

# **Essential Freshwater - Action on Healthy Waterways: Impacts on Māori Values**

## **Report for the Ministry for the Environment**

**April 2020**

Prepared by Poipoia Ltd

# 1 Contents

1	Contents .....	2
2	Executive Summary .....	4
3	Introduction .....	5
4	Kaupapa Māori .....	6
5	Report Methodology .....	7
	5.1 Introduction .....	7
	5.2 Documents Reviewed .....	7
	5.3 Engagement .....	7
6	Essential Freshwater Reforms .....	8
	6.1 Introduction .....	8
	6.2 The Freshwater Proposals .....	10
7	Te Ao Māori .....	13
	7.1 Introduction .....	13
	7.2 Te Ao Māori Framework .....	14
	7.2.1 Mana Motuhake .....	14
	7.2.2 Mātauranga Māori .....	15
	7.2.3 Mauri .....	16
	7.2.4 Hauora – Te Whare Tapa Whā .....	17
8	Impacts Assessment .....	19
	8.1 Introduction .....	19
	8.1.1 Limitations .....	19
	8.2 Te Mana o te Wai .....	21
	8.2.1 Current Position: NPS-FM 2014 (2017 Amendments) .....	21
	8.2.2 Proposed Position: Freshwater Proposals .....	21
	8.2.3 Impact Assessment .....	21
	8.3 Strengthening Māori Values .....	26
	8.3.1 Current Position: NPS-FM 2017 .....	26
	8.3.2 Proposed Position: Freshwater Proposals .....	26
	8.3.3 Impact Assessment .....	26
	8.4 Holistic Ecosystem Health: Management, Monitoring and Reporting .....	30
	8.4.1 Current Position: NPS-FM 2017 .....	30

8.4.2	Proposed Position: Draft NPS-FM .....	30
8.4.3	Impact Assessment .....	31
8.5	Holistic Ecosystem Health: Aquatic Life .....	34
8.5.1	Current Position: NPS-FM 2017 .....	34
8.5.2	Proposed Position: Draft NPS-FM .....	34
8.5.3	Impacts Assessment.....	34
8.6	Holistic Ecosystem Health: Habitat .....	37
8.6.1	Current Position: NPS-FM 2017 .....	37
8.6.2	Proposed Position: Draft NPS-FM .....	37
8.6.3	Impacts Assessment.....	38
8.7	Holistic Ecosystem Health: Water quality .....	41
8.7.1	Current Position: NPS-FM 2017 .....	41
8.7.2	Proposed Position: Draft NPS-FM .....	41
8.7.3	Impacts Assessment.....	43
8.8	Holistic Ecosystem Health: Water quantity.....	46
8.8.1	Current Position: NPS-FM 2017 .....	46
8.8.2	Proposed Position: Draft NPS-FM .....	46
8.8.3	Impacts Assessment.....	46
8.9	Holistic Ecosystem Health: Exceptions .....	49
8.9.1	Current Position: NPS-FM 2017 .....	49
8.9.2	Proposed Position: Draft NPS-FM 2017 .....	49
8.9.3	Impacts Assessment.....	49
9	Conclusion.....	51
10	Appendix A: Bibliography .....	52
10.1	Academic Articles .....	52
9.2	Freshwater Proposal Documents .....	53
11	Appendix B: Excerpt regarding Nitrate Cap.....	55

## 2 Executive Summary

The Ministry for the Environment is undertaking impact assessments of the proposals by the Government to address New Zealand freshwater issues (the **Freshwater Proposals**) on various sectors of the New Zealand community including Māori. The purpose of this report is to provide a high-level assessment of the positive and negative impacts of the Freshwater Proposals on Māori values. More specifically, this report compares the position of Māori under the National Policy Statement for Freshwater Management 2017 with the position of Māori under the Draft National Policy Statement for Freshwater Management and assesses whether the Freshwater Proposals will enhance Māori values relating to freshwater or otherwise. This report applies a kaupapa Māori framework, the 'Te Ao Māori Framework', that captures a Māori worldview for freshwater management and includes four components being Mana Motuhake, Mātauranga Māori, Mauri and Hauora – Te Whare Tapa Whā.

The Freshwater Proposals are those pursuant to the Essential Freshwater work programme that are set out in the following documents:

- *Essential Freshwater: Healthy Water, Fairly Allocated*. Ministry for the Environment and Ministry for Primary Industries (2018).
- *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater: Part I: Summary and Overview*. Ministry for the Environment (2019).
- *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater: Part II: Detailed Analysis*. Ministry for the Environment (2019).
- *Action for healthy waterways – A discussion document on national direction for our essential freshwater*. Ministry for the Environment (2019).

The Freshwater Proposals will be delivered through national direction under the Resource Management Act 1991 in the form of a new National Policy Statement for Freshwater Management, National Environmental Standards for Freshwater, Sources of Drinking Water and Wastewater, and Section 360 RMA Regulations (Ministry for the Environment, 2019).

In describing the impacts of the Freshwater Proposals on Māori values within the Te Ao Māori framework, the effect is mixed from supporting key values to reducing their influence in the management of freshwater. Overall, the Freshwater Proposals provide an opportunity for improvement in water quality across some but not all policy interventions. However, all are dependent on local territorial authorities for implementation which iwi and hapū practitioners are concerned about. The ability to positively impact upon Māori values, if left to councils to implement, will reduce the effect of these policies. Iwi and hapū practitioners are also significantly concerned with the effects the exemption of certain hydro-power stations from freshwater policies will have to specific freshwater bodies and associated iwi and hapū.

### 3 Introduction

The Government is taking urgent action to address the degradation of Aotearoa, New Zealand’s freshwater through the Essential Freshwater work programme (**Essential Freshwater**) (Ministry for the Environment, 2018). The Essential Freshwater Package sets out a work programme intended to set New Zealanders on the path to turning around water quality trends and generate long-term improvements in freshwater health. Essential Freshwater has three main objectives (the **Essential Freshwater Objectives**):

1. *Stopping further degradation and loss* – taking a series of actions now to stop the state of our freshwater resources, waterways, and ecosystems getting worse (i.e., to stop adding to their degradation and loss), and to start making immediate improvements so that water quality is materially improving within five years.
2. *Reversing past damage* – promoting restoration activity to bring our freshwater resources, waterways, and ecosystems to a healthy state within a generation, including through a new National Policy Statement for Freshwater Management and other legal instruments.
3. *Addressing water allocation issues* – working to achieve efficient and fair allocation of freshwater and nutrient discharges, having regard to all interests including Māori, and existing and potential new users (Ministry for the Environment, 2018).

The Government released the *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater Part 1: Summary and overview* and *Part 2: Detailed Analysis* (the **Impact Analysis**) which provide an analysis of the Government’s proposals (the **Freshwater Proposals**) to meet the Essential Freshwater Objectives.

In addition to the Impact Analysis, the Government has released, *Action for Healthy Waterways: A discussion document on national direction for our essential freshwater* (**Action for Healthy Waterways**) (Ministry for the Environment, 2019) which further elaborates and expands on Freshwater Proposals with a particular focus on achieving the first two objectives of the Essential Freshwater Objectives. Action for Healthy Waterways incorporates aspects of the Government’s Three Waters Review of drinking water, wastewater and storm water services, a review that has been undertaken to ensure New Zealanders can be confident that drinking water is safe to use, sources of drinking water are adequately protected, and wastewater and storm water are managed in environmentally sustainable ways. The proposals subject to the Three Waters Review are not subject to this report as we understand these will be consulted on later in 2020.

The Ministry for the Environment is undertaking impact assessments of the Freshwater Proposals on various sectors of the New Zealand community including Māori. The purpose of this report is to assess the positive and negative impacts of the Freshwater Proposals on Māori values relating to freshwater. More specifically, this report will compare the position of Māori under the National Policy Statement for Freshwater Management 2017 with the position of Māori under the Draft National Policy Statement for Freshwater Management (**Draft NPS-FM**) and assess whether the Freshwater Proposals will enhance Māori values relating to freshwater or otherwise. This report provides an assessment of the Freshwater Proposals using a kaupapa Māori framework (Te Ao Māori Framework) that encapsulates a Māori worldview for freshwater management.

## 4 Kaupapa Māori

Kaupapa Māori methodologies centre Te Ao Māori and a Māori world view and require that research and analysis is undertaken through the implementation of Māori principles and values at both a theoretical and practical level (Smith, L. 2000).

Graham Hingangaroa Smith (1990) initially identified six principles of Kaupapa Māori within the context of educational intervention and research:

- Tino Rangatiratanga – The Principle of Self-Determination
- Taonga Tuku Iho – The Principle of Cultural Aspiration
- Ako Māori – The Principle of Culturally Preferred Pedagogy
- Kia piki ake i ngā raruraru o te kainga – The Principle of Socio-Economic Mediation
- Whānau – The Principle of Extended Family Structure
- Kaupapa – The Principle of Collective Philosophy

Over time these principles have been expanded upon to include others such as:

- Te reo me ōna tikanga (Smith, L. 2000).
- Āta (Pohatu, 2005).

Kaupapa Māori is expansive and necessarily diverse to recognise the diversity within Te Ao Māori. There is no one definition of Kaupapa Māori and the principles it entails, and to purport as such would unnecessarily restrict the accessibility of iwi, hapū and whānau to Kaupapa Māori (Smith, L. 2000).

The Kaupapa Māori methodology that has been adopted for this report is unique to the relationship between Māori and Freshwater but also draws upon common key principles of Kaupapa Māori. Theoretically, this report utilises the Te Ao Māori Framework which draws on several key Kaupapa Māori environmental principles. Practically, the research that has been undertaken to inform this report draws on common key principles of Kaupapa Māori such as taonga tuku iho (for example through centering mātauranga Māori and tikanga Māori) and āta (building and nurturing relationships when engaging through the Focus Groups).

## 5 Report Methodology

### 5.1 Introduction

The methodology adopted for this report involved a review of relevant literature and discussing the Freshwater Proposals with tangata whenua freshwater experts.

### 5.2 Documents Reviewed

We have reviewed the following three distinct sets of documents to inform this report:

- A review of academic articles relating to tangata whenua relationships to freshwater to inform the Te Ao Māori Framework, the framework through which the Freshwater Proposals were assessed. These articles are set out in the Bibliography.
- A review of the Freshwater Proposal documents as listed in the Bibliography. These documents were critical to informing our understanding of the Freshwater Proposals.
- A review of submissions on the Freshwater Proposals by organisations representing tangata whenua. The purpose of this review was to identify key themes within submissions and to test those against the findings of this report.

### 5.3 Engagement

Interviews to test the contents of this report and its consistency with the perspectives of tangata whenua practitioners were held with the following freshwater experts. These experts represent the broad range of relationships Māori have with freshwater and include iwi / hapū practitioners, legal and planning practitioners, Treaty of Waitangi claimants and primary sector experts. Each person received a copy of the report and were able to provide their feedback. They were also available to discuss in the time that was provided.

- Selwyn Parata
- Puna Wano-Bryant
- Nicki Douglas
- Che Wilson
- Horiana Irwin
- Robyn Rauna
- Dayle Hunia
- Maria Nepia
- Maia Wikaira
- Pia Pohatu
- Hannah Rainforth
- Amohaere Houkamau
- Murray Palmer
- Naomi Simmonds
- Keri Topperwien.

## 6 Essential Freshwater Reforms

### 6.1 Introduction

The state of freshwater within New Zealand is an issue that affects all New Zealanders. In 2004 the Parliamentary Commissioner for the Environment, Morgan Williams, identified decreasing water quality arising from increasingly intensive farming in his report *Growing for Good*. Shortly following the release of this report, reforms for the way in which central and local government manages freshwater were announced by the Minister for the Environment who announced the Government's intention for the development of a National Policy Statement for Freshwater Management. Mana 1 provides a snapshot of freshwater reforms over the past decade.

#### Timeline







*Figure 1: Snapshot of New Zealand's Freshwater Reform Timeline (Ministry for the Environment, 2018)*

Freshwater within New Zealand is extremely degraded and urgent action is required to address and reverse this damage. The Government has released staggering statistics regarding freshwater within New Zealand:

- 90% of New Zealand's wetlands have been lost to agricultural or urban development.
- Estuaries throughout New Zealand are being seriously damaged by sediment smothering the seabed and shellfish. Increasing sediment is also resulting in the expansion of mangroves.

- Over 90% of river length in urban areas about 70% in pastoral farming areas have nitrogen levels that may affect the growth of some aquatic species.

Furthermore, waterways are polluted by excess nutrients, pathogens (disease-causing microorganisms) and sediments. Many waterways have been physically altered through diversion and damming, permanently altering the natural character of these waterways and generating significant and possibly irreversible effects to our freshwater resources (Ministry for the Environment, 2018).

As kaitiaki of freshwater within New Zealand, Māori have seen first-hand the devastating impacts to freshwater through increasing development. Whilst these effects are measured differently (as is expanded upon within the Te Ao Māori Framework), there is no doubt that Māori agree that urgent action is required to address the state of Freshwater within New Zealand.

## 6.2 The Freshwater Proposals

The Freshwater Proposals are those that are pursuant to the Essential Freshwater work programme set out in the following documents:

- *Essential Freshwater: Healthy Water, Fairly Allocated*. Ministry for the Environment and Ministry for Primary Industries (2018).
- *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater: Part I: Summary and Overview*. Ministry for the Environment (2019) (**IRIAC I**).
- *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater: Part II: Detailed Analysis*. Ministry for the Environment (2019) (**IRIAC II**).
- *Action for healthy waterways – A discussion document on national direction for our essential freshwater*. Ministry for the Environment (2019) (**AFHW**).

The Freshwater Proposals will be delivered through national direction under the Resource Management Act 1991 (the **RMA**) in the form of a new National Policy Statement for Freshwater Management (**NPS-FM**), National Environmental Standards for Freshwater, Sources of Drinking Water and Wastewater (**NES**), and Section 360 RMA Regulations (Ministry for the Environment, 2019).

This report focuses on those Freshwater Proposals that will have the most impact on Māori values as articulated through the Te Ao Māori Framework. Where relevant, this report also makes brief comments on Freshwater Proposals that have less significant impacts on Māori values. The Freshwater Proposals assessed in this report are set out in Table 1 as follows. These do not include those proposals that are subject to the Three Waters Review which we understand will be consulted on later in 2020.

