for wai ora, mahinga kai, and pā harakeke.

It is important to Ātiawa that customary names are utilised correctly so that all ara wai in the catchment uphold their intrinsic mana and retain their historical significance.

The Ngārara Stream flows through land to the north of Waikanae township, covering an approximate 2,000-hectare catchment. Some of its tributaries pass through the urban area and receive stormwater inputs, while other sections of the streams have been reclaimed and piped. This sub-catchment features significant wetlands, including Te Harakeke Swamp, Tōtara Lagoon, and Ngā Manu. Both streams are recognised in the NRP as having significant indigenous ecosystems.

The catchment has mixed land uses, with lifestyle properties, urban areas, recreational areas, sheep and beef farming, and other mixed uses on the coastal dune plains. In the upper catchment, land use is dominated by the conservation estate and a small area of exotic forestry. There is also an unidentified source of contamination which requires further investigation.

The Committee identified the following values for the Waimeha FMU:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Data exists in this FMU on the presence and quality of mahinga kai. Monitoring undertaken in the Waimeha Stream and Tauwharenīkau Stream between 2018 and 2022 as part of the Mackays to Peka Peka Kaitiaki Monitoring Programme found:

- In the Waimeha, watercress at the monitoring sites was initially present and then absent. Where watercress was present, it was tested for campylobacter and *E. coli*, with all results below the limit for health. Heavy metals in watercress were also sampled and all results were below safe human consumption limits.
- In the Tauwharenīkau, watercress presence was varied between the sites, but for the majority of monitoring events was absent. *E. coli* measured in 2021 at one site significantly exceeded the human health limit. Campylobacter was not detected.
- *E. coli* was also measured in water in both streams. Results indicate several occasions where water quality exceeds the human health limits. The Tauwharenīkau Stream control site was particularly poor, with an average result of approximately 2000 MPN/100ml; the accepted human health limit is 540 MPN/100ml.
- In the Waimeha, tuna abundance and average length varied, with 17 caught in 2019 with an average length of approximately 60cm, 17 caught in 2020 with an average length of approximately 55cm at the control site and 160cm at the test site, and 25 caught in 2022 with an average length of 50cm. In the Tauwharenīkau, tuna abundance and average length also varied, with 4 caught in 2019 with an average length of approximately 80cm, 0 caught in 2021 and 9 caught in 2022 with an average length around 70cm.

Wrinkles where the body bends tells us that this is a longfin tuna. Photo: Stuart Mackay, NIWA

Overall, it is understood that the tuna abundance and condition target attribute state is met in the Waimeha. However, environmental degradation has impacted cultural well-being as demonstrated in the current available information for the mahinga kai culture aggregate. The score is currently a median of 3/5, which does not achieve the target attribute state.

The Waimeha Estuary is located immediately north of Waikanae. It has been substantially modified, channelised, and bordered by houses and parklands. The macrofaunal habitat diversity is low due to the highly modified channels, absence of tidal flats, lack of salt marsh, perched nature, regular mouth closures, and mobile flow paths of the estuary.

Greater Wellington monitoring data for the Ngārara Stream is limited to baseline state information due to the monitoring site's closure in 2016. Due to this, modelling has been employed to estimate the stream's current attribute states. Together this information indicates that suspended fine sediment, *E. coli*, deposited fine sediment, and dissolved reactive phosphorus attribute states all fall below the national bottom line, demonstrating degraded environmental conditions (see Appendix 10). Ammonia and nitrate levels are within the A band, reflecting water quality that supports ecosystem health. Dissolved copper and zinc baseline attribute states are also indicative of good water quality but there is no information available to estimate their current state (see Appendix 10).

In terms of water quantity, at present 20L/s has been allocated from the Waimeha Stream which is approximately 42 percent of the default take limit. The Te Horo groundwater catchment unit is also partially located within the Waimeha FMU and 38 percent of the take limit from the Te Horo groundwater catchment has been allocated.

7.6.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's vision and outcome for the Waimeha FMU are for water bodies that are resilient and in a state of wai ora, as well as providing for continued spiritual, social and customary use and connection, safe drinking from the aquifer, and restored wetlands.

Vision 7: Long-term Freshwater Vision for Waimeha:

By 2040, all water bodies in the Waimeha FMU are in a state of resilient health and wai ora and:

1. *The beauty and natural character of the Waimeha FMU is respected and enjoyed by mana whenua and the wider community;*
2. *The water bodies of the Waimeha FMU are protected and preserved so that life which relies on those water bodies may flourish and mana whenua may continue their customary practices associated with the wai, including that of mahinga kai and rongoā;*
3. *Use of the wai for community and mana whenua values such as fishing are recognised and provided for so that everyone can feel connected with the wai;*
4. *Where water bodies are expected to flood regularly, these water bodies are allowed to express their natural flows and forms as much as possible;*
5. *All sites of significance to mana whenua and associated names and kōrero are respected and protected; and*
6. *The Waimeha FMU is free from pollutants, restored, and managed to support an abundance of biodiversity.*

Outcome 15 – Waimeha

By 2040 the Waimeha FMU is managed so that:

1. *Water is safe to drink from the aquifer in an emergency;*
2. *Te Ātiawa ki Whakarongotai are active kaitiaki on the Waimeha FMU;*
3. *Te Ātiawa ki Whakarongotai and the wider community know the whakapapa and historical connections associated to the Waimeha FMU and its wetland and tributaries;*
4. *Habitats in the Waimeha FMU are thriving to support biodiversity and improve mahinga kai and other native species for future generations;*
5. *The Waimeha FMU is free to flow through the removal of exotic/invasive weed species, improved resilience of ecosystems, and sustainable mahinga kai practices;*
6. *Recreational and fishing sites are accessible and knowledge is handed down through generations; and*
7. *The water bodies of the Waimeha FMU, including tributaries, drains, and wetlands are restored, enhanced, protected, and reconnected to the wider water cycle to sustain its natural form, function, and character.*

Target attribute states for the Waimeha FMU have been selected at one location based on a historic monitoring site on the Ngārara Stream, just upstream of the confluence with the Waimeha Stream and in close proximity to the coast.

In setting the target attribute states the Committee noted:

- Improving MCI/QMCI from below the national bottom line to a target attribute state of B is required to achieve good ecosystem health.
- Deposited fine sediment and DRP target attribute states were set at C, reflecting the level required to achieve the MCI/QMCI target attribute state.
- Ammonia, nitrate (toxicity), dissolved copper and dissolved zinc were to be maintained at either a B or A state.
- *E. coli*, periphyton and dissolved oxygen target attribute states were selected to reflect mahinga kai values, particularly for tuna and inanga.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.6.3 Responses

In discussing the necessary actions to achieve the target attribute states in the Waimeha, the Committee discussed how the Waimeha is relatively clean, groundwater-fed, and there are plenty of fish. However, there are issues with contaminants that are discharged into the Waimeha FMU from previous sewerage pond overflows and the lagoons and wetlands that continue to feed into this tributary. The Committee is unsure of the source of those contaminants and consider that the priority is to investigate these, as Greater Wellington are not well-placed to regulate without better information.

Another required response is to explore pathways for climate change adaptation. This is because of the issues with projected storm surges affecting the Waimeha and a need to work on adaptation measures. The current management approach has been to focus on periodically excavating the stream, which will not contribute to the achievement of other environmental outcomes sought for this FMU.

Recommendation 37

Develop and implement an action plan to achieve outcomes including:

a. Prioritising an investigation into the sources and nature of the contaminants discharged into the Ngārara tributary, and from the Ngārara Stream tributary into the Waimeha. Make the results available as part of the next State of the Environment Report and identify actions to be taken to address these contaminants; and

b. Ensuring Te Ātiawa ki Whakarongotai are a decision-maker, including for consent applications for proposed developments that may directly or indirectly impact waterways within the Waimeha FMU; and

c. Investigating pathways for climate change adaptation.

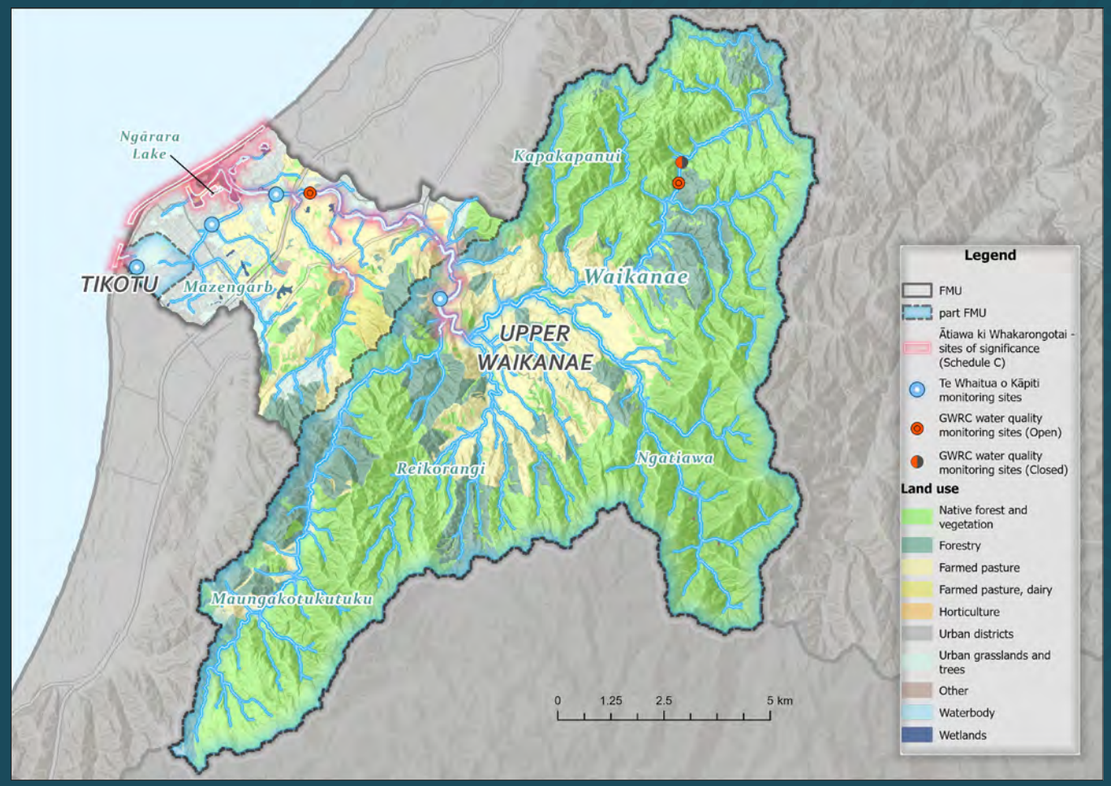
Lead: (AKW):	December 2024

“Wetlands, they are essential for sequestering carbon”

Waikanae Estuary from Kōtuku Park. Photo: Sharlene Maoate-Davis

7.7 Waikanae

FMU



Waikanae estuary. Photo: GWRC

Waikanae water supply recharge. Photo: Sharlene Maoate-Davis

7.7.1 Values, Pressures, and Current State

The Waikanae FMU is the second largest in Te Whaitua o Kāpiti at about 15,500 hectares and comprises of the Upper Waikanae and Tikotu part-FMUs. The Waikanae River originates in the western slopes of the Tararua Forest Park and numerous contributing tributaries, such as the Ngātiawa and Rangiora Rivers feed into it.

For Ātiawa, the Waikanae is a significant source of wairua and mauri which is unparalleled in the rohe. The river was the primary water body upon which Ātiawa settled. It supported the many hapū and papakāinga situated along its embankments with an abundance of kai, wai Māori, puna wai, and rongoā as well as resources such as harakeke, wood, and transportation. The Waikanae River has significant values of mana and kaitiakitanga through wai ora, wai tai, puna wai, mahinga kai, kai moana, pā tuna, pā harakeke, wāhi whakawātea, tohi and whakarite, and wāhi kauhoe. It was a tauranga waka for many pā and papakāinga along the awa and its tributaries and wetlands. As a source of identity, it is a central lifeline to past and future generations of Ātiawa.

The lower reaches of the Waikanae River are joined by several small tributaries, including the heavily modified Mazengarb channel. The Tikotu has been highly modified by the stormwater network; it is now severely degraded and fully cut off from the Mazengarb. Receiving both urban stormwater and wastewater discharges, it has been diverted and channelised and lacks riparian vegetation. Wastewater discharges from the Paraparaumu Wastewater Treatment Plant into the Mazengarb are highly offensive to Ātiawa.

The Waikanae River is recognised in the NRP as a river with significant indigenous ecosystems. It also serves as a significant drinking water source, with a river recharge project of groundwater recharge to maintain summer low flows. The Waikanae River is central to the wider community and important for recreation as it is one of the main water bodies used for human contact in Te Whaitua o Kāpiti.

Land use in the FMU is predominantly conservation estate and forestry, while sheep and beef farming, other farming, and lifestyle blocks are also present. The urban environment accounts for only 4 percent of the catchment land use.

The Tikotu Stream part-FMU is a small urban stream within the Paraparaumu Beach township and is now characterised by channelisation and stormwater discharges. Its estuarine environment is regularly blocked by sand build-up, requiring mechanical openings. The Tikotu estuary, though small, exhibits significant modifications, including channelisation and vertical wooden walls. For Ātiawa, the Tikotu Stream has significant values for mahinga kai, pā, and wai māori. At its mouth, the Tikotu Stream continues to be a significant tauranga waka.

The Waikanae Estuary extends 1.5 kilometres inland from the coast and has undergone past modifications, including the creation of the Waimanu Lagoon and artificial river mouth management to prevent flooding. The Waikanae Estuary is relatively large, spanning 37 hectares and features various substrates, including gravel, cobbles, intertidal flats, and sands. Habitat diversity remains relatively high, although it is impacted by modified channels that restrict tidal flats and salt marsh.

The values identified by the Committee for the Waikanae FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

In terms of mahinga kai attributes, while more information is needed to determine baseline states, monitoring undertaken in the Waikanae as part of the Mackays to Peka Peka Kaitiaki Monitoring Programme provides some indication of baseline state. This monitoring found:

- Watercress in the Waikanae was present in 2019, but not in 2020 or 2022. Testing of watercress for campylobacter, *E. coli* and heavy metals showed results were all within the human health limits.
- In the Mazengarb, watercress was present during all monitoring events. No campylobacter was detected but one result indicated *E. coli* exceeded the human health limit. Heavy metals were all below the safe human consumption limits.
- *E. coli* in water was also measured in the Waikanae and Mazengarb. The results for the Waikanae sites were below human health limits but the Mazengarb site was significantly greater than the limit.
- Tuna abundance and average length varied in the Waikanae, with 10 caught in 2019 with an average length of approximately 60cm, 1 caught in 2020 with an average length of 80cm, and 18 caught in 2022 with an average length of approximately 65cm. In the Mazengarb, 8 tuna were caught in 2019 with an average length of 65cm, and 9 caught in 2022 with an average length of 61cm.

Overall, it is understood that the tuna abundance and condition target attribute state is currently achieved in the Waikanae and Mazengarb. Despite this, current data for the mahinga kai culture aggregate indicates this target is not being achieved (3/5). The score for environment distress component of the aggregate is particularly low (1/5), which indicates that the current level of environmental degradation is impacting on cultural well-being.

In terms of water quality, the Waikanae River has three Greater Wellington monitoring sites. Collectively, data from these sites indicates that water quality is generally in good condition, with most attributes (for which data is available) falling within the A band. However, there are exceptions, notably dissolved reactive phosphorus, which tends to fall within the C band, and macroinvertebrates, which typically is in the B band in the lower reaches.

With regards to water quantity, 223 percent of the Waikanae surface water catchment management unit take limit has been allocated and 89.5 percent of the Waikanae groundwater catchment take limit has been allocated. The Raumati groundwater catchment is also partially within this FMU and 24 percent of the Raumati groundwater catchment management unit take limit has been allocated.

It is noted that the exceedance of the Waikanae surface water catchment take limit is not reflective of Greater Wellington continuing to allocate water after a catchment management unit has reached 100 percent allocation, nor of existing consent holders operating in a manner that has not been approved. Consents in the Waikanae catchment have always been granted in accordance with planning rules in place at the time water was sought. Rather, this apparent over-allocation relates to the adoption of an interim default allocation amount in the NRP (220 L/s) ahead of the whaitua process, to account for the fact that there was previously no catchment limit for allocation expressed in the regional plan. A catchment allocation limit is now necessary to comply with the NPS-FM.

7.7.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for the Waikanae FMU are to achieve resilient freshwater environments that are in a state of wai ora. The Committee seek freshwater that provides for well-being of mana whenua, enabling traditional practices, including gathering of mahinga kai and the development and transfer of mātauranga. Additionally, habitats are sought to be improved, pollution reduced, and communities provided with sufficient and safe drinking water.

Vision 8: Long-term Freshwater Vision for Waikanae, Upper Waikanae, and Tikotu:

By 2040, all water bodies in the Waikanae FMU and upper Waikanae and Tikotu part-FMUs are in a state of resilient health and wai ora and:

1. *Integrated management throughout the FMU, ki uta ki tai/from the mountains to the sea ensures balance, function, and hydrological connection throughout all water bodies in the Waikanae FMU;*
2. *The role of Te Ātiawa ki Whakarongotai as active kaitiaki along the awa is recognised, protected, resourced, respected, and allowed to be enriched and transferred in full between generations;*
3. *Te Ātiawa ki Whakarongotai and the wider community feel a deep sense of ūkaipōtanga/belonging to the Waikanae River, including through their role as stewards undertaking positive community action. They are valued for their contributions to the state of wai ora that is present in the Waikanae FMU;*
4. *Cultural and spiritual practices, tikanga, and mātauranga across the Waikanae and within the Tikotu part-FMU, including harvesting mahinga kai, rongoā, and raranga are respected, supported, and upheld to allow mana whenua to connect with their whakapapa, fulfil manaakitanga and kaitiakitanga responsibilities, and share and transfer these across generations;*
5. *The wider community's recognition of and reverence for Tikotu and its mana are upheld and maintained into the future, including its mauri and importance as a taonga for Te Ātiawa ki Whakarongotai and Ngāti Toa Rangatira and the connection of the wider community to the wai/water through use and enjoyment; and*
6. *The historical importance of Waikanae and Tikotu as tauranga waka is respected and protected so that this use may continue.*

Outcome 16 – Waikanae

By 2040 the Waikanae FMU is managed so that:

1. *Whānau and hapū are connected to different parts of the catchment that they have whakapapa to;*
2. *Mana whenua know their whakapapa to the Waikanae, and to each other;*
3. *Mana whenua and the wider community feel connected to the Waikanae and understand its history;*
4. *There is a coordinated approach to inclusive communication and engagement of awa activities mai uta ki tai;*
5. *Tiriti-based action is implemented along the awa;*
6. *Tiriti partnership is modelled through all decision-making;*
7. *Key physical sites of connection and access are identified, protected, and enhanced;*
8. *Development of knowledge and competence in local maramataka and seasonal taiao indicators inducing knowledge of rongoā rākau and wai for personal, whānau, and environmental management, revitalisation, health & well-being. Mātauranga and knowledge is generated that can be used to inform decision-making;*
9. *Key threats to mahinga kai are identified and the steps required to revitalise mahinga kai are implemented;*
10. *Habitats (e.g., spawning sites, fish passage) and biodiversity are improved so that the full suite of mahinga kai species are present and abundant;*
11. *Pollution and other harmful inputs to the system are reduced across the entire catchment;*
12. *The continued importance of Waikanae and Tikotu as a tauranga waka is recognised and respected;*
13. *Water is safe to drink and there is enough water in the awa to supply drinking water to the current supply area;*
14. *The water quantity and quality allow for whānau and the wider community to immerse themselves and undertake inter-generational recreational activities in the awa; and*
15. *The Waikanae is cared for to provide for delicious and plentiful kai, rongoā, and the ability to undertake unimpeded intergenerational practices.*

The target attribute states for the Waikanae FMU have been selected for two sites based on current Greater Wellington monitoring locations. Both sites are on the Waikanae River; one site is located on the Mangaone Walkway within the foothills of the Tararua ranges, and the second site is located at Greenaway Road which is west of the expressway.

As water quality of the Waikanae River is reasonably good, the majority of the target attribute states seek to maintain that level of water quality (see Appendix 10). For most attributes at the upstream site, A target attribute states apply, with the exception of DRP which is set at a C state reflecting the baseline state and limited influence on MCI/QMCI.

At the Greenaway Road site, B target attribute states have been selected for MCI/QMCI and DRP. The Committee discussed opting for an A target attribute state for MCI/QMCI, however settled on a B attribute state to account for the level of effort which would be required to achieve an A state, noting that invertebrates do not change regularly.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

Waikanae River in flood (2003). Photo: KCDC

7.7.3 Responses

In addition to those Whaitua-wide responses, the Committee has identified discharges from the Paraparaumu Wastewater Treatment Plant (PWTP) as a priority for this FMU. It is currently located to discharge treated effluent into the river, and ongoing related water quality issues have been of concern for a number of years for Ātiawa. Ātiawa considers that there have impacts on ecological health, and the microbiological effects are significant.

The Committee considers that KCDC needs to investigate the relocation of discharges from the PWTP from the Mazengarb catchment to a site that enables land-based treatment and ensures no waste is discharged to fresh or coastal water.

Other interventions required reflect the need to gain more knowledge, share this knowledge, and co-ordinate a network of mana whenua kaitiaki and community stewards to support decision-making and restoration work. Investigating the daylighting[98] of Tikotu Stream is specifically identified as a potential restoration action to recognise the mana of the water body and improve catchment ecological health.

Recommendation 38

Investigate relocating the Wastewater Treatment Plant or alternative wastewater discharge locations from the Mazengarb catchment to a site that can have land-based treatment and ensures no waste is discharged to fresh or coastal water. Introduce the best option from this investigation into the KCDC Long Term Plan.

Lead: (AKW):	December 2025

Recommendation 39

Develop and implement an action plan to achieve outcomes including:

a. Developing a storehouse of kōrero-a-iwi and a-hapū alongside community information and data to recognise, understand, and strengthen collective ties to the Waikanae Awa to include: generation of mātauranga and development of knowledge in mātauranga taiao indicators, knowledge, environmental monitoring and management, revitalisation, health and wellbeing;

b. Creation of a network of mana whenua kaitiaki and community stewards to connect restoration and monitoring work in the waterways of the Waikanae FMU, including monitoring and reviewing tikanga for vehicle access;

c. Actions to ensure gravel extraction is carried out in a way that contributes to the achievement of environmental outcomes in this WIP;

d. Investigating the ecological health of Ngārara Lagoon and prepare and implement an action plan incorporating measures of mātauranga Māori and including direction for Greater Wellington, Kāpiti Coast District Council, and mana whenua to partner to carry out monitoring to ensure that the ecological health of Ngārara Lagoon is on a trajectory of improvement by 2030;

e. Educating the wider community about Waimanu Lagoon so that visitors understand that it is wāhi tapu and contains an urupā and the significance of these to ensure cultural health and safety;

f. Investigating naturalising the Tikotu stream, including daylighting; and

g. Ensuring that any relevant outputs of the Waikanae Ki Uta Ki Tai programme are considered and investigating if additional provisions need to be incorporated in plan provisions in the change to the Natural Resources Plan for Te Whaitua o Kāpiti.

