



Modelling Group  
WATER NEW ZEALAND

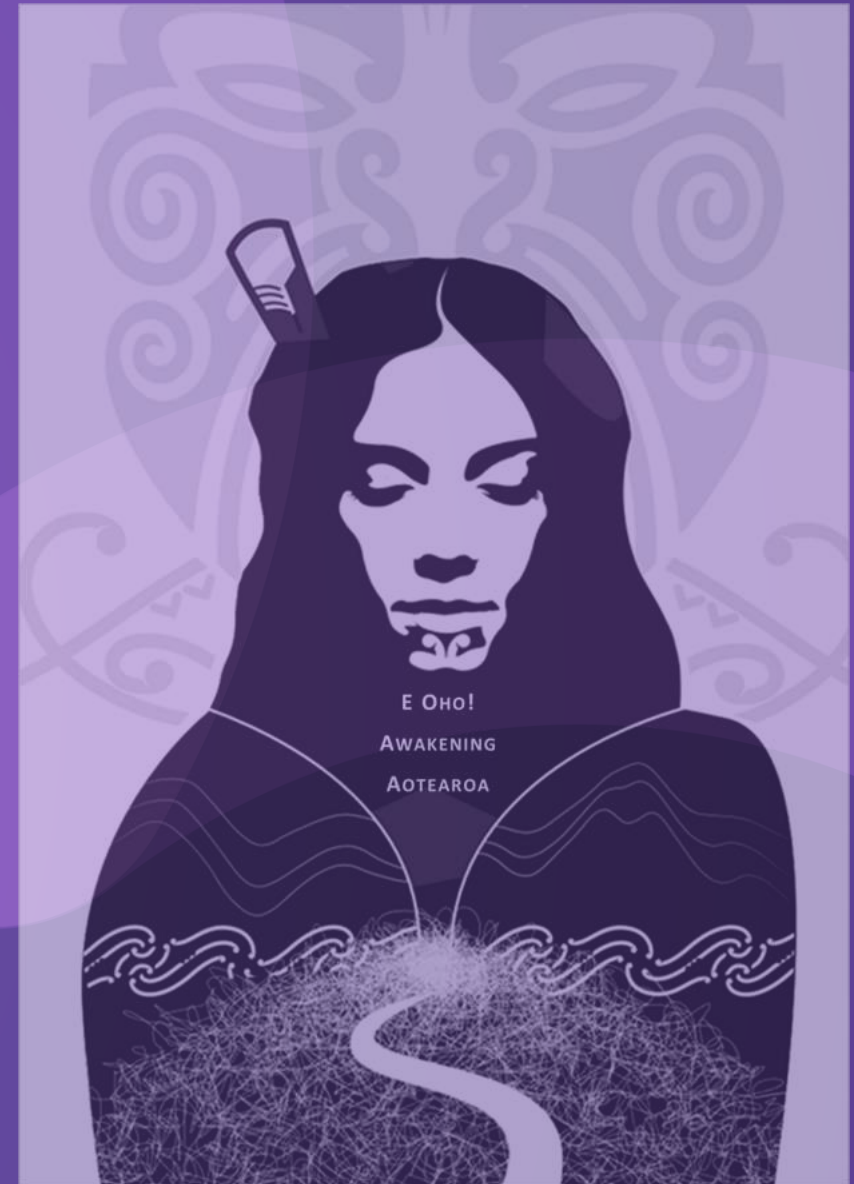
# Modelling Symposium

## Mana Enhancing Modelling?

Can Aotearoa shift from deficit thinking to mana enhancing outcomes thinking?

Presented by

Lara Taylor, E Oho! Awakening Aotearoa (Ngāti Tahu, Te Arawa, Tūwharetoa, Ngāti Pāhauwera, Kai Tahu ki Murihiku)



Kia tau te rangimārie  
O te Rangi e tū iho nei  
O Papatūānuku e takoto nei  
O te Taiao e awhi nei  
Ki runga i a tatou  
Tihei Mauriora

May the peace  
Of the sky above  
Of the Earth below  
And of the all-embracing universe  
Rest upon us all  
Behold, it is life!



**Karakia i te ata  
Morning Prayer**

**Kia Tau Te Rangimārie Ki A Tātou Katoa  
Kia Īnoi Tātou  
E Te Atua Kaha Rawa,  
He Whakamoemiti tēnei mō ngā manaakitanga.  
Manaakitia mai mātou  
Mō te roanga o tēnei rā  
I roto i Tōu ingoa tapu  
Māu e whakamana mai  
Haumi e  
Hui e  
Taiki e**



“Dear Prime Minister,

New Zealand’s rivers, lakes &  
aquifers are in a dire state.