**Table 1: Freshwater Proposals**

<b>Policy</b>	<b>Freshwater Proposals</b>
<i>Te Mana o te Wai</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Parts, 1, 2 and 3</li> <li>• AFHW: Te Mana o te Wai</li> <li>• IRIAC Parts I &amp; II: Te Mana o te Wai in the Freshwater NPS.</li> </ul>
<i>Strengthening Māori values</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Section 3.7; Appendix 1A</li> <li>• AFHW: Strengthening Māori Values</li> </ul>

	IRIAC Parts I & II: Providing for Māori values and attributes of freshwater health
<i>Holistic Ecosystem Health: Management</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Part 3, Subpart 2: National Objectives framework; Appendices 1A, 2A, 2B.</li> <li>• AFHW: Focus on holistic ecosystem health – te hauora o te wai; New attributes and new management approach.</li> <li>• IRIAC Parts I &amp; II: Recognising all components of ecosystem health; Reporting on the five components of ecosystem health.</li> </ul>
<i>Holistic Ecosystem Health: Aquatic Life</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Appendix 1A; Section 3.17; Tables 1, 2, 13, 14, 15, 16, 17</li> <li>• Proposed NES-FM: Part 2, Subpart 3.</li> <li>• AFHW: Improving protection for threatened indigenous species; Providing for Fish Passage.</li> <li>• IRIAC Part II: Recognising all components of ecosystem health (Option 2, 3, 4 and 7).</li> </ul>
<i>Holistic Ecosystem Health: Habitat</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Sections 3.15 and 3.16.</li> <li>• Proposed NES-FM: Part 2, Subpart 1; Section 18.</li> <li>• AFHW: No further loss of wetlands; No further loss of streams</li> <li>• IRIAC Part I &amp; II: Wetlands; Preventing further loss of streams; Recognising all components of ecosystem health (Option 7: Macrophyte monitoring).</li> </ul>
<i>Holistic Ecosystem Health: Water Quality</i>	<ul style="list-style-type: none"> <li>• Draft NPS-FM: Section 3.9; Section 3.18; Part 3, Subpart 4; Appendices 1A, 2A, 2B, 2C.</li> <li>• RMA Section 360 Draft Stock Exclusion Regulations.</li> <li>• Proposed NES-FW: Part 3; Schedule 1.</li> <li>• AFHW: New bottom line for nutrient pollution; Reducing sediment; A higher standard for swimming; Directing more integrated management; Restricting further intensification of rural land use; Improving farm practices through farm planning; Freshwater modules in farm plans; Immediate action to reduce nitrogen loss; Excluding stock from waterways; Controlling intensive winter grazing; Restricting feedlots; Reducing pollution from stockholding areas.</li> <li>• IRIAC Parts I &amp; II: Nutrient attributes for managing ecosystem health; Sediment; Improving water for contact recreation;</li> </ul>

	<p>Direction to Territorial Authorities to Support Integrated Management;</p> <ul style="list-style-type: none"> <li>○ Recognising all components of ecosystem health (Option 7: Dissolved oxygen (rivers), Dissolved oxygen (lakes)); Agricultural intensification; Reducing excessively high nitrogen leaching (nitrogen cap); Stock exclusion; Intensive Winter Grazing on Forage Crops; Stockholding areas and feedlots.</li> </ul>
<p><i>Holistic Ecosystem Health: Water Quantity</i></p>	<ul style="list-style-type: none"> <li>● Draft NPS-FM: Part 2, Policy 12; Sections 3.7, 3.9, 3.11, 3.12.</li> <li>● AFHW: Clarifying requirements for minimum flows; Real time reporting of water use</li> <li>● IRIAC Parts I &amp; II: Directing clearer ecological outcomes for river flows and water levels; Updating the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 to require real-time reporting of water use</li> </ul>
<p><i>Holistic Ecosystem Health: Exceptions</i></p>	<ul style="list-style-type: none"> <li>● Draft NPS-FM: Part 3, Subpart 4.</li> <li>● AFHW: Exceptions for major hydro-schemes to support renewable energy targets.</li> <li>● IRIAC Parts I &amp; II: Providing for hydroelectricity generation infrastructure</li> </ul>

## 7 Te Ao Māori

### 7.1 Introduction

Māori have multiple, diverse and sophisticated relationships to the environment and to wai Māori. Underpinning and guiding these relationships are a series of values that reflect Te Ao Māori and are the mechanism through which Māori make sense of, experience and interpret their environment. These values guide decision making with respect to the environment, assisting Māori to develop strategies and determine goals and aspirations for the environment and wai Māori (Harmsworth, 2013).

This report assesses the impacts of the Freshwater Proposals on Māori through the Te Ao Māori Framework. The Te Ao Māori Framework has been adapted from work completed by Māori academics including Sir Mason Durie, Garth Harmsworth and Shaun Awatere and draws together values that are most relevant to the relationship between Māori and wai Māori, expressing these as components of the Te Ao Māori Framework (the **Components**). The Components have been captured through a literature review that includes an analysis of the submissions on the Freshwater Proposals relating to Te Ao Māori, Waitangi Tribunal Reports and academic literature. The work of the Focus Groups also informed the Components.

Although the Components focus on those values of Te Ao Māori that are most relevant to the relationship of Māori with freshwater, we note that these principles and values are not an exhaustive list of principles that guide Te Ao Māori. For example, although the report comments on certain aspects of economic impacts for Māori, we understand that a thorough assessment of economic impacts on Māori is being undertaken separately. Furthermore, it is noted that whānau, hapū and iwi will have values which are specific to their own whakapapa and local environment. However, this report is limited to a ‘universal’ approach, focusing on those values that are consistent across Aotearoa.

Consistent with a Te Ao Māori world view, the Components represent a complex matrix of values representing typically physical aspects and non-physical aspects. In a study of kaitiaki through New Zealand, Jonathon Dick and others (2013) noted that distress about ecological degradation to the environment extended to also include concern for the cultural consequences related to loss such as the severance between people and food species, reduced connection between people in their community, erosion of ways that kinship is maintained, severed transmission of mātauranga Māori and impaired health and tribal development (Dick et al, 2013). This reflects a Te Ao Māori world view that value is not restricted to ecological or economic factors but includes a wide range of interconnected factors.

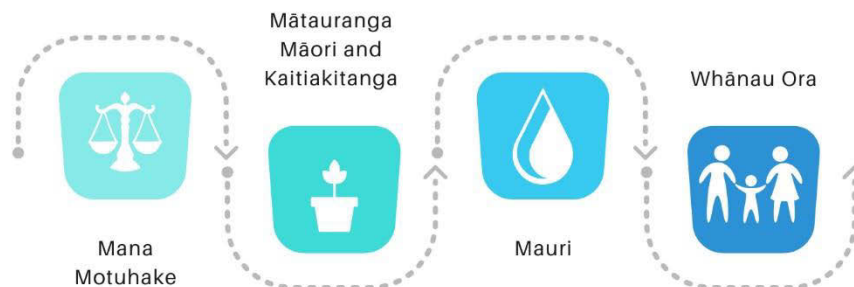
It is important to understand that not all Components complement one another and at times kaitiaki must carefully consider and balance a range of values when determining priorities for the environment (Harmsworth, 2013). This is true for the management of freshwater resources and is a factor the Freshwater Proposals must consider when determining a way forward for the management of New Zealand’s freshwater resources.

## 7.2 Te Ao Māori Framework

The Te Ao Māori Framework clusters principles and values of Te Ao Māori that relate to freshwater into four Components. These Components are set out in Figure 2. This section provides a description of each of the Components and their corresponding values. We acknowledge at the outset that te reo Māori is the means through which the Māori world view, including Māori perspectives on the natural world are expressed. (Waitangi Tribunal, 2011). On this premise, it must be acknowledged that the description of the Components cannot be fully appreciated in the English language but rather have complex layers of understanding that is informed by mātauranga Māori over many generations.

### A TE ĀO MĀORI FRAMEWORK

There are multiple components of a Te Āo Māori framework, and this representation is not comprehensive nor complete. Each Iwi and Hapu will consider their own framework. For the purposes of this work, which has a limited scope, we have focused on four key areas of a Te Āo Māori framework deemed to be helpful when considering these Freshwater Proposals.



### 7.2.1 Mana Motuhake

Mana is often described as self-determination, autonomy and control. Ngata (2006) defines mana motuhake as “separate identity, autonomy”. To give effect to mana motuhake within a freshwater context is to enable Māori to manage freshwater resources in accordance with Māori principles and values and place the authority over those resources in the iwi, hapū and whānau that are most closely connected to the area (Tomas, 2011).

Mana motuhake for Māori and freshwater is aptly captured by this quote from Tina Ngata (2018):

When you ask me what it is that I want to see for the future of my people and our waterways...My vision is the full restoration of our relationship to our waters. The honouring of the divine whakapapa, our genealogical relationship to and intimate interdependency with the waters. The return of our fluency in the communication of the awa, and responsiveness to the needs of our awa.

The maintenance and continuation of Māori principles and values including through the practice of tikanga Māori is an enduring expression of mana motuhake. Continuation of Māori practices and customs also ensure that Māori do not live in accordance with, and in servitude to, other ways of knowing and living thus strengthening our self-determination and mana motuhake (Waitangi Tribunal, 2017).



Since the signing of the Treaty of Waitangi in 1840, the ability for Māori to continue practices and customs relating to freshwater has been eroded. Although, the Treaty of Waitangi 1840 is largely accepted as providing the foundation for a governance partnership between Māori and the Crown and as such providing the basis (from a western legal perspective) for the involvement of Māori in freshwater management and decision making, in practice resource management within Aotearoa is largely a Western planning and policy regime with western processes that are not founded in Te Ao Māori (Harmsworth, 2012).

The Waitangi Tribunal (2011) made strong statements about the failure of the RMA to meet its potential to give Māori space in environmental management stating that:

*Although the RMA represented a significant step forward...in making room for the Māori voice in environmental management, much of its potential remains disappointingly unrealised.*

Waitangi Tribunal recommendations helped to give Māori a greater role in the management of freshwater. The Waikato River, Lake Taupō and Waipapu catchment are examples of iwi working with the Crown to determine methods for exercising kaitiakitanga and affording waterways the very best care possible as iwi work towards re-establishing their relationship with waterways. However, there is still a long way to go to achieve mana motuhake and fully restore the relationships between Māori, freshwater and the environment (Ngata, 2018). Further, it is critical that any initiative to support mana motuhake and to give effect to a Treaty of Waitangi partnership within a freshwater context be grounded in reality. This includes ensuring that iwi and hapū are well-resourced from a funding and capacity perspective, to ensure Māori can have effective participation in freshwater management and decision-making.

### **7.2.2 Mātauranga Māori**

Mātauranga Māori reflects the unique Māori world view and encompasses all aspects of knowledge such as philosophy, beliefs, language, methods, technology and practice (Harmsworth, 2013). Mātauranga Māori captures not only what is known but *how* it is known and includes Māori ways of perceiving and understanding the world, and the values or systems of thought that underpin those perceptions (Waitangi Tribunal, 2011).

With respect to freshwater, mātauranga Māori, and more specifically mātauranga-a-iwi and mātauranga-a-hapū are the unique and enduring knowledge of iwi and hapū that support kaitiakitanga and regulate relationships between people and freshwater. This knowledge is intergenerational in nature and includes traditional technology relating to mahinga kai and food cultivation, storage, hunting, gathering and food preparation. It also includes knowledge relating to the various uses of plants and wildlife and the characteristics and properties of plants and wildlife including habitats, growth cycles and sensitivity to environmental change. Mātauranga Māori also includes various rituals and ceremonies that require interaction with freshwater including tohi (baptism) and pure (rites of cleansing) (Waitangi Tribunal, 2011).

Whakapapa provides the base for mātauranga Māori and, mātauranga relating to freshwater. An essential step to understanding the Māori relationship to the environment is to acknowledge that Māori descend from the natural environment. (Waitangi Tribunal, 2011). Through whakapapa, Māori trace present realities back through hundreds of generations to the atua Māori and their parents Ranginui (the sky father) and Papa-tū-ā-nuku (the earth mother) (Morgan, 2006). Ranginui and Papa-

tū-ā-nuku delegated authority over the natural elements to their children who each reign over specific environmental domains. Whenua is the term used for land as well as placenta and Marsden describes this dual use as a constant reminder that the natural elements and humankind are born from Papa-tū-ā-nuku (Marsden, 2003).

Tracing back to Ranginui and Papatūānuku, Māori accumulated mātauranga Māori over multiple generations guiding the relationship between Māori and the environment. When contemplating a course of action, Māori debate the rules and principles by which they should be guided drawing from first principles of creation stories, the acts of gods or myth heroes such as Māui to determine tikanga. In other instances, Māori rely on tradition and customs that have been adopted over the generations in reliance on first principles, otherwise referred to as tikanga Māori. Tikanga Māori are the customs and traditions handed down through the generations that are accepted as proven and reliable ways to give effect to first principles (Marsden, 2003).

As such, mātauranga Māori is not only knowing but it is also putting knowledge into practice through the practice of tikanga. Phillips et al. (2016) note that the creation narratives are embedded in mātauranga Māori that is then put into practice through tikanga such as those that are exercised through mahinga kai. It is essential to mātauranga Māori that practices such as mahinga kai continue for without their continuation the learning, testing and adapting of this knowledge cannot continue. Therefore, in the context of mahinga kai, if food resources are depleted, mātauranga Māori cannot be transferred to future generations and even if food resources return, the knowledge surrounding that food source may have been lost or altered (Dick et al., 2012).

Mātauranga Māori is not a traditional concept locked in time, but is dynamic and has evolved into many contemporary forms as our ways of knowing and knowledge on both a national and local level evolve, maintaining the relevance of mātauranga Māori in the contemporary world (Harmsworth, 2013). Likewise, tikanga is adaptable to reflect shifts in mātauranga Māori and can also be both generic, such as the universal responsibility of all Māori to care for the environment for future generations, or tikanga can be localised including how and when a rāhui is laid down (Dick et al., 2012).

### **7.2.3 Mauri**

Mauri is described as the life force which generates, re-generates and upholds creation and is the bonding element that holds the fabric of the universe together (Marsden, 2003). Mauri links the physical world to the spiritual world and denotes health and spirit which permeates through all living and non-living things (Harmsworth, 2013).

Freshwater bodies such as rivers, lakes and wetlands have their own mauri. The pollution and degradation of freshwater, the diversion of freshwater bodies and artificially mixing water from freshwater bodies harms the unique mauri of each waterbody. (Waitangi Tribunal, 2012). Water forms can be distinguished from one another depending on the health of the mauri of the water. For example, where mauri is strong and healthy states of water include waiora which can be used for healing and giving life, waiunu which refers to drinking water, waiwhakaika which refers to ceremonial waters used for embedding knowledge, and waiariki refers to healing waters. Conversely, where mauri is depleted or absent various states of wai include waikino which refers to polluted waters and waimate being stagnant, dead or death-inducing water (Ngata 2018).



Māori have inherited the role of kaitiaki through whakapapa to Ranginui and Papa-tū-ā-nuku. An important aspect of kaitiakitanga is that if humankind cares for the environment, the environment will continue to sustain humankind (Te Aho, 2011). As such, it is a key responsibility of Māori as kaitiaki to enhance, protect and maintain the mauri of wai. The failure of iwi, hapū and whānau to protect mauri affects their mana. For this reason, Māori are generally cautious about interfering with the natural balance of the environment as systems that are destabilised could lose their mauri (Tomas, 2011).

The measurement and monitoring of the nature of mauri is a role that is unique to kaitiaki and is the yardstick by which kaitiaki make decisions relating to the natural environment. (Morgan, 2006). Therefore, whilst certain tangible aspects of mauri such as the physical health of the taiao may overlap with western measurements of environmental health, there are several intangible elements of mauri that can only be assessed by iwi, hapū and whānau as kaitiaki. For example, kaitiaki must ensure that tikanga relating to freshwater bodies are respected, such as keeping strictly separate those areas that are used for karakia, food preparation and washing. In turn, this supports the maintenance of the mauri of freshwater (Waitangi Tribunal, 2012). A tikanga or practice that kaitiaki implement to protect the mauri of freshwater bodies is rāhui. Rāhui is used today to protect polluted or relatively unproductive resource bases which in turn enables the revitalisation of the mauri of the resource base (Kawharu, 2000).

Mahinga kai is a key practice in te ao Māori through which the mauri of wai can be measured. Mahinga kai can be broadly described as a traditional Māori food gathering practice and food gathering sites. It is an all-encompassing term that captures the ability to access food resources, the site where food is gathered, the act of gathering and using the food resource and the abundance and good health of food species (Panelli & Tipa, 2009).