Lead: (AKW):	December 2025

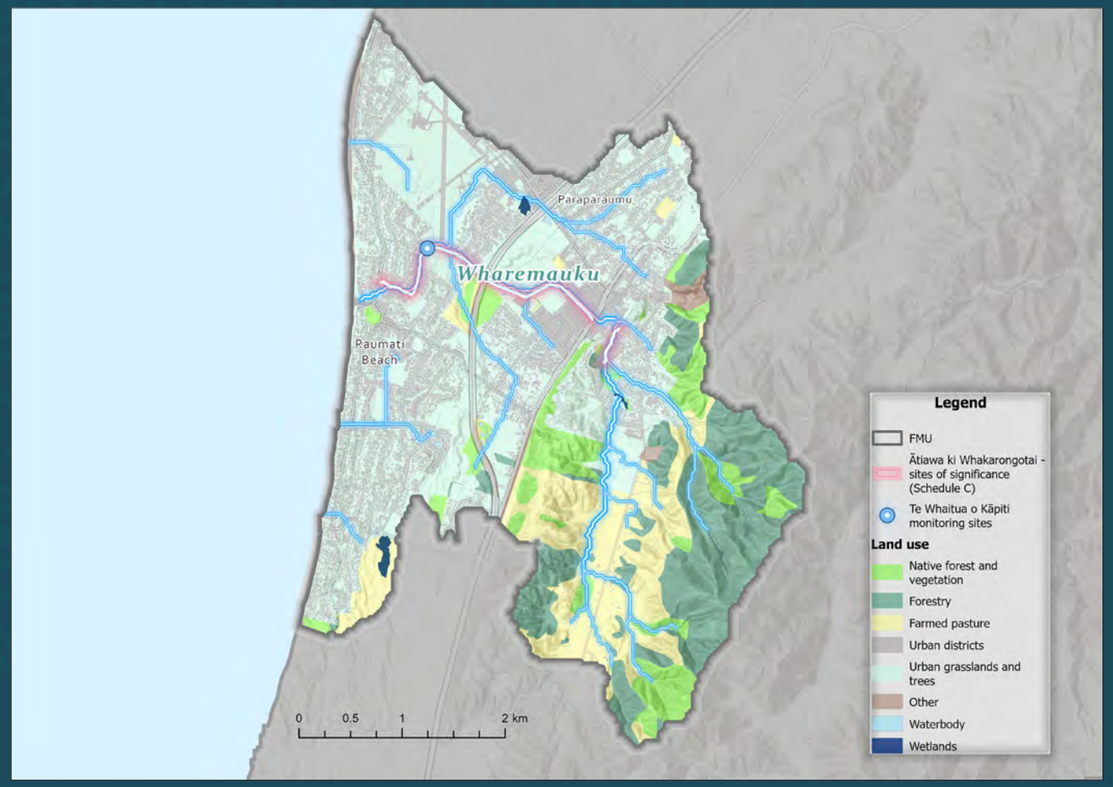
98 Daylighting is the opening up and restoration of a previously buried watercourse, one which had at some point been diverted below ground.

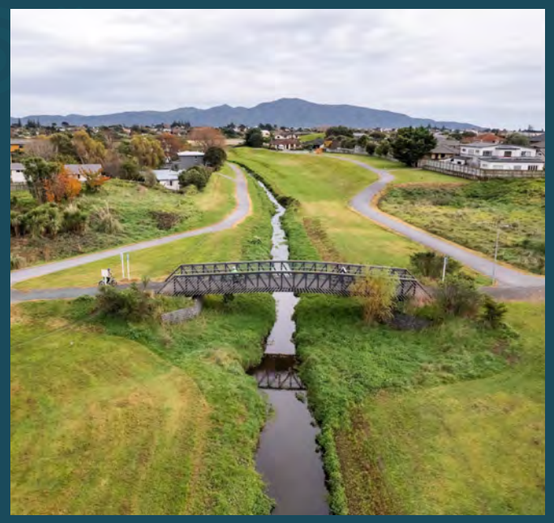
“Being by water is connected to our well-being. It is peaceful. It washes away our stress. It has a therapeutic effect on all of us.” (The Shed Project)”

Waikanae Estuary, Kōtuku Park. Photo: Sharlene Maoate-Davis

7.8 Wharemauku

FMU





Wharemauku Stream. Photo: KCDC

Wharemauku Stream, looking downstream (west). Photo: Tiana Hakaraia Morgans

7.8.1 Values, Pressures, and Current State

The Wharemauku Stream originates in the Tararua range foothills outside the conservation estate. It has a catchment of approximately 2,000 hectares.

For Ātiawa the Wharemauku was a significant ara wai to their tūpuna as it provided for the settlement of hapū. Its forested areas and wetlands provided an abundant source of sustenance and meant the area was less prone to flooding, as well as being a valuable source for mahinga kai, rongoā, and the provision of resources. The Wharemauku has significant values for wai ora, mahinga kai, and pātaka kai for papakāinga.

The stream flows through the urban centre of Paraparaumu and the residential area of Raumati Beach. The lower reaches of the Wharemauku Stream have undergone extensive modification that have straightened and channelised the stream and also reduced the grade. The flattening of the stream bed gradient has exacerbated risks from storm events, leaving surrounding land vulnerable to flooding and erosion. Current management of these risks involves removing sediment, which is ineffective, particularly as a long-term solution as the excavated areas of the stream are quickly filled with sediment discharging from the hills. Removal of sediment can also have significant impacts on fish and habitat.

The catchment is primarily urban, with mixed land uses and some forestry. The Wharemauku receives multiple stormwater discharges and has limited riparian vegetation, limiting biodiversity. The clearance of this vegetation and subsequent macrophyte proliferation has been a contributing factor to the decline in ecosystem health. Nevertheless, the Wharemauku Stream and its tributaries are recognised in Schedule F1 of the NRP as a river with significant indigenous ecosystems.

The Wharemauku Estuary is situated at Raumati Beach. It is small (0.55 hectares) and confined within a highly modified and channelized estuary margin. Large concrete culverts and flap gates restrict ecological habitat upstream, and much of the lower estuary has been reclaimed and is now bordered by vertical wooden or concrete walls with no remaining salt marsh.

The values identified by the Committee for the Wharemauku FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Drinking water supply
- Transport and tauranga waka
- Fishing
- Animal drinking water
- Irrigation, cultivation, and production
- Wāhi tapu
- Commercial use
- Residential use

Monitoring undertaken in the Wharemauku as part of the Mackays to Peka Peka Kaitiaki Monitoring Programme has found:

- Watercress was present in all years. Campylobacter was detected in two years at the test site and *E. coli* exceeded the human health limits in 2019 and 2021. No heavy metals were found to be at levels that exceeded the safe human consumption limits.
- At the Kiwi Road site, watercress was present and was then found to be absent. Campylobacter was not detected when watercress was present, however *E. coli* levels significantly exceeded human health limits in 2018. Arsenic and lead levels were found

to exceed safe human health consumption limits in 2018.

- *E. coli* measured in water at both locations shows exceedances of the human health limit in almost all sampling events.
- Tuna abundance and average length varied in the Wharemauku, with 4 caught in 2019 with an average length of 60 – 80cm, 19 caught in 2021 with an average length of approximately 80cm, and 2 caught in 2022 with an average length of 50cm at the control site and 110cm at the test site.

Overall, tuna monitoring shows that the proposed abundance and condition target attribute state is currently achieved. However, environmental degradation in the FMU is likely to be impacting on cultural well-being, particularly in relation to environmental distress as reflected in the assessment of the cultural aggregate.

There is no Greater Wellington monitoring data available for the Wharemauku FMU. Therefore, current state has been estimated based on modelling results. These results indicate that *E. coli*, deposited fine sediment, and DRP states are all below national bottom lines. MCI indicates environmental pressures as it is modelled in the C band while the Fish IBI, ammonia, and nitrate attribute states are in the B or A bands.

In terms of water quantity, 4L/s has been allocated from the Wharemauku, which is approximately 27 percent of the default take limit. The Raumati groundwater catchment is also partially within this FMU and 24 percent of the Raumati groundwater catchment management unit take limit has been allocated.

7.8.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's ambitions for the Wharemauku FMU are to achieve freshwater environments that are restored, healthy, and clean, supporting a full suite of mahinga kai species. The Committee seek that mana whenua and the wider community are connected to awa and water bodies enable safe harvesting of mahinga kai.

Vision 9: Long-term freshwater vision for Wharemauku:

By 2040, all water bodies in the Wharemauku FMU are in a state of resilient health and wai ora and:

1. *The beauty of the Wharemauku is realised through the protection, restoration and flourishing biodiversity of the river and wetlands;*
2. *Integrated management of the Wharemauku FMU, from the mountains to the sea ensures the decision-making role of Te Ātiawa ki Whakarongotai, hapū, and kāwanatanga in the best interests of the Wharemauku FMU;*
3. *The mana of the Wharemauku awa is upheld through the increased ability of whānau, hapū, and iwi to safely harvest mahinga kai to manaaki its manuhiri and fulfil its cultural obligations;*
4. *Where water bodies are expected to flood regularly, these water bodies are allowed to express their natural flows and forms as much as possible; and*
5. *The wider community has a deep recognition of the awa as a central source of identity that connects them to the Wharemauku, and the wairua and mauri of the awa is restored through this recognition.*

Outcome 17 – Wharemauku

By 2040 the Wharemauku FMU is managed so that:

1. *The Wharemauku is restored and cared for by mana whenua kaitiaki who know their whakapapa, historic connections, and associated cultural practices to ensure all generations continue to sustain mahinga kai harvesting and gathering practices along the awa;*
2. *The wider community have a sense of stewardship, belonging, and connection to the wai of the FMU and have an active role in the restoration and care of the Wharemauku, working together and respecting its whakapapa relationship with mana whenua;*
3. *Mai uta ki tai (from mountains to the sea), the wairua of the people is supported through their ability to gather, tell stories, and restore themselves alongside the Wharemauku in the natural ecosystems;*
4. *Land and waterways are healthy, clean, and free from pollutants so that the full suite of mahinga kai and appropriate rongoā rākau species can be found in the Wharemauku;*
5. *Wetlands are restored, enhanced, protected, and reconnected to the wider water cycle;*
6. *The temperature and oxygen in waterways support stable ecological communities;*
7. *The mauri of the awa is resilient to climate change; and*
8. *Whānau and hapū are connected to different parts of the catchment to which they whakapapa.*

Highly modified Wharemauku Stream. Photo: KCDC

Given there is no Greater Wellington monitoring site currently within the Wharemauku FMU, the Committee have determined target attribute states for a lowland urban site as this would best represent upstream influences and enable management of those. In determining the target attribute states, the Committee recognised the significant interaction between the Wharemauku and the urban environment, while also acknowledging that many fish remain in the awa. A target attribute state for MCI/QMCI of B was selected to reflect good ecosystem health, with other target attribute states selected to achieve this. Deposited fine sediment and DRP levels will need to be improved to meet the national bottom line, ammonia and nitrate (toxicity) concentrations are to be maintained, and fish-IBI is to be improved to an A state across the Whaitua.

E. coli, periphyton, and dissolved oxygen target attribute states were selected to reflect the continued use of this water body for fishing.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

Wharemauku River mouth. Photo: KCDC

7.8.3 Responses

With multiple critical issues in this FMU, the Committee found it difficult to decide which issues should be prioritised for responses. The biggest issues discussed included: contaminants from urban and industrial environments, natural character and habitat quality, and climate change/flooding.

The Committee considers it a priority to improve habitat quality and the natural character of the stream. To achieve this, the Committee believe there is a need to limit the excavation of the stream, avoiding further wetland loss, and improve habitat including through riparian planting. Ātiawa and hapū have wanted to partner in the restoration of the Wharemauku but to date there lacks a cohesive and coordinated plan between mana whenua, kāwanatanga, and the community. The Committee consider it vital to address this.

The lower reaches of the stream lack riparian shading, and the Committee considers improving this through planting should be a priority to improve water quality. The Kāwanatanga House noted that some large local businesses have been keen to establish riparian planting but have gotten push back. The Committee considers this is likely due to stormwater/flood management requirements.

However, KCDC advise that there is flood hazard mapping underway that will identify where future planting will best be situated. The issue of floodwater storage capacity in the context of climate change was discussed. The stream has a very low gradient and saltwater intrudes a long way up the channel towards Paraparaumu. In a storm surge, the water moves rapidly up the catchment, and it does not have many places to go. The stream therefore continues to be heavily modified through channelisation and excavation.

The Committee noted several actions required through the conditions of KCDC's stormwater consent. A stormwater management strategy is required through the global discharge consent, and this requires an integrated catchment management plan. This plan is an opportunity to look at ways to minimise works in-stream and improve natural character over time.

Also, in relation to stormwater, the Committee recommends investigating runoff from impervious surfaces and parking areas to characterise the contaminants in stormwater discharges from "hot spots". The aim of this investigation is to gain a greater understanding of the nature of the discharge and therefore what mitigations are needed to reduce contaminant loads, including any organochemicals.

Recommendation 40

Develop and implement an action plan to achieve outcomes including:

a. Restoring natural character values that have been lost due to historical flood engineering works, while retaining or increasing flood storage capacity;

b. Prioritising climate change adaptation measures in the Wharemauku, including managed retreat/planned relocation with the aim to limit the need for stream excavation, avoiding further wetland loss, and improving habitat; and

c. Undertaking an investigation to characterise contaminants in stormwater from hotspots, such as impervious surfaces and parking areas, that tests for a full range of contaminants including organochemicals. Using the results of this investigation and the pollution prevention programme specified in Recommendation 28, identify, and prioritise actions necessary to improve stormwater quality.

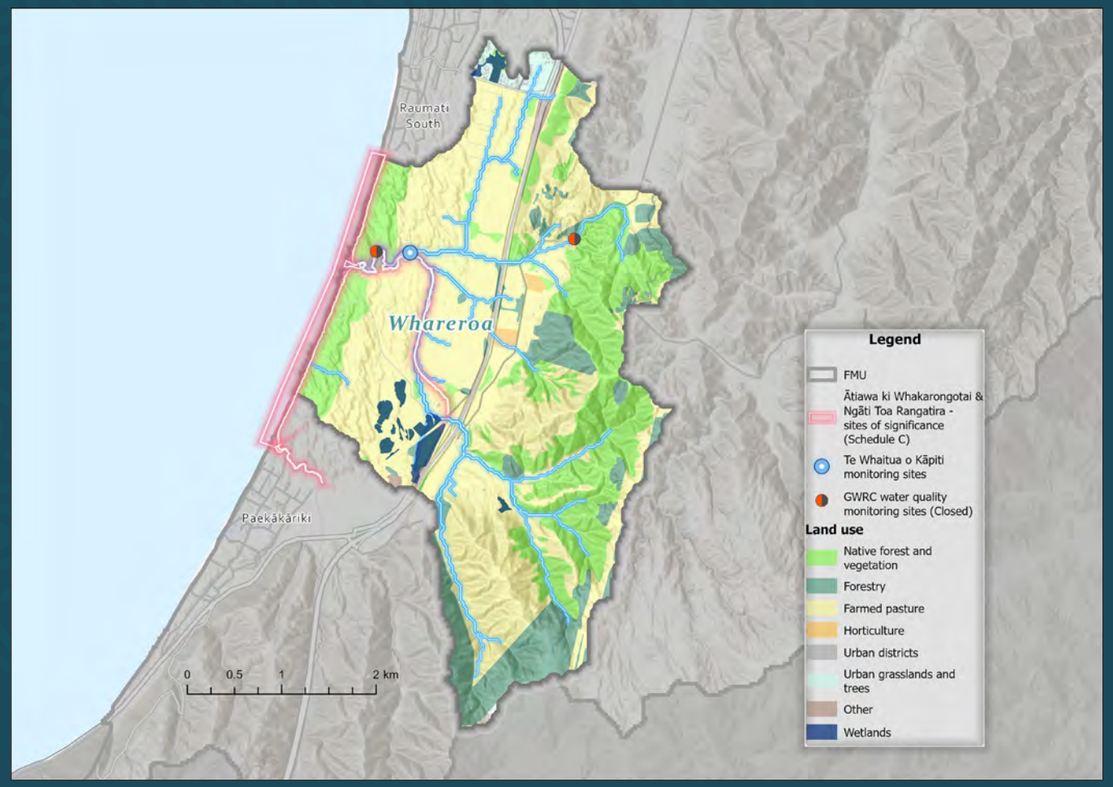
Lead: (AKW) Support:	December 2024

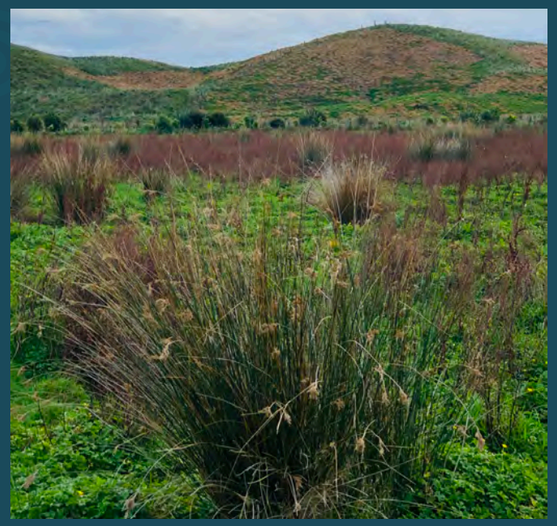
"Quality. It is important that practices are established to ensure all Kāpiti residents can enjoy the area now and into the future"

Waikanae Ngutu Awa Estuary – Kotuku Park view of Hemi Matenga. Photo: Sharlene Maoate-Davis

7.9 Whareroa

FMU





Whareroa regenerating wetlands. Photo: Sharlene Maoate-Davis

Whareroa downstream west. Photo: Kaea Hakaraia-Hosking

Whareroa, pātaka rongoā and pa harakeke. Photo: Sharlene Maoate-Davis

7.9.1 Values, Pressures, and Current State

The Whareroa FMU covers an area of approximately 1,600 hectares. The main water body is the Whareroa Stream which flows from the Akatarawara Forest to the Tasman Sea at Queen Elizabeth Park.

As an individual and unique catchment Whareroa is significant, significant as it was considered by tūpuna as a significant connector between people and the atua domains of Parawhenuamea, Tāne, Huhi, and Repo.

The wetlands were…"serving as an 'arterial network' of Papatūānuku, conduits and givers of life Inland waterways are also the way by which the earth mother cleanses herself of impurities.

Prior to 1840, wetlands made up 34 per cent of the Porirua ki Manawatū landscape. Ms Baker remarked that the groups of the area are 'people of the wetlands'.

Lowland catchments, or wetlands, 'receive water, sediments, and nutrients from upslope and process them' This abundance of nutrients and shallow water promotes a habitat that supports a wide range of fish, birds, and invertebrates.

According to Ms Baker, her tūpuna were 'seduced' by the rich array of mahinga kai and resources that the wetland habitats provided.

Practically, this meant that prior to the arrival of Pākehā, Māori strategically built pā sites and papakāinga near waterways.[99]

For Ngāti Toa and Ātiawa, the Whareroa holds significant values for waka, rongoā, wāhi tapu, pā, urupā, papakāinga, maara/whakatupu kai, wāhi tūpuna, mahi pārekareka, raranga, mahinga kai, kai māori, wai ora, wai tai, wai Māori, kanga wai, pātaka kai, and rohenga.

For Ngāti Toa, the Whareroa holds significant values for waka, rongoā, wāhi tapu, pā (defence), urupā, papakāinga, whakatupu kai, wāhi tūpuna, mahi pārekareka, raranga, mahinga kai (pā tuna), and kai māori.

In the upper catchment, the predominant land use consists of sheep and beef farming, with a small portion of exotic and regenerating native forest. The lower catchment features mixed land uses, including areas designated for conservation, regenerating wetlands, recreational spaces, and additional sheep and beef farming. Urban land use represents only a minor component within the catchment's land use composition.

The Whareroa Stream is fed by two main tributaries, and within Queen Elizabeth Park (QEII Park), a network of drains intersects historic wetlands, conveying surface water into the Whareroa Stream. Both the Whareroa Stream and its tributaries are recognised in Schedule F1 of the NRP as a river with significant indigenous ecosystems.

While there is limited agricultural activity in the FMU, forestry activities occurring in the upper catchment have resulted in logs being transported down the Whareroa Stream and collecting at the river mouth. Forestry debris being conveyed in streams can damage banks, causing erosion and loss of riparian vegetation. Further risk of environmental harm arises if these logs need to be mechanically removed.

The Whareroa estuary, a small estuary located at Whareroa Beach within Queen Elizabeth Park, has been subject to channelisation which has limited the extent of the salt marsh and increased the presence of terrestrial weeds. Despite this modification, the Whareroa Stream

99 Waikanae Waitangi Tribunal Report – Page 86

Estuary is acknowledged in NRP Schedule F4 as a site that provides seasonal or core habitat for threatened fish species.

The values identified by the Committee for the Whareroa FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori Freshwater Values
- Natural form & character
- Transport and tauranga waka
- Wāhi tapu
- Residential use

In terms of mahinga kai, monitoring in the Whareroa as part of the Mackays to Peka Peka Kaitiaki Monitoring Programme found:

- Watercress was present in all monitoring events, with campylobacter detected in 2019, but not in 2018 or 2022. *E. coli* levels exceeded the human health limit on two occasions and heavy metals were all measured below the safe human consumption limit.
- *E. coli* in water varied with an exceedance in 2018 but compliance with the human health limit in 2019 and 2020.
- In 2019 no tuna were caught, and in 2022 4 tuna were caught with an average length of 65cm.

Tuna abundance and condition monitored demonstrates the proposed target attribute state is currently achieved. However, assessment of the mahinga kai cultural aggregate indicates that environmental degradation is impacting cultural well-being with the median aggregated score of 3/5.

On the Whareroa Stream, there are two monitoring sites, but the available data is limited and only baseline state can be determined. Therefore, modelling has been employed to assess the current state. This indicates that at the Waterfall Road site, ammonia, nitrate, dissolved copper, and dissolved zinc states fall in the A or B bands suggesting reasonable water quality. Information for the attributes of suspended fine sediment, deposited fine sediment, *E. coli*, macroinvertebrates, and DRP all reflect states below the national bottom line.

The Queen Elizabeth Park site displays comparable attribute states, with A or B conditions for ammonia, nitrate, dissolved copper, and dissolved zinc. However, a minor variation is observed, with suspended fine sediment estimated to be in the C band at this site.

With regards to water quantity, 4L/s has been allocated from the Whareroa which is approximately 24 percent of the default take limit. The Raumati groundwater catchment is also partially within this FMU and 24 percent of the Raumati groundwater catchment management unit take limit has been allocated.

Giant kōkopu. Photo: Tiana Hakaraia Morgans

7.9.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's vision and outcome for the Whareroa FMU are to realise a state where all water bodies are resilient and in a state of wai ora. The Committee specifically seek improved freshwater environments and freshwater management that supports ecosystem health and the cultural well-being of mana whenua.