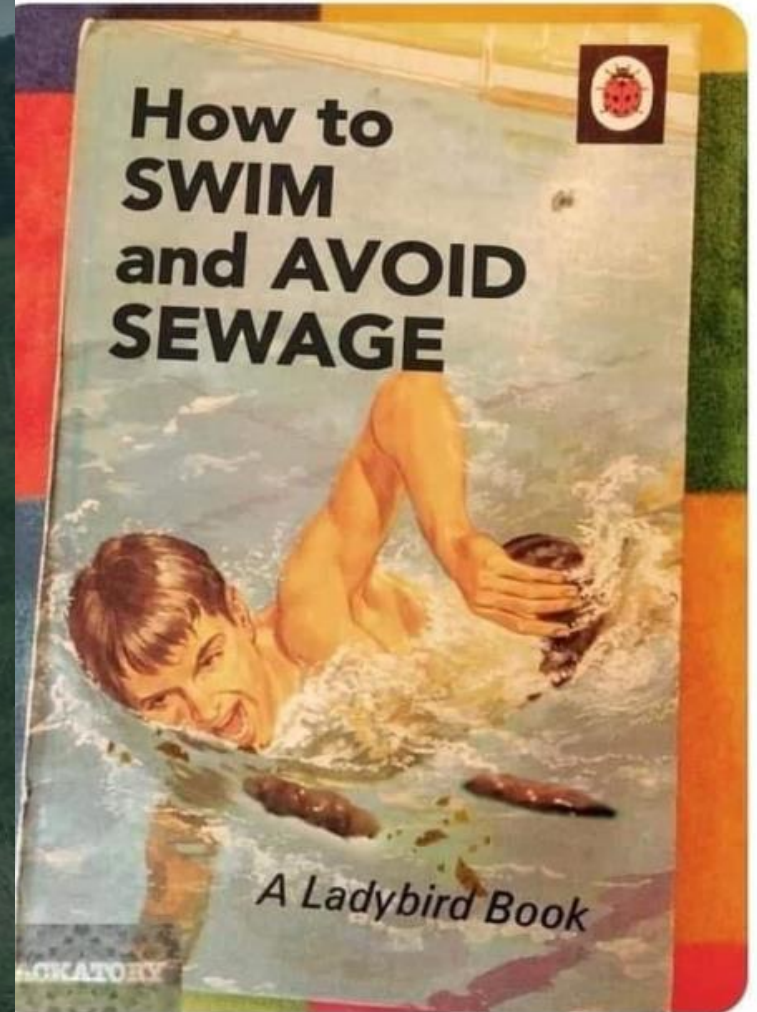
If you proceed with your  
proposals to undo the country’s  
freshwater policy, they will only  
get worse.”

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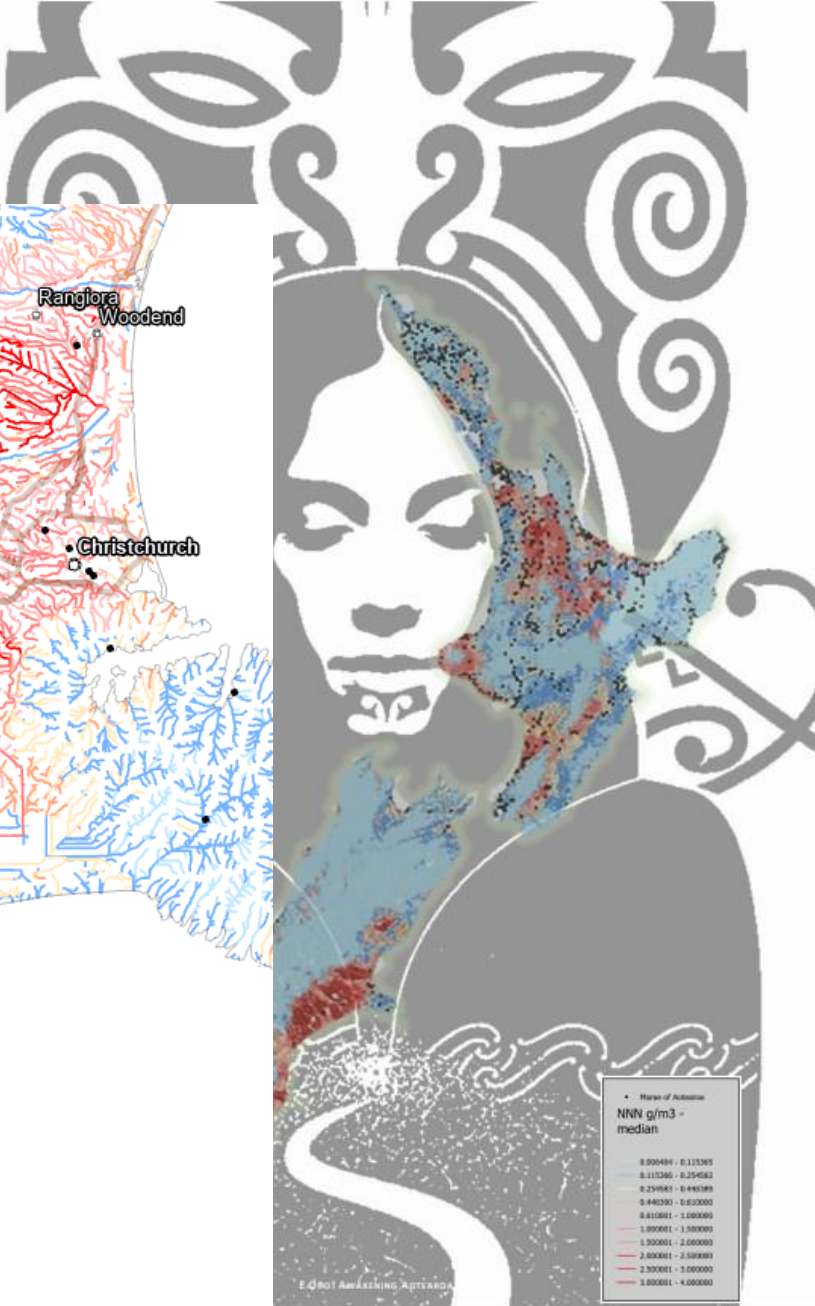
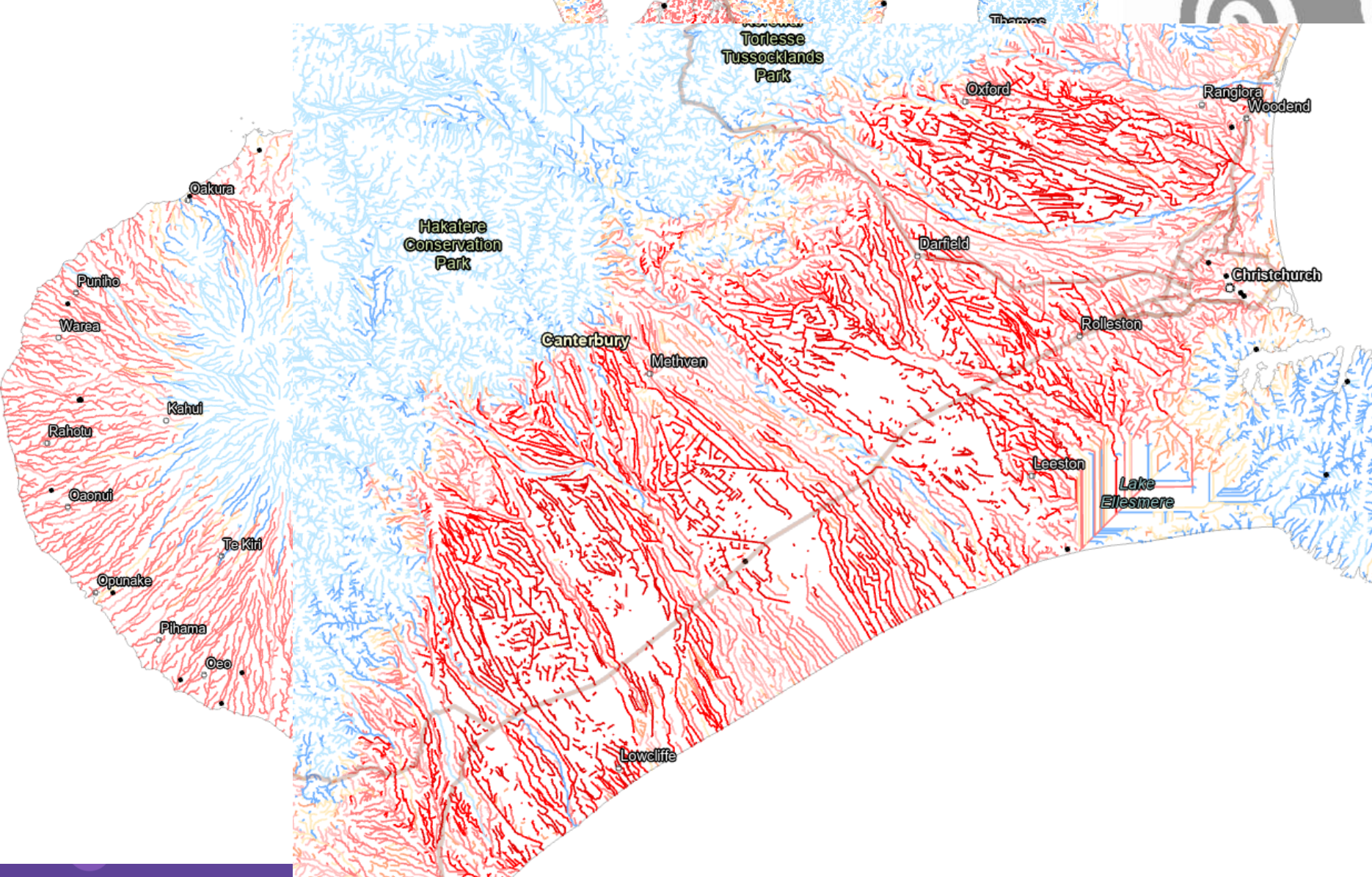
Extract From An Open Letter from  
50 freshwater experts and leaders to  
Prime Minister Luxon.