Traditionally, Māori heavily relied on mahinga kai as a fundamental source of food. Mahinga kai were carefully managed and conserved and Māori were skilled at ensuring the continued plentiful supply of food. Kaitiaki commonly refer to a childhood of abundant mahinga kai, however, considerable change and development has occurred over their lifetimes resulting in waterway degradations with some foods not readily available and other food having disappeared completely. Where once Māori could wade in the water for 10 minutes to collect kai, now it could take several hours (Dick et al., 2012). The inability of Māori to continue to practice mahinga kai indicates waning mauri and the inability for freshwater to support an abundance of healthy mahinga kai species. This has devastating ongoing effects for Māori including adversely affecting the mana of hapū to offer hospitality and mātauranga relating to mahinga kai.

#### **7.2.4 Hauora<sup>1</sup> – Te Whare Tapa Whā**

Hauora – Te Whare Tapa Whā (**Hauora**) is the Component that more explicitly captures human health and wellbeing and its intersection with freshwater management and decision-making. There are several Māori models of human wellbeing and health that are based on traditional knowledge and understanding. A common factor among these models is the link between Māori wellbeing and the natural environment which reflects the interconnectedness between Māori and the environment as kin (Harmsworth, 2013). As such, the degraded environment and waterways will have negative

---

<sup>1</sup> Hauora in this context represents the Whānau Ora component of the Te Ao framework.

impacts on human physical health and other aspects of health which are of more fundamental importance such as wairua (Durie, 1985).

A wellbeing and health model that incorporates the complex aspects that contribute to Māori wellbeing and health is Sir Mason Durie's Whare Tapa Whā model. This model is rooted in the premise that health is not a universal concept, rather, that full appreciation of health requires an understanding of a particular culture. Te Whare Tapa Whā sees health as a four-sided concept, representing four basic tenets of life:

- *Te Taha Wairua* denotes spiritual well-being which in Te Ao Māori is the most basic and essential requirement for health. Te Taha Wairua includes an acknowledgment of human limitation over the environment and the need to humble oneself to the elements. Spiritual wellbeing includes a spiritual connection with the environment with elements of the environment holding spiritual significance. Disconnection to the environment is often associated with poor spiritual health
- *Te Taha Hinengaro*: denotes the health of one's thoughts and feelings. Healthy thinking is holistic and integrative and combines with the expression of feeling to enable full self-expression.
- *Te Taha Tinana*: denotes physical, bodily health. Physical health has long been an important aspect of wellbeing to Māori. However, that importance is rooted in a different perspective than that of western health professionals. For Māori, physical health is strongly associated with rituals that aim to separate the sacred and the common. For example, the head is regarded as very special and sacred and therefore parts of the head are seen as harmful and head hair must be cut and disposed of in accordance with rituals.
- *Te Taha Whānau*: denotes family health. Family for Māori represents an extended kinship system as opposed to the western nuclear family and family remains the major support system for Māori. A strong sense of identity as part of a wider whānau unit supports family health and reflects the Māori worldview of communal connection as opposed to individual identity (Durie, 1985).

In order to achieve Hauora, all four dimensions of Te Whare Tapa Whā must be in balance and in order to achieve balance, an understanding and a fostering of humankind's relationship with the environment is vital. Therefore, disconnection to the environment, pollution affecting traditional areas of food gathering and the depletion of natural resources all adversely affect health and wellbeing. Many Treaty of Waitangi claims recognise the significance of a clean environment for good health, reflecting this as a universally shared belief amongst Māori (Harmsworth, 2013).

## 8 Impacts Assessment

### 8.1 Introduction

This section assesses the Freshwater Proposals against the Components to determine whether the position of Māori under the National Policy Statement for Freshwater Management 2017 (the **NPS-FM 2017**) will be enhanced or diminished. The assessment uses the following scale:

- Neither diminishes nor enhances where the position of tangata whenua has not changed under the Freshwater Proposals.
- Low: where the position of tangata whenua has changed but to an insignificant amount.
- Medium: where the position of tangata whenua could be changed to a significant amount, however, competing effects diminish the significance.
- High: where the position of tangata whenua will be changed to a significant amount.

This section focuses attention on those Freshwater Proposals that we consider will most significantly impact Māori and clusters the Freshwater Proposals as follows:

- Te Mana o te Wai
- Strengthening Māori Values
- Holistic Ecosystem Health:
  - Management, Monitoring and Reporting
  - Aquatic Life
  - Habitat
  - Water Quality
  - Water Quantity
  - Exceptions

Where a Freshwater Proposal may have similar impacts on multiple te ao Māori values, this impact assessment focuses on values that are most significantly impacted whilst acknowledging the interconnectedness of Māori values and that an enhancement or diminishing of one value will generate effects to other Māori values.

#### 8.1.1 Limitations

We acknowledge that by limiting this impact assessment to a comparison of the Māori position under the NPS-FM 2017 and the Freshwater Proposals, we are unable to assess whether the Freshwater Proposals go far enough to achieve te ao Māori values with respect to freshwater. Furthermore, given this is an impact assessment, we also have not been directed to make recommendations to better uphold or achieve te ao Māori values.

Although issues of Māori customary and contemporary rights to freshwater have been raised throughout consultation on the Freshwater Proposals, this assessment does not address these issues. However, we acknowledge the validity of submissions and stress that determining these issues will contribute to the better involvement of tangata whenua in freshwater management and decision making.

Our brief does not include undertaking a policy by policy assessment, but rather we have been directed to undertake a high-level assessment of policy clusters. As such, we have not assessed whether the

framework of the Draft NPS-FM properly provides the means through which overarching concepts such as Te Mana o te Wai, as well as the Objective and Policies of the Draft NPS-FM can be delivered.

Finally, we acknowledge that none of the Freshwater Proposals will be effective without full and proper resourcing (including capacity and capability building within iwi and hapū) of Māori to be meaningfully involved in freshwater management and decision-making. We support the Government progressing non-regulatory support in this respect.

## 8.2 Te Mana o te Wai

### 8.2.1 Current Position: NPS-FM 2014 (2017 Amendments)

Te Mana o te Wai (TMotW) was first incorporated into the NPS-FM in 2014 and then clarified and strengthened in the NPS-FM 2014 (2017 amendments) (NPS-FM 2017). TMotW was further clarified in the 'National significance of freshwater and Te Mana o te Wai' section and incorporated into an objective in the NPS-FM 2017. The objective required regional councils to 'consider and recognise Te Mana o te Wai in the management of fresh water'.

### 8.2.2 Proposed Position: Freshwater Proposals

The Draft NPS-FM proposes to reframe TMotW in the current NPS-FM by clarifying current provisions, further embedding the concept and requiring an approach that prioritises the essential value, health, and wellbeing of the waterbody. The Draft NPS-FM proposes to:

1. Clarify the descriptor of TMotW so that it more clearly underpins the whole framework of the regulation.
2. Clarify how new and existing components of the NPS-FM relate to TMotW.
3. In addition to managing freshwater in a way that is consistent with TMotW, regional councils will be required to, in discussions with communities and tangata whenua:
  - a) Determine local understanding of TMotW for local waterbodies.
  - b) Establish a long-term vision and trajectory (i.e. multi-generational) for the waterbody to be articulated in regional policy statements. This step would involve:
    1. Understanding what communities and tangata whenua want their waterbodies to look like in the future.
    2. Understanding of the history of and current pressures on local waterbodies.
    3. Assessing whether the water bodies can sustain current pressures and meet the aspirations communities and tangata whenua hold for the water.
  - c) Report on whether freshwater management is moving towards the long-term trajectory established by communities and tangata whenua.

### 8.2.3 Impact Assessment

The Draft NPS-FM contains provisions that will help to give effect to TMotW. This section does not assess all of these provisions but rather focuses on the clarified definition of TMotW in Section 1.5 Draft NPS-FM and the process for giving effect to TMotW in Section 3.2.

Te Ao Māori Value	Assessment
<i>Mana motuhake</i>	<p>Enabling tangata whenua to further engage in planning for TMotW may increase tangata whenua participation in freshwater management and provide a further pathway for tangata whenua to express aspirations with respect to freshwater. These measures support the achievement of mana motuhake.</p> <p>Any improvement in the clarity and strength of TMotW for regional councils would be well received by tangata whenua as there is still significant misunderstanding of the use and definition of TMotW by regional councils. From discussions with iwi and hapū practitioners the implementation of TMotW currently is entirely dependent on the</p>

<p>capacity, capability and willingness of council staff and consequently, councillors to work with tangata whenua through a constructive and partnership approach. Results across councils are variable and inconsistent with insufficient investment of resources from councils to ensure appropriate delivery and understanding of TMotW.</p> <p>The recent Auditor-Generals report on water management identifies that the commitment needed from central and local government to give effect to the avenues available for tangata whenua to participate in water management is beyond what is currently provided.<sup>2</sup></p> <p>These proposals have the potential to improve the influence and participation of tangata whenua in the freshwater management process. However, tangata whenua are not positioned as either Treaty partners or decision-makers within the TMotW process.</p> <p>Tangata whenua are positioned alongside the community with regional council positioned as final decision-maker. In a worst-case scenario, the process leaves room for regional councils to determine local understandings of TMotW without properly collaborating tangata whenua views or even prioritising competing views of TMotW above tangata whenua to ensure their views are understood.</p> <p>To give effect to mana motuhake, it is important that tangata whenua have input at all levels of freshwater management including operational and governance. Thus, whilst there is an avenue for tangata whenua to influence local understandings of TMotW, this is limited and usurped by regional councils being given ultimate decision-making powers.</p> <p>Requiring regional councils to report on whether freshwater management is moving towards achieving the long-term TMotW vision is essential in ensuring councils are held accountable when tangata whenua are not positioned as Treaty partners or decision-makers in the TMotW process. However, TMotW must be characterised in a way that incorporates Māori perspectives to ensure the measurement of TMotW is effective and supports mana motuhake.</p> <p>A regional approach for determining an understanding of TMotW enables tangata whenua to determine freshwater management for the waterbodies they whakapapa to as opposed to being required to adopt a national and generic understanding of TMotW. This is a positive step and a positive impact on achieving and supporting tangata whenua mana motuhake as it allows individual iwi, hapū and whānau to determine for themselves understandings of TMotW. In comparison to NPS-FM 2017, where there was no requirement to involve tangata whenua in TMotW planning, we consider that the Draft NPS-FM <b>neither enhances or diminishes</b> mana motuhake. This is based on the fact that tangata</p>
--

<sup>2</sup> <https://oag.govt.nz/2020/water-management/docs/water-management.pdf>

	<p>whenua are not positioned as decision makers, and in worst case scenarios, tangata whenua could have limited to no involvement in the formulation of local understandings of TMotW should regional councils so determine.</p>
<p><i>Mātauranga Māori</i></p>	<p>TMotW requires freshwater to be managed firstly for its inherent qualities before it is shared for other uses. This approach reflects a te ao Māori view which is grounded in whakapapa and reflects the paramount importance of protecting the taiao and then turning to human need.</p> <p>The Freshwater Proposals further embed TMotW, a te ao Māori concept, in freshwater management including by:</p> <ul style="list-style-type: none"> <li>• Further clarifying TMotW</li> <li>• Compelling inclusion of TMotW in regional planning documents; and</li> <li>• Using TMotW as a tool for interpretation of freshwater planning documents</li> </ul> <p>The Freshwater Proposals require regional councils to enable mātauranga Māori when giving effect to TMotW. If this requirement is given full effect, this could result in the practical application of Māori knowledge for the betterment of wai. For example, councils could adopt mauri-based measurement, kaitiakitanga methodologies, cultural monitoring and holistic, integrated approaches to regenerative programs of restoration. The success of this proposal depends on the extent to which regional councils adopt mātauranga Māori. Iwi and hapū practitioners have identified that there are mixed results in this area, and there is overall a lack of resourcing from council to support mātauranga Māori to be integrated into their programmes of work.</p> <p>Developing overarching long-term visions for TMotW in conversations with tangata whenua enables long-term planning for freshwater management which aligns with tangata whenua ways of knowing by observation of freshwater over generations, building up repositories of knowledge that can then be transferred through generations.</p> <p>Developing local understandings of TMotW enables tangata whenua to incorporate mātauranga-ā-iwi and mātauranga-ā-hapū into freshwater planning, supporting local understanding and relationships to freshwater, if councils implement this policy well the impact on mātauranga will be positive.</p> <p>Reporting on whether long-term visions for TMotW are being achieved can enable the collection of data that informs mātauranga Māori.</p> <p>The meaning of TMotW as a te ao Māori concept could be reduced by putting the development of TMotW in local communities' hands, particularly if community members attempt to assert priority for matters that conflict with the priority of freshwater. This is particularly relevant in areas where the collaborative methods chosen by council to discuss TMotW support only one tangata whenua representative to represent all iwi and hapū in the region or where the wider community greatly</p>

	<p>outnumbers the iwi and hapū participants. It is also risky where the capacity and capability of iwi and hapū practitioners are often grossly underfunded against larger industry advocates or community groups.</p> <p>In these situations, Māori are often forced to ‘prove’ the validity of mātauranga Māori against western science and are expected to resource mātauranga Māori themselves whereas western science parameters are often monitored by councils who are funded by rate payers.</p> <p>There must be an ability to amend and update local understandings of TMotW and long-term visions in recognition that mātauranga Māori is dynamic and to remain relevant must change to suit changing environments. Mātauranga Māori is also evolving as iwi and hapū reclaim lost knowledge and grow their understanding of its potential and implementation. It is unclear how this is provided for in the Freshwater Proposals.</p> <p>The impact of the provisions regarding mātauranga Māori are potentially positive, however, the implementation of this is still left to councils who are not effectively carrying out the current NPS requirements. Without extensive investment in Māori skilled practitioners both inside and out of Council, and an increase in Māori representation, tangata whenua are concerned that the mātauranga Māori provisions will not be enforced.</p> <p>In comparison to NPS-FM 2017, further clarifying TMotW as a te ao Māori concept and involving tangata whenua in TMotW local planning will <b>enhance</b> mātauranga Māori to a <b>medium</b> extent given the possibility for mātauranga Māori to be usurped by regional council decision-making and local community aspirations.</p>
<i>Mauri</i>	<p>The extent to which mauri is enhanced within these Freshwater Proposals depends upon the extent to which local understandings of TMotW, as formulated by communities and tangata whenua, adopt understandings of mauri. Adoption of understandings of mauri is assisted by the obligation to adopt the priorities in the 'hierarchy of obligations' which prioritises the health of water bodies thus protecting the life-supporting capacity of freshwater. Furthermore, requiring that an understanding of the history and current pressures on waterbodies informs an understanding of TMotW aligns with a kaitiaki approach to consider freshwater bodies holistically as opposed to compartmentalised.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals <b>enhance</b> mauri indirectly in that further articulation of TMotW includes concepts that are relevant to upholding and supporting mauri. However, enhancement is of a <b>low</b> extent as the extent to which mauri is incorporated into TMotW in practice depends largely on local communities and regional councils.</p>
<i>Hauora – Te Whare Tapa Whā</i>	<p>The TMotW planning process positions tangata whenua alongside other members of the community where tangata whenua may be placed in an</p>



adversarial position. A common experience tangata whenua face when attempting to assert Māori values for freshwater planning is facing strong opposition from those members of the community whose values are focused on economic gain to the detriment of freshwater health. Such processes adversely impact Te Taha Wairua, Te Taha Hinengaro and Te Taha Tinana by subjecting Māori to trauma and stress.

Being marginalised within council processes and being forced to conform to a western paradigm, where decision-making power is unequal also has a detrimental effect on the wairua of tangata whenua practitioners. Iwi and hapū practitioners spoke of their frustration and 'burn out' through both 'hui fatigue' and the consistent, ratepayer resourced push back from many council staff and councillors regarding Māori values, perspectives and aspirations.