Vision 10: Long-term Freshwater Vision for Whareroa:

By 2040, all water bodies in the Whareroa FMU are in a state of resilient health and wai ora and:

1. *The historical importance of Whareroa is recognised, respected and protected so that mana whenua are connected to different parts of the catchment to which they whakapapa, retelling the pūrākau, sharing history, and upholding kawa and tikanga;*
2. *The Whareroa awa, wetlands and land are protected, supported, and restored to a state of abundance for mahinga kai and as a pātaka kai/storehouse for food;*
3. *Both mana whenua and the wider community recognise the sense of stewardship and connection to the wai;*
4. *Mai uta ki tai (from mountains to the sea), the whakapapa and wairua of the taiao is supported through the ability to gather and tell stories and educate on the importance of Whareroa and its natural, interconnected ecosystems;*
5. *Coastal wetland habitat is recognised for its rarity and restored to a state of abundance, reconnected to its own natural character and role in protecting the sand dunes, awa, tributaries, and wetlands;*
6. *The role of the Whareroa as a place of rongoā/healing for mana whenua is respected and protected; and*
7. *The wairua and mauri of the Whareroa is resilient to climate change.*

Outcome 18 – Whareroa

By 2040 the Whareroa FMU is managed so that:

1. *The importance of Whareroa as an area of mutual interest to Te Ātiawa ki Whakarongotai, Ngāti Toa Rangatira and Ngāti Haumia is recognised and understood by all;*
2. *Tiriti-based partnership is implemented across the Whareroa FMU through a shared vision and modelled through shared decision-making;*
3. *The significance of Whareroa as a tauranga waka is recognised along the coast;*
4. *Hapū and iwi are connected to different parts of the Whareroa to which they whakapapa;*
5. *Whareroa is a place that supports healthy wairua of the people. It is clean, calm, safe and conflict-free;*
6. *Habitats (spawning sites, fish passage, insect and bird life) and biodiversity are improved so that the full suite of mahinga kai species are present;*
7. *Key threats to mahinga kai are identified and the steps required to revitalise mahinga kai are implemented;*
8. *Pollutants and other harmful inputs to the Whareroa system are monitored and reduced, including those from land use and pest management practices;*
9. *Diverse mahinga kai is abundant and can be sourced efficiently in all seasons, mai uta ki tai;*
10. *The temperature and oxygen in waterways support stable ecological communities and the enhancement of habitats, fish passage, and biodiversity;*
11. *Wetlands and dunes are restored, enhanced, protected, and reconnected to the wider water cycle; and*
12. *The mauri of the Whareroa is resilient to climate change.*

Whareroa. Photo: GWRC

The target attribute states for the Whareroa FMU have been selected for two sites based on Greater Wellington monitoring locations, both of which are currently not used. Both sites are on the Whareroa Stream; one site is located at Waterfall Road which at the base of the foothills, and the second site is located closer to the coast within Queen Elizabeth Park.

In determining the target attribute states the Committee acknowledged the restoration work that has been occurring in the catchment, including removal of stock and recreating wetland areas. The Committee sought to prioritise improvements within this catchment to align with the work already occurring, and as such were ambitious with the target attribute states for MCI/QMCI, deposited fine sediment, and DRP, with A target states selected for all.

Target attribute states of A were also determined for ammonia and nitrate toxicity, suspended fine sediment, dissolved copper, and dissolved zinc in order to achieve the MCI/QMCI target.

The baseline state for Fish-IBI is an A attribute state and this therefore must be maintained.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.9.3 Responses

In recommending the responses required for the Whareroa, the Committee acknowledged:

- The FMU is largely in public ownership
- Through historical farming practices the landscape and waterways were significantly altered, and the catchment has only relatively recently undergone ecological restoration
- The catchment is of huge significance to the community and multiple iwi.

With these matters in mind, the Committee considers the key interventions necessary to achieve the target attribute states are focused on supporting ongoing catchment restoration and mana whenua values and connections, supported by DoC. The Committee discussed the history of the catchment, from Māori occupation through to its protection under the Reserves Act 1977. The Committee also recommends re-naming the park from Queen Elizabeth Park to something more culturally appropriate and historically accurate.

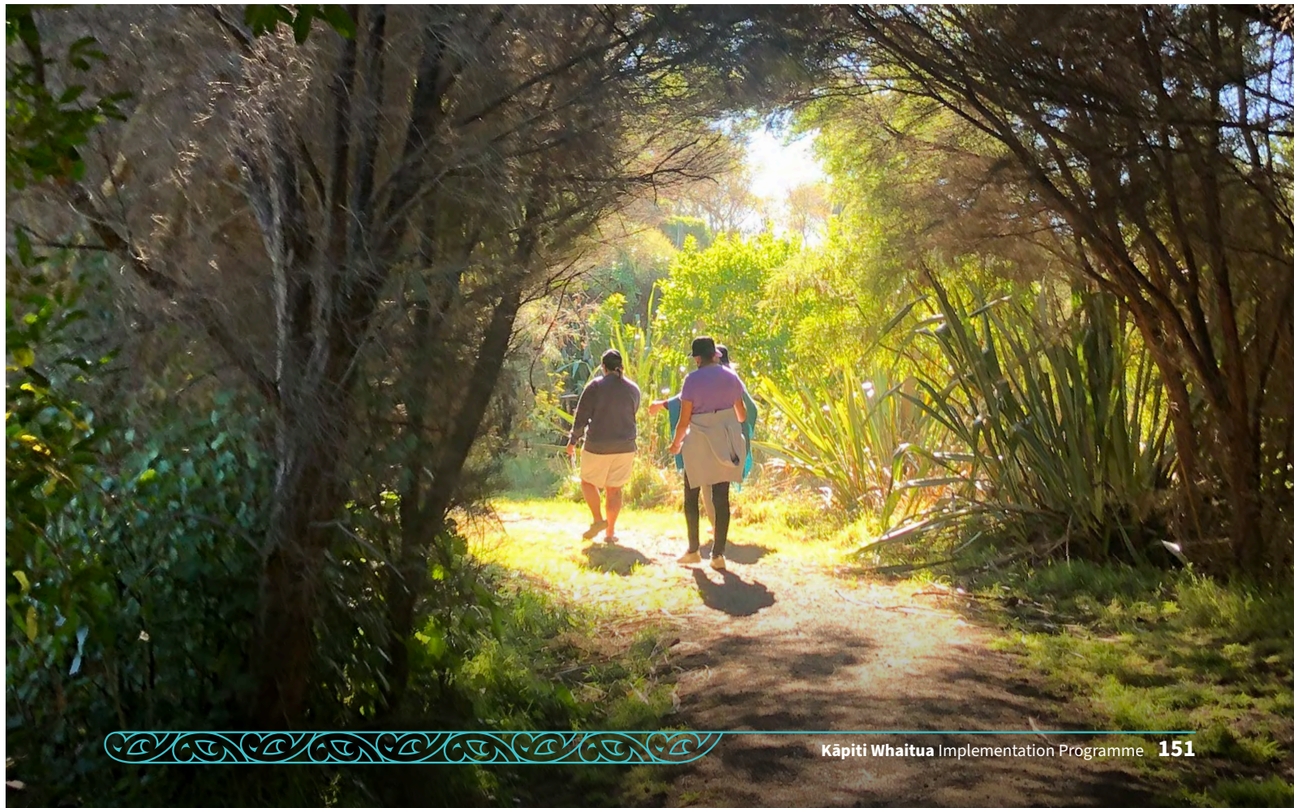
Recommendation 41

Develop and implement an action plan to achieve outcomes including:

a. As a high priority, develop and deliver a knowledge plan which includes:
   i. Generation of mātauranga and development of knowledge in mātauranga taiao indicators, environmental monitoring and management, revitalisation, health and wellbeing;
   ii. A storehouse of kōrero to recognise, understand and strengthen collective ties to the Whareroa and its cultural landscape;
   iii. A combined, culturally responsive GIS information management platform to inform integrated management;
   iv. The creation of a network of iwi kaitiaki and community stewards to connect restoration and monitoring work in the waterways of the Whareroa FMU; and
   v. Establishment of a base for volunteers and rangatahi to work from.
b. Using measures of mātauranga Māori, improve the Whareroa catchment, including by the following:
   i. Undertaking significant riparian planting to help mitigate discharges from the highway and ensuring that water temperature remains cool enough to sustain aquatic life;
   ii. Improving dissolved oxygen levels;
   iii. Protecting, maintaining, and restoring wetlands in the FMU;
   iv. Enhancing connectivity throughout the catchment, especially for migratory tuna, inanga, and kōkopu; and
   v. The development of education programmes to support positive behavioural change and enable rongoā, maramataka, and mahinga kai.

Lead:	Support:	December 2024

Whareroa. Photo: GWRC

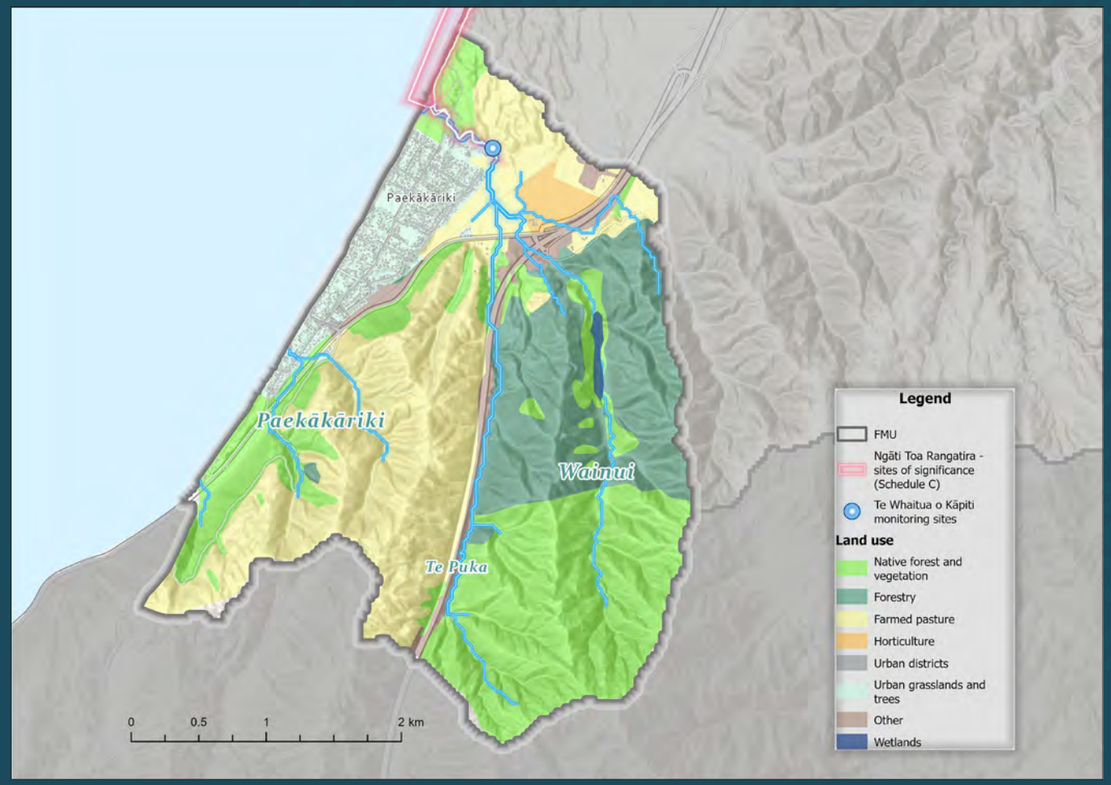


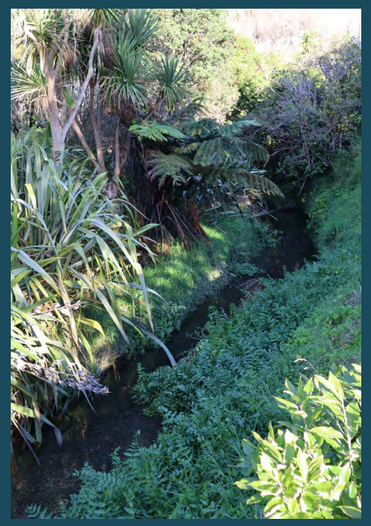
“People valued the natural forms. Features and remoteness of many other Kāpiti rivers, streams and tributaries.”

Hemi Matenga awa. Photo: Sharlene Maoate-Davis

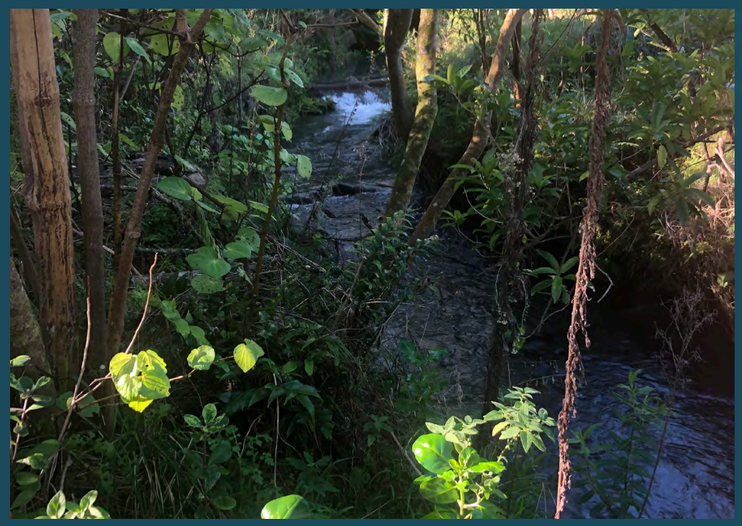
7.10 Wainui and Paekākāriki

FMU





Wainui upstream east. Photo: Kaea Hakaraia-Hosking



Wainui Stream. Photo: Sharlene Maoate-Davis

7.10.1 Values, Pressures, and Current State

The Wainui and Paekākāriki FMU covers a catchment area of approximately 1,200 hectares. The primary water bodies are the Wainui Stream and the Waikākāriki Stream. The Wainui Stream's headwaters originate in the western slopes of the Akatarawa Forest before flowing across the coastal sand dune plains, eventually meeting the sea at Wainui Estuary located at the northern end of Paekākāriki. Notably, the Te Puka Stream is a major tributary which also serves as a backup source of municipal drinking water for the Paekākāriki township.

For Ngāti Toa, the Wainui Stream holds significant values for pā, wai māori, wai ora, kai awa, rongoā, puna raranga, mahinga mataitai, nohoanga, taunga ika, wāhi tūpuna, and wāhi maumahara.

Within the catchment, more than half of the land area is in forestry, with a significant portion dedicated to sheep and/or beef farming. Urban land use comprises only a small fraction of the catchment's land use.

The Wainui Stream and its tributaries hold recognition in Schedule F1 of the NRP as rivers with significant indigenous ecosystems. Additionally, the Wainui estuary is identified in Schedule F1 as an area providing seasonal or core habitat for threatened fish species.

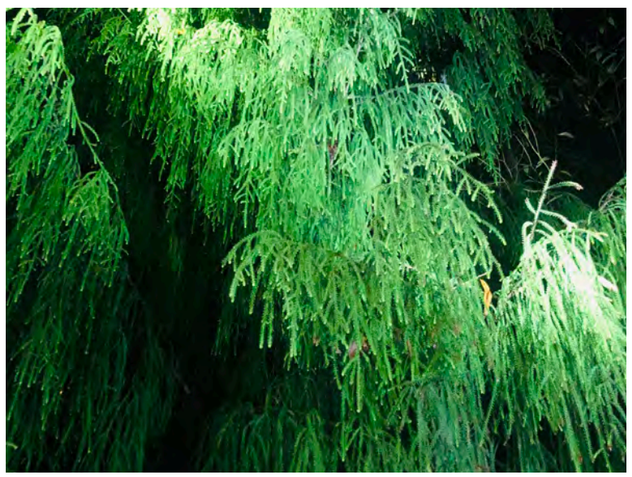
The values identified by the Committee for the Wainui and Paekākāriki FMU are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori freshwater values
- Natural form and character
- Drinking water supply
- Fishing
- Residential use

From a mahinga kai perspective, water quality is still sufficient in the Wainui Stream to support a healthy longfin tuna population, which is also a tohu that there is enough for these tuna to eat. Assessment of tuna abundance and condition demonstrates that the proposed target attribute state is met. However, there are significant sedimentation and fish passage risks due to the major road construction works that have taken place.

In the southeast of Te Whaitua o Kāpiti the Waikākāriki Stream, a smaller catchment spanning approximately 300 hectares, passes through the Paekākāriki township before flowing into the sea. More than half of this catchment is used for sheep and/or beef farming, with urban land use, roading, and conservation comprising the remaining land uses.

There is no Greater Wellington monitoring site in the Wainui and Paekākāriki FMU. Modelling has been used to predict attribute states for a lowland rural site, which is to be representative of upstream land uses. The modelling results indicate A state ammonia and nitrate concentrations, but either C or D band suspended fine sediment, *E. coli*, MCI, deposited fine sediment, and DRP states.



Wainui, rimu by night. Photo: Sharlene Maoate-Davis

7.10.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for the Wainui and Paekākāriki FMU are to achieve a state where all water bodies are resilient and in a state of wai ora, cultural well-being and practices are supported and upheld, and the significance of the FMU as a tauranga waka is respected and protected.

Vision 11: Long-term Freshwater Vision for Wainui and Paekākāriki:

By 2045, all water bodies in the Wainui and Paekākāriki FMU are in a state of resilient health and wai ora and:

1. *The wider community's recognition of and reverence for the Wainui awa and its mana are upheld and maintained into the future, including its mauri and importance as a taonga and nohoanga for mana whenua and connection to the wider community through use and enjoyment;*
2. *Cultural and spiritual practices and mātauranga within the Wainui and Paekākāriki FMU, including harvesting mahinga kai, rongoā, raranga, and customary fishing are respected, supported, and upheld to allow mana whenua to fulfil manaakitanga and kaitiakitanga responsibilities and share and transfer these across generations;*
3. *The historical importance of the Wainui and Paekākāriki FMU as a tauranga waka is respected and protected so that this use may continue; and*
4. *Where possible, the mouth of the Wainui awa is supported to enhance its resilience to climate change.*

Outcome 19 – Wainui and Paekākāriki

By 2045 the Wainui and Paekākāriki FMU is managed so that:

1. *The mana and the mauri of Wainui is upheld and maintained into the future as a taonga and nohoanga for mana whenua;*
2. *Mana whenua can undertake cultural and spiritual practices and apply mātauranga within the Wainui and Paekākāriki, including harvesting mahinga kai, rongoā and raranga, and customary fishing;*
3. *The Wainui Stream is resilient to climate change, in particular the mouth;*
4. *Mana whenua can fulfil manaakitanga and kaitiakitanga responsibilities and share and transfer these across generations;*
5. *The significance of tauranga waka are recognised along the coast, and the potential to have new tauranga waka exists; and*
6. *There is continuous riparian cover providing shade along the entire stream.*

As there are currently no Greater Wellington monitoring sites within the Wainui and Paekākāriki FMU, the target attribute states have been determined for a hill country and lowland rural site, reflecting differences in land uses within the FMU.

MCI/QMCI is predicted to be at a B baseline attribute state and the Committee opted to maintain this state to reflect good ecosystem health. Target attribute states for ammonia and nitrate toxicity are to be maintained as the baseline is A state and B attribute state suspended fine sediment, dissolved copper and dissolved zinc targets were selected in order to achieve the MCI/QMCI target.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.10.3 Responses

The Committee's responses for the Wainui and Paekākāriki FMU are centred around the environmental implications of Te Aranui o Te Rangihaeata (Transmission Gully), particularly in relation to sediment and fish passage. The Committee considers that restoration carried out in partnership with Waka Kotahi is a priority in this catchment.

Recommendation 42

Develop and implement an action plan to achieve outcomes including:

a. As a high priority, investigate and restore fish passage and enhance connectivity throughout the catchment, especially for migratory tuna, inanga, and kōkopu, prioritising actions in the Te Aranui o Rangihaeata/Transmission Gully; and

b. Monitor and if necessary review consent conditions for Te Aranui o Rangihaeata/Transmission Gully relating to awa restoration to ensure that these are restored and/or left in a better state in a way that preserves their natural character.

Lead:	December 2025

Wainui and Paekākāriki FMU, new puna wai / spring. Photo: Sharlene Maoate-Davis

7.11 Kāpiti Island

FMU

Okupe Lagoon (west). Photo: Manaaki Barrett

7.11.1 Values, Pressures, and Current State

The Kāpiti Island FMU encompasses the entirety of Kāpiti Island. This island is approximately 2,000 hectares and located 5.6 kilometres offshore.

Kāpiti Island is of immense cultural significance as a taonga for Ātiawa, Ngāti Raukawa, and particularly Ngāti Toa. The area holds many values, including a wai tapu at Ōkupe Lagoon and historical significance arising from a rich history of Māori occupation, as the island served as a refuge and stronghold during times of conflict. Today it remains an important cultural site.

The island is one of New Zealand's most significant nature reserves, which is managed by the DoC. The island is home to many native species that are either very rare or absent from the mainland. DoC has undertaken a programme of pest eradication, leaving the island completely free of introduced mammals.

With regards to freshwater, there are several freshwater bodies located across the island including streams, springs, waterfalls, and a lagoon.

The island is a popular eco-tourism destination with a small number of accommodation facilities and limited residents, located at the northern end of the island.

The values identified the Committee for Kāpiti Island are:

- Ecosystem health
- Human contact
- Threatened species
- Mahinga kai
- Kaupapa wai Māori/Māori freshwater values
- Natural form & character
- Drinking water supply

There is no information available to understand the baseline state or current state of attributes as there is currently no water quality monitoring programme for the island. Due to the limited human influences, it is expected water quality would be good and there would be little alteration to river flows, generally reflecting of natural conditions.

7.11.2 Vision, Environmental Outcome, and Target Attribute States

The Committee's aspirations for Kāpiti Island are to ensure that the FMU remains resilient, in a state of wai ora, and to recognise the significance of the area as a taonga for mana whenua. The vision and outcome are set out below.

Vision 12 – Long term Freshwater Vision for Kāpiti Island

1. *From 2024 all water bodies in the Kāpiti Island FMU remain in a state of resilient health and wai ora and:*
2. *All freshwater bodies of Kāpiti Island are protected so that they may continue to contribute to the thriving abundance of wildlife on the island; and*
3. *The wider community's recognition and reverence for all water bodies of Kāpiti Island and the mana of the island are upheld and maintained into the future, including the mauri of all water bodies and the importance of the island as a taonga for mana whenua.*

Outcome 20 – Kāpiti Island

From 2024 the Kāpiti Island FMU is managed so that:

1. *The mana and the mauri of the island is upheld and maintained into the future, including the mauri of all water bodies and the importance of the island as a taonga and nohoanga for mana whenua;*
2. *All freshwater bodies of Kāpiti Island are maintained and protected; and*
3. *Mana whenua can undertake cultural and spiritual practices and apply mātauranga, including harvesting mahinga kai, rongoā and raranga, and customary fishing.*

Reflecting these aspirations, the anticipated current state and the FMU's significance for mana whenua, the Committee determined that all target attribute states should be set at A and achieving the mahinga kai attributes.

See Appendix 10 for a full list of target attribute states set by the Committee for this FMU.

7.11.3 Recommendations

One key aspect which the Committee seek to address for the Kāpiti Island FMU is the need for ongoing management to be led by Ngāti Toa Rangatira in accordance with the Te Mana o te Wai principles, particularly mana whakahaere.

The Committee seek that all monitoring activities take into account the cultural sensitivity of the whenua, and community education is provided to increase understanding of the cultural significance of the island.

The Kāpiti Island Strategic Advisory Committee (KISAC) is responsible for a conservation management plan for Kāpiti Island[100]. The implementation of these Recommendations needs to be aligned with this management plan.

Recommendation 43

Develop and implement an action plan to achieve outcomes including:

a. Appropriate protocols for monitoring which take into account the cultural sensitivity of Kāpiti Island; and

b. An education programme about Kāpiti Island with specific reference to places of cultural significance in relation to the importance of wai.

Lead: Support:	December 2024

100 Ngāti Toa Rangatira Claims Settlement Act 2014

Recommendations

Full Set

The intent of these Recommendations is to focus the attention of decision-makers on Te Mana o te Wai, the fundamental concept in the NPS-FM, so the balance between the water, the wider environment and the community is restored and preserved.