[Link to full letter in description.](#)

National Party and ACT  
release their alternative  
to 3 Waters policy



Plurality of worldviews, values, ways of knowing and being.  
Aotearoa >> Te Tiriti o Waitangi is our fundamental constitutional framework.



• Mean of Autumn  
NNN g/m<sup>3</sup> -  
median

0.00000 - 0.11330
0.11330 - 0.25402
0.25402 - 0.44030
0.44030 - 0.62000
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2.00000 - 2.50000
2.50000 - 3.00000
3.00000 - 4.00000

## Enabling Kaitiakitanga

# Kaitiakitanga

To operate effectively Kaitiakitanga requires Rangatiratanga, Mātauranga and Tikanga.

Kaitiakitanga exists within a cosmology of Te Kore, Te Pō, Te Ao Mārama. It has a spiritual aspect, extending beyond an obligation to care for and nurture physical well-being. Tapu (cosmic power), mana (the utmost privilege and authority and the reciprocal obligations that come with it), wairua (spirit), hau (vitality), and mauri (an essential life force) are all life and spiritual forces, emergent through the cosmos, and inherited by entities in Te Ao Mārama.<sup>1</sup>

Kaitiakitanga seeks to achieve physical, political, economic and spiritual well-being. Weaving in Te Kauwae-runga (the unseen) and Te Kauwae-raro (the seen), the celestial and terrestrial worlds, this practice permeates a depth far beyond the scope or capability of western ideologies and approaches.

*1. M. Kawharu (2000)*

### 1 Kaitiakitanga & Rangatiratanga

**Rangatiratanga**  
Māori authority  
*A state of being*

Kaitiakitanga is both rangatiratanga, and kaitiakitanga to be within the kin (relatives, people, resources) point is Tangaroa. Tangaroa's control of the resource. Rangatiratanga is the control of the resource by those who actually control it. The Māori text of the Māori people that should be protected not only on their own grounds, but in the world with their own cultural preferences.