Iwi and hapū practitioners have felt that they are often seen as slowing down freshwater planning processes, instead of being viewed as having a unique role as kaitiaki and protectors of the natural environment with valuable technical skills to offer to the process. The proposed policies have the potential to be positive, but without significant culture change in council structures, the current negative impact on the wairua of iwi and hapū practitioners is expected to remain.

The Freshwater Proposals enable tangata whenua input into TMotW planning which could help to foster and strengthen the connection between tangata whenua and freshwater, strengthening health and wellbeing should te ao Māori values be adopted through TMotW planning.

The NPS-FM 2017 provided no clear avenue for tangata whenua involvement in planning for TMotW and in this respect, the Freshwater Proposals enhance Hauora, however, the avenue the Freshwater Proposals provides is fraught and likely to generate stress and trauma to tangata whenua. On balance, the Freshwater Proposals **diminish** Hauora to a **low** extent.

## 8.3 Strengthening Māori Values

### 8.3.1 Current Position: NPS-FM 2017

The NPS-FM 2017 requires regional councils to provide for the involvement of iwi and hapū in freshwater management and to identify and reflect tangata whenua values in freshwater management and decision-making including on how all objectives in the NPS-FM 2017 are given effect to. The NPS-FM 2017 requires that freshwater is managed through a framework that considers and recognises TMotW as an integral part of freshwater management. The NPS-FM 2017 otherwise recognises Māori values as follows:

- ‘Mahinga kai’ is recognised as an ‘Other value’ within the National Objectives Framework (NOF).
- Policy CB1 requires regional councils to include mātauranga Māori in their monitoring plans.
- Part D sets out a process for involving Māori in freshwater management and planning by requiring regional councils to identify Māori values and interests and reflect them in freshwater planning. This process sits outside of the NOF and lacks clarity as to how regional councils and hapū/iwi integrate these processes.

### 8.3.2 Proposed Position: Freshwater Proposals

The Government consulted on two proposals.

Proposal 1 involves consolidating the two existing mahinga kai ‘other national values’ into one compulsory value in the NOF elevating mahinga kai status to align with ecosystem health and human health for recreation. This option will compel regional councils to incorporate mahinga kai into regional freshwater planning through, among other things, requiring mahinga kai attributes and target attribute states to be set in every Freshwater Management Unit.

Since the release of *Action for healthy waterways – A discussion document on national direction for our essential freshwater*, the Ministry for the Environment provided an update that, based on submissions received on the Essential Freshwater package, Proposal 2 will likely not be adopted by Government. Therefore, this assessment focuses on the impacts of Proposal 1 on tangata whenua.

### 8.3.3 Impact Assessment

Te Ao Māori Value	Assessment
<i>Mana motuhake</i>	<p>The Freshwater Proposals provide direction compelling regional councils to manage freshwater for its mahinga kai value. Mahinga kai is a te ao Māori concept and this inclusion should strongly support tangata whenua to be provided a greater opportunity to lead freshwater planning. It also supports tangata whenua decision-making concerning mahinga kai, enabling tangata whenua to manage fresh water in accordance with Māori values and tikanga as opposed to being subject solely to western values and processes.</p> <p>Attributes and values for the mahinga kai value will be set regionally supporting the mana motuhake of iwi and hapū by removing generic</p>

	<p>national standards and ensuring iwi and hapū can self-determine values that are relevant within their rohe.</p> <p>Conversely, by not including compulsory attributes for mahinga kai (similar to the compulsory values for ecosystem health), there is a risk that regional councils fail to include important attributes of mahinga kai. Iwi and hapū practitioners’ experience has shown that regional councils are much more likely to focus resource on compulsory attributes than non-compulsory attributes (i.e. the water quality and quantity attributes have been the main focus of regional councils to the detriment of other ecosystem health factors).</p> <p>Incorporating mahinga kai as a compulsory value enables tangata whenua to have immediate input and effect into freshwater management due to the existing knowledge systems and guidance that have been established through the NPS-FM 2017.</p> <p>The Treaty principle of partnership is not achieved by these Freshwater Proposals as ultimate decision-making power still rests with regional councils. Providing regional councils with decision-making powers over a te ao Māori kaupapa presents a risk that regional councils will diminish the value of mahinga kai through incorrect interpretation of mahinga kai values both out of lack of capability or expertise in this area and through pressure applied to regional council by community members whose values do not align with mahinga kai values.</p> <p>When adopting te ao Māori values such as mahinga kai, tangata whenua leadership must be enabled at all levels for delivering values, from decision-making to operationalising values. The Draft NPS-FM does not provide direction in this respect.</p> <p>In comparison to the NPS-FM 2017, although regional councils will be compelled to provide for mahinga kai as a compulsory value, tangata whenua are still not recognised as Treaty partners and therefore mana motuhake is <b>neither enhanced nor diminished</b> by the Freshwater Proposals.</p>
<p><i>Mātauranga Māori</i></p>	<p>Including mahinga kai as a compulsory value will ensure that mātauranga Māori will be included in freshwater management planning. Not only will values be articulated for mahinga kai, but identifying existing knowledge, and monitoring and reporting on mahinga kai data will be required which will enable the collection and analysis of data to better inform kaitiaki decisions relating to freshwater management.</p> <p>Intergenerational transfer of knowledge could also be enabled – when identifying existing data, knowledge systems that may be held</p>

	<p>by kaumatua generations could be collected and transferred to younger generations who are involved in monitoring existing states of mahinga kai. Younger generations could then transfer the knowledge they have gained to older generations.</p> <p>This Freshwater Proposal will ensure a holistic management tool led by mātauranga Māori rather than a siloed approach that is currently provided under the existing NOF.</p> <p>This Freshwater Proposal will support TMotW and in particular the descriptor of TMotW of enabling mātauranga Māori, to the health and wellbeing of water bodies and freshwater ecosystems. This Freshwater Proposal enables an ability to go beyond the limited biophysical measures for freshwater management and examine other values that relate to mahinga kai such as the interconnectedness of tangata whenua to freshwater from both a wairua and whakapapa perspective.</p> <p>There are no compulsory attributes for the compulsory mahinga kai value. Experience has shown that regional councils tend to focus resources on compulsory attributes and therefore there is a risk that some mātauranga Māori aspects of mahinga kai may not be managed. However, enabling local communities to determine mahinga kai values supports mātauranga-ā-iwi and mātauranga-ā-hapū. Furthermore, when the next iteration of the NPS-FM is formulated, it may be clearer through the implementation of the mahinga kai value whether there are compulsory values that could be included in the NPS-FM. Therefore, a fine balance must be struck between these competing priorities.</p> <p>Providing for mahinga kai as the only tangata whenua specific compulsory value could compartmentalise Māori freshwater values prevent the identification of further tangata whenua values and the associated identification and development of mātauranga Māori relating to such other tangata whenua values. Many iwi and hapū practitioners have identified mauri as the value which would be better suited to be included as the compulsory value in addition to mahinga kai.</p> <p>In comparison to the NPS-FM 2017 where mahinga kai was an 'other value', the Freshwater Proposals will <b>enhance</b> mātauranga Māori to a <b>high</b> extent. This is particularly due to the ability to add to and enhance the repository of mātauranga Māori relating to mahinga kai.</p>
<p><i>Mauri</i></p>	<p>The mauri of freshwater is a critical measurement of mahinga kai health. Assuming mauri is included as an attribute within freshwater management for mahinga kai, the Freshwater Proposal will enable, at the least, measurement and monitoring of mauri as well as require steps to be taken to ensure target attribute states of mauri are met.</p>

	<p>A principal role of tangata whenua as kaitiaki of freshwater is to protect mauri. Mahinga kai is one indicator of mauri health and therefore the management of mahinga kai as a compulsory value will contribute to mauri health, supporting kaitiakitanga.</p> <p>The determination of mahinga kai attributes and associated measurement and monitoring will be crucial to the success of this Freshwater Proposal. Mātauranga Māori practitioners have been clear that any measurement of mauri can only be completed by the mana whenua and mana wai of the rohe. This measurement cannot be devolved to non-tangata whenua parties.</p> <p>In comparison to the NPS-FM 2017 where mahinga kai was an ‘other value’, the Freshwater Proposals <b>enhance</b> mauri to a <b>high</b> extent.</p>
<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>Mahinga kai is a Te Aō Māori concept and practice that supports Māori health and wellbeing, including through encouraging connections to the environment and within whānau, hapū and iwi, and supporting good self-esteem and strong identity. It also provides opportunities for increased access to traditional kai stocks for improved physical health. The key is to ensure that Māori are leading mahinga kai planning.</p> <p>In comparison to the NPS-FM 2017 where mahinga kai was an optional value to monitor and enhance, providing Māori are heavily involved in mahinga kai management and planning, the Freshwater Proposals will <b>enhance</b> Hauora to a <b>high extent</b>.</p>

## 8.4 Holistic Ecosystem Health: Management, Monitoring and Reporting

This section of the assessment addresses the Freshwater Proposals that provide the *framework* for delivering a holistic approach to ecosystem health. Freshwater proposals that relate to the *specific* components of ecosystem health such as aquatic health and habitat are addressed in sections 8.5 to 8.9.

### 8.4.1 Current Position: NPS-FM 2017

The NPS-FM 2017 directs councils to provide for ecosystem health in all FMUs and to improve the integrated management of freshwater, including by recognising the interactions between environments connected to water and managing cumulative effects. However, in practice central national direction and local authority management focus narrowly on water quantity and quality. There is relatively little (if any) direction to manage habitat or aquatic life which are important aspects of ecosystem health. Gaps in the current management of freshwater through the NPS-FM 2017 also include:

- Where an attribute does not lend itself easily to management through limit setting, those attributes are not being sufficiently managed by councils. This is particularly so for attributes where the drivers or necessary actions may not be clear at a national level and require determination at a regional level.
- Council's state of environment monitoring does not currently monitor ecosystem metabolism relating to the 'Ecosystem processes' component of ecosystem health.
- Limited direction as to how ecosystem health monitoring and reporting is to be achieved and resulting gaps in reporting on all five components of ecosystem health.

### 8.4.2 Proposed Position: Draft NPS-FM

The Draft NPS-FM proposes a holistic approach to regional freshwater planning that captures all five elements of ecosystem health: water quality, water quantity, aquatic life, physical habitat and the interaction between all components. The Freshwater Proposals provide a stepped process through the following framework for delivering a holistic approach:

- Amending the description of the ecosystem health value to clarify its five specific components and that management is required of each component.
- Requiring regional councils to:
  - Identify the Ecosystem Health values that apply to each FMU.
  - Describe the environmental outcomes it wants to achieve for the value of Ecosystem Health and each of its components for each FMU.
  - Identify the current state of attributes for Ecosystem Health (or for water quantity, identifying environmental flows) – both compulsory attributes as set out in Appendix 2A and 2B or additional attributes it identifies.
  - Identify a target attribute state for each attribute in order to achieve the identified environmental outcomes. Target attribute states must be at or above the identified current state; or if the current attribute state is worse than the national bottom line for that attribute (as set out in Appendix 2A and 2B) the target attribute state must be set at, or better than, the national bottom line.

- Identify take limits to meet environmental flows that must be included as rules in regional plans for water quantity and to determine whether existing water permits will be reviewed to comply with environmental flows and levels.
- Undertake monitoring of attributes that do not lend themselves easily to a limit setting approach, to detect possible issues and develop an action plan to investigate and respond to evidence to ensure these attributes are satisfactorily managed.
- Achieve target attribute states for the compulsory attributes in Appendix 2A, regional councils must identify limits on resource use to be included as rules in regional plans.
- Achieve target attribute states for the compulsory attributes in Appendix 2B, regional councils must prepare an action plan.
- Regional councils will be required to establish methods for monitoring progress towards achieving target attribute states and identified environmental outcomes. These methods must include measures of health for indigenous flora and fauna and mātauranga Māori.
- Regional councils will also be required to monitor ecosystem metabolism although a bottom line will not be set due to the current state of limited knowledge relating to this component.
- Where an attribute declines or is below a national bottom line, councils would implement an action plan to achieve improvement. Where a target attribute state, environmental flow or level or environmental outcome is not being met, the regional council may take any other steps, which may be regulatory (i.e. rules) or non-regulatory to assist to achieve goals within defined timeframes.
- In terms of reporting, regional councils will be required to transparently report all monitoring data against the five components of ecosystem health including identifying information gaps and to produce a single ecosystem health score.

### 8.4.3 Impact Assessment

Te Ao Māori Value	Impact Assessment
<i>Mana motuhake</i>	<p>Although ecosystem health captures biophysical aspects of freshwater health that are relevant to Māori values, the focus on ecosystem health attributes in the Draft NPS-FM limits tangata whenua ability to manage fresh water in accordance with Māori values and processes as in practice it is likely councils will focus on compulsory attributes as opposed to additional identified values that may closely align with Māori values. The ecosystem health perspective fails to connect to TMotW and fails to include mātauranga Māori which excludes tangata whenua from its implementation unless along non-Māori aspects. This erodes participation by tangata whenua in the process while further diminishing mana motuhake.</p> <p>Despite regional councils being required to consult with tangata whenua on values relating to FMUs, regional councils are the ultimate decision-makers when it comes to identifying, monitoring and planning for freshwater ecosystem attributes. Such an approach does not recognise tangata whenua as equal Treaty partners</p>

	<p>In comparison to the NPS-FM 2017, the Freshwater Proposals do not provide for better or less participation of tangata whenua as decision-makers in freshwater management. Mana motuhake is <b>neither enhanced nor diminished</b> by the Freshwater Proposals.</p>
<p><i>Mātauranga Māori</i></p>	<p>Methods for monitoring progress towards achieving target attribute states and identified environmental outcomes must include measures of health through mātauranga Māori including mauri. This ensures that mātauranga Māori is included in freshwater management. In practice, using mātauranga Māori monitoring methods could also help to ensure that mātauranga Māori values are being monitored as it would be difficult to utilise mātauranga Māori monitoring methods for values that are not based in mātauranga Māori.</p> <p>Ecosystem health is a concept grounded in biophysical determinants of freshwater health alone. Mātauranga Māori dictates that freshwater health is determined by both biophysical and non-biophysical aspects such as wairua, an aspect of the Te Ao Māori Framework under ‘Hauora’. However, the main focus of the Draft NPS-FM remains on ecosystem health, a western view of freshwater health. Despite this, widening the direction and scope of the NOF to compel councils to better manage all aspects of ecosystem health, does capture more measures of freshwater health that align with mātauranga Māori.</p> <p>Collating and reporting on monitoring data for the five components of ecosystem health will help to identify where improvements can be made in freshwater management to support TMotW, a te ao Māori concept.</p> <p>The NPS-FM 2017 already requires that monitoring methods for values of FMUs must include mātauranga Māori and therefore there is no change in this respect. In comparison to the NPS-FM 2017, the Freshwater Proposals do not provide for greater use of mātauranga Māori by continuing to characterise the aspects of ecosystem health in the bio-physical alone. Mātauranga Māori is <b>neither diminished or enhanced</b> by the Freshwater Proposals.</p>
<p><i>Mauri</i></p>	<p>Clarifying the definition of ecosystem health and requiring management of each of the five components will help to support the mauri of freshwater by improving biophysical components.</p> <p>However, the mauri of freshwater is not limited to biophysical components and there is concern that focusing on these components will reduce the focus of non-physical mauri indicators to their detriment. When viewed holistically, there is a concern overall mauri of freshwater is reduced. For example, wastewater treatment prior to discharge to freshwater may be improved so that nutrients in freshwater are reduced, but the spiritual quality and</p>