Key for WIP Recommendations:

- Mana Whenua
- Greater Wellington
- Kāpiti Coast District Council
- Department of Conservation
- Whaitua Kāpiti Oversight Committee
- Community/relevant stakeholders

Whaitua-wide Recommendations:

1. Mana Whakahaere and Governance

Recommendation 1

Greater Wellington upholds the mana of the WIP by:

a. Receiving and considering the adoption of the Recommendations in this WIP and the accompanying section 32 content, and acknowledging Te Tiriti framework in which the Recommendations were developed;

b. Directing their staff to read this WIP and proactively use it to inform all advice and decision-making across all its functions, including Biosecurity, Emergency Management, Environment, Flood Protection, Harbours, Land Management, Parks and Forests, Pollution control, Transport, and Water supply;

c. Providing resourcing to support staff to understand the WIP, including resourcing to engage with mana whenua;

d. Undertaking immediate proactive communication of the WIP with stakeholders, community, and partners through a variety of channels, including a video, to promote the Committee's vision and long-term outcomes including their expression of Te Mana o te Wai. This is to enable ongoing dialogue and accountability for implementation and will involve Committee members and mana whenua partners (to the extent they wish to be involved);

e. Enabling Te Whaitua o Kāpiti Committee members to retain oversight for the delivery of WIP Recommendations and ensuring the Committee is formalised and funded for its implementation by Greater Wellington by 31 August 2024; and

f. Developing and maintaining a WIP monitoring programme to support the delivery of this WIP and the Committee oversight process.

Lead: Support:	August 2024

Recommendation 2

Notify changes to the Regional Policy Statement for the Wellington Region (RPS) and Te Tikanga Taiao o Te Upoko o Te Ika a Maui/the Natural Resources Plan for the Wellington Region (NRP) to implement the Recommendations contained in Te Whaitua o Kāpiti WIP including:

a. Te Mana o Te Wai and long-term freshwater vision objectives for Te Whaitua o Kāpiti into the RPS; and

b. Freshwater management units and part freshwater management units, monitoring sites, environmental outcome objectives, target attribute states, environmental flows and levels, limits, rules, and methods for Te Whaitua o Kāpiti into the NRP.

Lead:	December 2024

Ōtaki River. Photo: KCDC

Recommendation 3

Identify, develop, and implement further necessary regulatory and non-regulatory actions to give effect to the National Policy Statement for Freshwater Management 2020 (NPS-FM) and to achieve target attribute states, and environmental outcomes in this WIP. This shall include:

a. Establishing baseline information for all new target attribute states;

b. Identifying additional primary contact monitoring sites, in addition to existing monitored primary contact sites;

c. Setting target attribute states for the E. coli attribute as per Table 22 in Appendix 2B of the NPS-FM;

d. Developing a new social attribute to understand the wider community's values in connecting with the environment;

e. Developing, setting and notifying target attribute states for ecosystem metabolism to achieve the environmental outcomes of this WIP;

f. Developing and implementing Freshwater Action Plans;

g. Remove the permitted activity rule in the Natural Resources Plan, except for those provided for under section 14(3)(b) of the RMA, that allows water to be taken from a water body within Te Whaitua o Kāpiti without resource consent. This process will consider:

   i. The inclusion of a controlled activity rule for small water takes, to enable monitoring, reporting, and cost recovery;

   ii. Any one-off or infrequent uses of water where water takes should be enabled as permitted activities, or where permitted volumes should be reduced; and

   iii. Any transition period, if appropriate, to phase in the requirement for resource consents under (a).

h. Investigating regulatory or non-regulatory actions on matters such as:

   i. Setting limits on resource uses necessary to achieve target attribute states and action plans;

   ii. Rural land use including agriculture, horticulture, and forestry to reduce contaminant loads including nutrients and sediment;

   iii. Sediment control through earthworks rules, and identification and management of works on erosion-prone land;

   iv. Stormwater and wastewater networks;

   v. Activities in and adjacent to streams such as flood control works, open channel clearance, and gravel extraction;

   vi. Expanding the requirement for Freshwater Farm Plans, or similar management plans, to smaller properties such as lifestyle blocks and market gardens with disproportionate impact on surrounding waterways;

   vii. Phasing out any over-allocation and avoiding future over-allocation;

   viii. Further restrictions to prevent the loss of existing natural inland wetlands, including preventing the use of the offsetting and compensation elements of the effects management hierarchy to progress land development; and

   ix. The need for nutrient and pathogen discharge quality standards for new on-site wastewater systems, rather than relying on the AS/NZS On-site domestic wastewater management.

Lead: Support:	December 2024

Recommendation 4

Improve coordination of freshwater management and restoration work and budgets across organisations involved in freshwater management in Kāpiti to contribute to achieving the long-term freshwater visions, environmental outcomes, and target attribute states laid out in this WIP in time to influence each organisation's 2025-26 annual budget and then ongoing Long Term Plans.

Lead:	June 2025

Recommendation 5

Ensure that consent compliance, monitoring, and enforcement practices are improved by:

a. Improving monitoring and enforcement of stock exclusion requirements under the NRP and the Resource Management (Stock Exclusion) Regulations 2020;

b. Undertaking monitoring of compliance with permitted activity standards in the NRP;

c. Developing improved protocols by December 2025 for regularly sharing information on contaminated and potentially contaminated land to ensure that the Selected Land Use Register best reflects up to date knowledge of contaminated land;

d. In relation to water sensitive urban design:

   i. Compliance monitoring of resource consents that require the use of water sensitive urban design practices to ensure those practices are successful, focusing on correct installation and ongoing maintenance to ensure effective operation;

   ii. Reviewing the Kāpiti Coast District Plan provisions requiring rainwater tanks on new developments to ensure they are fit for purpose with regard to lot size and infrastructure needs, reducing costs and adverse environmental effects, and improving water security;

e. In relation to natural wetlands (which includes coastal wetlands):

   i. Improved compliance and enforcement of conditions on resource consents relating to the management of natural wetlands and coastal wetlands; and

   ii. Improved methods to evaluate the success of any natural wetland offsetting projects undertaken as part of the effects management hierarchy are implemented where appropriate.

Lead: Support:	December 2025

Recommendation 6

Advocate for funding and resourcing from Central Government to undertake research into aquifer ecosystem health in Te Whaitua o Kāpiti, including into the risks of emerging contaminants[101] on groundwater and human health.

Lead: Support:	March 2026

101 Emerging contaminants are synthetic or naturally occurring compounds or microbes that are generally not monitored in the environment but have the ability to negatively influence ecological or public health. They include medicines, personal care or household cleaning products, and lawn care and agricultural products, among others.

Recommendation 7

Ensure mana whenua and agencies are partners in the management of freshwater by developing and implementing a Memorandum of Understanding (MOU) or similar by December 2024 to:

a. Provide mana whenua with the technical and resourcing support from Greater Wellington to undertake mahinga kai monitoring, as well as monitoring of any other attributes in this WIP where they want to or are able to lead this monitoring.

b. Review, improve, and establish protocols on the following:

   i. Collaboration on State of the Environment monitoring and reporting;

   ii. Collaboration on pre-application meetings;

   iii. Assessment and processing of resource consent applications;

   iv. Compliance, monitoring, and enforcement of resource consents;

   v. Developing standard resource consent conditions to be applied to relevant resource consents to implement the Recommendations of this WIP;

   vi. Communication between mana whenua and councils for resource consenting and the use of Te Wahi portal; and

   vii. The use and interpretation of te ao Māori values, including where they form part of the planning framework.

Lead:	Support:	
		December 2024

Recommendation 8

Provide for mana whenua rights and interests in freshwater in Te Whaitua o Kāpiti, including by:

a. Establishing a specific water allocation for mana whenua to use and administer, as a right of first refusal of 20% of the allocation set as part of Obligation 3 of the hierarchy in Te Mana o te Wai, after the health and well-being of the awa, freshwater ecosystems, and mahinga kai species (Obligation 1), and the health needs of people (Obligation 2), are provided for;

b. Embedding the principles of mana whakahaere, kaitiakitanga, manaakitanga, and mātauranga Māori in freshwater allocation and the consenting process, including through active involvement of mana whenua in decision-making (to the extent they wish to be involved); and

c. Recognising papakāinga, kōhanga, and kura in Obligation 2 of the hierarchy.

Lead:	
	December 2024

Recommendation 9

Design and implement a knowledge programme, including state of the environment and plan effectiveness monitoring, to track progress towards targets and re-evaluate regulatory and non-regulatory responses. The monitoring programme shall:

a. Be equally informed by mātauranga Māori and Western science knowledge collection, including frameworks, protocols and practices so that the knowledge collected provides the benefit of both knowledge systems;

b. Incorporate new and confirmed monitoring sites recommended in this WIP, including new primary contact monitoring sites identified in accordance with Recommendation 3;

c. Identify and implement additional investigations, interventions, and monitoring needed to better understand the causes and effects of poor water quality to inform future management;

d. Ensure information is gathered to create a baseline state for any target attributes without sufficient information to determine a baseline, and new target attributes introduced by the WIP from 2024;

e. Develop a programme to undertake monitoring surveys of cultural and social attributes including:

   i. Monitoring mahinga kai cultural aggregate attributes identified in this WIP;

   ii. iMonitoring the wider community social attribute; and

f. Require the results of RMA section 35 monitoring relating to freshwater management in Te Whaitua o Kāpiti are proactively communicated with mana whenua, the Kāpiti Coast community, and Kāpiti Coast District Council, both through workshops led by relevant staff and the publication of easily digestible reports including online content.

Lead:	
	December 2024

Recommendation 10

Develop and implement a specific long-term monitoring programme to provide the data required to determine the needs of freshwater ecosystems and mahinga kai and inform the ongoing management of environmental flows and levels (including groundwater and lakes). This monitoring programme will incorporate measures of mātauranga Māori and take into account several matters, including but not limited to:

a. Mana whenua cultural connections with the awa;

b. The presence, distribution, and habitat requirements of mahinga kai and other taonga species;

c. Potential impacts of climate change;

d. Algal blooms;

e. Fish deaths;

f. The relationship between water quality and quantity, including concentrations of contaminants.

Lead:	Support:	
		December 2024

Recommendation 11

Improve knowledge of freshwater environments and methods necessary to support the achievement of environmental outcomes and target attribute states by:

a. Investigating a mechanism of defining and/or delineating lakes in the region for the purposes of prioritising monitoring and environmental management;

b. Identifying and mapping streams that were historically cobble-bottomed that are incorrectly classified as being naturally soft-bottomed in accordance with Appendix 2C of the NPS-FM;

c. Enhancing information about the connectivity of groundwater and surface water, including natural wetlands, to understand the influence of groundwater on the target attribute states. This should include:

   i. Identifying areas in Te Whaitua o Kāpiti where groundwater connectivity with surface water bodies is high, prioritising areas where nitrate concentrations in groundwater or surface water pose risks to ecological health, or where there is saline intrusion;

   ii. Undertaking additional targeted investigations necessary to understand the interaction between groundwater and surface water and/or management responses required to achieve target attribute states;

   iii. If acceptable amounts of surface and groundwater quality and quantity data exist, then the Whaitua Kāpiti groundwater model rebuild should be expanded to be an integrated surface and groundwater flow and quality model to better understand the transport of contaminants such as nitrate-nitrogen;

   iv. Identifying any actions, including regulatory changes necessary to ensure target attribute states are achieved; and

d. Improving data on existing private wells, including permitted takes, by December 2025 in Te Whaitua o Kāpiti, including their location, depth, and water quality, including through actions such as:

   i. Using social media or other education programmes to encourage landowners to supply information and data to Greater Wellington;

   ii. Undertaking targeted leaflet drops to properties in areas where there is limited information currently held; and

   iii. Carrying out site visits with the permission of landowners to locate private wells and test water quality.

Lead:	Support:	
		December 2025

Recommendation 12

Develop and implement protocols to ensure appropriate access and sharing, to ensure Māori data sovereignty is upheld with respect to any data produced by Māori, and data that are about Māori and the environments they have relationships with.

Lead:	
	December 2024

Recommendation 13

Ensure that knowledge is available to inform decision-making, including but not limited to policy and consenting decisions and mahinga kai tikanga by:

a. Giving mātauranga Māori the same weight as Western science in decision-making, so that it is embedded in policy and consenting processes of both councils;

b. Ensuring appropriate availability of knowledge and information via a living map52 that provides successive and current data and information to support kaitiaki decision-making and integrated management of risk in the catchment;

c. Ensuring the management of freshwater takes into account the modelled impacts of climate change, as well as any adaptation works undertaken in the catchment such as managed retreat/planned relocation, and soft and hard engineering;

d. Designing and managing a database of natural wetland offsetting projects undertaken as part of the effects management hierarchy to monitor and evaluate the success of implementation, including a data management protocol to ensure data is appropriately shared with Kāpiti Coast District Council, mana whenua, and relevant stakeholders; and

e. Requiring timely and meaningful sharing of information and forward planning with all relevant agencies with regard to the setting and implementation of environmental flows and levels and take limits.

Lead:	
	December 2024

Recommendation 14

Develop a programme to provide education and support to ensure that where planting and pest control will impact waterways, all restoration planting and pest control, including that which is required through consenting, will be informed by the local maramataka to ensure integrated and coordinated restoration efforts across Te Whaitua o Kāpiti so that the right plant is in the right place at the ideal time. This education and support may include:

a. Annual production of a local maramataka, led by Kāpiti Coast mana whenua (ĀRT) in collaboration with Kāpiti Coast District Council;

b. Training for Council staff, contractors, and community;

c. Education materials including investigating online resources such as GIS applications and a mobile app; and

d. Development of Council policies and processes to provide funding for pest management and planting in accordance with the maramataka.

Lead:	
	August 2024

Recommendation 15

Establish reliable funding to implement an intergenerational healing and restoration programme premised in rongoā mātauranga-ā-iwi. The programme will continue to redress trauma associated with the degradation and disconnection to waterways, and instil wai ora across current and future generations, providing opportunities for learning from pēpi through to kaumātua. The programme is Taiao-based education, seasonal and mai uta ki tai. The programme will be funded and developed through a seasonal approach.

Lead:	Support:	
		June 2024

Recommendation 16

Develop and implement a programme to improve community and mana whenua understanding of their connection and obligation to the wai of Kāpiti. This should include:

a. Enhancing mana whenua understanding of their connection through sharing whakapapa kōrero tuku iho and the complexity and nuance of whakapapa relationships, including through the production of educational resources;

b. Educating the Kāpiti community about the value, uses, and state of freshwater in Kāpiti so they understand the hierarchy of obligations in and principles of Te Mana o te Wai and the decision-making approach of Greater Wellington and Kāpiti Coast District Council;

c. An education campaign including community education days and the production of educational resources, such as permanent and maintained on-site signage in prominent locations in each of the FMUs, a dedicated web page (including information on where drinking water is sourced and the history and significance of wai), and annual social media campaigns (for a minimum of three years);

d. Te reo me ngā tikanga and mātauranga is incorporated through all education strategies; signage, naming, community events/education days, and other resources;

e. Promoting Greater Wellington's established Wetlands Programme for landowners, which provides funding, advice, and support to restore and protect wetlands on private property and Māori land; and

f. Resourcing and promoting groups including Māori landowners and community groups undertaking wetland restoration and pest management.

Lead:	Support:	December 2024

Recommendation 17

All decision-making on setting environmental flows and levels and take limits in Te Whaitua o Kāpiti must prioritise:

a. First, the health and well-being of water bodies, freshwater ecosystems including mahinga kai species (Obligation 1);

b. Second, the health needs of people (such as drinking water) (Obligation 2); and

c. Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future (Obligation 3).

Lead:	December 2024

Recommendation 18

Review and, where necessary, revise the environmental flows and levels and take limits within each FMU to implement the hierarchy of obligations identified in Recommendation 17. This process shall be guided by the following principles:

a. To achieve Obligation 1:
   i. Set environmental flows and levels for all waterways by:
      1. Applying 80 percent of Mean Annual Low Flow (MALF) in all rivers and streams;
      2. Protecting mahinga kai species and tikanga tuku iho by applying an additional 35% of MALF buffer in addition to the environmental flow calculated under (1);
      3. Responding to the potential changes in flows and levels from climate change by applying an additional 35% of MALF buffer in addition to the environmental flow calculated in (1) and (2);
   ii. Avoid any new abstraction of groundwater from aquifers for the purpose of augmenting surface water flows to prevent adverse effects on cultural values from the mixing of waters. and prohibit the recharging of the Ōtaki River with groundwater;
   iii. Protecting and managing aquifer ecosystems to allow them to fulfil their role in the hydrological cycle, including connections to other water bodies;
   iv. Identifying specific water bodies where new water abstractions need to be restricted to provide for the health and well-being of water bodies, freshwater ecosystems, and mahinga kai;

b. To achieve Obligation 2:
   i. Recognising and providing for immersion activities as additional health needs of people, including but not limited to swimming;
   ii. Investigating potential prioritisation of use under human health needs. If it is required, activities such as drinking water, sanitation and hygiene, health and harvesting of mahinga kai, fishing, essential community facilities, papakāinga, and others related to wairua, mauri, and spiritual sustenance will be considered;
   iii. Protecting and managing aquifers to prevent the intrusion of salt water and emerging contaminants, avoid consolidation, and ensure that pressures are suitable for water supply;
   iv. Accommodating projected population growth and climate change where appropriate;

c. To achieve Obligation 3:
   i. investigating opportunities and developing criteria for prioritising and incentivising certain uses of water that fall under this obligation, particularly where they are sustainable, efficient, and provide for the social, economic and cultural well-being of people and communities, now and in the future; and
   ii. the investigation under (c)(i) will involve engagement with the community and stakeholders to ensure there are no unintended consequences in a prioritisation system.

Lead:	Support:	December 2024

Recommendation 19

Undertake the following actions in relation to water allocation and use:

a. To achieve Obligations 2 and 3 as identified in Recommendation 17, apply a take limit of 10 percent of MALF as part of water allocation regimes for all rivers and streams, and:
   i. Within the take limit in (a), provide for an allocation for mana whenua as a right of first refusal as per Recommendation 8; and
   ii. Review take limits at a minimum of every 10 years to ensure these are set to appropriately account for changing environmental conditions.

b. Improved data collection on water take volumes and uses, including takes permitted under section 14(3)(b) of the RMA, in order to provide more accurate and transparent accounting of water use. This will involve requirements for metering on all water takes, including telemetry for takes from bores;

c. Requirements for common consent conditions on water permits, with a trigger to step down or cease abstraction in an FMU when an issue is identified in monitoring of another consent in the FMU (such as saline intrusion);

d. Aligning consent expiry dates and reviewing all water permits on a staged FMU-by-FMU (or part-FMU) basis to understand the impact of cumulative abstraction on the health of the awa and dependent ecosystems, and to transition to a more equitable allocation framework. Priority for reviews will be given to catchments with the highest level of over-allocation and/or adverse effects on water bodies. Review of consents should occur upon renewal in the first instance, or otherwise under s128 of the RMA if the FMU or part-FMU is over-allocated and there is no upcoming renewal within 5 years of the plan change becoming operative; and

e. Investigating a replacement to the "first-in-first-served" approach to processing water permits and allocating water. This will be informed by the water permit reviews undertaken under (c), and in investigating a replacement must consider alternative methods for providing more equitable allocation of resources, including but not limited to specific policy direction within FMUs to prioritise particular water uses or activities above others.

Lead:	December 2024

Recommendation 20

Develop and implement and provide ongoing funding for a programme for the enhancement and restoration of mahinga kai to achieve the long-term visions and environmental outcomes, and address issues outlined in this WIP for all water bodies:

a. Restore mauri so that there is a great abundance of mahinga kai;

b. Enhance mahinga kai, including for, but not limited to:
   i. Historic ngahere (forests);
   ii. Repo (wetlands);
   iii. Pā harakeke (flax plantings);
   iv. Rongoā plants;
   v. Kai moana and kai awa including tuna, inanga, and piharau (lamprey);

c. This programme shall:
   i. Be developed by June 2025 (funding for programme development in 2025-26 financial year;
   ii. Incorporate of measures of mātauranga Māori;
   iii. Investigate and identify potential mahinga kai sites and species and any actions needed to establish habitat or species;
   iv. Set a timeline for implementing all identified actions based on priority; and
   v. Outline a monitoring programme to assess the effectiveness of implemented actions.

Lead: Support:	June 2025

Recommendation 21

Investigate, develop and implement a habitat restoration monitoring methodology that enables an assessment of habitat quality in order to measure progress of improving habitat outcomes including:

a. Considering using HQI to set targets for habitat restoration that align with outcomes articulated by the Committee;

b. Considering applying the measure as a target attribute state as an objective in the NRP along with any associated methods to achieve it;

c. Following best practice guidance on designs and practices to maintain and improve habitat in relation to river management works

Lead:	June 2025

Recommendation 22

Develop, implement and provide ongoing funding for a restoration programme for the enhancement of habitat of all water body types. This programme shall:

a. Be developed by June 2025 (funding for programme development in 2025-26 financial year);

b. Incorporate measures of mātauranga Māori;

c. Seek to enhance ecosystem health;

d. Investigate and identify opportunities and actions to protect, restore, or enhance habitats including:
   i. Potential for restoring the natural form of modified streams, for example re-establishing natural meanders and daylighting piped streams;
   ii. Sites that require enhancement to meet habitat quality targets;
   iii. Actions for effective habitat enhancement or species establishment that can be applied to identified sites over time, agreeing good practice management for stream and channel maintenance, gravel extraction, silt, and vegetation clearance, alteration or removal of structures and restoration planting;
   iv. Identifying species at severe risk of decline and identifying locally extinct species and the potential for reintroduction;

e. Set a timeline for implementing all identified actions based on priority; and

f. Outline a monitoring programme to assess the effectiveness of implemented actions.

Lead: Support:	June 2025

Recommendation 23

Design and initiate the following pest and weed control programmes, with actions including:

a. As a high priority, undertake active removal of exotic aquatic weeds (e.g., hornwort, oxygen weed) with priority given to "hot spots" identified by the programme;

b. Active control of pest populations that contribute to poor water quality, including geese, carp, perch, rudd, gambusia, brown trout and tench; and

c. Active control of any other species identified in partnership.

Lead: Support:	December 2026

Recommendation 24

Progress the effective management and protection of natural inland wetlands in Te Whaitua o Kāpiti, including:

a. Providing support and advice on responding to changes due to climate change, including from rising or falling groundwater levels and interactions with flood management and flooding;

b. Investigating alternative models of management and ownership to protect wetlands from development;

c. Investigating options to adapt existing and future infrastructure design to allow natural processes to occur within natural inland wetlands without damaging infrastructure in wetlands;

d. Promoting best practice and educating developers on adding economic and aesthetic value when incorporating water sensitive urban design, such as incorporating existing or offset or constructed wetlands into new developments; and

e. Investigating where stormwater may be discharging into natural inland wetlands, assessing the effects on those wetlands including measures of mātauranga Māori, and alternative discharge options.

Lead:	December 2025

Recommendation 25

Advocate to central government through annual correspondence and formal submissions for the protection and restoration of natural inland wetlands, coastal wetlands, and peatlands to be included in the Emissions Trading Scheme.

Lead:	December 2026

Recommendation 26

Investigate and implement actions to improve the ecosystem and cultural health of estuaries in Te Whaitua o Kāpiti. The investigation should consider necessary actions (beyond those identified in this WIP) to manage/resolve:

a. Habitat loss, including the reductions in the area of salt marsh, cockle beds, and other habitats;

b. Undertaking estuarine restoration;

c. Water quality degradation including issues caused by sediment inputs;

d. Catchment flow alterations including estuarine mouth management and stream course alterations;

e. The presence of introduced weeds and nuisance algae;

f. Human disturbance of wildlife;

g. Reductions in the area of salt marsh, including undertaking estuarine planting to restore salt marsh area; and

h. Investigating and implementing policies and rules to improve the health of estuaries.