1. M. Kawharu (2000)
2. M. Kawharu (2000)
3. Waitangi Tribunal (2000)
4. Waitangi Tribunal (2000)

### 1 Ecosystem-based & Equitable

**Equitable**  
Tāngata Whenua  
*A need to balance*

Greater emphasis is placed on Whenua than Tāngata and management. Upland power dynamics at the Tāngata Whenua level in governance, management, and engagement are necessary at all scales. A system that treats their well-being equitably perhaps even more so. Our society is maturing. Opportunity and responsibility for both Kaitiakitanga and societal ways of thinking encompasses health of the communities and

*11. Schärer and Kauler 2013:2*

### Enabling Kaitiakitanga

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*1. M. Kawharu (2000)*

### Enabling Ecosystem-based management

## Ecosystem-based management

Globally, there is growing recognition of the need to shift away from "ego-system" based management, where decision making is driven by egos, to "ecosystem" based management, where society cares more about the well-being of all, including oneself rather than just oneself.<sup>11</sup>

There is no "ego" associated with Kaitiakitanga, or the role of kaitiaki. There is an incentive and obligation to the "eco" system. To enable Kaitiakitanga, Māori need to be influential across the whole environmental and socio-political system. Likewise, the whole socio-political and ecological system needs to function effectively for Ecosystems based management (EBM) to succeed.

*11. Schärer and Kauler 2013:2*



...ter, and the research it references, remains under the tiaki (guardianship) of the original... We caution the use of quotes or analysis out of context, without respect for the... and it, and in isolation of reference to existing tangata whenua sources and authorities.

National Science Challenges  
SUSTAINABLE SEAS  
Ka ngā moana whakahaere



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water  
NEW ZEALAND

# Deficit models and modelling in a deficit system

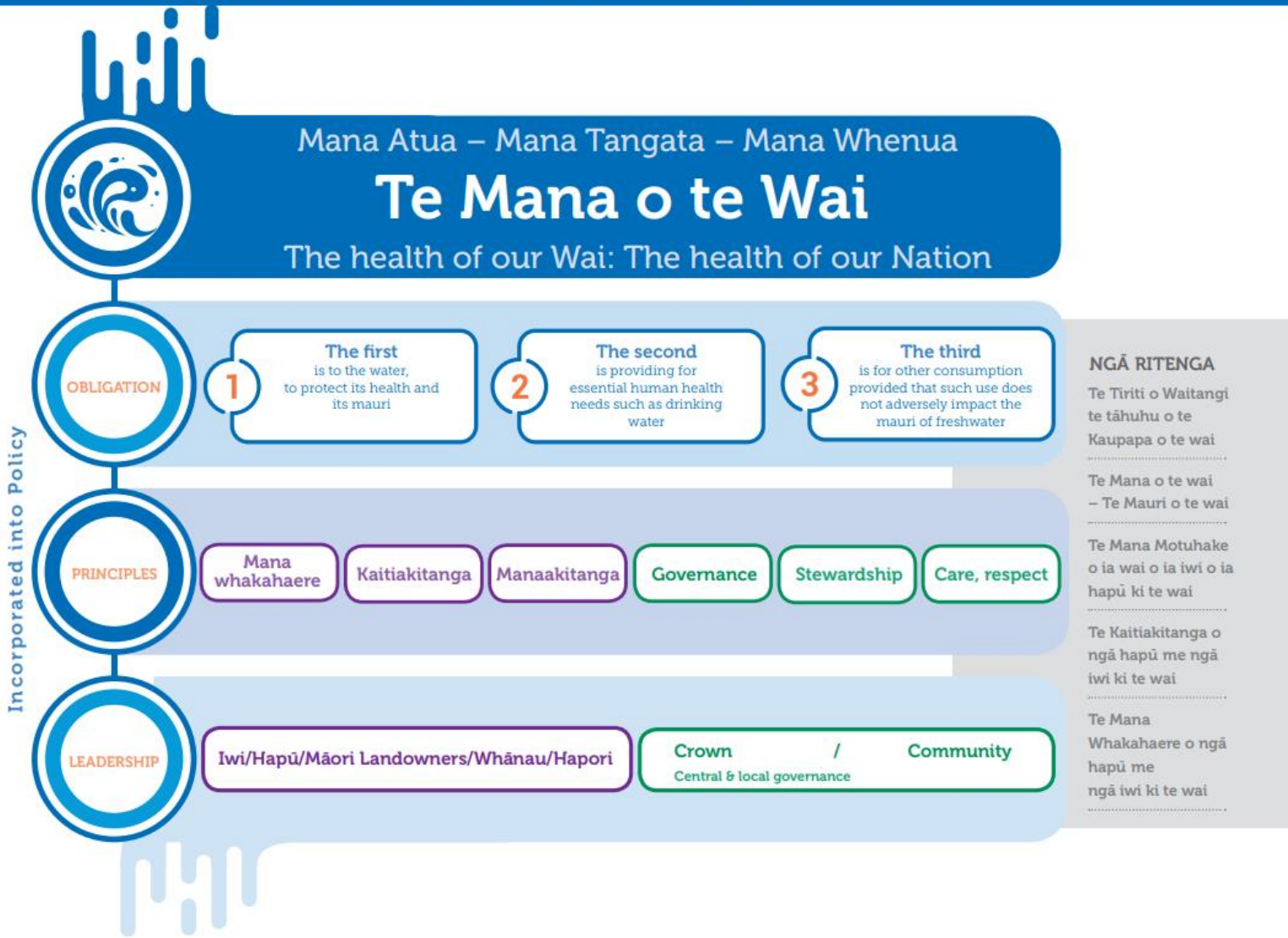
- Our normative freshwater regime, developed over the lifetime of the RMA (or longer), has resulted in a deficit model with negative cascading effects – which are then responded to through effects-based management.
- Models employed reactively, in response to issues associated with adverse effects, or potential effects of human activities.

# National Policy Statement for Freshwater Management + Te Mana o te Wai + Hierarchy of Obligations = Game Changer

- The NPS-FM and TMOTW are an opportunity to turn this model around to focus on abundance.
- Purposefully designed to support positive visions, values, and outcomes agreed to by all involved in the management of any FMU, as intended by the NOF, and consider more hopeful scenarios and possibilities for freshwater, communities, and economies.