	<p>mauri of freshwater will remain depleted and unsafe for use, particularly for uses that require pristine water quality such as tohi rites.</p> <p>Requiring that mātauranga Māori measures are used to monitor progress towards achieving target attribute states and environmental outcomes for ecosystem health ideally should ensure that tangata whenua are enabled to exercise kaitiakitanga through establishing mātauranga Māori methods and undertaking the monitoring. This will enable tangata whenua to discharge kaitiakitanga obligations to protect the mauri of freshwater. However, this will rely on regional councils as final decision-makers ensuring tangata whenua participation as kaitiaki.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals will ensure that a wider range of ecosystem health aspects are measured, monitored and improved which will support mauri. However, the focus on ecosystem health could be to the detriment of mauri where non-biophysical measures are not given the same priority. It is hoped that non-biophysical measures are captured through the NOF process for the proposed mahinga kai value, however, this is not certain. Therefore, on balance, the Freshwater Proposals <b>neither enhance nor diminish</b> mauri.</p>
<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>Ecosystem health is focused on biophysical health and does not explicitly consider the connection between human health and wellbeing and freshwater. For example, habitat may be improved in a freshwater body, however, access may be restricted which perpetuates a disconnect between people and freshwater, adversely affecting Hauora – Te Whare Tapa Whā, in particular, 'Te Taha Tinana' and 'Te Taha Wairua'.</p> <p>Indirectly, there may be increased benefits to Hauora through improvements to ecosystem health (i.e. an increased ability to interact with the environment where environments are restored and enhanced (, however, those will not be explicitly monitored or measured through the Freshwater Proposals and will be difficult to assess with certainty.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals <b>neither diminish nor enhance</b> Hauora.</p>

## 8.5 Holistic Ecosystem Health: Aquatic Life

### 8.5.1 Current Position: NPS-FM 2017

Despite the NPS-FM 2017 directing councils to provide for ecosystem health, approaches to ecosystem health are narrowly focused on water quantity and quality and fail to promote restoration or manage risks to indigenous and threatened species. In particular:

- There is relatively little (if any) direction in the NPS-FM 2017 to provide specifically for aquatic life including ensuring habitat connectivity for native freshwater fish species that require access to the sea and freshwater to complete their lifecycles.
- There is a lack of systematic monitoring of fish throughout Aotearoa.
- NPS-FM 2017 requires the monitoring of macroinvertebrates but at a level that is insufficient for managing broader ecosystem health.

### 8.5.2 Proposed Position: Draft NPS-FM

In addition to the measures set out in Section 8.4, the Freshwater Proposals include the following to achieve Ecosystem Health, and in particular to support aquatic life:

- Include a new compulsory national value for threatened species in the Draft NPS-FM. As a compulsory value, regional councils will be required to apply the value to all FMU's in their region and consider objectives and attributes accordingly.
- Require regional councils to include aquatic life objectives in regional plans to achieve diversity and abundance of fish. Objectives must identify where fish passage must be provided (or prevented for undesirable species) and must integrate management with the Department of Conservation.
- Design requirements are imposed on regional councils to implement in regional plans and when considering applications for consent relating to an instream structure. Minimum design standards must be met for structures that are less than 4m high.
- Regional councils will be required to establish and implement a work programme to improve the extent to which existing structures achieve the council's aquatic life objectives for fish.
- Regional councils will be required to monitor fish communities with action required (in the form of an action plan) if there is a declining trend shown or fish health is below the national bottom line.
- Requiring regional councils to monitor additional measures of macroinvertebrate health with action required (in the form of an action plan) if there is a declining trend or macroinvertebrate health is below the national bottom line.

### 8.5.3 Impacts Assessment

Te Ao Māori Value	Impacts Assessment
<i>Mana motuhake</i>	Threatened native species and native aquatic species are a taonga to tangata whenua. Te Tiriti o Waitangi guaranteed tangata whenua the unqualified exercise of tino rangatiratanga over these taonga. Including a new compulsory value for threatened species supports the protection of threatened species but does not

	<p>provide tino rangatiratanga to tangata whenua as regional councils are still the ultimate decision making in this regard and regional councils could decide to manage threatened species in a way that does not support te ao Māori world views.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals <b>neither enhance nor diminish</b> mana motuhake.</p>
<p><i>Mātauranga Māori</i></p>	<p>The Freshwater Proposals will require regional councils to monitor the health of threatened species, fish life and macroinvertebrate, all attributes of importance within te ao Māori. Information collected from monitoring may have some alignment with mātauranga Māori.</p> <p>However, the Draft NPS-FM includes aquatic health monitoring measures that are not mātauranga Māori methods (i.e. Fish IBI, MCI, QMCI). Regional council will also use non-Māori criteria to determine the classification of threatened species which does not consider mātauranga Māori.</p> <p>In comparison to the NPS-FM 2017, where there is little if any direction to provide for aquatic health, the Freshwater Proposals <b>enhance</b> mātauranga Māori. However, this is to a <b>low extent</b> due to the lack of incorporation of mātauranga Māori within aquatic life management.</p>
<p><i>Mauri</i></p>	<p>A strong approach to aquatic health (i.e. one that provides directions and minimum expectations) in addition to measures such as water quality and quantity will ensure that a more holistic approach to freshwater management is adopted, including mauri measurement and understanding.</p> <p>Removing restrictions to fish passage is key to supporting the mauri of aquatic life and in turn, the mauri of freshwater health. Many mahinga kai species require access to the sea and freshwater to complete their lifecycles and therefore, removing restrictions also supports the mauri of mahinga kai.</p> <p>Aquatic health management measures must be directed towards indigenous fish including species that are more commonly found in mahinga kai. A focus on species that are native to freshwater environments will ensure that relating habitat and management measures also support the natural freshwater environment and the mauri within. The removal of salmon will ensure that there is not a focus on exotic species.</p> <p>In comparison to the NPS-FM 2017 where aquatic health was not adequately provided for, the Freshwater Proposals <b>enhance</b> mauri to a <b>medium extent</b>.</p>

<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>Managing freshwater for aquatic health may, in turn, support mahinga kai. Mahinga kai as a practice supports health and wellbeing of tangata whenua including encouraging connections to the environment and within whānau, hapū and iwi, and supporting good self-esteem and strong identity through practicing mahinga kai.</p> <p>Access to mahinga kai also provides healthy kai options for whanau supporting Te Taha Tinana. This requires that mahinga kai species are being managed for their health.</p> <p>In comparison to the NPS-FM 2017 where aquatic health was not adequately provided for, the Freshwater Proposals <b>enhance</b> Hauora. However, the extent to which Hauora is enhanced will depend on methods employed to monitor aquatic health as well as whether mahinga kai species are being managed for their health. Therefore, the Freshwater Proposals enhance Hauora to a <b>medium</b> extent.</p>
--	---

## 8.6 Holistic Ecosystem Health: Habitat

### 8.6.1 Current Position: NPS-FM 2017

The current regulatory regime for stream habitat is set by regional councils and is ad hoc and will continue to allow the gradual loss of streams and habitat particularly in regions with more permissive planning frameworks. Regional approaches are not considering the cumulative effects of multiple instances of piping and infilling throughout a stretch of stream. Often the ecological value of streams is outweighed by the economic benefits of maximising profits through stream use and mitigation measures to offset effects are inadequate.

With respect to wetlands, the NPS-FM 2017 requires that the 'significant values of wetlands' be protected in terms of both water quality and quantity but does not define what the significant values of wetlands are. This leaves interpretation of 'significant values' to councils. In some cases, this has resulted in councils focusing only on 'significant wetlands' meaning other wetlands remain subject to ongoing wetland loss. Policies within the NPS-FM 2017 that could offer protection to wetlands are relatively weak and relate to only a few activities that affect wetlands (see Objectives A2, B4 and B5 of the NPS-FM 2017). Across regional councils, protection for inland wetlands varies.

### 8.6.2 Proposed Position: Draft NPS-FM

The Draft NPS-FM will seek to avoid loss of habitat rather than attempt to restore them at a later date. In particular, the Draft NPS FM will:

- Require councils to (at least) maintain the extent and ecosystem health of rivers and streams, and their associated freshwater ecosystems, in their region. In particular:
  - Permanent diversions of streams and culverting streams must not result in a net loss in the extent of ecosystem health of a stream where allowed and as far as practicable.
  - Infilling of river or stream beds must be avoided unless there are no practicable alternative methods of providing for the activity and it is an activity designed to restore or enhance the natural values of the stream or of any adjacent or associated ecosystem; or it is necessary to enable nationally significant infrastructure; or it is required for the purposes of flood prevention or erosion control.
- Apply the 'effects management hierarchy' when considering an application for a consent that could adversely affect any stream:
  - Effects are avoided where possible, ○ Adverse effects that cannot be demonstrably avoided are remedied where possible. ○ Adverse effects that cannot be demonstrably remedied are mitigated.
  - In relation to adverse effects that cannot be avoided, remedied, or mitigated, offsetting is considered.
  - If offsetting is not demonstrably achievable, compensation is considered
- Require councils to report on losses and gains in streams and river habitat.

With respect to wetlands, the Freshwater Proposals seek to strengthen and clarify national direction so that local plans become consistent in their approach to halt the loss and degradation of remaining natural inland wetlands (note that coastal wetlands are covered by the New Zealand Coastal Policy Statement 2010). In particular, the Draft NPS-FM will:

- Require councils to identify all existing natural wetlands, monitor their health, set policies to protect them, think about how to make restoration easier have methods that respond to a detected deterioration of wetlands.
- Direct that in the Proposed NES-FM there will be restrictions on activities considered the most destructive to inland and coastal wetlands such as drainage, damming, diversion, water takes, reclamation, disturbance of the bed, or clearance of indigenous vegetation.
- When considering an application for a consent, regional councils must ensure that adverse effects on any natural inland wetland are managed by applying the effects management hierarchy
- Have enabling provisions where activities are required for wetland restoration, consented hydrogeneration and flood control schemes, and nationally significant infrastructure.

In addition to the above, the Draft NPS-FM will require macrophyte monitoring in lakes as an additional indicator of ecosystem health in lakes. Where the health of native submerged plants has declined or is below the national bottom line, an action plan is required from councils.

### 8.6.3 Impacts Assessment

Te Ao Māori Value	Impacts Assessment
<i>Mana motuhake</i>	<p>Regional councils are positioned as ultimate decision-makers with respect to maintaining stream extent and protecting wetland health including through resource consent processes. The tangata whenua position within this framework is alongside community members, not as equal Treaty partners. Furthermore, streams and wetlands are tāonga to tangata whenua, however, the Freshwater Proposals do not support the tino rangatiratanga of tangata whenua to these taonga.</p> <p>The Freshwater Proposals may negatively impact Māori landowners disproportionately to general title landowners in that the latter group have had the opportunity to ‘develop’ their land under previous lax rules enabling them to create in many cases, significant economic gain. For Māori landowners, many of whom have had institutional barriers to developing their land and who are now ready to develop lands, the loss of the same opportunity to develop on lands that cannot be sold provide an unequal outcome.</p> <p>The Freshwater Proposals result in a loss of mana motuhake. Māori landowners generally understand that these changes are positive for the whenua, but there may be a growing sense of grievance if there is not an acknowledgment of this inequity. Now that many wetlands have been drained it is highly likely that many of the remaining areas being targeted by this proposal remain on Māori owned land. Some type of compensation for this change would be expected.</p> <p>In comparison to the NPS-FM 2017 within which tangata whenua are not positioned as Treaty partners, nor provided tino</p>

	<p>rangatiratanga over their taonga, the Freshwater Proposals <b>neither enhance nor diminish</b> mana motuhake.</p>
<p><i>Mātauranga Māori</i></p>	<p>Streams and wetlands are tāonga to tangata whenua and there is a wealth of knowledge within iwi, hapū and whānau relating to all mātauranga Māori aspects of stream and wetland health. There is an absence of mātauranga Māori indicators proposed for considering consent applications. Rather the ‘effects hierarchy’ is proposed.</p> <p>This is not a mātauranga Māori concept and does not go far enough to protect stream and wetland health. The non-inclusion of mātauranga Māori indicators within the effects hierarchy will likely mean mātauranga Māori measures maintain the same position as they do now within the consent process – they are considered as part of the effects to tangata whenua but are often usurped in favour of enabling development and the economic benefits that derive from development. This reduces the overall TMotW progress and disconnects the implementation of the NPSFW from the purpose of TMotW.</p> <p>In comparison to the NPS-FM 2017 under which there was also no compulsion to include mātauranga Māori in the management of streams and wetlands, the Freshwater Proposals <b>neither enhance nor diminish</b> mātauranga Māori.</p>
<p><i>Mauri</i></p>	<p>Mauri flourishes where waterbodies can naturally express themselves. Therefore, restricting activities that affect the natural patterns of streams and wetlands will help to support mauri. However, the Draft NPS-FM will still allow activities to be undertaken through the ‘hierarchy of obligations’ and therefore, there is no guarantee that mauri will be maintained. Furthermore, there is no opportunity for mauri to be restored as there is no requirement to reverse damage to streams and wetlands by reversing non-natural intrusions on streams and wetlands.</p> <p>Streams and wetlands provide essential habitat for a highly diverse range of flora and fauna and wetlands support a high proportion of threatened species. Taking measures to maintain the mauri of these waterbodies will in turn generate greater positive effects to the mauri of interrelated ecosystems.</p> <p>In comparison to the NPS-FM 2017, under which streams, and wetlands are degrading in mauri, the Freshwater Proposal <b>enhances</b> mauri. However, this is to a <b>low extent</b> because there is a possibility that under the Freshwater Proposals, competing values are prioritised over stream and wetland health which will result in diminished mauri.</p>

<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>Restricting the extent of loss of stream and wetland should ensure that access to these waterways is maintained to undertake traditional activities such as mahinga kai. For iwi and hapū that whakapapa to these water bodies, continued access is critical to supporting Hauora. In particular, enabling access to waterways and the ability to practice mahinga kai supports Te Taha Wairua and Te Taha Hinengaro by increasing the connection between Māori and the taiao and enables the continuation of certain rituals such as pure.</p> <p>However, access may be restricted if under the ‘hierarchy of obligations’ regional councils determine that loss of stream and wetland extent is appropriate to enable other activities.</p> <p>In comparison to the NPS-FM 2017, under which streams, and wetlands have reduced in extent, the Freshwater Proposals will <b>enhance</b> Hauora through halting further reduction in loss extent. However, this is to a <b>low extent</b> because there is a possibility that competing values are prioritised over stream and wetland health which will result in diminished Hauora.</p>
--	--



## 8.7 Holistic Ecosystem Health: Water quality

### 8.7.1 Current Position: NPS-FM 2017

This section addresses the following matters that directly affect water quality:

- Nutrient objective setting.
- Sediment.
- *E.coli*.
- Dissolved oxygen levels.
- Integrated management.
- Farm practices.

With respect to these matters, the NPS-FM 2017 directs councils to:

- Manage nutrients in rivers by setting objectives for ammonia and nitrate and for periphyton levels. However, periphyton does not accumulate in all rivers, particularly soft bottomed lowland streams and rivers. In these locations, the minimum requirement is for only the nitrate and ammonia toxicity attributes which are not sufficient for providing for ecosystem health in all cases.
- Take into account sediment levels for ecosystem health, which is a compulsory national value within the NPS-FM 2017 planning framework. However, councils are not explicitly directed to manage sediment (i.e. sediment is not identified in Appendix 2).
- Set a target for swimmable rivers and lakes in their regions that must contribute to achieving the national target for 90 percent of rivers and lakes to be swimmable. The targets set to date by regional councils will not reach the national target by 2040.
- Undertake limited dissolved oxygen monitoring at point source only.