Lead: Support:	December 2025

Recommendation 27

Develop and implement measures to acknowledge unnamed awa/streams, including establishing a programme of work to ensure that traditional names are returned to the awa, and ensuring Te Reo Māori is upheld through appropriate signage and respected as part of the community's identity.

Lead:	December 2025

Recommendation 28

Develop and implement a pollution prevention programme by December 2026 aimed at avoiding contaminants entering the public or a private stormwater system. The pollution prevention programme could include:

a. Identification of catchments or hot spots within catchments that contribute a high dissolved copper and/or dissolved zinc load in stormwater discharges;

b. Prioritising high contaminant loss catchments or hot spots for actions to reduce contaminant loads entering the stormwater network;

c. Working with specific industries or suppliers to raise awareness of the risks of certain activities or products to stormwater quality with the aim of avoiding discharges of contaminants into stormwater drains; and

d. Investigating new or expanded initiatives to reduce the contaminant load of heavy metals entering the stormwater system, or removing contaminants from the stormwater network, such as increasing street sweeping frequency, installing new treatment devices and maintaining awareness of new innovative solutions.

Lead: Support:	December 2026

Recommendation 29

Investigate and implement a permitting system, such as a warrant of fitness system or bylaw, to ensure onsite wastewater disposal systems are correctly maintained. This will be supported by an education programme for septic tank owners to raise awareness of how to correctly use and maintain onsite wastewater systems. This could include, for example, a leaflet drop to all septic tank owners with guidance, a social media campaign, or a website with easy to follow guidance for correct use and maintenance.

Lead:	December 2025

Recommendation 30

Develop and implement an education programme for people undertaking open channel/modified waterways maintenance and clearance. The implementation programme should include actions such as:

a. Meeting with operators and landowners to provide advice on specific clearance sites; and

b. Promoting the application of Good Practices for the Mechanical Management of Highly Modified Waterways 2022.

Lead:	December 2025

Recommendation 31

Review and update the Kāpiti Coast District Council 2003 Sustainable Water Use Strategy to better provide for relevant long-term visions, values, and environmental outcomes in this WIP, including providing for Te Mana o te Wai.

Lead: Support:	December 2026

Recommendations by Freshwater Management Unit:

Lake Waiorongomai FMU:

Recommendation 32

Monitor and investigate the ecological health of the waterways of the Waiorongomai FMU and prepare and begin implementation of an action plan, incorporating measures of mātauranga Māori.

Lead: Support:	December 2025

Waitohu FMU:

Recommendation 33

Investigate the ecological health of Lake Waitawa and Ngātōtara Lagoon and tributaries, and prepare and begin implementation of action plans, incorporating measures of mātauranga Māori and including the following:

a. As a high priority, actions to reduce DIN levels especially where it is entering the Mangapouri. For example, investigating land use practice change to achieve nutrient limits including a potential nitrogen input cap and sinking lid approach to achieve targets;

b. Actions to ensure gravel extraction is carried out in a way that does not impede/delay the achievement of environmental outcomes; and

c. Education for the wider community about Lake Waitawa so that visitors to the lake understand that it is wāhi tapu and contains an urupā, and the significance of these to ensure cultural health and safety.

Lead: Support:	December 2025

Ōtaki FMU:

Recommendation 34

Develop and implement an action plan to achieve outcomes, including:

d. Ensuring Ngā Hapū o Ōtaki are a decision-maker with regard to actions and proposed developments alongside the Ōtaki River and tributaries; and

e. As a high priority, reviewing and updating the Ōtaki Floodplain Management Plan to identify any changes required to achieve target attribute states.

Lead: (NHoŌ):	December 2025

Mangaone FMU:

Recommendation 35

Develop and implement an action plan to achieve outcomes including:

a. Ensuring Ngā Hapū o Ōtaki are a decision-maker with regard to actions and proposed developments alongside the Mangaone Stream and associated wetlands and tributaries; and

b. As a high priority, undertaking actions to reduce DIN levels; for example, investigating land use change or other methods to achieve nutrient limits including a potential nitrogen input cap and sinking lid approach, as well as amending existing permitted activity rules.

Lead: (NHoŌ): Support: (AKW):	December 2025

Kōwhai FMU:

Recommendation 36

Develop and implement an action plan to achieve outcomes including:

a. Developing a storehouse of kōrero to recognise, understand and strengthen collective ties to the Kōwhai, including recognising and acknowledging the importance of Kōwhai as a shared boundary between Te Ātiawa ki Whakarongotai and Ngāti Raukawa;

b. Creation of a network of iwi kaitiaki and community stewards to connect restoration and monitoring work so that Te Ātiawa ki Whakarongotai, Ngā Hapū o Ōtaki and the wider community feel connected to the Kōwhai, including the ability to undertake customary activities including mahinga kai and passing on mātauranga Māori;

c. Considering regulating for increased development setbacks for buildings, structures and earthworks to improve natural character; and

d. Reestablishing rākau Kōwhai as key tohu along the banks.

Lead:	December 2025

Waimeha FMU:

Recommendation 37

Develop and implement an action plan to achieve outcomes including:

a. Prioritising an investigation into the sources and nature of the contaminants discharged into the Ngārara tributary, and from the Ngārara Stream tributary into the Waimeha. Make the results available as part of the next State of the Environment Report and identify actions to be taken to address these contaminants; and

b. Ensuring Te Ātiawa ki Whakarongotai are a decision-maker, including for consent applications for proposed developments that may directly or indirectly impact waterways within the Waimeha FMU; and

c. Investigating pathways for climate change adaptation.

Lead: (AKW):	December 2024

Waikanae FMU:

Recommendation 38

Investigate relocating the Wastewater Treatment Plant or alternative wastewater discharge locations from the Mazengarb catchment to a site that can have land-based treatment and ensures no waste is discharged to fresh or coastal water. Introduce the best option from this investigation into the KCDC Long Term Plan.

Lead: (AKW):	December 2025

Recommendation 39

Develop and implement an action plan to achieve outcomes including:

a. Developing a storehouse of kōrero-a-iwi and a-hapū alongside community information and data to recognise, understand, and strengthen collective ties to the Waikanae Awa to include: generation of mātauranga and development of knowledge in mātauranga taiao indicators, knowledge, environmental monitoring and management, revitalisation, health and wellbeing;

b. Creation of a network of mana whenua kaitiaki and community stewards to connect restoration and monitoring work in the waterways of the Waikanae FMU, including monitoring and reviewing tikanga for vehicle access;

c. Actions to ensure gravel extraction is carried out in a way that contributes to the achievement of environmental outcomes in this WIP;

d. Investigating the ecological health of Ngārara Lagoon and prepare and implement an action plan incorporating measures of mātauranga Māori and including direction for Greater Wellington, Kāpiti Coast District Council, and mana whenua to partner to carry out monitoring to ensure that the ecological health of Ngārara Lagoon is on a trajectory of improvement by 2030;

e. Educating the wider community about Waimanu Lagoon so that visitors understand that it is wāhi tapu and contains an urupā and the significance of these to ensure cultural health and safety;

f. Investigating naturalising the Tikotu stream, including daylighting; and

g. Ensuring that any relevant outputs of the Waikanae Ki Uta Ki Tai programme are considered and investigating if additional provisions need to be incorporated in plan provisions in the change to the Natural Resources Plan for Te Whaitua o Kāpiti.

Lead: (AKW):	December 2025

Wharemauku FMU:

Recommendation 40

Develop and implement an action plan to achieve outcomes including:

a. Restoring natural character values that have been lost due to historical flood engineering works, while retaining or increasing flood storage capacity;

b. Prioritising climate change adaptation measures in the Wharemauku, including managed retreat/planned relocation with the aim to limit the need for stream excavation, avoiding further wetland loss, and improving habitat; and

c. Undertaking an investigation to characterise contaminants in stormwater from hotspots, such as impervious surfaces and parking areas, that tests for a full range of contaminants including organochemicals. Using the results of this investigation and the pollution prevention programme specified in Recommendation 28, identify, and prioritise actions necessary to improve stormwater quality.

Lead: (AKW): Support:	December 2024

Whareroa FMU:

Recommendation 41

Develop and implement an action plan to achieve outcomes including:

a. As a high priority, develop and deliver a knowledge plan which includes:

   i. Generation of mātauranga and development of knowledge in mātauranga taiao indicators, environmental monitoring and management, revitalisation, health and wellbeing;

   ii. A storehouse of kōrero to recognise, understand and strengthen collective ties to the Whareroa and its cultural landscape;

   iii. A combined, culturally responsive GIS information management platform to inform integrated management;

   iv. The creation of a network of iwi kaitiaki and community stewards to connect restoration and monitoring work in the waterways of the Whareroa FMU; and

   v. Establishment of a base for volunteers and rangatahi to work from.

b. Using measures of mātauranga Māori, improve the Whareroa catchment, including by the following:

   i. Undertaking significant riparian planting to help mitigate discharges from the highway and ensuring that water temperature remains cool enough to sustain aquatic life;

   ii. Improving dissolved oxygen levels;

   iii. Protecting, maintaining, and restoring wetlands in the FMU;

   iv. Enhancing connectivity throughout the catchment, especially for migratory tuna, inanga, and kōkopu; and

   v. The development of education programmes to support positive behavioural change and enable rongoā, maramataka, and mahinga kai.

Lead: Support:	December 2024

Wainui and Paekākāriki FMU:

Recommendation 42

Develop and implement an action plan to achieve outcomes including:

a. As a high priority, investigate and restore fish passage and enhance connectivity throughout the catchment, especially for migratory tuna, inanga, and kōkopu, prioritising actions in the Te Aranui o Rangihaeata/Transmission Gully; and

b. Monitor and if necessary review consent conditions for Te Aranui o Rangihaeata/Transmission Gully relating to awa restoration to ensure that these are restored and/or left in a better state in a way that preserves their natural character.

Lead:	December 2025

Kāpiti FMU:

Recommendation 43

Develop and implement an action plan to achieve outcomes including:

a. Appropriate protocols for monitoring which take into account the cultural sensitivity of Kāpiti Island; and

b. An education programme about Kāpiti Island with specific reference to places of cultural significance in relation to the importance of wai.

Lead: Support:	December 2024

Giant kōkopu. Photo: Tiana Hakaraia Morgans

References

Aquanet. (2023). *Water Quality and Ecological State Report – Ōtaki.* Prepared by Aquanet for Greater Wellington Regional Council. 54p

Aquanet. (2023). *Water Quality and Ecological State Report – Waikanae.* Prepared by Aquanet for Greater Wellington Regional Council. 46p

Aquanet. (2023). *Water Quality and Ecological State Report – Whareroa.* Prepared by Aquanet for Greater Wellington Regional Council. 39p

Australian and New Zealand Environment and Conservation Council (ANZECC), & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ). (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* https://www.waterquality.gov.au/anz-guidelines/resources/previous-guidelines/anzecc-armcanz-2000

Baker, M. (2019). *Te Kete Tua-ātea, Māori modelling of the future and the kaitiakitanga of water. A thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Resource and Environmental Planning.* Massey University, Manawatū, Aotearoa New Zealand.

Death, R. (2024). A Bayesian model to assist Te Whaitua o Kāpiti in developing freshwater ecosystem guidelines for streams and rivers in Kāpiti. www.gw.govt.nz/environment/freshwater

Death, R. G., Death, F., Stubbington, R., Joy, M. K., & van de Belt, M. (2015). How good are Bayesian belief networks for environmental management? A test with data from an agricultural river catchment. *Freshwater Biology,* 60(11), 2297-2309.

Department of Conservation. (2024, March 27). *NZTCS New Zealand Threat Classification System.* https://nztcs.org.nz/

Duckworth, S., Lamb-Yorski, R., & Wynd, D. (2023). *Have your say on the future of Kāpiti freshwater: Freshwater values and aspirations community research.* Litmus. https://www.gw.govt.nz/assets/Documents/2023/11/FINAL_Whaitua-Kapiti-community-engagement-report_Apr2023.pdf

Egan, E., Woolley, J. M., & Williams, E. (2020). *Climate change vulnerability assessment of selected taonga freshwater species: Technical report.* NIWA.

Greater Wellington Regional Council. (1998). *Otaki Floodplain Management Plan for the Otaki River and its environment.* https://www.gw.govt.nz/assets/Documents/2021/11/FP-Otaki-FMP.pdf

Greater Wellington Regional Council. (2003). *Wetland Action Plan.* https://www.gw.govt.nz/assets/Documents/2003/04/Environment-Management_20030611_095644.pdf

Greater Wellington Regional Council. (2023). *Environmental data and information.* https://www.gw.govt.nz/environment/environmental-data-and-information/

Greater Wellington Regional Council. (2023). *River water quality and ecology annual report 2022/23.* https://www.gw.govt.nz/annual-monitoring-reports/river-water-quality-and-ecology/river-water-quality-and-ecology/

Grill, G., Lehner, B., Thieme, M., Geenen, B., Tickner, D., Antonelli, F., Babu, S., Borrelli, P., Cheng, L., Crochetiere, H., Ehalt Macedo, H., Filgueiras, R., Goichot, M., Higgins, H., Hogan, Z., Lip, B., McClain, M. E., Meng, J., Mulligan, M., … Zarfl, C. (2019). *Mapping the world's free-flowing rivers. Nature, 569, 215-221.* https://doi.org/10.1038/s41586-019-1111-9

Housiaux, J. (2023). Mackays to Peka Peka (M2PP) *Kaitiaki Monitoring Programme Report 2023.* https://teatiawakikapiti.co.nz/wp-content/uploads/2023/09/M2PP-Kaitiaki-Monitoring-Programme-Report.pdf

Hutchings, J., Tipene, P., Carney, G., Greensill, A., Skelton, P., & Baker, M. (2012). Hua parakore: an indigenous food sovereignty initiative and hallmark of excellence for food and product production. *Mai Journal, 1*(2), 131-145.O

Kāpiti Coast District Council. (2022, September 12). *Learning about harakeke care.* https://www.kapiticoast.govt.nz/council/news-and-information/news-archive/2022/learning-about-harakeke-care/

Kāpiti Coast District Council. (2022, March 4). *Kaitiakitanga with Hemaima and Sharlene* [Video]. YouTube. https://www.youtube.com/watch?v=yLUQZTyYTVU

Kāpiti Coast District Council. (2024). *Our district's history.* https://www.kapiticoast.govt.nz/community/heritage/district-history/

Mauri Tūhono ki Te Upoko o Te Ika. (2024). *Framework Te Reo.* https://www.maurituhono.org.nz/frameworktereo

National Institute of Water & Atmospheric Research Ltd (NIWA). (2017). *Climate change and variability – Wellington Region. Prepared for Greater Wellington Regional Council.* https://www.gw.govt.nz/assets/Documents/2022/05/Climate-Change-and-Variability-report-Wlgtn-Regn-High-Res-with-Appendix.pdf

Orange, C. (1987). *The Treaty of Waitangi.* Auckland: Allen & Unwin. Page 62.

Potter, H., Spinks, A., Joy, M., Baker, M., Poutama, M., & Hardy, D. (2017). *Porirua Ki Manawatū Inland Waterways Historical Report.* https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_146545818/Wai%202200%2C%20A197.pdf

Rāwiri, Ā (ed.) *Tahi ki a Maru: Water, fishing and tikanga in Ngāti Raukawa ki te Tonga.* (2018) Te Tākupu, Te Wānanga o Raukawa Ōtaki. https://tetakupu.wananga.com/products/e-tahi-ki-a-maru

Royal Society Te Apārangi. (2023) *Mana Raraunga Data Sovereignty.* https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/mana-raraunga-data-sovereignty

Spinks, A. (2018). *Restoring the mauri of coastal dune lake ecosystems: The case study of Lake Waiorongomai, Ōtaki Aotearoa/New Zealand.* Doctoral thesis submitted to Massey University.

Te Ātiawa ki Whakarongotai. (2019). *Whakarongotai o te moana Whakarongotai o te wa. Kaitiakitanga Plan for Te Ātiawa ki Whakarongotai.* https://teatiawakikapiti.co.nz/wp-content/uploads/2019/07/TAKW-Kaitiakitanga-Plan-V6-online-2.pdf

Te Ātiawa ki Whakarongotai. (2022, June 28). *Maramataka launch 2022-23: Mahi rongoā by the moon.* https://teatiawakikapiti.co.nz/maramataka-launch-2022-23/

Te Mana Raraunga. (2024). *Our Data, Our Sovereignty, Our Future.* https://www.temanararaunga.maori.nz/

Waikanae ki uta ki tai. (2024). *Waikanae ki uta ki tai.* https://www.waikanaeawa.org.nz/waikanae-ki-uta-ki-tai/

GIS reference list

Layers	Reference
FMU	Te Whaitua o Kāpiti Committee. "FMU" [Shapefile]. Nov, 2023.
Mana whenua – sites of significance	Greater Wellington Regional Council. "Schedule C - Sites with significant mana whenua values" [Group Layer]. Publish Date Unknown. Layer: Schedule C - Sites with significant mana whenua values (ID: 2) (gw.govt.nz) (August 14, 2024)
Te Whaitua o Kāpiti Nitrates	Te Whaitua o Kāpiti Committee. "Te Whaitua o Kāpiti nitrate levels" [Shapefile]. Nov, 2023.
Te Whaitua o Kāpiti monitoring sites	Te Whaitua o Kāpiti Committee. "Te Whaitua o Kāpiti monitoring sites" [Shapefile]. Feb, 2024.
GWRC water quality	Layer: Water Quality Sites (ID: 4) (gw.govt.nz) [Note these are for the region and include groundwater and swimming sites as well]
GWRC landuse	Greater Wellington Regional Council. "CLM Layer" [Shapefile]. Created May 2022.
GWRC wetlands	Greater Wellington Regional Council. "Schedule F3 - Significant Natural Wetlands" [Feature Service Feature Class]. Publish Date Unknown. Layer: Schedule F3 - Significant Natural Wetlands (ID: 20) (gw.govt.nz) (August 14, 2024)
MfE current wetland layers	Ministry for the Environment. Creative Commons Attribution 3.0 New Zealand. "Current wetland extent, 2013" [Vector polygon layer]. Apr 24, 2017. https://data.mfe.govt.nz/layer/52676-current-wetland-extent-2013/ (August 14, 2024)
MfE predicted wetlands	Ministry for the Environment. Creative Commons Attribution 3.0 New Zealand. "Prediction of wetlands before humans arrived" [Vector polygon layer]. Apr 24, 2017. https://data.mfe.govt.nz/layer/52676-current-wetland-extent-2013/ (August 14, 2024)
MfE rivers	Ministry for the Environment. Creative Commons Attribution 3.0 New Zealand. "River Environment Classification New Zealand (2010)" [Shapefile]. Dec 23, 2013. https://data.mfe.govt.nz/layer/51845-river-environment-classification-new-zealand-2010/ (August 14, 2024)

Implementation Commencement Timeframes for Recommendations

		Number	Recommendation	Timeframe for Commencing Recommendation		
				2024	2025	2026
Mana Whakahaere and Governance	Committing to the reccs	Rec 1	Adoption by Greater Wellington, launch of WIP and development of the Oversight Committee	August		
		Rec 2	Notify WIP Regional Policy Statement and Natural Resources Plan changes	December		
		Rec 3	Deliver actions to give effect to the NPS for Freshwater Management 2020, achieve target attribute states, and WIP outcomes	December		
		Rec 4	Improve cross agency coordination of freshwater work and budgets		June	
		Rec 5	Improve consent compliance, monitoring and enforcement		December	
		Rec 6	Advocate Central Government for funding for aquifer research			March
		Rec 7	Memorandum of Understanding for partners in the management of freshwater	December		
		Rec 8	Provide for mana whenua rights and interests in freshwater in Te Whaitua o Kāpiti	December		
	Baskets of knowledge	Rec 9	Design and implement a knowledge programme, including state of the environment and plan effectiveness monitoring, to track progress and re-evaluate regulatory and non-regulatory responses	December		
		Rec 10	Deliver a long-term monitoring programme to provide the data to determine the needs of freshwater ecosystems and mahinga kai and inform the ongoing management of environmental flows and levels	December		
		Rec 11	Improve knowledge of freshwater environments and methods to support the achievement of environmental outcomes and target attribute states		December	
		Rec 12	Develop Māori data sovereignty protocols	December		
		Rec 13	Ensure that knowledge is available to inform decision-making, including but not limited to policy and consenting decisions and mahinga kai tikanga	December		
	Reconnection with te taiao	Rec 14	Develop an education programme on how local maramataka can be used ensure integrated and coordinated restoration efforts	August		
		Rec 15	Funding to implement an intergenerational healing and restoration programme premised in rongoā mātauranga-ā-iwi	June		
		Rec 16	Programme to improve community's connection to wai	December		

KEY:

- Regulatory review
- Regulatory procedural changes
- Information and monitoring
- Non-regulatory programme and restoration
- Advocacy
- Develop action plan
- KCDC lead

		Number	Recommendation	Timeframe for Commencing Recommendation		
				2024	2025	2026
Kaitiakitanga and Stewardship	Protecting wai	Rec 17	Apply Te Mana o Te Wai principles when setting allocation limits in Natural Resources Plan	December		
		Rec 18	Review and revise flows and take limits in Natural Resources Plan	December		
		Rec 19	Address water allocation	December		
	Habitat enhancement and restoration	Rec 20	Develop and implement mahinga kai restoration programme		June	
		Rec 21	Develop habitat restoration methodology		June	
		Rec 22	Develop and implement habitat restoration programme		June	
		Rec 23	Design and initiate pest and weed control programmes			December
	Wetlands and estuaries	Rec 24	Progress the effective management and protection of natural inland wetlands		December	
		Rec 25	Advocate to central government for wetlands to be included in the Emissions Trading Scheme			December
		Rec 26	Investigate and implement actions to improve the ecosystem and cultural health of estuaries		December	
Manaakitanga and Care and Respect	Restoring the mana of ara wai	Rec 27	Implement measures to acknowledge unnamed awa/streams, including ensuring that traditional names are returned to the awa		December	
	Changing established practices	Rec 28	A pollution prevention programme aimed at avoiding contaminants entering the public or a private stormwater system			December
		Rec 29	Implement a permitting system, such as a warrant of fitness system or bylaw, to ensure onsite wastewater disposal systems are correctly maintained		December	
		Rec 30	Develop and implement an education programme for people undertaking open channel/modified waterways maintenance and clearance		December	
		Rec 31	Review and update the Kāpiti Coast District Council 2003 Sustainable Water Use Strategy			December
FMU-Specific Recommendations	Waiorongomai	Rec 32	Monitor, investigate and prepare action plan		December	
	Waitohu	Rec 33	Investigate the ecological health of Lake Waitawa and Ngātōtara Lagoon and develop action plans		December	
	Ōtaki	Rec 34	Review and update Ōtaki flood management plan and develop action plan		December	
	Mangone	Rec 35	Develop and implement action plan		December	
	Waimeha	Rec 36	Develop and implement action plan	December		
	Kōwhai	Rec 37	Develop and implement action plan		December	
	Waikanae	Rec 38	Investigate relocating the Mazengarb wastewater treatment plant or alternative discharge locations		December	
		Rec 39	Develop and implement action plan		December	
	Wharemauku	Rec 40	Develop and implement action plan	December		
	Whareroa	Rec 41	Develop and implement action plan	December		
	Wainui and Paekākāriki	Rec 42	Develop and implement action plan		December	
	Kāpiti Island	Rec 43	Kāpiti Island management actions	December		

Appendices

Appendix 1: Summary of the National Policy Statement for Freshwater Management 2020

This appendix provides a summary of the direction in the NPS-FM that guided the Committee's work programme and decision-making.