# Modelling and the six 'Te Mana o te Wai Principles'

## TE KĀHUI WAI MĀORI OVERVIEW OF TE MANA O TE WAI



Can we model for Te Mana o te Wai?

1. Models fit for the purpose of the NPS-FM and Te Mana o te Wai – methodology used for report
2. Modelling for mana more generally (outcomes focused) – variety of pathways
3. Develop a 'mana model' (akin to mauri modelling e.g. Dr Kepa Morgan's Mauri Model, or Ian Ruru's Mauri Compass)
4. Modelling that enhances mana of each other – an opportunity for all of us?



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	ACTIVELY INVOLVE TĀNGATA WHENUA	ENABLE APPLICATION OF DIVERSITY OF VALUES+KNOWLEDGE	APPLY HIERARCHY OF OBLIGATIONS	MEANINGFUL ENGMT ON VISION, OUTCOMES, OTHER NOF-RELATED PROCESSES	INTEGRATED APPROACH, KI UTA KI TAI	MANA WHAKAHAERE	KAITIAKITANGA	MANAAKITANGA	GOVERNANCE	STEWARDSHIP	CARE AND RESPECT	FMU-SPECIFIC OR ALIGNED?	DEVELOPMENTAL NPSFM
le: 1 of OTW: re;	Green = Tāngata Whenua led Yellow = Tāngata Whenua involvement but not to fullest extent Red = Tāngata Whenua not involved in a meaningful way Additional explanation included if necessary	Green = enables equitable application of mātauranga (to the extent Tāngata Whenua want to be involved) Yellow = enables some application of mātauranga but less than desired extent Red = enables very little to no application of	Green = yes to a great extent Yellow = yes to a limited extent Red = no, or to a very limited extent	Green = yes to a great extent Yellow = yes to a limited extent Red = no, or to a very limited extent	Green = yes to a great extent, in a manner consistent with Tāngata Whenua values and objectives for freshwater management Yellow = yes to a limited extent... Red = no, or to a very limited extent...	Tāngata Whenua governance and control enabled... Green = yes to a great extent Yellow = yes to a limited extent Red = no, or to a very limited extent	Tāngata Whenua ethics of care enabled... Green = yes to a great extent Yellow = yes to a limited extent Red = no, or to a very limited extent	Tāngata Whenua mana and ability to provide manaakitanga is enabled... Green = yes to a great extent Yellow = yes to a limited extent	Tāngata Tiriti governance enables Tāngata Whenua to be involved, to the extent they desire, in all NOF processes, and to lead process for giving effect to TMOTW...	Tāngata Tiriti ethics of care enable Tāngata Whenua to be involved, to the extent they desire, in all NOF processes, and to lead process for giving effect to TMOTW...	Tāngata Tiriti provide care and respect to Tāngata Whenua and te ao Tūroa, in ways that are consistent with the Kaitiakitanga values and practices of respective	Yes / No / Could be	Yes / No
e													
naakit													
na													

Investigation of tāngata whenua use of freshwater models, or involvement in modelling processes.