The NPS-FM 2017 does not currently address farm practices directly. Regional plans address farm practices, but this is highly variable in scope and effectiveness.

In addition to the above, the NPS-FM 2017 contains no explicit direction to territorial authorities regarding freshwater management, apart from Part D regarding engagement with Māori.

### 8.7.2 Proposed Position: Draft NPS-FM

The Draft NPS-FM proposes:

- New nutrient tables setting bottom lines for nitrogen and phosphorus levels in freshwater. These bottom lines will apply to soft bottomed lowland streams and rivers which may not be captured by periphyton limit setting.
- An attribute for suspended sediment that includes a bottom line and bands setting out a range of attribute states.
- Target attribute states are set for deposited sediment and if thresholds are exceeded councils will be required to take action.
- Clear standards for swimming in the swimming season (1 November to 31 March) at freshwater places where people popularly swim. Bottom line for these places is similar to A band in NPS-FM 2017. Councils are to prepare action plans that set out what is to be done to manage and, where necessary, reduce *E. coli* at the 290 swimming spots that councils monitor

around the country. The existing *E. coli* table and requirements within the NPS-FM 2017 apply to all other freshwater bodies.

- To apply the existing dissolved oxygen attribute table applies in all river reaches, not just “below point sources” of pollution. Specific monitoring for dissolved oxygen levels in lakes is also proposed.
- Directions to territorial authorities to manage the effects of urban development on water so they are supporting integrated management across freshwater management units.

The Proposed NES-FM and Section 360 Regulations are proposed to address farm practices directly in an attempt to improve water quality. These Freshwater Proposals propose to:

- Require farms to have a farm plan unique to their farm with a freshwater module to assist with improving environmental outcomes. Freshwater modules would have to include maps showing waterways, critical discharge source areas, highly erosion-prone areas, a risk assessment and actions to address risks. Farm plans would be phased in starting with higher risk activities and catchments where pressure on freshwater is higher. The Government is seeking feedback on whether farm plans should be mandatory or compulsory.
- Exclude stock from waterways (with a 5m setback) more than one metre wide in low sloping areas in an attempt to rapidly reduce faecal contamination of waterways. Outside of low-slope areas, cattle, pigs and deer will be excluded where the type and intensity of farming poses a similar risk to that of low-slope farming. For smaller waterways, freshwater modules in farm plans must set out how and when farmers will exclude stock (section 360 Regulations).
- Set minimum standards for intensive winter grazing to reduce the amount of effluent that would enter waterways. This will be delivered either through national-set standards or industry-set standards.
- Reduce the amount of pollution leaving feedlots and stockholding areas and entering waterways through requiring feedlots meet standards set out in resource consents for managing effluent and siting the feedlot at least 50m away from freshwater or coastal marine areas.
- Take immediate action on identified catchments to reduce excess nitrogen leaching arising from poor management practices to 'hold the line' on water quality. There are three options offered to achieve this: a nitrogen loss cap in high nitrate-nitrogen catchments set by regional councils which would require the highest leaching farms to meet targets (and specify the actions taken to reduce nitrogen loss in freshwater modules in farm plans); a national nitrogen fertiliser cap; farm plan based reductions.
- Restrict further land intensification so that it can only happen where there is evidence that it will not increase pollution so that where there is intensification, there is a positive net benefit to people, environment and economy. Restrictions will be placed on increases in the area of land in irrigated pastoral, arable or horticultural production above 10ha and changes in land use that result in land intensification. Restrictions will be interim until the NPS-FM limit and objective setting process is adopted by all councils.

### 8.7.3 Impacts Assessment

Te Ao Māori Value	Impacts Assessment
<p><i>Mana motuhake</i></p>	<p>Tangata whenua are not positioned as decision-makers with respect to these Freshwater Proposals and therefore, a Treaty partnership is not achieved.</p> <p>Where tangata whenua are farm owners, opportunity is provided for tangata whenua to take responsibility for freshwater management effects. However, this is at an individual farm level and does not recognise the collective decision-making model that tangata whenua traditionally adhere to. Furthermore, where farmers are not tangata whenua, decision-making with respect to freshwater management and effects is even further removed from tangata whenua as there would be no opportunity for tangata whenua involvement.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals will <b>diminish</b> mana motuhake as decision-making under farm plans exclude tangata whenua involvement. This is to a <b>medium extent</b> because farm plans have the potential to cover a significant area of land that affects freshwater health.</p>
<p><i>Mātauranga Māori</i></p>	<p>The water quality attributes that are proposed to be monitored and the actions proposed to improve water quality are not informed by mātauranga Māori. Whilst there may be some overlap between the Freshwater Proposals and ecosystem health, this has not been tested. For example, <i>E. coli</i> is proposed to be managed for human recreational contact, however, these levels may not achieve the safety of mahinga kai. This proposed policy diminishes the importance of mātauranga Māori and in particular negatively impacts on the lack of connection between monitoring to TMotW.</p> <p>Nutrient management will particularly impact Māori landowners and their ability to make land use decisions on their land. Ngāti Tūwharetoa is currently the only iwi who has had to manage a nutrient cap and trade system. Grandparenting will always be a concerning issue for Māori landowners as this method has disadvantaged them when measuring baseline benchmarks on existing use rather than on potential use, particularly for underdeveloped or undeveloped land. These lands have often been historically impacted by cumulative inequitable laws and policies that have disproportionately impacted Māori land differently than general title land.</p> <p>More detail on the experience of Ngāti Tūwharetoa is detailed in the appendices which include an excerpt from a paper developed for the Tax Working Group in 2018 entitled, “Māori Perspectives on Environmental Taxes and Economic Tools”. Any proposal of this nature</p>

	<p>will potentially significantly impact on the ability of Māori landowners to make land-use decisions over their lands in comparison to general title landowners who have had the benefit of developing their lands earlier and so being advantaged under a grandparenting model.</p> <p>In comparison to the NPS-FM 2017 where mātauranga Māori measures also do not inform the management of freshwater for water quality, the Freshwater Proposals <b>neither enhance or diminish</b> mātauranga Māori.</p>
<p><i>Mauri</i></p>	<p>The Freshwater Proposals contain multiple strong measures that will contribute to supporting water quality including reducing poor nutrient health, restricting livestock access to freshwater and consequential bank erosion, de-vegetation, sedimentation and nutrients from dung and urine and restricting farm activities that generate higher adverse effects to freshwater. This will, in turn, support the biophysical aspects of mauri of freshwater bodies.</p> <p>The Freshwater Proposals direct district councils' involvement in managing the effects for freshwater management. This aligns with kaitiaki methods for managing the environment which acknowledges all connections between land use and freshwater management and effects to mauri. Requiring integrated management will contribute to better ecosystem health which should, in turn, support the mauri of freshwater.</p> <p>However, some Freshwater Proposals prioritise the water quality of larger freshwater bodies over smaller streams and drains. Mauri is present within all life forms and the mauri of larger water bodies is not more significant than smaller waterbodies. Failing to provide for the mauri of smaller waterbodies fails to recognise the interconnectedness between smaller and larger water bodies and that impacts one waterbody will generate impacts to another.</p> <p>Many of the water quality Freshwater Proposals are staggered in their implementation. This presents a risk that water quality targets are not achieved as quickly as they could be reducing the effectiveness of positive impacts to mauri.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals will <b>enhance</b> mauri due to the strong measures aimed at improving water quality. This is to a <b>medium extent</b> given the possibility that a significant amount of streams may not be subject to the Freshwater Proposals.</p>
<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>Improving water quality, in particular through removing disease causing organisms in dung, will reduce health risks and support the safety of tangata whenua accessing freshwater, supporting Te Taha Tinana. This will, in turn, support the relationships and connections</p>

	<p>between tangata whenua and freshwater, supporting Te Taha Wairua and Te Taha Hinengaro.</p> <p>Involving district councils more in managing land use for effects to freshwater could remove the need for tangata whenua to constantly advocate for freshwater health through local authority processes, reducing stress and supporting the health and wellbeing of tangata whenua.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals <b>enhance</b> Hauora to a <b>medium effect</b> as it goes to improving the health and wellbeing of tangata whenua.</p>
--	---

## 8.8 Holistic Ecosystem Health: Water quantity

### 8.8.1 Current Position: NPS-FM 2017

The NPS-FM 2017 directs regional councils to set freshwater objectives and limits for the compulsory values and any other relevant values. One type of limit is “environmental flows and/or levels” which are defined as “an allocation limit and a minimum flow (or other flow(s))”.

In practice, regional plans often have no clear connection between flow or water levels and the ecological or environmental outcome those restrictions are intending to achieve. Furthermore, some minimum flow regimes do not adequately recognise connections between surface water and groundwater resulting in surface water ecosystems becoming stressed. While the NPS-FM has attributes (such as nitrate and E. coli) for setting freshwater quality objectives, there is no corresponding attribute table for water quantity.

With respect to monitoring of water quantity, the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 are relatively permissive as they only require data to be reported to councils once a year at a minimum and allow a wide range of reporting methods varying from hand-written records to real time data being sent electronically to councils.

### 8.8.2 Proposed Position: Draft NPS-FM

The Draft NPS-FM proposes to:

- Require that objectives for freshwater quantity state the desired ecosystem health outcome and that minimum flows and allocation limits must relate to achieving those objectives.
- Require councils to set water levels and allocation limits to achieve objectives for groundwater and surface water bodies for aquifers connected to rivers and lakes.
- Encourage councils to review existing water permits to comply with rules about water quantity and for plans to set out how and when new rules would affect permit holders.
- Improve the accuracy of data that is produced regarding water use through updating the Resource Management ((Measurement and Reporting of Water Takes) Regulations 2010 to mandate telemetry (direct electronic transmission). This will require measuring water take every 15 minutes and transmitting daily electronic records. Higher water takes will be required to meet standards within 2 years of regulations being operative and smaller water takes within up to six years.

### 8.8.3 Impacts Assessment

Te Ao Māori Value	Impacts Assessment
<i>Mana motuhake</i>	Regional councils are positioned as decision-makers with tangata whenua input limited to involvement in identifying environmental outcomes for compulsory and other values. This does not support a Treaty partnership.

	<p>Making decisions on allocation are for many iwi and hapū core to their Treaty rights and interests. The Freshwater Proposals do not enable rights and interests to be addressed nor does it provide for an equitable share of water allocation, after water quality standards being met, to iwi and hapū. This proposal will further diminish the mana motuhake of iwi and hapū.</p> <p>In comparison to the NPS-FM 2017 which also required regional councils to set environmental flows and limits, the Freshwater Proposals <b>neither enhance nor diminish</b> mana motuhake.</p>
<i>Mātauranga Māori</i>	<p>Improving the robustness of data that is collected in respect of environmental flows and levels will support freshwater management for ecosystem health. This data could support mātauranga Māori indicators of freshwater health, However, how this occurs would need to be led by tangata whenua in order for it to have a positive impact.</p> <p>Reporting data will not be immediately required and therefore there could be delays of up to six years before accurate water level information is known. Should water flow / level data inform mātauranga Māori monitoring methods, the benefits of collecting this data to mātauranga Māori could be delayed.</p> <p>In comparison to the NPS-FM 2017 which also did not include mātauranga Māori monitoring measures for environmental flows and levels, the Freshwater Proposals <b>neither enhance nor diminish</b> mātauranga Māori.</p>
<i>Mauri</i>	<p>Requiring that a connection is drawn between environmental flows/levels and ecosystem health provides for a more holistic approach to freshwater management which aligns with a kaitiaki approach to freshwater management and in turn will contribute to better supporting the mauri of freshwater.</p> <p>However, if ecosystem health values either prioritise development over mauri or enable mauri to be affected by development then environmental flows/levels could be set at levels that adversely affect mauri.</p> <p>Incorporating a requirement to set flows/levels to achieve objectives for groundwater and surface water recognises the interconnectedness of groundwater to surface water and the need to manage freshwater systems as a whole, recognising that effects to one component of a system will affect other components. This is a critical understanding of kaitiakitanga that helps to inform the protection of mauri.</p> <p>Reviewing existing water permits and requiring that they comply with new environmental flow limits is critical to ensuring effects to mauri are positive. If existing water permits do not adhere to new rules, then</p>

	<p>mauri could degrade in certain catchments. The Freshwater Proposals only ‘encourage’ councils to take action in this respect.</p> <p>In comparison to the NPS-FM 2017 where no clear connection between environmental flows/levels was required to be made, the Freshwater Proposals <b>enhance</b> mauri. However, this is to a <b>low extent</b> given the possibility that environmental flows/levels do not provide for mauri.</p>
<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>It is difficult to predict impacts to Hauora through the Freshwater Proposals as they will depend on whether the Freshwater Proposals can improve mātauranga Māori and mauri relating to freshwater. If improvements are made to freshwater that support and improve connections between Māori and freshwater, this will have positive effects for Te Taha Wairua and Te Taha Hinengaro. Furthermore, if improvements are made to the safety of freshwater, from a mauri perspective (i.e. freshwater is safe for use from both a biophysical and spiritual perspective), this will support Hauora. Conversely, if the Freshwater Proposals are interpreted in a way that decreases Māori connections to freshwater and the safety of freshwater, adverse effects could be generated to Hauora.</p> <p>In comparison to the NPS-FM 2017, the Freshwater Proposals <b>neither diminish nor enhance</b> Hauora.</p>



## 8.9 Holistic Ecosystem Health: Exceptions

### 8.9.1 Current Position: NPS-FM 2017

The NPS-FM 2017 allows regional councils to set an objective below a national bottom line if there is existing significant infrastructure listed in Appendix 3. Appendix 3 is currently empty.

### 8.9.2 Proposed Position: Draft NPS-FM 2017

The Draft NPS-FM proposes to exempt the six largest hydro-electricity schemes from the national bottom lines given the critical role these schemes play in providing electricity and reducing greenhouse gas emissions through renewable energy. Regional councils will still be required to set target attribute states that, to the extent possible, improve any waterbody or freshwater ecosystem affected by any scheme. Where this policy is inconsistent with Treaty settlements, settlement legislation will prevail.