Overview

The NPS-FM came into force on 3 September 2020. It replaced the National Policy Statement for Freshwater Management 2014 (amended 2017).

Broadly, the NPS-FM sets the direction for freshwater quality and quantity management in New Zealand through the framework of Te Mana o te Wai. Te Mana o te Wai is described as the fundamental concept for the NPS-FM, recognising that protecting the health of fresh water protects the health and well-being of the wider environment. An important component of implementing Te Mana o te Wai is the hierarchy of obligations (see below).

The NPS-FM applies to all freshwater (including groundwater) and, to the extent they are affected by freshwater, to receiving environments such as estuaries and the coastal marine area.

Regional and district (where relevant) councils are directed under the RMA to give effect to the requirements of the NPS-FM when developing statutory plans and plan changes.

Key Parts of the NPS-FM

The NPS-FM is comprised of four parts:

- Part 1 contains preliminary provisions.
- Part 2 contains the objective and policies of the NPS
  Part 3 contains direction on implementation, relating to how to give effect to Te Mana o te Wai, the NOF process, and other matters.
- Part 4 contains timing and transitional matters.

Key direction within each of these parts, where particularly relevant to this Whaitua process, is summarised below.

Te Mana o te Wai and Policy Direction

Te Mana o te Wai underpins the NPS-FM and is central to all decision-making on freshwater. Te Mana o te Wai recognises the fundamental importance of water and that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai.

Te Mana o te Wai encompasses six principles relating to the roles of tangata whenua and other New Zealanders in the management of freshwater: [102]

- **Mana whakahaere:** the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater.
- **Kaitiakitanga:** the obligations of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations.
- **Manaakitanga:** the process by which tangata whenua show respect, generosity, and care for freshwater and for others.
- **Governance:** the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future.
- **Stewardship:** the obligations of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations.
- **Care and respect:** the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

As outlined above, Te Mana o te Wai contains a hierarchy of obligations. The single objective of the NPS-FM mirrors this hierarchy and requires natural and physical resources to be managed in a way that prioritises:

- First, the health and well-being of water bodies and freshwater ecosystems
- Second, the health needs of people (such as drinking water)
- Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Regional councils are required to engage with communities and tangata whenua to determine how Te Mana o te Wai applies to water bodies and freshwater ecosystems in the region. It also requires an objective to be included in the RPS that describes how the management of freshwater in the region will give effect to Te Mana o te Wai.

The NPS-FM contains 14 policies which specify the high-level courses of action for achieving its objective. In summary, these policies direct:

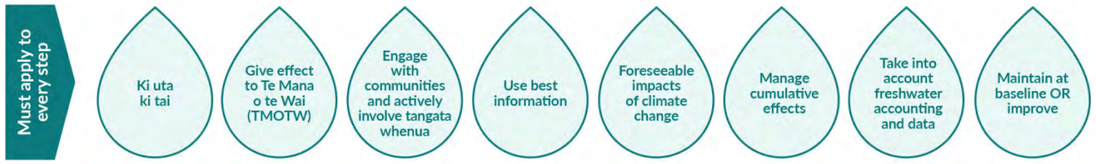
- Freshwater is managed in a way that gives effect to Te Mana o te Wai.
- Kaupapa wai Māori/Māori freshwater values are identified and provided for.
- Tangata whenua are actively involved in freshwater management.
- Freshwater is managed on an integrated, whole-of-catchment basis, and so as to integrate with New Zealand's response to climate change.
- Freshwater is managed through a NOF
- There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration promoted.
- The loss of river extent and values is avoided to the extent practicable.
- The significant values of outstanding water bodies and the habitats of indigenous freshwater species are protected. The habitat of trout and salmon is protected in so far it is consistent with protecting indigenous species habitat.
- Freshwater is allocated and used efficiently, all existing over-allocation is phased out, and future over allocation is avoided.
- The national target for 80 percent of specified lakes and rivers to be suitable for primary contact creation (such as swimming) by 2030 and 90 percent by 2040, is achieved.
- The condition of water bodies and freshwater ecosystems is systematically monitored over time and action is taken where it is degraded to reverse this.
- There is regular reporting on the state of water bodies and freshwater ecosystems.
- Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with direction in the NPS-FM.

102 NPS-FM, clause 1.6(4).

National Objectives Framework

The NOF is the 'engine room' of the NPS-FM and establishes a collaborative process for giving effect to Te Mana o te Wai. In summary, the NOF process requires Greater Wellington to[103]:

- Identify spatial units for freshwater management and accounting purposes (FMU)
- Set long-term visions (ambitious but reasonable goals) for each FMU to describe what mana whenua and the community want the water bodies and freshwater ecosystems in their region to look like in future
- Identify values for each FMU and desired outcomes for each value
- Identify attributes (measurable characteristics) for each value and set baseline and target attribute states
- Set environmental flows and levels to achieve outcomes for water quantity
- Set limits, prepare action plans and impose consent conditions (if necessary) to achieve target attribute states and environmental flows and levels
- Monitor water bodies and freshwater ecosystems and take action if degradation is detected.



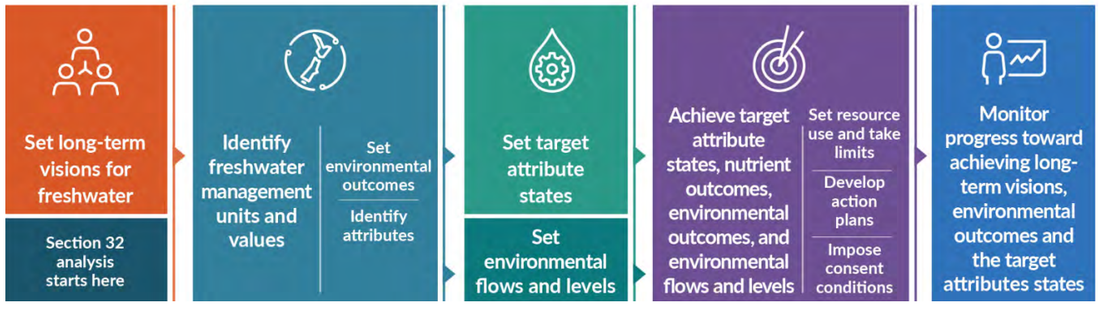


***Figure 1**: Key steps in the NOF process. Source: MfE (2023).*

At each step of the process, the NPS-FM directs Greater Wellington to give effect to Te Mana o te Wai and engage with communities and actively involve tangata whenua.[104] Council must also use an integrated approach (ki uta ki tai), manage cumulative effects and take into account the challenges and changing circumstances of climate change.

Figure 1 demonstrates the relationship between the NOF steps and their influence on the relevant policy mechanisms in the Greater Wellington region. A clear 'line of sight' between different outputs of the NOF process to therefore important to ensure there is alignment and the relevant long-term visions and Te Mana o te Wai.

103 NPS-FM, clause 3.7(2).
104 NPS-FM, clause 3.7(1).

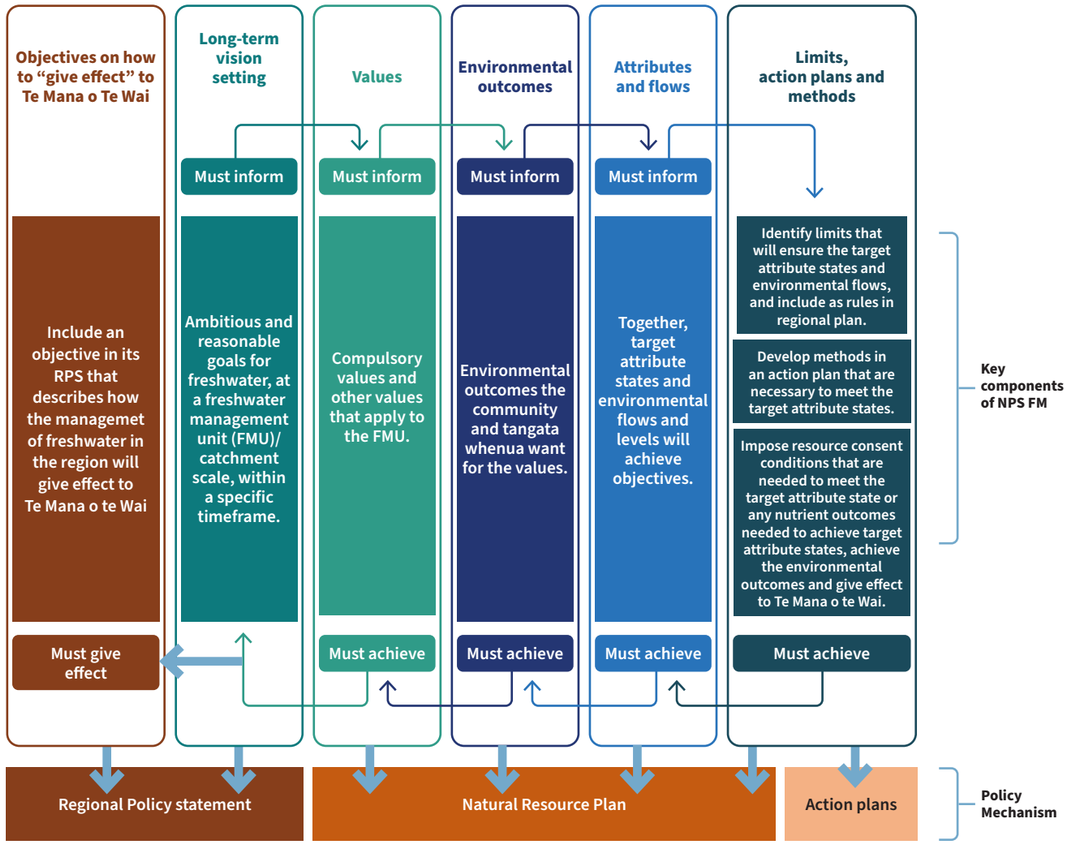


***Figure 2:** Linkages between NOF steps and Greater Wellington policy mechanisms. Modified from: MfE (2023).*

Each of the key NOF steps which informed the decisions and Recommendations made by the Committee are described below.

Freshwater Management Units and special sites and features

The NPS-FM requires freshwater management units (FMU) to be identified for each region.[105]

FMUs are spatial units identified for the purpose of freshwater management and accounting. Identification of FMUs is a prerequisite to all other steps in the NOF. FMUs can include all or any part of a water body or water bodies, and their related catchments. FMUs can also be split into part-FMUs to recognise where a specific site, river reach, water body or part of a body may require distinct management. Every water body must be located within at least one FMU.[106]

All FMUs and part-FMUs must also contain one or more monitoring sites to track progress toward, and report on, the achievement of long-term visions and target attribute states. These sites, except where they monitor Kaupapa wai Māori/Māori freshwater values (see 'Values, environmental outcomes and attributes' section below), must be representative of the FMU or part-FMU. If an FMU contains primary contact sites, at least one representative monitoring site must be identified for that value. Reporting and freshwater accounting are key requirements that must be undertaken at the FMU scale.

105 NPS-FM, clause 3.8(1).
106 NPS-FM, clause 3.8(2).

In addition to monitoring sites, the NPS-FM also requires regional councils to identify (if present) several 'special sites and features' including primary contact sites, the location of habitats of threatened species, outstanding water bodies and natural inland wetlands within each FMU.

Long-term Visions for Freshwater

The NPS-FM requires regional councils to develop long-term visions for freshwater in its region, to be included as objectives in the RPS.[107] Long-term visions should describe what the community and mana whenua want the relevant freshwater bodies (and wider FMU, part FMU or catchment) to be like in the future. The vision sets the future desired state of wai; it creates a destination against which to measure progress toward achieving a state of health for water bodies.

Long-term visions for freshwater can be set at the level of an FMU, part of an FMU, or catchment; their aim is to set goals that are 'ambitious but reasonable' within an identified timeframe that is 'both ambitious and reasonable'.[108] This provides for long-term planning, beyond the 10-year cycle of reviewing individual plans.

Long-term visions must be developed through engagement with communities and tangata whenua and be informed by an understanding of the history of, and pressures on, the FMU, part FMU, catchment.[109]

As they sit in the RPS, long-term visions must be given effect to by regional and district plans. Therefore, the NPS-FM envisages that collective action across local authority functions may be required to achieve long-term visions.

Values, Environmental Outcomes and Attributes

The NPS-FM requires values to be identified for each FMU or part-FMU. Four compulsory values of ecosystem health, human contact, threatened species, and mahinga kai are provided, which apply to every FMU.[110] An additional nine values are included in the NPS-FM, which must be considered and applied to FMUs, if applicable.[111]

The NPS-FM also has scope for additional values to be identified and applied, including Māori freshwater values. Māori freshwater values are defined in the NPS-FM as the compulsory value of mahinga kai and any other value identified for a particular FMU or part FMU through collaboration between tangata whenua and Greater Wellington.[112]

Environmental outcomes must be set for each value that applies to an FMU or part-FMU and included as objectives in regional plans.[113] An environmental outcome is essentially a desired outcome for each value and must, when achieved, fulfil the relevant long-term vision. These outcomes must be described in a way that enables an assessment of the effectiveness of the RPS and plans (including limits and methods) and action plans in achieving the environmental outcome.[114]

The NPS-FM also requires that for each value that applies to an FMU or part of and FMU, attributes shall be identified.

An attribute is defined as *"a measurable characteristic (numeric, narrative, or both) that can be used to assess the extent to which a particular value is provided for."*[115] Appendices 2A and 2B of the NPS-FM list a number of compulsory attributes for the ecosystem health and human contact values that must be used. Other attributes can be identified for any compulsory value and where practicable, attributes must be selected for all other applicable values.

If attributes cannot be identified for a value, or if attributes are insufficient to assess a value, regional councils must identify alternative criteria to assess whether the environmental outcome of the value is being achieved.[116]

Baseline States and Target Attribute States

The NPS-FM requires baseline states to be set for each attribute. The baseline state is defined as:

a. *the state of the attribute on the date it is first identified by a regional council under clause 3.10(1)(b) or (c)*
b. *the state of the attribute on the date on which a regional council set a freshwater objective for the attribute under the National Policy Statement for Freshwater Management 2014 (as amended in 2017)*
c. *the state of the attribute on 7 September 2017."*[117]

The baseline state sets the starting point for determining if an attribute can be maintained or needs to be improved to achieve the environmental outcomes.

Target attribute states are set for every attribute and must be set at either the baseline state, or above it. If the baseline state is below the national bottom line, it must be set at, or above the national bottom line unless an exception applies.[118] Every target attribute state must specify a timeframe for achieving the target attribute state or from when it will be maintained if it is already achieved.

Timeframes may be any length or period, but if the timeframes are long-term, interim target attribute states must be used to assess progress at intervals no longer than 10 years.[119]

Regional councils must ensure that target attribute states are set in a way that will achieve the environmental outcomes for the relevant values and long-term vision. When setting targets, regard must also be had to connections between water bodies and water bodies to receiving environments and consider results or information from freshwater accounting systems.

Environmental Flows and Levels and Take Limits

Regional councils must include rules in regional plans that set environmental flows and levels for each FMU and may set different flows and levels for different parts of an FMU.[120]

Flows and levels must be set at a level that achieves the environmental outcomes for the values relating to the FMU or relevant part of the FMU and all relevant long-term visions but may take a phased approach to their achievement.[121]

Environmental flows and levels must be expressed in terms of the water level and flow rate (and may include flow variability) at which any taking, damming, diversion, or discharge of water meets the environmental outcomes for the water body, any connected water body, and receiving environments.[122]

When setting environmental flows and levels, regional councils must have regard to the foreseeable impacts of climate change and take into account results or information from freshwater accounting systems.[123]

107 NPS-FM, clause 3.3(1).
108 NPS-FM, clause 3.3(2).
109 NPS-FM, clause 3.3(3).
110 NPS-FM, Appendix 1A.
111 NPS-FM, Appendix 1B.
112 NPS-FM, clause 1.4.
113 NPS-FM, clauses 3.9(2) and 3.9(3).
114 NPS-FM, clause 3.9(5).
115 NPS-FM, clause 1.4.
116 NPS-FM, clause 3.10(1).
117 NPS-FM, clause 1.4.
118 NPS-FM, clause 3.11.
119 NPS-FM, clause 3.11(6).
120 NPS-FM, clause 3.16(1).
121 NPS-FM, clause 3.16(2).
122 NPS-FM, clause 3.16(3).
123 NPS-FM, clause 3.16(4).

To achieve the environmental flows and levels, regional councils:[124]

- must identify take limits for each FMU;
- must include the take limits as rules in its regional plan(s);
- must state in the regional plan whether (and if so, when and which) existing water permits will be reviewed to comply with environmental flows and levels; and
- may impose conditions on resource consents.

Take limits must be expressed as a total volume, a total rate, or both, at which water may be taken or diverted from, or dammed within, an FMU or part of an FMU. Take limits must also provide for a range of listed matters, including flow or level variability in water bodies, and the life cycle needs of aquatic life.

Achieving Target Attribute States and Identifying Limits

Clause 3.12 outlines the regional council's obligations regarding the achievement of target attribute states, including by applying limits on resource use.

The NPS-FM defines limits on resource use as:

> *"…the maximum amount of resource use that is permissible while still achieving a relevant target attribute state or a nutrient outcome needed to achieve a target attribute state."*

To achieve target attribute states for attributes in Appendix 2A, and any nutrient outcomes, regional councils:

- must identify limits on resource use that will achieve the above and include these as rules in its regional plan.
- may also prepare an action plan (see 'Action plans' section below) and/or impose conditions on resource consents.

To achieve target attribute states for attributes in Appendix 2B, regional councils:

- may identify limits on resource use and include them as rules in its regional plan.
- must also prepare an action plan for achieving the target attribute states within a specified timeframe and may impose conditions on resource consents.

To achieve any other target attribute states or otherwise support the achievement of environmental outcomes, regional councils must either identify limits on resource use and include them as rules in its regional plan, or prepare an action plan, or impose conditions on resource consents to achieve target attribute states.

Clause 3.12(4) states that where the same attribute provides for more than one value, it is the most stringent target attribute state applying to those values that must be achieved.

Limits on resource use may apply to any activity or land use, apply at any scale (e.g., all or any part of an FMU, a specific water body or individual property), be expressed as a land-use control, input control, or output control, and describe the circumstances in which the limit applies.

Special Provisions for Attributes Affected by Nutrients

The NPS-FM states that to achieve a target attribute state for any nutrient attribute, and any attribute affected by nutrients, regional councils must, at a minimum set appropriate instream concentrations and exceedance criteria, or instream loads for nitrogen and phosphorus.[125]

These are defined in the NPS-FM as 'nutrient outcomes needed to achieve target attribute states'.

Where there are nutrient-sensitive downstream environments, the nutrient outcomes for the upstream contributing water bodies must be set so as to achieve the environmental outcomes sought for those downstream environments. In setting the nutrient outcomes, regional councils must determine the most appropriate form(s) of nitrogen and phosphorus needed to achieve target attribute states.[126]

Examples of attributes affected by nutrients include periphyton, dissolved oxygen, submerged plants (invasive species), fish (rivers), macroinvertebrates and ecosystem metabolism.

Action Plans

As outlined above, regional councils must prepare action plans to achieve the target attribute states of attributes listed in Appendix 2B. Action plans may also be prepared to achieve the target attribute states for attributes in Appendix 2A, any nutrient outcomes, any other target attribute states or to otherwise support the achievement of environmental outcomes.[127]

If prepared for the purpose of achieving a target attribute state or supporting the achievement of environmental outcomes, action plans must identify the specific outcome and set out how the regional council will or intends to achieve the target attribute state.

Action plans may be prepared for any spatial scale and may describe both regulatory measures (such as proposals to amend RPS and plans) and non-regulatory measures (such as work plans or projects and partnership arrangements with community groups). Action plans must be reviewed within five years after they are published.

Other related mandatory action plans that sit outside of the NOF process include those required for turning soft-bottomed streams to hard bottomed streams, and in relation to fish passage.

Monitoring, Assessing Trends and Responding to Degradation

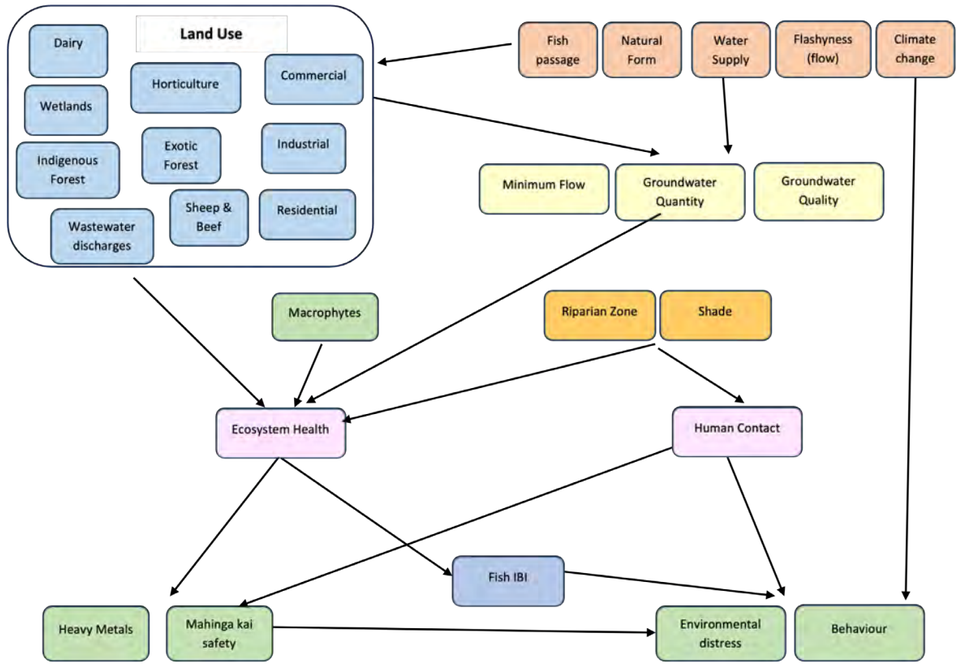
The NOF also requires regional councils to monitor water bodies and freshwater ecosystems and take action if degradation is detected. Monitoring is necessary to track progress toward achieving target attribute states and environmental outcomes.