Stocktake: 34 models  
Deep dive: 4 case studies

Stocktake: Summaries – Case Studies

Rohe	Model Name, Year, Who, Where Reference/Link	Type/ Short Description	Key Drivers	5 Key Council Requirements	TMOTW, 3 Key Tangata Whenua Principles	TMOTW, 3 Key Tangata Tiriti Principles	Scale	Council Investment & Commitment
Kaipara Uri; Kaipara	Kōrero Tuku Iho, in development (eta 2025), KMR including Kaipara Uri, <a href="#">KMR Joint Committee 1 May 2023</a>	Conceptual model   Intention to establish a series of case studies in places of significance to local tangata whenua communities of the Kaipara catchment. The goal is to work towards restoring the health, wellbeing, and mauri of specific locations through a range of cultural (kaitiaki) actions including building cultural competency through history learning, waiata creation, and ceremonial application. Through practical application, the case study communities will investigate what successful implementation of kaitiakitanga takes, now and into the future. Each case study is estimated to take 2-3 years. As they progress, so will the Kaipara Uri and KMR's understanding of how and what information could be utilised to inform sedimentation reduction plans, modelling, and other parts of KMR's work programme. Kōrero Tuku Iho is envisioned to build a model of kaitiakitanga that can be replicated across the Kaipara. In the context of TMOTW, the development of Kōrero Tuku Iho might assist Kaipara Uri to articulate "TMOTW". In turn, that may inform other process, strategy, governance, or management frameworks related to waimāori within the catchment that are necessary to "give effect to TMOTW". In and of itself, the model is insufficient for NPS-FM/TMOTW implementation. However, it provides a critical and foundational step in the modelling and freshwater management process for restoring the mauri of Kaipara Moana.	Kaitiakitanga Restoring mauri Sediment reduction				Six case studies, localised to sub catchments within the wider Kaipara catchment	Yes – and likely to be maintained to the extent Kaipara Uri want it to be over longer term
	Tātaki Wai, in development (eta early 2024), KMR including Kaipara Uri, <a href="#">KMR Joint Committee 24 July 2023</a>	Integrated Model/Accounting Model   A continuous, process-based accounting framework adapted from Auckland Council's Freshwater Management Tool, will produce sub-catchment level (100-200ha) information across all land that drains into the Kaipara Moana, providing a significantly more fine-scale spatial results than previous models. It quantifies the sediment reduction benefit of a spatially explicit mix of mitigations. The model is expected to be complete by early 2024 and its outputs will include the modelled reduction in sediment load that could be achieved with KMR co-investment. The optimised solution provided by Tātaki Wai is based on:  - modelled baseline water quality state across sediment and other contaminants, including the sources and amounts of contaminants entering waterways, and a time-series view of key indicators, - catchment specific cost estimates of available mitigations and - a spatialised understanding of opportunities for mitigation.  The model inputs the biophysical catchment parameters, the available mitigations, and the available level of investment to model the optimised (most cost-effective) solution that KMR can invest in to reduce suspended sediment and the associated reduction in sediment load (as well as other freshwater contaminants and physiochemical parameters) to each river system and the Kaipara Moana. Outputs spatially identify a range of opportunities across the landscape to invest in each mitigation type. Alongside an understanding of cultural values and aspirations and operational realities, these high-resolution outputs will inform programme strategy and operational decisions (e.g. Mātai Onekura). At its current stage, Kaipara Uri are driving decisions at a governance level. The focus is on urgent address of sediment reduction and identifying the most efficient and effective actions on-farm. Restoring the mauri of Kaipara will only be possible through substantial, long-term (trans-generational) sediment reduction. The extent of mātauranga and tikanga influence in modelling for Kaipara is likely to increase as Kōrero Tuku Iho develops, and as Tātaki Wai begins to be implemented. This tool could be used to further consider the NPS-FM (such as Freshwater Farm Plans) and TMOTW. Though it has not been developed for council or landowners to meet freshwater requirements it could be used more purposefully in that regard.	Sediment reduction Restoring mauri Stewardship Care				Multiscalar potential	Yes – service level agreement likely with AC, utilising long-term commitment in AC to FWMT approach for ongoing maintenance, versioning, and improvements
	Mātai Onekura, in development (2023), KMR including Kaipara Uri, <a href="#">KMR Annual Report 2021 - 2022</a>	Conceptual   On-farm planning tool to present information, agree remedial action plan and share information back. Can speak with/to the other (aforementioned) tools in the "digital ecosystem" for Kaipara. For example, draft Sediment Reduction Plans can be (and are being) lodged in Mātai Onekura for various projects across all of the Kaipara catchment. The plans include identified actions and locations e.g. (a map showing a farmers property with mark ups such as: yellow property boundary; green planting/regen; brown new fencing) and associated budget. Though Mana Whenua were not directly involved in the tools design or development, there are a number of Kaitiaki now trained and employed through KMR that are working as Farm Advisors, involved at a technical level. Influence and impact of mātauranga and tikanga may also increase in respective subcatchments and case study areas as Kōrero Tuku Iho develops - over time influencing the whole catchment. This tool could be used to further consider the NPS-FM (such as Freshwater Farm Plans) and TMOTW. Though it has not been developed for council or landowners to meet freshwater requirements it could be used more purposefully in that regard.	Sediment Reduction Stewardship Care Kaitiakitanga Manaakitanga				Farm scale; potentially sub catchment and multiscalar	Yes, yes

Ngāti Rangiwewehi; Rotorua	Kaitiaki Flows and management regime in the spring-fed Awahou Stream; (which followed Ka Tu Te Taniwha, Ka Ora te Tangata), 2018-2019, Ngāti Rangiwewehi, GNS Science, Rotorua District Council, <a href="#">Our Land and Water Information</a>	Integrated Model / Water quantity focus   Ngāti Rangiwewehi used modelling as a tool to ensure mana over their taonga. It is both qualitative and quantitative, providing an opportunity for whānau to participate and contribute on site at the water source as well as in wānanga settings. Iwi determined TMOTW through mātauranga, which was then modelled alongside western science data. Proving to be complementary, the developers established the validity of the Kaitiaki Flows water management framework, grounded in both knowledge systems. The model supports the Hierarchy of Obligations by ensuring life sustaining force of wai first, and allocation for the communities needs second, with ability to consider water allocation for other purposes as they arise. Kaitiaki flow is defined as stream flow > consistent with tangata whenua values (e.g., amenity, environment, and spirituality), identified by iwi-based assessment processes. Flow was determined within the unique cultural context of Ngāti Rangiwewehi, who are kaitiaki (guardians) of Awahou Stream and Taniwha Springs in the Lake Rotorua catchment, as part of a flow management regime designed for the co-managers (Ngāti Rangiwewehi and Rotorua Lakes Council) of the Taniwha Springs municipal water supply abstraction consent. The regime, now part of the Taniwha Springs water supply consent application submitted to Bay of Plenty Regional Council, includes kaitiaki flow as a moving minimum mainstem flow that is 90% of daily mean naturalised flow in the Awahou Stream, permanent flow monitoring of Awahou Stream downstream of Taniwha Springs and a web-based information system. Wide participation by Ngāti Rangiwewehi in the process to define the kaitiaki flow regime underlined the importance of kaitiakitanga and co-management roles to the iwi. The process showed how traditional Māori knowledge can be transferred into policy utilising methodologies that may provide a guideline to iwi engagement in other iwi/science water projects. The only concern is whether the regional council will enable the scaling up of this model, which is what Ngāti Rangiwewehi and other iwi would like to see, both through policy and practice.	Mana Whakahaere Kaitiakitanga Manaakitanga			Puna; Awa; Sub catchment	Yes – Ngāti Rangiwewehi have established a kaitiaki flow and advise that water quality, water quantity and water allocation are determined in the conditions of the joint consent they hold with the Lakes District Council in relation to the Awahou catchment. The Bay of Plenty Regional Council is the consenting agency
Mohakiki Waihua; Hawkes Bay	Predictive water quality model, developed by iwi working group in partnership with independent providers, 2023	Predictive model of water quality and ecological state of unmonitored river sites/reaches to inform the development of the Mohaka Freshwater Plan Tangata Whenua workstream] Mohaka me Waihua River catchment mana whenua (Ngāti Pāhauwera, Ngāti Hineuru, Ngāti Tūwharetoa, multiple hapū and marae and Māori land trusts working as a collective). The Māori team leading NPS-FM processes in the Mohaka catchment recently commissioned modelling to provide independent information on the predicted state of water quality and ecology at sites of interest to tangata whenua and on Māori land. Regional Council monitoring sites are sparse (being a remote catchment) and lack spatial coverage of areas of interest to tangata whenua. The models were developed from robust national level information and datasets and will them to understand the likely state of water quality and ecology at sites of interest to them and within their own landholdings. This information will be presented and explored by whānau through wānanga planned for Spring 2023/24 > to assist identification of attribute, targets and limits for the catchments from the perspective of tangata whenua. The models cover almost all river reaches and segments in the catchments, allowing tangata whenua to zoom into any area of a river to examine the prediction and if possible to ground truth that prediction against their own experiences, observations and mātauranga.	Mana Whakahaere Kaitiakitanga Manaakitanga			Multiscale capability	Yes, Uncertain extent of commitment
Ngāi Tahu whānui; Tāhuna (Otago)	Te Mana o te Wai Whakaata (includes two iwi-led tools for water quality assessment, Āpiti Hono Tātai Hono: Ngā Whenua o Ngāi Tahu ki Murihiku; and Murihiku Cultural Waters Classification System), 2022 (initiated but evolving)	In lieu of a “fit-for-purpose” model, Mana Tāhuna has employed a combination of mātauranga and western science-based tools to help them to understand the current state of the water quality for Wai Whakaata. This approach has been under the umbrella of Ngāi Tahu ki Murihiku which has developed a site-specific Statement of Expectation: Ngāi Tahu ki Murihiku Environmental Statement of Expectation Waiwhakaata / Lake Hayes. Within which two iwi-led tools for water quality assessment, Āpiti Hono Tātai Hono: Ngā Whenua o Ngāi Tahu ki Murihiku; and Murihiku Cultural Waters Classification System, have been applied. Alongside those cultural health assessments, are a series of biophysical assessments conducted by kaimahi for Mana Tāhuna.	Kaitiakitanga Manaakitanga Mana Whakahaere			Catchment	MFE investment into capability building; some investment from councils, uncertain extent of long-term commitment