### 8.9.3 Impacts Assessment

Te Ao Māori Value	Impacts Assessment
<i>Mana motuhake</i>	<p>Requiring that Treaty settlement legislation prevails over hydroelectricity exemptions recognises and supports agreements reached between iwi and the Crown as Treaty partners. However, where there are no Treaty Settlements, or if early Treaty Settlements did not address these matters, the iwi may be disadvantaged.</p> <p>Prioritising renewable energy over freshwater health is a continuation of principles from the NPS-FM 2017. This is a decision that was not made in conjunction with Māori as Treaty partners. Furthermore, the decision to identify 6 hydro-electricity schemes was not made in conjunction with iwi and hapū whose freshwater bodies are directly affected by these decisions. There has been little discussion with impacted iwi on this matter.</p> <p>In comparison with the NPS-FM 2017 where no decisions were made regarding which hydro schemes to exempt, the Freshwater Proposals <b>diminish</b> mana motuhake to a <b>medium</b> extent, Despite Treaty settlement legislation prevailing over hydro-electricity exemptions, the impacts of this Freshwater Proposal will be keenly felt by those directly affected and there is strong opposition from impacted iwi for this proposal.</p>
<i>Mātauranga Māori</i>	<p>The decision to prioritise renewable energy over freshwater health for six catchments is not a decision that is informed by mātauranga Māori. Although mātauranga Māori recognises the need to balance competing environmental priorities, there has been no ability for tangata whenua to determine the most appropriate way to provide for renewable energy and freshwater health. For example, mātauranga Māori may dictate that it is not the six largest hydro schemes that should be exempt, but it should be the hydro schemes that have the least impact on freshwater mauri.</p>

	<p>In comparison with the NPS-FM 2017 where no decisions were made regarding renewable energy and freshwater health, the Freshwater Proposals <b>diminish</b> mātauranga Māori to a <b>high</b> extent by determining hydro-schemes to exempt without utilising mātauranga Māori indicators.</p>
<p><i>Mauri</i></p>	<p>Damming water for generation storage generates significant effects to mauri including through affecting biophysical water quality and flow levels by preventing natural flushing flows and encouraging periphyton growth.</p> <p>Damming waterbodies also prevents Māori from exercising kaitiakitanga. Kaitiaki rely on environmental predictors that have been observed over generations. Man-made structures alter natural flows and make it difficult for Māori to predict freshwater behaviour, preventing kaitiaki ability to protect, support and enhance mauri.</p> <p>Mauri recognises the interconnectedness of various components of freshwater ecosystems and, that where effects to mauri are generated to one component, there will be effects to other components. As such, effects to mauri on waterbodies from dams are not just isolated to the immediate dam area, impacts extend throughout the freshwater body.</p> <p>Regional councils will still be required to manage affected freshwater bodies for freshwater ecosystem health, however, there is no explicit requirement to manage affected freshwater bodies for mauri.</p> <p>In comparison to the NPS-FM 2017 where no catchments were subject to exemptions, the Freshwater Proposal <b>diminishes</b> mauri to a <b>high extent</b>.</p>
<p><i>Hauora – Te Whare Tapa Whā</i></p>	<p>The Freshwater Proposal will generate significant effects to iwi and hapū who whakapapa to affected freshwater bodies including through perpetuating disconnection between Māori and freshwater both physically through an inability to access freshwater, and spiritually through affecting the mauri of freshwater.</p> <p>In comparison to the NPS-FM 2017 where no catchments were subject to exemptions, the Freshwater Proposal <b>diminishes</b> Hauora to a <b>high extent</b> and these effects will be most endured by those iwi and hapū directly affected by the exemption.</p>

## 9 Conclusion

The Freshwater Proposals have the potential to generate a wide range of positive effects to Māori values. The report has identified that a number of Freshwater Proposals will enhance Māori values, with the biophysical aspects of mauri in particular being predicted to improve. The Freshwater Proposal that proposes to determine mahinga kai as a compulsory value will particularly generate significant positive effects to Māori for its ability to incorporate mātauranga Māori, and support mauri and hauora. Generally, the Freshwater Proposals relating to ecosystem health will improve mauri and hauora with mixed results for mana motuhake and mātauranga mauri.

Despite the positive predicted impacts, this report also repeatedly shows that this potential to achieve enhancement of Māori values is hamstrung by the positioning of Māori as a community member, rather than a Treaty partner within freshwater planning. Many Freshwater Proposals rely heavily on local territorial authorities to ensure Māori values are accurately and adequately captured within freshwater planning. In the experience of the iwi and hapū practitioners interviewed as part of the development of this report, territorial authorities have consistently failed to achieve this in freshwater planning to date. Therefore, unless iwi and hapū are provided input into freshwater planning as Treaty partners, there is a real and likely probability that Māori values will not be improved by the Freshwater Proposals. It is for this reason that the report assesses that there will be no improvement to mana motuhake, and in some cases mana motuhake will be diminished by the Freshwater Proposals.

Intertwined with the effects on mana motuhake, are those effects that will be generated to mātauranga Māori. The report has shown lower potential to enhance mātauranga Māori and again the extent to which mātauranga Māori will be improved will depend on local territorial authorities and their ability to accurately and adequately capture mātauranga Māori within freshwater planning.

Of significant concern is that the report has identified that all Māori values will be diminished by the Freshwater Proposals that exempt hydro schemes. This is most concerning for those iwi and hapū who are directly affected by the exemption. Should the exemption Freshwater Proposals proceed, it is expected that there will be significant opposition from Māori to these exemption proposals.

Overall, the Freshwater Proposals take some steps towards achieving Māori aspirations for freshwater within Aotearoa. With the exception of the hydro scheme exemptions, the Freshwater Proposals will mostly either enhance or 'hold the line' on current impacts to Māori values or will enhance Māori values.

## 10 Appendix A: Bibliography

### 10.1 Academic Articles

Dick, J. Stephenson, J. Kirikiri, R. Moller, Henrik. Turner, R. (2012). *Listening to the Kaitiaki: Consequences of the loss of abundance and biodiversity of coastal ecosystems in Aotearoa New Zealand*. In MAI Journal, Volume 1, Issue 2.

Durie, Mason (1985). *A Māori Perspective of Health*. Soc. Sci. Med. Vol. 20, No. 5, pp. 483-486.

Durie, Mason (1999). *Te Pae Mahutonga: A model for Māori health promotion*. Health Promotion Forum of New Zealand Newsletter.

Grinlinton, D. and Taylor, P. (eds). *Property Rights and Sustainability; Chapter 10: Māori Concepts of Rangatiratanga, Kaitiakitanga, the Environment, and Property Rights* pp. 219–248.

Harmsworth GR, Awatere S 2013. *Indigenous Māori knowledge and perspectives of ecosystems*. In Dymond JR ed. *Ecosystem services in New Zealand – conditions and trends*. Manaaki Whenua Press, Lincoln, New Zealand.

Jackson, Moana. (1993). 'Land loss and the Treaty of Waitangi', in W. Ihimaera (ed.), *Te Ao Mārama: Regaining Aotearoa: Māori Writers Speak Out, Volume 2: He Whakaatanga o te Ao: The Reality*, Auckland: Reed Books.

Kawharu, M (2000). *Kaitiakitanga: A Māori Anthropological Perspective of the Māori Socio Environmental Ethic of Resource Management*. In the Journal of the Polynesian Society, Volume 109, No.4.

Mikaere, A. (2011). *Are We All New Zealanders Now? A Māori Response to the Pākehā Quest for Indigeneity in Colonising Myths, Māori Realities: He Rukuruku Whakaaro*. Huia Publishers and Te Wānanga o Raukawa.

Mead, H. (2003). *Tikanga Māori: Living by Māori Values*. Wellington, New Zealand: Huia.

Morgan, T.K.K.B (2005) *An Indigenous Perspective on Water Recycling*. Desalination 187 (2006) 127–136.

Ngata, H.M (2006). *English Māori Dictionary*. 3ed, Learning Media, Wellington.

Ngata, T. (2018). *Wai Māori* in Joy M ed. *Mountains to Sea: Solving New Zealand's Freshwater Crisis*. Bridget Williams Books, Wellington, New Zealand.

Panelli, R., & Tipa, G. (2009). *Beyond foodscapes: Considering geographies of indigenous well-being*. Health & Place, 15(2), 455–465.

Panelli, Ruth and Tipa, Gail (2007) *Placing Well-Being: A Māori Case Study of Cultural and Environmental Specificity*. In EcoHealth 4, 445-460.

Phillips, C. Jackson, A. Hakopa, Hauiti (2016). *Creation Narratives of Mahinga Kai: Māori customary food-gathering sites and practices*. MAI Journal.2016.5.1.5.

Reilly, M. P.J. (2004). *Te tīmatanga mai o ngā atua—Creation narratives*. In T. M. Ka'ai, J. C. Moorfield, M. P. J. Reilly, & S. Mosley (Eds.), *Ki te whaiao: An introduction to Māori culture and society* (pp. 1–12). Auckland, New Zealand: Pearson Education.

Roberts, M., Norman, W., Minhinnick, N., Wihongi, D., & Kirkwood, C. (1995). *Kaitiakitanga: Māori perspectives on conservation*. *Pacific Conservation Biology*, 2, 7–20.

Royal, Charles Te Ahukaramū, ed. (2003). *The Woven Universe: Selected Writings of Rev. Māori Marsden*. Ōtaki: Estate of the Reverend Māori Marsden p 46.

Ruru, J. (2018) *Listening to Papatūānuku: a call to reform water law*, *Journal of the Royal Society of New Zealand*, 48:2-3, 215-224, DOI:10.1080/03036758.2018.1442358

Smith, G. (1997). *The Development of Kaupapa Māori: Theory and Praxis*. Thesis (PhD – Education), University of Auckland.

Smith, L. Reid, P. (2000). *Māori Research Development: Kaupapa Māori Principles and Practices – A Literature Review*. Prepared for Te Puni Kōkiri.

Te Aho, Linda (2011). *Indigenous Aspirations and Ecological Integrity: Restoring and Protecting the Health and Wellbeing of an Ancestral River for Future Generations in Aotearoa New Zealand*. In L. Westra, K. Bosselmann & C. Soskolne (Eds.), *Globalisation and Ecological: Integrity in Science and International Law* (pp. 346-360). Newcastle upon Tyne, United Kingdom: Cambridge Scholars Publishing.

Tomas, Nin (2011). *Māori Concepts of Rangatiratanga, Kaitiakitanga, the Environment and Property Rights*. In *Property rights and sustainability*. Editors: Taylor P, Grinlinton D. Martinus Nijhoff Brill, Netherlands 2011.

Waitangi Tribunal (2011). *Ko Aotearoa Tēnei: A Report into Claims Concerning New Zealand Law and Policy Affecting Māori Culture and Identity: Te Taumata Tuatahi*. Waitangi Tribunal Report.

Waitangi Tribunal (2012). *Stage 1 Report on the National Freshwater and Geothermal Resources Claim, Wai2358*. Waitangi Tribunal Report.

Waitangi Tribunal (2017). *Te Urewera, Volume One*. Waitangi Tribunal Report.

[https://www.mfe.govt.nz/sites/default/files/media/Freshwater\\_reform\\_timeline\\_300dpi.jpg](https://www.mfe.govt.nz/sites/default/files/media/Freshwater_reform_timeline_300dpi.jpg)

## 9.2 Freshwater Proposal Documents

Draft National Policy Statement for Freshwater Management: Proposals for consultation September 2019 issued by the Minister for the Environment.

Draft Stock Exclusion Section 360 Regulations.

Ministry for the Environment and Ministry for Primary Industries (2019). *Essential Freshwater: Healthy Water, Fairly Allocated*. Wellington: Ministry for the Environment and Ministry for Primary Industries.

Ministry for the Environment. 2019. *Action for healthy waterways – A discussion document on national direction for our essential freshwater*. Wellington: Ministry for the Environment.

Ministry for the Environment (2019). *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater – Part I: Summary and Overview*. Wellington: Ministry for the Environment.

Ministry for the Environment (2019). *Interim Regulatory Impact Analysis for Consultation: Essential Freshwater – Part II: Detailed Analysis*. Wellington: Ministry for the Environment.

National Policy Statement for Freshwater Management 2014 (amended 2017).

Proposed National Environmental Standards for Freshwater: Proposals for consultation September 2019 issued by the Minister for the Environment.

## 11 Appendix B: Excerpt regarding Nitrate Cap

### Nitrate Cap: Taupo Moana

The following section provides an outline of the Nitrate cap used in Taupo to address one type of pollutant as a result of farming to Lake Taupo. It has resulted in some current improvement in the quality of Lake Taupo however it will be generations before its ultimate success will be known.

### Background

Regional Plan Variation 5 – Lake Taupō Catchment was established by the Waikato Regional Council to cap the amount of nitrogen entering Lake Taupō from urban and rural activities. The variation contains policies that reduce and require the formation of the Lake Taupō Protection Trust to assist in achieving the 20 per cent reduction in the amount of nitrogen entering Lake Taupō.

Nitrogen has been identified as the major factor limiting plant growth in Lake Taupo. Scientific evidence indicates that nitrogen inputs to the lake are increasing (Vant and Smith, 2004). The implication of this trend is that lake water nitrogen concentrations and plant biomass will increase, and water quality and clarity will decline. If recent development trends continue then scenarios of future water quality conditions in Lake Taupo (Vant and Huser, 2000; Elliot and Stroud, 2001) are concerning and suggest long lag times in lake water quality response to both previous land development and possible changes in land use.

A projected trend of water quality decline in Lake Taupo is not only a regional concern but is of national interest. Lake Taupo is the largest New Zealand lake by area (616 km<sup>2</sup>) and its clear water and trout fishery are an important recreational and tourism asset for the nation. The need to constrain nutrient inputs to Lake Taupo suggests that the pattern of land development that has evolved in the lake catchment is not compatible with maintaining the present level of lake water quality and clarity. A similar, but more advanced eutrophication process exists for several of the nearby Rotorua lakes. The wider implication that arises from the Lake Taupo and Rotorua lakes cases is that development and direct economic returns from land developed around lake catchments may be constrained by the need for sustainable development that balances lake water quality against land use and economic returns. An economic cost benefit analysis for Lake Taupo has shown that the benefits of protecting lake water quality, mostly be enhancing tourism, over further development of dairy farming, outweigh the costs by a ratio of c. 3 to 1 (McDermott Fairgray, 2001; MacKay and Petch, 2001; Hickman, 2002).

Environment Waikato has set a target of 20% nitrogen reduction from all manageable urban and rural nitrogen sources entering Lake Taupo, to retard and ultimately stabilise the present increases in nitrogen loads. Certain land developments that result in nitrogen inputs exceeding assigned threshold values may not be allowed. Concurrently, conversions to land uses with low nitrogen yields and implementation of specific environmental management techniques for nitrogen control will be necessary to achieve the prescribed 20% nitrogen reduction. The cost required to reduce nitrogen loads by 20% is estimated to be \$81.5 million (Environment Waikato, 2004)<sup>3</sup>.

This example was a controversial change, particularly for Ngati Tuwharetoa who were directly impacted by the policy. On the one hand the Iwi was highly motivated to protect Lake Taupo as kaitiaki, however there was clear disadvantages with the methodology that specifically affected the

---

<sup>3</sup> Hamilton & Wilkins, 2004. *Review of science underpinning the 20% nitrogen target for Lake Taupo*. Centre for Biodiversity and Ecology Research, University of Waikato.

uniqueness of Māori land ownership in the catchment differently to developed land under general title.

### **Ngati Tuwharetoa**

As kaitiaki, Ngati Tuwharetoa believe they have an intrinsic duty to ensure that the Mauri and the physical and spiritual health of the environment is maintained, protected and enhanced. The tribe takes this duty very seriously and welcomed the opportunity to work with Taupo District Council, Environment Waikato and the Crown through the Ministry for the Environment when addressing nitrates to ensure the wairua of Taupo Moana and Tuwharetoa was given the opportunity to recover and provide fulfilment to generations to come. They also believe in Rangatiratanga, the right to make decisions over matters that impact their hapū and iwi. To have control over the things that were guaranteed in Te Tiriti o Waitangi, their lands, waters and taonga and beyond.

Ngati Tuwharetoa hold mana whenua over the rohe. They today retain ownership of approximately half of the land in the Lake Taupo District (including the bed of Lake Taupo). In addition to various land sales and acquisitions by government authorities, large areas have been shared with the nation, including most famously the land forming Tongariro National Park. Consistent with their role as kaitiaki, any development of Tuwharetoa land was done only after consideration of wider environmental implications, and for example had led to significant areas set aside as Lakeshore Reserves and substantial riparian margins in forests and farms. Decisions on use must also pass the high hurdles inherent with Māori land tenure.

Consequently, the lands still retained by Tuwharetoa under Māori freehold status are predominantly either undeveloped or in plantation forestry, with around fifty percent of pastoral farming in the catchment making up the balance. Taken as a whole, Tuwharetoa land in the district plays a major role in protecting the lake and waterways and in preserving the natural character for which the district is renowned. Tuwharetoa landowners fully expect to develop more of their land over time, though any such developments will be over a long timeframe.