Monitoring methods must include measures of mātauranga Māori and the health of indigenous flora and fauna. They must also recognise the importance of long-term trends, and the relationship between results and their

124 NPS-FM, clause 3.17(1).
125 NPS-FM, clause 3.13(1).
126 NPS-FM, clause 3.13(2).
127 NPS-FM, clauses 3.12(1) to (3).

Waikanae Estuary, full moon over Kōtuku Park. Photo: Sharlene Maoate-Davis

Appendix 2: Committee Conceptual Model and Attributes/Components Incorporated into the Kāpiti Freshwater BBN Model



The following components/attributes were included in the BBN model used by the Te Whaitua o Kāpiti Committee in their decision-making on target attribute states:

- Land uses (indigenous forest, exotic forest, high intensity agriculture, low intensity agriculture, lifestyle and urban)
- Dissolved inorganic nitrogen
- Dissolved reactive phosphorus
- Habitat Quality Index
- Presence of riparian zone
- Fish – IBI
- Mahinga kai – heavy metals attributes
- Mahinga kai – cultural aggregate
- Mahinga kai – tuna condition and abundance
- Mahinga kai – campylobacter
- MCI
- QMCI

Appendix 3: Committee Expression of Te Mana o te Wai

Te Mana o te Wai

- The waterways in the Kāpiti Coast District are degraded. Many are now sick. Te Mana o te Wai must be restored.
- Honouring Te Mana o te Wai involves transforming the legacy of seeing water as just an asset, back to seeing healthy water as fundamental to the existence of all living things.
- There is a hierarchy of obligations in Te Mana o te Wai that prioritises:
  - first, the health and well-being of water bodies and freshwater ecosystems including mahinga kai species.
  - second, the health needs of people (such as drinking water)
  - third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.
- Te Mana o te Wai has a whakapapa that connects the atua (natural processes) to the land and its people.
- To appropriately understand and implement Te Mana o te Wai, Te Kotahitanga o Ātiawa, Ngāti Raukawa, and Ngāti Toa Rangatira, in partnership with Greater Wellington Regional Council and Kāpiti Coast District Council on behalf of the wider community, have adopted the 'Tiriti House Model'.
- The 'Tiriti House Model' is a decision-making and implementation framework that gives effect to Te Tiriti o Waitangi and its articles. It is comprised of the Mana Whenua House and the Kāwanatanga House and a third Tiriti House where consensus decision-making occurs.
- Both Houses are required to have some level of understanding of the tikanga and mātauranga, systems of regulation and knowledge of each other's House.
- Te Whaitua o Kāpiti Implementation Programme will provide a road map for the whole community to give effect to Te Mana o te Wai.

Mana Whakahaere

- The authority and responsibility to make decisions on the care and use of water is an expression of rangatiratanga inherited through whakapapa.
- These rights and responsibilities are affirmed in Te Tiriti o Waitangi between rangatira and the British Crown. Māori have never ceded their rangatiratanga and rights to water. From a kāwanatanga perspective these rights have been identified as including rights akin to ownership, and authority to manage freshwater.
- Different mana whakahaere groups have different roles and responsibilities and bring different legitimate perspectives in the implementation of Te Mana o te Wai. These include ahi kā, whānau, hapū, marae, iwi and landowning and commercial trusts.
- Mana whakahaere is primarily expressed at the local level by ahi kā and hapū, and broader political structures such as iwi or other Confederations are utilised by Māori in particular contexts where they self-determine these to be appropriate and effective.
- In a catchment context, whakapapa and whanaungatanga requires mana whakahaere to consider the impacts of activities in one part of the catchment on another, including on other communities in different parts of the catchment.

Kaitiakitanga

- From a Māori understanding of the taiao, certain creatures in natural systems play a role of protection. They protect people through their appearance; once observed, these kaitiaki instantiate certain dynamics in the taiao that people should take heed or caution of. They invite people to be conscious, reflective and act with care and integrity.
- This understanding informs the ethic of kaitiakitanga as it is performed by tangata whenua today. In a contemporary context, where the taiao is being impacted by people at an unprecedented scale and rate, tangata whenua care for the taiao in a way that reflects this consciousness and the need to pursue the right way of being in the world.
- Mātauranga Māori is comfortable recognising the role of people in using resources provided by the taiao and atua. This is codified in our whakapapa to Tūmatauenga and his actions in taking the children of the natural world and turning them into resources for his use.
- However, a key aspect of the practice of kaitiakitanga is the ability to understand our appropriate place in natural systems as people, to understand our limitations in what we can use or restore, and to understand the need to create space for atua and our tuākana / our senior siblings in the taiao to perform their natural and restorative roles.
- As something informed by tikanga Māori, kaitiakitanga is a responsibility practiced as a function of rangatiratanga, of those that hold ahi kā and mana whenua. Its practice involves decisions and actions that are legitimised through whakapapa connection to place.

Manaakitanga

- Manaakitanga is the practice of reciprocally sharing resources in a manner that facilitates the enhancement of mana of all involved parties.
- Practicing manaakitanga requires that there is always enough resource to share and therefore upholding the ethic of reciprocity with the taiao itself; that is, if we take from the environment, we have to give back.
- The Māori concept of utu is closely connected to manaakitanga, in the understanding that reciprocal actions grow over time. When we take from the environment, we should always be trying to enhance rather than simply restore. This builds the wealth of our taiao, and the access of future generations to its abundance. Where there are not enough resources to share, this indicates that we have not upheld manaakitanga; we have taken too much, or not put enough back.
- Manaakitanga is evident in relationships across Māori society: prestige and integrity of people and communities is upheld through their ability to responsibly look after others. From a constitutional perspective, Māori have always shared space and resources, including water, with tangata Tiriti in Aotearoa.

Governance

- Governance is responsibility of those with authority for making decisions about water to do so in a way that prioritises the health and well-being of freshwater now and into the future.
- Good governance is transparent, accountable, and effective decision-making driven by active and effectively resourced collaboration between government, mana whenua/tangata whenua and communities to ensure an equitable and sustainable future for all.
- It must include community participation, rule of law, and protection of human rights. Good governance is inclusive and provides a clear and usable programme which achieves the vision of the community.
- Practicing good governance means that public officials must consistently uphold ethical standards, foster inclusive policies, and manage Te Taiao efficiently.
- Outcomes are measurable and processes are transparent to ensure integrity. Successful implementation of this concept is achieved when the concept of good governance is entrenched into all planning processes and decisions are made in the Tiriti House model based on principles of accountability, fairness, transparency, equity, and consensus. This model facilitates good governance and trust; it is mutually mana-enhancing for both Houses.
- Good governance builds trust between those in authority and the community; the community should be aware of and support the principles of the Tiriti House decision-making model.

Stewardship

- The obligations of all New Zealanders to manage water in a way that ensures it sustains present and future generations.
- Stewardship is the responsible and ethical management and protection of Te Taiao, and the community assets and infrastructure entrusted to an individual, community, or organisation.
- All New Zealanders uphold recognition of and conscientious participation in the reciprocal and interdependent relationship between land use and the health of water. Local government officials set guidelines, strategy, rules, monitoring plans, and undertake physical works in service of what is best for freshwater according to the hierarchy of obligations in Te Mana o te Wai.
- Stewardship requires passing on intergenerational learning, knowledge, and mātauranga Māori to ensure the long-term sustainability and well-being of Te Taiao, while taking into account the values and interests of current stakeholders and communities alongside those of future generations.
- Success in stewardship is all New Zealanders feeling a sense of ownership, reverence, and pride in a healthy and improving catchment environment – “leaving it better than you found it”.
- It is recognising stewardship work that has been done in the past while fostering a sense of hope for the future by encouraging, resourcing, and growing those efforts. The principles of effective stewardship should be entrenched into policy and planning related to water management.
- It is a change in consideration from freshwater as a functional asset and resource to water as a living being, one in a reciprocal relationship with the health and well-being of human beings.

Care and Respect

- The responsibility of all New Zealanders to care for water in providing for the health of the nation.
- Care and respect for water means honouring the mana and intrinsic value of individual water bodies. It is behaving with kindness, empathy, and consideration, where our actions recognise, restore, enhance, and protect freshwater and all life that relies on it.
- Practicing care and respect fosters positive relationships between people and Te Taiao, promotes inclusivity, and creates a harmonious social, cultural, and ecological environment where individuals and water bodies are valued and supported to express their natural character and values – where the water has “space to breathe”.
- Care and respect for water requires committing to sustainable resource use and making conscious choices to minimise negative impacts on the environment, live within our environmental means, and promote and enhance ecosystem health.
- Communities are educated about their water, understanding their role in caring for and enhancing the health and well-being of their water bodies. Care and respect for water means that communities are connected to their wai.
- Success in care and respect for water means entrenching these principles into policy and planning and upholding collective responsibility in maintaining and improving the health of freshwater.

Waitohu. Photo: Dr Aroha Spinks

Appendix 4: Nationally Threatened Species Known to Reside in Te Whaitua o Kāpiti

Water Body and FMU	Threatened Species: Fish	Threatened Species: Birds	Threatened Species: Other
Lake Waiorongomai (Waiorongomai FMU) *Also the latest one		Australasian bittern/Matuku-hūrepo, NZ dabchick/Weweia White heron/Kōtuku New Zealand Grebe (Poliocephalus rufopectus)	Button daisy (Leptinella tenella)
Lake Waitawa (Waitawa part-FMU)		NZ dabchick/Weweia	
O-te-Pua Wetlands (Waitohu FMU)		NZ dabchick/Weweia	
QE Park Railway Wetlands (Whareroa FMU)			Water brome (amphibromus fluitans)
Raumati South Peatlands A (Wharemauku FMU)			Sneeze weed (Centipeda minima subsp. Minima)
Ōtaki River (Ōtaki FMU)	Shortjaw kōkopu	White heron/Kōtuku Wrybill/Ngutu-pare	Caddisfly/Mokihinui (both Cryptobiosella spinosa and Cryptobiosella furcate) Caddisfly (Xenobiosella motueka) *NB: all three invertebrates found high in the Tararua ranges*
Ōtaki River mouth / Estuary Go North to South (Ōtaki FMU)	Shortjaw kōkopu	Caspian tern/Taranui Wrybill/Ngutu-pare	
Mangaone Stream (Mangaone FMU)	Lamprey/Piharau Shortjaw kōkopu		
Te Hapua Wetland A (Kōwhai FMU)		NZ dabchick/Weweia Aus. bittern/Matuku-hūrepo, White heron/Kōtuku	
Kōwhai Stream Mouth (Kōwhai FMU)		Caspian tern/Taranui	
Te Harakeke Swamp (Waimeha FMU)		Grey duck/Pārera NZ dabchick/Weweia	
Waikanae River (Waikanae FMU)	Lamprey/Piharau Shortjaw kōkopu		
Waikanae River mouth / Estuary (Waikanae FMU)	Lamprey/Piharau Shortjaw kōkopu	Aus. bittern/Matuku-hūrepo Brown teal/Pāteke Caspian tern/Taranui NZ dabchick/Weweia Wrybill/Ngutu-pare	
Waimanguru Lagoon (Forest Lakes) (Waitohu FMU)		NZ dabchick/Weweia	
Wainui Stream (Paekākāriki & Wainui FMU)	Shortjaw kōkopu		
Wharemaukū Stream (Wharemauku FMU)	Shortjaw kōkopu		
Whareroa Stream (Whareroa FMU)	Lamprey/Piharau		
Waitohu Stream (Waitohu FMU)	Lamprey/Piharau Shortjaw kōkopu		
Waitohu Stream mouth/Estuary (Waitohu FMU)	Lamprey/Piharau Shortjaw kōkopu	Aus. bittern/Matuku-hūrepo Caspian tern/Taranui Wrybill/Ngutu-pare	

Appendix 5: Values that apply in Te Whaitua o Kāpiti

FMU / part-FMU	Values	
Wainui and Paekākāriki	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values	• Natural form and character • Drinking water supply • Fishing • Residential use
Whareroa	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values	• Kaupapa wai Māori/Māori freshwater values • Natural form and character • Transport and tauranga waka • Residential use
Wharemauku	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form and character	• Fishing • Irrigation, cultivation, and production • Commercial use • Industrial use • Residential use
Tikotu (part)	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form and character • Transport and tauranga waka	• Fishing • Irrigation, cultivation, and production • Commercial use • Industrial use • Residential use
Waikanae and Waikanae Upper (part)	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply • Wāhi tapu (Waimanu Lagoon)	• Transport and tauranga waka • Fishing • Animal drinking water • Irrigation, cultivation, and production • Commercial use • Industrial use • Residential use
Waimeha	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Transport and tauranga waka • Fishing • Animal drinking water • Irrigation, cultivation, and production • Commercial use • Industrial use • Residential use
Kōwhai	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Fishing • Animal drinking water • Irrigation, cultivation, and production • Commercial use • Industrial use • Residential use

FMU / part-FMU	Values	
Mangaone	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply • Transport and tauranga waka	• Fishing • Animal drinking water • Irrigation, cultivation, and production • Industrial use • Commercial use • Residential use
Ōtaki	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Transport and tauranga waka • Fishing • Animal drinking water • Irrigation, cultivation, and production • Commercial use • Residential use
Waitohu	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Transport and tauranga waka • Fishing • Animal drinking water • Irrigation, cultivation, and production • Commercial use • Residential use
Waiorongomai	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values
Lake Waitawa (part)	• Ecosystem health • Human contact • Threatened species • Mahinga kai • Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply	• Transport and tauranga waka • Fishing • Animal drinking water • Irrigation, cultivation, and production • Residential use
Kāpiti Island	• Ecosystem health • Human contact • Threatened species • Mahinga kai	• Kaupapa wai Māori/Māori freshwater values • Natural form & character • Drinking water supply

Appendix 6: NOF Connectivity: Environmental Outcomes and Long-term Visions

The table below provides a high-level explanation of how the environmental outcomes give effect to the long-term visions. The overarching long-term freshwater vision was drafted to be as inclusive as possible of the ambitions which apply to all FMUs and part-FMUs across Te Whaitua o Kāpiti. Therefore, the environmental outcomes for each FMU also give effect to this long-term vision, as well as the FMU-specific long-term visions drafted to capture priority goals in each FMU.

Vision	Outcome	Explanation
Overarching long-term vision	1: Mana Whenua outcomes	Outcome 1 reflects many of the aspirations in the overarching vision, including management of freshwater through a framework of partnership under Te Tiriti o Waitangi, and restored and renewed connection to the wai.
	2: Ecosystem health (surface water)	Outcome 2 realises aspirations for water quality, habitat, and species abundance
	3: Ecosystem health (groundwater)	Outcome 3 realises aspirations for water quality and sustainable and resilient management
	4: Human contact	Outcome 4 realises aspirations for water quality, community connection to water, and various uses of water including recreational
	5: Threatened species	Outcome 5 realises aspirations for habitat and species abundance
	6: Natural form and character	Outcome 6 realises aspirations for protecting and restoring natural form and character of waterways, connecting water bodies within a catchment, and the natural processes and behaviours of waterways are restored and allowed to be expressed.
	7: Fishing	Outcome 7 realises aspirations for water quality and mahinga kai
	8: Urban and rural land use	Outcome 8 realises aspirations for good governance of water and supporting prosperous communities through careful and respectful use of water
	9: Climate change	Outcome 9 realises aspirations for whole-of-system approach to management of freshwater and resilience to the impacts of climate change
Vision 2: Waitohu FMU and Lake Waitawa part FMU	10: Waitohu FMU	Outcome 11 realises aspirations for improving the health of tributaries, revitalising tikanga and traditional practices for the Waitohu Stream, and improving cultural connections to the waterways for Ngā Hapū o Ōtaki
Vision 3: Lake Waiorongomai FMU	11: Waiorongomai FMU	Outcome 10 realises aspirations for protecting and enhancing mātauranga Māori, enhancing Ngā Hapū o Ōtaki connections to the waterways in their ancestral rohe, the availability of abundant and safe mahinga kai, and restoring the lake to a state of good health
Overarching long-term vision Vision 4: Ōtaki FMU	12: Ōtaki FMU	Outcome 12 realises aspirations for enhancing the connection of both the wider community and Ngā Hapū o Ōtaki to the Ōtaki River, upholding cultural practices and mātauranga Māori within the FMU, and improving the ecological health and water quality of the waterways of the FMU.
Overarching long-term vision Vision 5: Mangaone FMU	13: Mangaone FMU	Outcome 13 realises aspirations for upholding Ngā Hapū o Ōtaki cultural practices and mātauranga Māori, restoring and protecting wetlands, increasing biodiversity and improving community connection to the Mangaone Stream through recreational use of water.
Overarching long-term vision Vision 6: Kōwhai FMU	14: Kōwhai FMU	Outcome 14 realises aspirations for preserving whakapapa, history, and intergenerational knowledge in the FMU from both Ngā Hapū o Ōtaki and Ātiawa ki Whakarongotai, upholding the mana of the stream through restoring biodiversity, catchment connections, mahinga kai species and wetlands, and improving natural form and character, and enhancing community connections with the wai of this FMU.
Overarching long-term vision Vision 7: Waimeha FMU	15: Waimeha FMU	Outcome 15 realises aspirations for improving water quality, restoring mahinga kai species toa state of abundance, enhancing active kaitiaki of Ātiawa ki Whakarongotai, and restoring natural character and biodiversity, including wetlands.
Vision 8: Waikanae FMU, Upper Waikanae and Tikotu part-FMUs	16: Waikanae FMU	Outcome 16 realises aspirations for enhancing community, whānau and hapū connection to appropriate parts of the FMU, integrated management of the Waikanae River, improved water quality and indigenous biodiversity, enhancement of mahinga kai activities and the transfer of mātauranga Māori between generations, and the recognition of Tikotu as a tauranga waka
Overarching long-term vision Vision 9: Wharemauku FMU	17: Wharemauku FMU	Outcome 17 realises aspirations for restoring the Wharemauku Stream and associated wetlands to a state of wai ora, enhancing resilience to climate change, and upholding the mana of the Wharemauku Stream by enhancing kaitiakitanga and the ability to safely gather healthy and abundant mahinga kai

Appendices

Appendix 6: NOF Connectivity: Environmental Outcomes and Long-term Visions (cont.)

Vision	Outcome	Explanation
Overarching long-term vision Vision 10: Whareroa FMU	18: Whareroa FMU	Outcome 18 realises aspirations for restoring mahinga kai to a state of good health and abundance, enhancing connection to the Whareroa Stream as a tauranga waka and an area of special importance to multiple iwi and hapū, and the restoration of coastal wetland and dune habitat.
Vision 11: Wainui and Paekākāriki FMU	19: Wainui and Paekākāriki FMU	Outcome 19 realises aspirations for enhancing the resilience of the Wainui Stream to climate change, enhancing wider community recognition and respect of the Wainui Stream as a taonga for mana whenua, and upholding cultural and spiritual practices and passing these between generations, including harvesting safe and healthy mahinga kai.
Vision 12: Kāpiti Island FMU	20: Kāpiti Island FMU	Outcome 20 realises aspirations to protect the water bodies of Kāpiti Island, enhance wider community understanding of respect for the island as a taonga to mana whenua, and to enhance and protect the ability of mana whenua to undertake cultural and spiritual practices on the island.

Mauri stones. Photo: Sharlene Maoate-Davis

Appendix 7: Proposed Attribute for Dissolved Copper and Dissolved Zinc

Attribute States for Dissolved Copper (Toxicity)

Value	**Ecosystem Health**		
Freshwater Body Type	**Lakes and Rivers**		
Attribute	Dissolved Copper (Toxicity)		
Attribute Unit	**µg DCu/L (micrograms of dissolved Copper per litre)**		
Attribute State	Median*	95th percentile	Narrative Attribute State
A	≤1	≤1.4	99% species protection level: No observed effect on any species tested
B	>1 and ≤1.4	>1.4 and ≤1.8	95% species protection level: Starts impacting occasionally on the 5% most sensitive species
C	>1.4 and ≤2.5	>1.8 and ≤4.3	80% species protection level: Starts impacting regularly on the 20% most sensitive species (reduced survival of most sensitive species)
D	>2.5	>4.3	Starts approaching acute impact level (i.e., risk of death) for sensitive species

Attribute States for Dissolved Zinc (Toxicity)

Value	**Ecosystem Health**		
Freshwater Body Type	**Lakes and Rivers**		
Attribute	Dissolved Zinc (Toxicity)		
Attribute Unit	**µg DZn/L (micrograms of dissolved Zinc per litre)**		
Attribute State	Median*	95th percentile	Narrative Attribute State
A	≤2.4	≤8	99% species protection level: No observed effect on any species tested
B	>2.4 and ≤8	>8 and ≤15	95% species protection level: Starts impacting occasionally on the 5% most sensitive species
C	>8 and ≤31	>15 and ≤42	80% species protection level: Starts impacting regularly on the 20% most sensitive species (reduced survival of most sensitive species)
D	>31	>42	Starts approaching acute impact level (i.e., risk of death) for sensitive species

Values for this metal should be expressed as a function of hardness (mg/L) in the water column. The value given here corresponds to a standard hardness for ANZG 2018 guidelines of 30 mg CaCO3/L. Criteria values for other hardness may be calculated as per the equation presented in the ANZG 2018 guidelines.

Appendix 8: Proposed Attribute for Dissolved Inorganic Nitrogen

Table 5: Dissolved Inorganic Nitrogen

Value (and component)	Ecosystem health (water quality)	
Freshwater Body Type	Rivers	
Attribute Unit	DIN mg/L (milligrams per litre)	
Attribute band and description	Numeric Attribute State	
	Median	95th percentile
A Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to DIN enrichment are expected.	≤ 0.24	< 0.56
B Ecological communities are slightly impacted by minor DIN elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of sensitive macroinvertebrate taxa, and higher respiration and decay rates.	> 0.24 and < 0.50	> 0.56 and < 1.10
C Ecological communities are impacted by moderate DIN elevation above natural reference conditions, but sensitive species are not experiencing nitrate toxicity. If other conditions also favour eutrophication, DIN enrichment may cause increased algal and plant growth, loss of sensitive macroinvertebrate & fish taxa, and high rates of respiration and decay.	> 0.5 and ≤ 1.0	> 1.10 and ≤ 2.05
National Bottom Line	1.0	2.05
D Ecological communities impacted by substantial DIN elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DIN enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia and nitrate toxicity are lost.	>1.0	>2.05

Groundwater concentrations also need to be managed to ensure resurgence via springs and seepage does not degrade rivers through DIN enrichment.

Numeric attribute state must be derived from the rolling median of monthly monitoring over five years.

Appendix 9: Attributes for Te Whaitua o Kāpiti

Value	Attribute	Source	Rationale
Rivers/streams			
Ecosystem health – Water quality	Ammonia (toxicity)	NPS-FM	Compulsory
	Nitrate (toxicity)	NPS-FM	Compulsory
	Dissolved oxygen	NPS-FM	Compulsory
	Suspended fine sediment	NPS-FM	Compulsory
	Dissolved reactive phosphorus	NPS-FM	Compulsory
	Dissolved inorganic nitrogen	Committee	Moderate levels of nitrate pose risks of excessive productivity in streams and potential impacts on ecosystem health.
	Dissolved copper	Committee	These metals pose toxicity risks for freshwater species and can help manage the effects of urban land uses on ecosystem health.
	Dissolved zinc	Committee	
Ecosystem health – Habitat	Deposited fine sediment	NPS-FM	Compulsory
Ecosystem health – Aquatic life	Periphyton	NPS-FM	Compulsory
	Fish	NPS-FM	Compulsory
	Macroinvertebrates 1	NPS-FM	Compulsory
	Macroinvertebrates 2	NPS-FM	Compulsory
Ecosystem health – Ecological processes	Ecosystem metabolism	NPS-FM	Compulsory
Human contact	Escherichia coli (*E. coli*)	NPS-FM	Compulsory
	Cyanobacteria (planktonic) (lake fed rivers)	NPS-FM	Compulsory
Mahinga kai	Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	Committee	These metals pose toxicity risks for freshwater species and potential impacts on human health from gathering and consuming mahinga kai.
	Campylobacter	Committee	Pose risks to the safety of people who collect and consume mahinga kai.
	Tuna condition and abundance	Committee	Ensure the ability for long-term harvest of species and that they are safe to eat.
	Mahinga kai culture aggregate attribute comprising:		
	Intergenerational knowledge transfer		
	Environmental distress		
	Connection with nature	Committee	Ensure the strength of connections with the environment, ability to practice tikanga and pass knowledge about the preparation, storage and cooking of kai onto future generations.

Appendix 9: Attributes for Te Whaitua o Kāpiti (cont.)