Figure 28: Council placed warning sign of bacterial risk in Waiwhakaata. (Source: ORC, 2023).

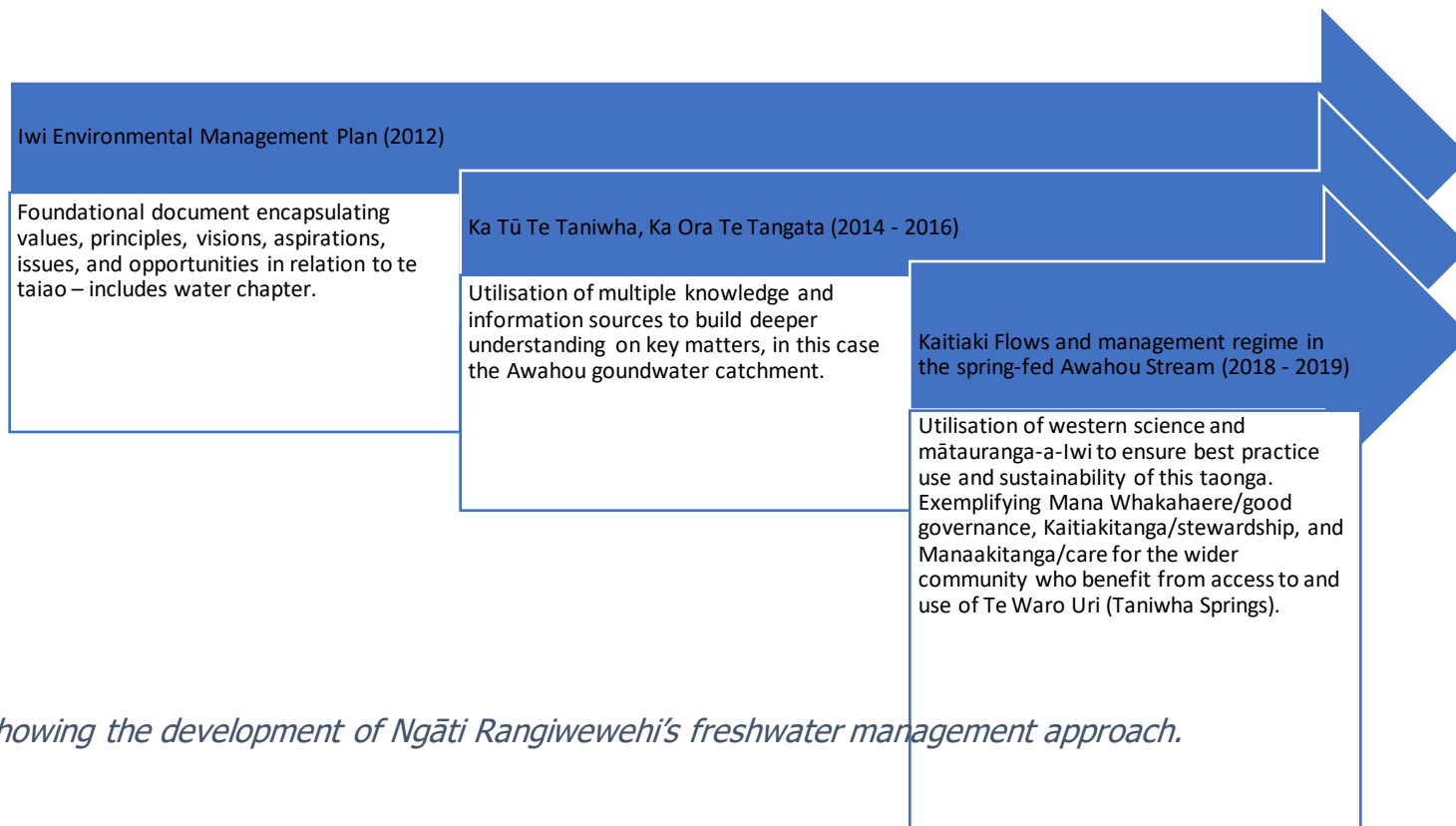


Figure 9: Process Model showing the development of Ngāti Rangiwewehi's freshwater management approach.