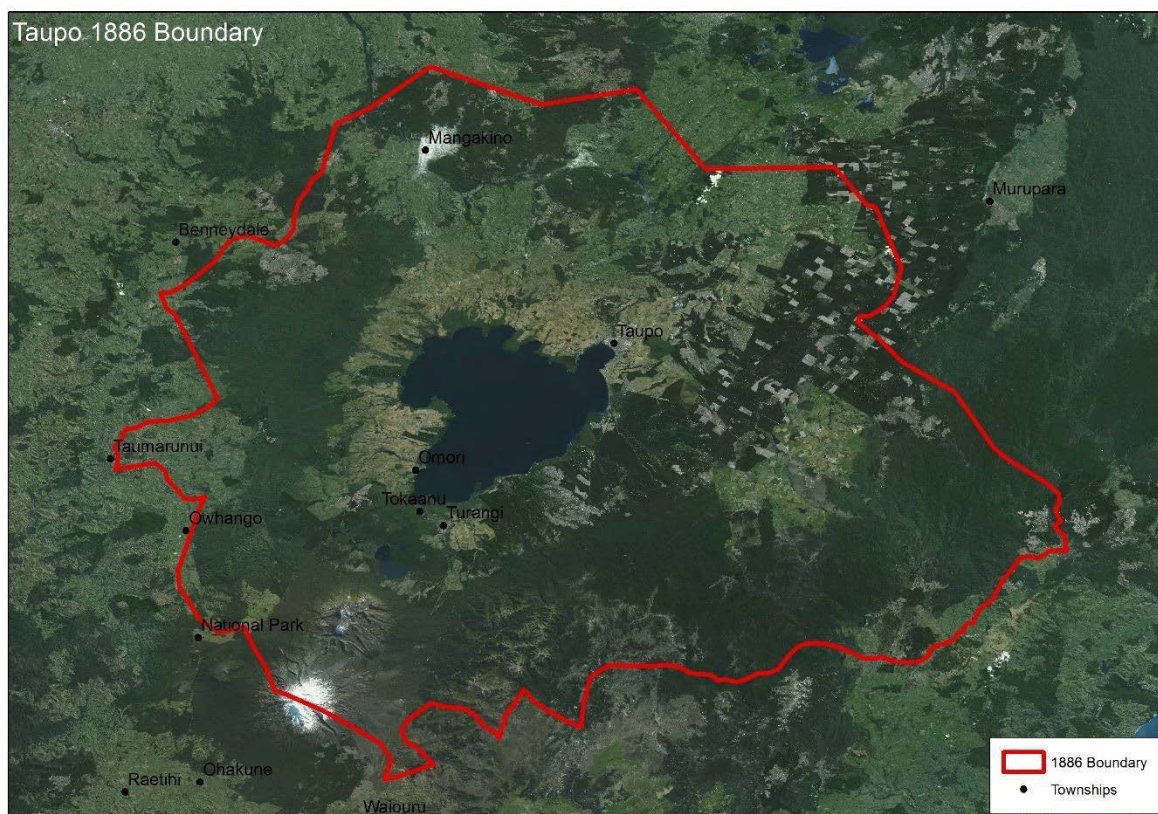


Figure 1: Ngati Tuwharetoa 1886 Iwi Boundary

### How does the scheme work?

The scheme comprehensively caps discharges from diffuse agricultural non-point sources of nutrients (in this case, largely farmers and foresters) and allows trading amongst these participants to cost effectively achieve an environmental goal. Market-based environmental policies are increasingly being applied to deal with water quality problems (Selman et al. 2009). A key motivation is the expectation that trading can achieve environmental goals at a lower cost, and with greater flexibility, than traditional command and control regulation (Shortle 2012). Environmental trading markets achieve this as they allow those who find it expensive to mitigate or abate their discharges to meet environmental requirements at lower cost by purchasing reductions from other participants who can reduce their discharges more cheaply. Those who can cost-effectively reduce their discharges are motivated to do so because if they can reduce their discharges below regulatory requirements then they can sell the excess allowances to others. As a result, trading markets will theoretically ensure the efficient distribution of mitigation: mitigation is carried out by those who can do it most cheaply, which minimises the cost of achieving an environmental goal.<sup>4</sup>

The Motu Group found in their 2015 paper that “while the introduction of a cap on nitrogen has effectively limited discharges into Lake Taupo, it has also imposed various economic and social costs on those who now face a limitation on the productive capacity and development potential of their land. The reduction of options and additional costs associated with farming under a cap has driven

<sup>4</sup> [http://motu-www.motu.org.nz/wpapers/15\\_07.pdf](http://motu-www.motu.org.nz/wpapers/15_07.pdf)

some landowners to exit the catchment, and may also have reduced the value of capped land compared to land not affected by a cap.”

---

The policy came into effect in 2011 and consists of three key components. The first is a cap on nitrogen losses, which serves to limit nitrogen losses at historical levels and prevent further increases. The second component is the establishment of the Lake Taupo Protection Trust, a public fund with contributions from local, regional and national communities, charged with permanently reducing the cap by 20 percent through the purchase and conversion of land or purchase and permanent retirement of farmers’ nitrogen allowances. The third part of the policy enables the establishment of a nitrogen trading system that allows farmers to trade allowances with other farmers or with the trust. **Allocation of Nitrogen Credits**

When the system was established it was required that each landowner was given a quantity of credits. The choice of how these credits were established had a significant impact on Ngati Tuwharetoa and they opposed the use of grandparenting to determine the initial allocation of credits.

Under historical allocation, all landowners can continue to operate at their current chosen land use, and none is required by the regulation to make costly changes or to de-intensify. By enabling landowners to continue operating at existing levels, grandparenting recognises and values earlier investments made to maintain a certain level of production but still places a marginal cost on intensification, and in conjunction with the overall cap, limits any increase in the total nutrients entering the lake.

The system meant that if you were already operating with high discharges you were favoured in the system. Those lands previously used for low-nitrogen leaching activities, along with those farms previously facing capital constraints or other factors that historically restricted their ability to operate at a higher production levels, now face significant costs if they wish to convert their land to more nitrogen-intensive uses.

This restriction significantly affected Ngati Tuwharetoa. In order to ease the restrictive nature of historical allocation on Tuwharetoa and other forest owners, the variation grants some costless flexibility for developing undeveloped land.

A baseline was individually set for each farm and was equivalent to the highest annual level of leaching over the period 2001–05. For this reason, many owners of forested and undeveloped land have expressed frustration that they should be disadvantaged by allocation intended to correct damage that had been largely caused by farming, whether intentionally or not.

Tuwharetoa forest trusts in particular felt that extensively forested areas, for example on the eastern side of the lake, had been deliberately planted in order to protect the water from the adverse impacts of land use, and that such protection should not go unrewarded in a policy meant to achieve a similar goal.

The natural character of the region was maintained by the creation of environmental reserves. Indigenous and natural vegetation was retained on riverside and streamside reserves to prevent runoff and protect trout spawning streams. In addition, a number of roadside areas were retained in native vegetation or planted in a variety of exotics to maintain aesthetic values.

The protection measures implemented for these forests exceeded any provisions contained in the regional and local planning schemes. The Catchment controls at the time reflected what was being developed in the Soil Conservation and Rivers Control Act 1941 but these had been developed around agriculture and pastoral land use. Unlike the latter, forestry development uses did not attract local body incentives and subsidies. The forests contribute significantly and directly to the positive environmental, ecological and recreational values associated with the Catchment and enhance the qualities of the Taupo waters. On the other hand, pastoral and agricultural uses are the major sources of contaminants entering Lake Taupo.

### **Nitrate Trading**

The concession in the current policy allows Māori and non-Māori owners of undeveloped and forestry land to increase their nitrogen leaching by 2kgN/ha/year above baseline leaching rates, an increase that will have only a small impact on water quality (Vant 2008). The development allowance cannot be sold to other landowners as part of the trading system, and it should allow owners of undeveloped land to increase their nitrogen intensity without having to purchase allowances to do so. However, Ngati Tuwharetoa believed that they had disproportionately carried the economic impacts of caring for the Taupo Catchment, and then when partnered with an ETS that effectively limited their ability to change their land use which others had previously been enabled to do, was unfair.

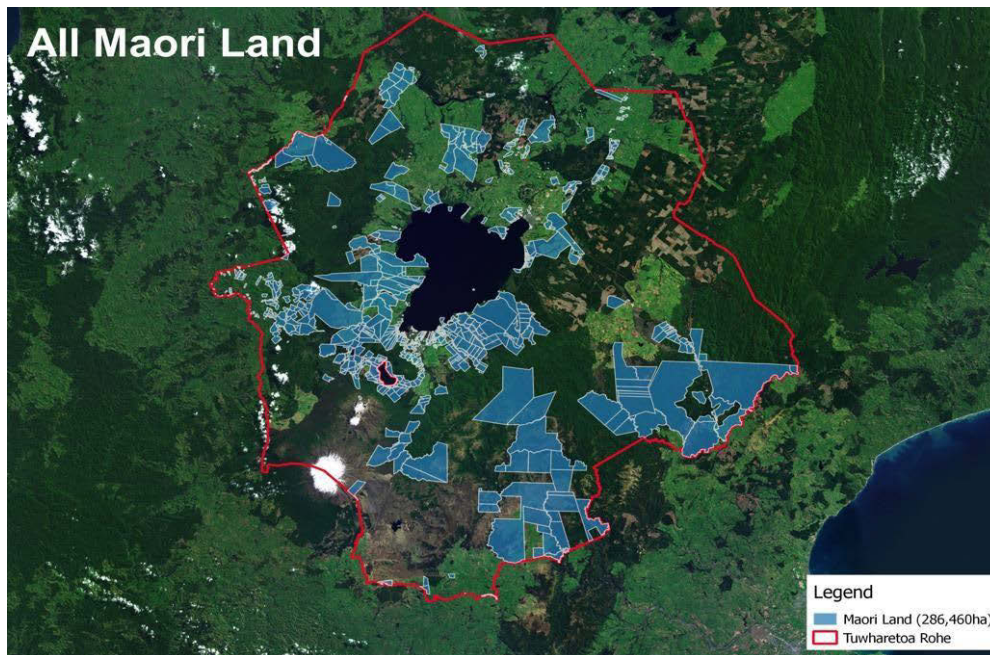
The policy grants farmers flexibility to deviate from their benchmark NDA by allowing them to offset any nitrogen losses above and beyond their specified allowance by an equivalent corresponding decrease in nitrogen losses elsewhere in the catchment. This creates a nitrogen trading system, where farmers facing high nitrogen reduction costs in terms of output and profits may choose to buy nitrogen allowances from another farmer, and vice versa.

The Taupo water-quality market differs from most other existing NPS water-quality trading schemes in that it is a cap and trade market, rather than an offset (or baseline and credit) scheme (Selman et al. 2009). In this manner, the Taupo scheme is similar to established emissions trading schemes such as the Acid Rain SO<sub>2</sub> market. Cap and trade systems, such as the Taupo scheme, have a comprehensive cap on the allowable discharges of nutrients in a catchment; this cap is then divided into individual, tradeable allowances. These allowances are then distributed to market participants, who must hold or remit an allowance for each unit of nutrients entering waterways from their property.

This system's participants are private farms, and Ngati Tuwharetoa, is the largest landowner in the catchment, with significant holdings of forestry and developed and undeveloped pasture. However much of that land was not considered by Ngati Tuwharetoa to be the cause of the nitrogen issues in Lake Taupo.

*Figure 2: Māori Land within the Ngati Tuwharetoa Rohe*





For Ngati Tuwharetoa, the chosen approach of nitrogen allocation and capping enforced the status quo and did not target the land uses that are responsible for high levels of nitrate leaching into the Lake. In respect of Tuwharetoa land that is undeveloped, the enforcement of status quo will lock the current land usage situation in and deny or limit many of the owners of forestry and undeveloped lands their right to freely utilise their lands in requirement with their needs. This in turn will lower the value of Tuwharetoa’s assets and hence the ability to create wealth for its community.<sup>5</sup> George Asher has noted:

“The paradox is that Tuwharetoa land owners will be penalised in the further utilisation of their lands without acknowledgement of the fact that they are not the main contributors to the problem, and indeed those who will benefit will be those who have alienated our ancestral lands and used them to create the unstable environmental conditions that are now being the focus of control and regulation”.

Although the nitrate trading system has now had success in the protection of Lake Taupo, there continues to be a grievance that the system protected those early entrants of development of the area. They preferred a targeted approach that protected the right of Ngati Tuwharetoa landowners to develop their lands consistently with their own tikanga.

The right to development is a recognised principle of the Treaty of Waitangi, and indeed a recognised norm of international law. Article 1(1) of the United Nations Declaration on the Right to Development adopted by the General Assembly on 4 December 1986 (resolution 41/128), which was supported by New Zealand, states that:

“The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and

---

<sup>5</sup> George Asher, 4 Aug 2005, pp.4-5

political development, in which all human rights and fundamental freedoms can be fully realised.<sup>6</sup>

### **Success of the Scheme**

---

In the Motu paper, they conclude that;

“We find that while the introduction of a cap on nitrogen has worked to limit the nitrogen leaving agricultural land, it has also placed significant costs and restrictions on those affected. The cap has reduced farmers’ ability to intensify production, has decreased land values, and has significantly increased administration and compliance costs. These economic costs have led to social costs: significant land-use change has resulted from the policy, which has resulted in a number of farmers leaving the catchment. This, combined with the uncertainty during the establishment of the policy, has negatively affected the social lives of farmers left in the catchment. The creation of the Lake Taupo Protection Trust to fund the decreases in nitrogen has significantly reduced the costs borne by farmers. Trading to 2012 had included 19 trades with the public trust, which are evidence of nitrogen being reduced and retired where it is cost-effective to do so. The ten private sales to 2012 are evidence of the trading scheme facilitating a shift in nitrogen leaching to the most profitable uses. The three short-term leases of allowances provide evidence for the flexibility of the policy: trading is allowing participants to upscale or downscale their activities as they see fit. All of these trades suggest that the trading scheme is working well to facilitate the achievement of the environmental goal at low cost.

We find that while transaction costs are low by international standards, they are still high enough to affect trading and decrease the cost-effectiveness of the policy. The choice of a cap and trade scheme will have reduced transaction costs relative to what would have been the case under a more common baseline and credit-type system. However, the requirement for ex ante trade approval and increased monitoring for participants who trade decreases the benefits of trading. This is likely to limit trading to large or long-term trades, as the transaction costs will outweigh the benefits of trading small volumes of allowances”.

### **Recommendations**

For Ngati Tuwharetoa, and for other landowners in the catchment the scheme has impacted land values, with many landowners retiring their land or selling out of the catchment due to the restrictions. For Ngati Tuwharetoa this has not been an option. In planning any other environmental and subsequent economic tool for nitrate trading in other parts of NZ, it will be essential to learn from the impacts on Ngati Tuwharetoa and establish a more bespoke and targeted programme for the actual contributors to nitrate production rather than try to protect current users from economic impact.

In effect this will mean having improved data to pinpoint those land users and land uses that create the problem and using this data to build a trading system that does not fundamentally favour those who have been creating the problem for generations and enabling development on Māori lands where those land uses are sustainable. It will require a deeper understanding of the history of Māori development and legacy issues that have created the current land structures that exist today. This same work will need to be completed in terms of any future water trading system.

---

<sup>6</sup> Cited in Waitangi Tribunal, Te Ika Whenua Rivers Report, p116.