Value	Attribute	Source	Rationale
Social connection to rivers	To be confirmed	Committee	Wider community social connection with Te Taiao.
• Threatened species • kaupapa wai Māori/Māori freshwater values • Natural form and character • Drinking water supply • Fishing • Irrigation, cultivation and production • Commercial use, industrial use, residential use • Wāhi tapu • Transport and Tauranga waka	No additional attributes required. Ecosystem health, human contact, mahinga kai attributes support measurement of these values.		
Lakes			
Ecosystem health – Water quality	Total nitrogen	NPS-FM	Compulsory
	Total phosphorus	NPS-FM	Compulsory
	Ammonia (toxicity)	NPS-FM	Compulsory
	Lake-bottom dissolved oxygen	NPS-FM	Compulsory
	Mid-hypolimnetic dissolved oxygen	NPS-FM	Compulsory
Ecosystem health – Aquatic life	Phytoplankton	NPS-FM	Compulsory
	Submerged plants (natives)	NPS-FM	Compulsory
	Submerged plants (invasive species)	NPS-FM	Compulsory
Human contact	Escherichia coli (*E. coli*)	NPS-FM	Compulsory
	Cyanobacteria (planktonic)	NPS-FM	Compulsory
Mahinga kai (Waiorongomai, Waitawa, Ngārara and Ngātōtara only)	Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	Committee	These metals pose toxicity risks for freshwater species and potential impacts on human health from gathering and consuming mahinga kai.
	Campylobacter	Committee	Provides measure of the ability to consume mahinga kai.
	Tuna condition and abundance	Committee	Assesses aspects of the mahinga kai value about the ability for long-term harvest of species and that they are safe to eat.
	Mahinga kai culture aggregate attribute comprising:		
	Intergenerational knowledge transfer		
	Environmental distress		
	Connection	Committee	The combined measure assesses the strength of connections with the environment, ability to practice tikanga and pass knowledge about the preparation, storage and cooking of kai onto future generations.
Social connection to lakes	To be confirmed	Committee	Wider community social connection with Te Taiao
Ecosystem health – Habitat Ecosystem health – ecological processes • Threatened species • kaupapa wai Māori/Māori freshwater values • Natural form and character • Drinking water supply • Fishing • Irrigation, cultivation and production • Commercial use, industrial use, residential use • Wāhi tapu • Transport and Tauranga waka	No additional attributes required. Ecosystem health, human contact and mahinga kai attributes support measurement of these values.		

Crossing the Waikanae. Photo: KCDC

Appendix 10: NOF Connectivity: Environmental Outcomes and Long-term Visions

The baseline attribute states presented in the following tables were established using a range of technical information, including mātauranga Māori, monitoring data and modelled data. A full summary of the dataset references underpinning this work is provided in Table 14.

Table 1: Waitohu FMU Target Attribute States

			Waitohu @ Forest Park (RS03)		Waitohu @ Norfolk Crescent (RS04)		Mangapouri Stream at Bennetts Road (RS02)	
			Baseline	Target state	Baseline	Target state	Baseline	Target state
Attribute	Unit	Statistic	Band	Band	Band	Band	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	A	A	D	B	D	B
	QMCI	Median						
Deposited fine sediment	% cover	Median	A	A	A	A	Insufficient information	A
Macroinvertebrates (2 of 2)	ASPM	Median	Insufficient information	A	D	B	D	B
Dissolved reactive phosphorus	mg/L	Median	B	B	C	B	D	B
Dissolved Inorganic Nitrogen	mg/L	95th%ile Median	A	A	B	B	D	B
E. coli	/100mL	Median	A	A	E	C	E	C
		%>260/100mL						
		%>540/100mL						
		95th %ile						
Ammonia (toxicity)	mg/L	Median	A	A	A	A	B	B
		95th %ile						
Nitrate (toxicity)	mg/L	Median	A	A	A	A	B	A
		95th %ile						
Suspended fine sediment	Black disc (m)	Median	A	A	D	B	D	B
Dissolved copper	µg/L	Median	B	A	Insufficient information	B	C	B
		95th %ile						
Dissolved zinc	µg/L	Median	A	A		B	B	B
Fish	Fish-IBI	Latest	A	A	A	A	B	A

Table 1: Waitohu FMU Target Attribute States (cont.)

			Waitohu @ Forest Park (RS03)		Waitohu @ Norfolk Crescent (RS04)		Mangapouri Stream at Bennetts Road (RS02)	
			Baseline	Target state	Baseline	Target state	Baseline	Target state
Attribute	Unit	Statistic	Band	Band	Band	Band	Band	Band
Periphyton biomass	mg chl-a/ m2	92nd %ile	Insufficient information	A	Insufficient information	B	Insufficient information	B
Dissolved oxygen	mg/L	1-day minimum		A		B		B
		7-day mean minimum						
Ecosystem metabolism	g O2 m-2 d-1	N/A		Maintain or improve		Maintain or improve		Maintain or improve
Campylobacter	TBC	Absence		Achieving		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4		At least 4

Whareroa FMU, ngahere remnant. Photo: Sharlene Maoate-Davis

Table 2: Waiorongomai FMU Target Attribute States

			Waiorongomai Lowland site	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	Insufficient Information	B
	QMCI	Median		B
Macroinvertebrates (2 of 2)	ASPM	Median		C
Deposited fine sediment	%cover	Median		B
Dissolved reactive phosphorus	mg/L	Median		A
		95th%ile		C
Dissolved Inorganic Nitrogen	mg/L	Median		B
E. coli	/100mL	Median		A
		%>260/100mL		B
		%>540/100mL		B
		95th %ile		B
Ammonia (toxicity)	mg/L	Median		A
		95th %ile		B
Nitrate (toxicity)	mg/L	Median		B
		95th %ile		B
Suspended fine sediment	Black disc (m)	Median		A
Dissolved copper	µg/L	Median		Maintain or improve
		95th %ile		Achieving
Dissolved zinc	µg/L	Median		Achieving
		95th %ile		Achieving
Fish	Fish-IBI	Latest		At least 4
Periphyton biomass	mg chl-a/m2	92nd %ile		
Dissolved oxygen	mg/L	1-day minimum		
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		
Campylobacter	TBC	Absence		
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		
Cultural Aggregate	Likert Scale 1-5	Median		

Table 3: Ōtaki FMU Target Attribute States

			Ōtaki @ Pukehinau (RS05)		Ōtaki @ Mouth (RS06)	
			Baseline	Target State	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	A	A	C	B
	QMCI	Median				
Macroinvertebrates (2 of 2)	ASPM	Median	B	A	B	A
Deposited fine sediment	%cover	Median	A	A	A	A
Dissolved reactive phosphorus	mg/L	Median	A	A	A	A
		95th%ile				
Dissolved Inorganic Nitrogen	mg/L	Median	A	A	A	A
E. coli	/100mL	Median	A	A	A	A
		%>260/100mL				
		%>540/100mL				
		95th %ile				
Ammonia (toxicity)	mg/L	Median	A	A	A	A
		95th %ile				
Nitrate (toxicity)	mg/L	Median	Insufficient information	A	Insufficient information	A
Suspended fine sediment	Black disc (m)	Median	A	A	B	A
Dissolved copper	µg/L	Median	Insufficient information	A	Insufficient information	A
		95th %ile				
Dissolved zinc	µg/L	Median		A		A
		95th %ile				
Fish	Fish-IBI	Latest	A	A	A	A
Periphyton biomass	mg chl-a/m2	92nd %ile	Insufficient information	A	A	A
Dissolved oxygen	mg/L	1-day minimum		A	Insufficient information	A
		7-day mean minimum				
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve		Maintain or improve
Campylobacter	TBC	Absence		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4

Table 4: Mangaone FMU Target Attribute States

			Mangaone @ Sims Road Bridge (RS07)	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	D	C
	QMCI	Median		
Macroinvertebrates (2 of 2)	ASPM	Median	D	C
Deposited fine sediment	%cover	Median	Insufficient information	B
Dissolved reactive phosphorus	mg/L	Median	D	C
		95th%ile		
Dissolved Inorganic Nitrogen	mg/L	Median	D	B
E. coli	/100mL	Median	E	C
		%>260/100mL		
		%>540/100mL		
		95th %ile		
Ammonia (toxicity)	mg/L	Median	B	B
		95th %ile		
Nitrate (toxicity)	mg/L	Median	B	A
		95th %ile		
Suspended fine sediment	Black disc (m)	Median	C	C
Dissolved copper	µg/L	Median	Insufficient information	B
		95th %ile		
Dissolved zinc	µg/L	Median		B
		95th %ile		
Fish	Fish-IBI	Latest	A	A
Periphyton biomass	mg chl-a/m2	92nd %ile	Insufficient information	B
Dissolved oxygen	mg/L	1-day minimum		B
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve
Campylobacter	TBC	Absence		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

Table 5: Kōwhai FMU Target Attribute States

			Kōwhai Stream Lowland Rural Site	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	Insufficient information	C
	QMCI	Median		
Macroinvertebrates (2 of 2)	ASPM	Median		C
Deposited fine sediment	%cover	Median		B
Dissolved reactive phosphorus	mg/L	Median		C
		95th%ile		
Dissolved Inorganic Nitrogen	mg/L	Median		B
E. coli	/100mL	Median		C
		%>260/100mL		
		%>540/100mL		
		95th %ile		
Ammonia (toxicity)	mg/L	Median		B
		95th %ile		
Nitrate (toxicity)	mg/L	Median		A
		95th %ile		
Suspended fine sediment	Black disc (m)	Median		B
Dissolved copper	µg/L	Median		B
		95th %ile		
Dissolved zinc	µg/L	Median		B
		95th %ile		
Fish	Fish-IBI	Latest		A
Periphyton biomass	mg chl-a/m2	92nd %ile		B
Dissolved oxygen	mg/L	1-day minimum		B
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve
Campylobacter	TBC	Absence		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

Table 6: Waimeha FMU Target Attribute States

			Ngārara @ Fieldway (RS08)	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	D	B
	QMCI	Median		
Macroinvertebrates (2 of 2)	ASPM	Median	Insufficient information	B
Deposited fine sediment	%cover	Median	Insufficient information	C
Dissolved reactive phosphorus	mg/L	Median	D	C
		95th%ile		
Dissolved Inorganic Nitrogen	mg/L	Median	A	A
E. coli	/100mL	Median	D	C
		%>260/100mL		
		%>540/100mL		
		95th %ile		
Ammonia (toxicity)	mg/L	Median	A	A
		95th %ile		
Nitrate (toxicity)	mg/L	Median	A	A
		95th %ile		
Suspended fine sediment	Black disc (m)	Median	D	B
Dissolved copper	µg/L	Median	B	B
		95th %ile		
Dissolved zinc	µg/L	Median	A	A
		95th %ile		
Fish	Fish-IBI	Latest	A	A
Periphyton biomass	mg chl-a/m2	92nd %ile	Insufficient information	B
Dissolved oxygen	mg/L	1-day minimum		B
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve
Campylobacter	TBC	Absence		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

Table 7: Waikanae FMU Target Attribute States

			Waikanae @ Footbridge Mangaone Walkway (RS61)		Waikanae @ Greenaway Road (RS10)	
			Baseline	Target State	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	A	A	B	B
	QMCI	Median				
Macroinvertebrates (2 of 2)	ASPM	Median	A	A	A	A
Deposited fine sediment	%cover	Median	A	A	A	A
Dissolved reactive phosphorus	mg/L	Median 95th%ile	C	C	C	B
Dissolved Inorganic Nitrogen	mg/L	Median	A	A	A	A
E. coli	/100mL	Median	A	A	A	A
		%>260/100mL				
		%>540/100mL				
		95th %ile				
Ammonia (toxicity)	mg/L	Median	A	A	A	A
		95th %ile				
Nitrate (toxicity)	mg/L	Median	A	A	A	A
		95th %ile				
Suspended fine sediment	Black disc (m)	Median	A	A	A	A
Dissolved copper	µg/L	Median	Insufficient information	A	A	A
		95th %ile				
Dissolved zinc	µg/L	Median		A	A	A
		95th %ile				
Fish	Fish-IBI	Latest	A	A	A	A
Periphyton biomass	mg chl-a/m2	92nd %ile	C	A	A	A
Dissolved oxygen	mg/L	1-day minimum	Insufficient information	A	A	A
		7-day mean minimum				
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve	Insufficient information	Maintain or improve
Campylobacter	TBC	Absence		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4

Table 8: Wharemauku FMU Target Attribute States

			Lowland Urban Site	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	Insufficient Information	B
	QMCI	Median		
Macroinvertebrates (2 of 2)	ASPM	Median		B
Deposited fine sediment	%cover	Median		C
Dissolved reactive phosphorus	mg/L	Median		C
		95th%ile		
Dissolved Inorganic Nitrogen	mg/L	Median		A
E. coli	/100mL	Median		C
		%>260/100mL		
		%>540/100mL		
		95th %ile		
Ammonia (toxicity)	mg/L	Median		B
		95th %ile		
Nitrate (toxicity)	mg/L	Median		A
		95th %ile		
Suspended fine sediment	Black disc (m)	Median		B
Dissolved copper	µg/L	Median		B
		95th %ile		
Dissolved zinc	µg/L	Median		B
		95th %ile		
Fish	Fish-IBI	Latest		A
Periphyton biomass	mg chl-a/m2	92nd %ile		B
Dissolved oxygen	mg/L	1-day minimum		B
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve
Campylobacter	TBC	Absence		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

Table 9: Whareroa FMU Target Attribute States

			Whareroa @ Waterfall Road (RS11)		Whareroa @ QE Park (RS12)	
			Baseline	Target State Baseline	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	B	A	D	A
	QMCI	Median				
Macroinvertebrates (2 of 2)	ASPM	Median	Insufficient information	A	Insufficient information	A
Deposited fine sediment	%cover	Median	D	A	D	A
Dissolved reactive phosphorus	mg/L	Median	D	A	D	A
		95th%ile				
Dissolved Inorganic Nitrogen	mg/L	Median	B	A	B	A
E. coli	/100mL	Median	D	B	D	B
		%>260/100mL				
		%>540/100mL				
		95th %ile				
Ammonia (toxicity)	mg/L	Median	B	A	A	A
		95th %ile				
Nitrate (toxicity)	mg/L	Median	A	A	A	A
		95th %ile				
Suspended fine sediment	Black disc (m)	Median	D	A	C	A
Dissolved copper	µg/L	Median	Insufficient information	A	A	A
		95th %ile				
Dissolved zinc	µg/L	Median		A	B	A
		95th %ile				
Fish	Fish-IBI	Latest	A	A	A	A
Periphyton biomass	mg chl-a/m2	92nd %ile	Insufficient information	B	Insufficient information	B
Dissolved oxygen	mg/L	1-day minimum		B		B
		7-day mean minimum				
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve		Maintain or improve
Campylobacter	TBC	Absence		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving

Table 10: Wainui and Paekākāriki FMU Target Attribute States

			Wainui Hill country Rural Site		Wainui Lowland Rural Site	
			Baseline	Target State	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	Insufficient information	B	Insufficient information	B
	QMCI	Median				
Macroinvertebrates (2 of 2)	ASPM	Median		B		B
Deposited fine sediment	%cover	Median		C		C
Dissolved reactive phosphorus	mg/L	Median		A		A
		95th%ile				
Dissolved Inorganic Nitrogen	mg/L	Median		B		B
E. coli	/100mL	Median		C		C
		%>260/100mL				
		%>540/100mL				
		95th %ile				
Ammonia (toxicity)	mg/L	Median		A		A
		95th %ile				
Nitrate (toxicity)	mg/L	Median		A		A
		95th %ile				
Suspended fine sediment	Black disc (m)	Median		B		B
Dissolved copper	µg/L	Median		B		B
		95th %ile				
Dissolved zinc	µg/L	Median		B		B
		95th %ile				
Fish	Fish-IBI	Latest		A		A
Periphyton biomass	mg chl-a/m2	92nd %ile		B		B
Dissolved oxygen	mg/L	1-day minimum		B		B
		7-day mean minimum				
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve		Maintain or improve
Campylobacter	TBC	Absence		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4

Table 11: Kāpiti Island FMU Target Attribute States

			Lowland Site	
			Baseline	Target State
Attribute	Unit	Statistic	Band	Band
Macroinvertebrates (1 of 2)	MCI	Median	Insufficient Information	A
	QMCI	Median		
Macroinvertebrates (2 of 2)	ASPM	Median		A
Deposited fine sediment	%cover	Median		A
Dissolved reactive phosphorus	mg/L	Median		A
		95th%ile		
Dissolved Inorganic Nitrogen	mg/L	Median		A
E. coli	/100mL	Median		A
		%>260/100mL		
		%>540/100mL		
		95th %ile		
Ammonia (toxicity)	mg/L	Median		A
		95th %ile		
Nitrate (toxicity)	mg/L	Median		A
		95th %ile		
Suspended fine sediment	Black disc (m)	Median		A
Dissolved copper	µg/L	Median		A
		95th %ile		
Dissolved zinc	µg/L	Median		A
		95th %ile		
Fish	Fish-IBI	Latest		A
Periphyton biomass	mg chl-a/m2	92nd %ile		A
Dissolved oxygen	mg/L	1-day minimum		A
		7-day mean minimum		
Ecosystem metabolism	g O2 m-2 d-1	N/A5		Maintain or improve
Campylobacter	TBC	Absence		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4

Table 12: Lake Waiorongomai and Lake Waitawa Target Attribute States

			Lake Waiorongomai		Lake Waitawa	
			Baseline	Target State	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band
Phytoplankton	mg chl-a/m³	Median	Insufficient information	C	Insufficient information	C
		Maximum				
Total nitrogen	mg/m³	Median		C		C
Total phosphorus	mg/m³	Median		C		C
Ammonia (toxicity)	mg/L	Median		B		B
		95th %ile				
E. coli	/100mL	Median		Baseline + 1 Band except where already at an A Band). Minimum of C Band		Baseline + 1 Band except where already at an A Band). Minimum of C Band
		%>260/100mL				
		%>540/100mL				
		95th %ile				
Cyanobacteria (planktonic)	Total biovolume mm³/L	80th %ile		B		B
Submerged plants (natives)	Native Condition Index (% of max)	Latest		B		B
Submerged plants (invasive species)	Invasive Impact Index (% of max)	Latest		B		B
Lake-bottom dissolved oxygen	mg/L	Annual minimum		B		B
Mid-hypolimnetic dissolved oxygen	Mg/L	Annual minimum		B		B
Campylobacter	TBC	Absence		Achieving		Achieving
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4

Table 13: Lake Ngārara, Ngātōtara and other lakes Target Attribute States

			Lake Ngārara		Lake Ngātōtara		Other Lakes	
			Baseline	Target State	Baseline	Target State	Baseline	Target State
Attribute	Unit	Statistic	Band	Band	Band	Band	Band	Band
Phytoplankton	mg chl-a/m³	Median	Insufficient information	B	Insufficient information	C	Insufficient information	C
		Maximum						
Total nitrogen	mg/m³	Median		B		C		C
Total phosphorus	mg/m³	Median		B		C		C
Ammonia (toxicity)	mg/L	Median		B		B		B
		95th %ile						
E. coli	/100mL	Median		Baseline + 1 Band except where already at an A Band). Minimum of C Band		Baseline + 1 Band except where already at an A Band). Minimum of C Band		Baseline + 1 Band except where already at an A Band). Minimum of C Band
		%>260/100mL						
		%>540/100mL						
		95th %ile						
Cyanobacteria (planktonic)	Total biovolume mm³/L	80th %ile		B		B		B
Submerged plants (natives)	Native Condition Index (% of max)	Latest		B		B		B
Submerged plants (invasive species)	Invasive Impact Index (% of max)	Latest		B		B		B
Lake-bottom dissolved oxygen	mg/L	Annual minimum		B		B		B
Mid-hypolimnetic dissolved oxygen	Mg/L	Annual minimum		B		B		B
Campylobacter	TBC	Absence		Achieving		Achieving		
Dissolved Arsenic, Dissolved Cadmium, Dissolved Chromium, Dissolved Lead, Dissolved Mercury, Dissolved Nickel	mg/L	TBC		Achieving		Achieving	N/A	
Tuna abundance and condition	# of healthy tuna	At least four healthy tuna		Achieving		Achieving		
Cultural Aggregate	Likert Scale 1-5	Median		At least 4		At least 4		

Table 14: References for datasets used to determine baseline and current attribute states

Modelled Data	
Attribute / Category	**Reference**
Ammonia, Clarity, DRP, *E. coli* (median and 95%ile), Nitrate-Nitrogen	Whitehead, A.L. (2018). Spatial modelling of river water-quality state: Incorporating monitoring data from 2013 to 2017. Prepared for the Ministry for the Environment (NIWA Client Report 2018360CH). NIWA, Christchurch, New Zealand. River water quality modelled state 2013–2017 raw data | MfE Data Service.
MCI	Clapcott, J.E., & Goodwin, E.O. (2014). Technical report of Macroinvertebrate Community Index predictions for the Wellington Region (Cawthron Report No. 2503). Cawthron Institute, Nelson, New Zealand. CawRpt_2503_Technical report of MCI predictions for the Wellington region (gw.govt.nz)
E. coli %age exceedances data	Snelder, T.H., Wood, S.A., & Atalah, J. (2016). Strategic assessment of New Zealand's freshwaters for recreational use: A human health perspective – Escherichia coli in rivers and planktonic cyanobacteria in lakes (LWP Client Report 2016-011). Land Water People, Christchurch, New Zealand. River Water Quality for Swimming Categories [Raw Model Output] | MfE Data Service.
Deposited sediment	Clapcott J.E., & Goodwin, E.O. (2017). Technical report on developing a deposited sediment classification for New Zealand streams. Prepared for Ministry for the Environment (Cawthron Report No. 2994). Cawthron Institute, Nelson, New Zealand. Predicted reference and current streambed deposited fine sediment 2017 | MfE Data Service.
Sediment classes	Ministry for the Environment. (2020). Sediment classes for REC2.4 nzsegments. Sediment classes for REC2.4 nzsegments | MfE Data Service.
Lake water quality attributes	Ministry for the Environment. (2022). Lake water quality, modelled, 2016-2020. Lake water quality, modelled, 2016 – 2020 | MfE Data Service.

Non-Modelled Data	
Attribute / Category	**Reference**
River water quality and ecology monitoring programme	Greater Wellington. (2023). 2022/23 River water quality and ecology monitoring. Greater Wellington.
Groundwater data	Greater Wellington. (2023). 2022/23 Groundwater quality monitoring report. Greater Wellington.
Lakes	de Winton M., Taumoepeau A., & David, S. (2022). LakeSPI surveys of water bodies in Wellington Region: 2021/22 Prepared for Greater Wellington Regional Council June 2022 NIWA CLIENT REPORT No: 2022179HN. Perrie, A., & Royal, C. (2022). A preliminary assessment of water quality in selected shallow lakes and lagoons in the Wellington Region. Greater Wellington Regional Council, Publication No. GW/ESCI-G-22/05, Wellington. Perrie, A., Heath M.W., & Cockeram, B. (2015). Lakes State of the Environment Monitoring Programme: Annual Data Report, 2014/15. Greater Wellington Regional Council, Publication No. GW/ESCI-T15/147, Wellington. https://gwrc.govt.nz/assets/Documents/2015/12/Lakes-SoE-Monitoring-Programme-Annual-Data-Report-2014-15.pdf
Additional MCI data	Bridges, A. (2023). ANNUAL COMPLIANCE MONITORING REPORT 2022-2023 KCDC District Wide Stormwater Quality Monitoring. Prepared for Kāpiti Coast District Council, Project Number: 310600136. Stantec.