### **Technical Model**

Focused on the Kaitaki Flows and management regime in the spring fed Awahou Stream. The Kaitaki Flows model (White et al., 2020), and Ka Tū te Taniwha, Ka Ora te Tangata (Ngāti Rangiwewehi, 2015), were both co-developed with GNS Science, building on the content within the Iwi Environmental Management Plan (IEMP). The model was designed to understand the base flow of the water in-stream system and use the data to establish their own minimum flows for sustainable water take in any water extratio consents. The model assists the Iwi to confidently ascertain flow regimes and advise on allocation and use of their waimāori.

# Freshwater Accounting: is it the next politrick?

Seeing the Unseen – Models can help us to fill in the gaps and see the unseen – but through who's eyes?

Deficit modelling within a deficit system... Modelling to fill the gaps. Who's gaps? Where? Why?

To save time?

To increase efficiencies?

To save money?

To make money, through shifting baselines that allow activities to continue having detrimental impacts?

Modelling is not just about 'best information' but must equally consider 'best process'


How will freshwater accounting be implemented across Aotearoa?


Whereas, according to the Ministry for the Environment (2023):

*The hierarchy requires a fundamental change to the way in which some resource managers have considered managing freshwater. It requires us to identify what is needed to give effect to Te Mana o te Wai, before deciding what other values can be accommodated in the catchment. The starting point is providing for the well-being of the water body not the current state of allocation or considering 'how much are we willing to give up?'*

ARTICLE

## Ngā Puna Aroha: towards an indigenous-centred freshwater allocation framework for Aotearoa New Zealand

Lara Bernadette Taylor, Andrew Fenemor, Roku Mihinui, Te Atarangi Sayers, Tina Porou, Dan Hikuroa ,  
Nichola Harcourt, Paul White and Martin O'Connor

 Check for updates

### ABSTRACT

Aotearoa New Zealand's environmental policy and legislation recognises Māori Indigenous principles and values, and gives prominence to Te Mana o te Wai (the authority of water itself). However, current policy, legislation, and practice are inadequate for enabling Māori rights and interests in water takes and instream flows and levels, in terms of both involvement and specific allocation mechanisms supporting Māori values. We argue that a policy and implementation space needs to be created that ensures indigenous Māori engagement and outcomes in freshwater governance, planning, and management. This space should provide for an integrated, precautionary, and bicultural 'First Principles' approach, ensuring that Māori rights and interests consistent with Te Tiriti o Waitangi/the Treaty of Waitangi (1840) are enabled, including the exercise of mātauranga Māori (knowledge informed by Māori worldviews), tikanga (Māori customs and lore), and kaitiakitanga (guardianship). We outline a potential water allocation framework, Ngā Puna Aroha, that could provide direction and give confidence and certainty to the implementers of national water policy. Such an approach would need to be supported by a broader bicultural policy and we suggest an overarching philosophy Ngā Taonga Tuku Iho, which would encompass all natural 'resource' management, providing a korowai (cloak) for the management of each particular 'resource' or taonga (treasure) including freshwater. This type of bicultural proposal could inform freshwater and wider natural 'resource' management policymaking, regulatory frameworks, and implementation nationally and internationally.

### ARTICLE HISTORY

Received 27 November 2019  
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### KEYWORDS

Tikanga; mātauranga;  
taonga; indigenous rights;  
co-governance; co-  
management; bicultural;  
freshwater allocation; policy;  
legislation; reform;  
framework

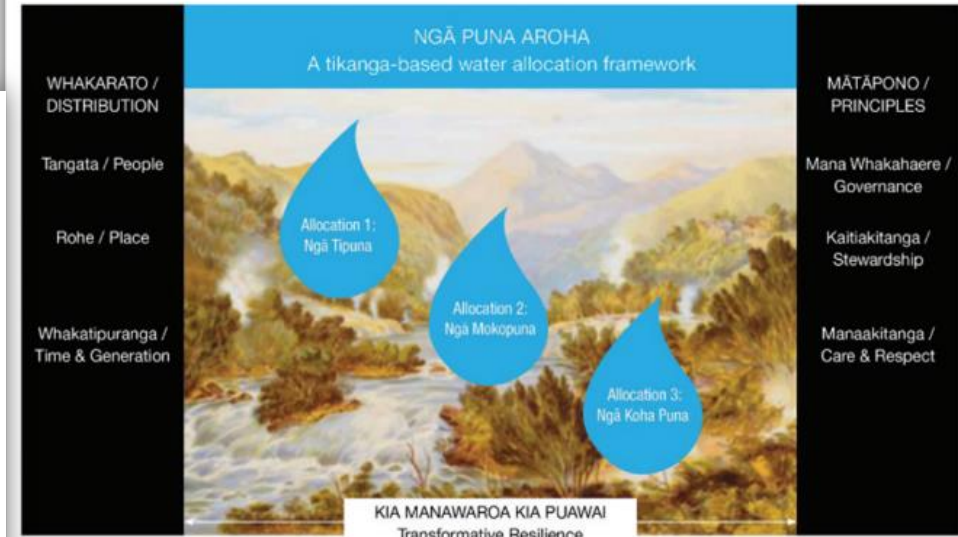


Figure 2. Ngā Puna Aroha – a tikanga-based framework.

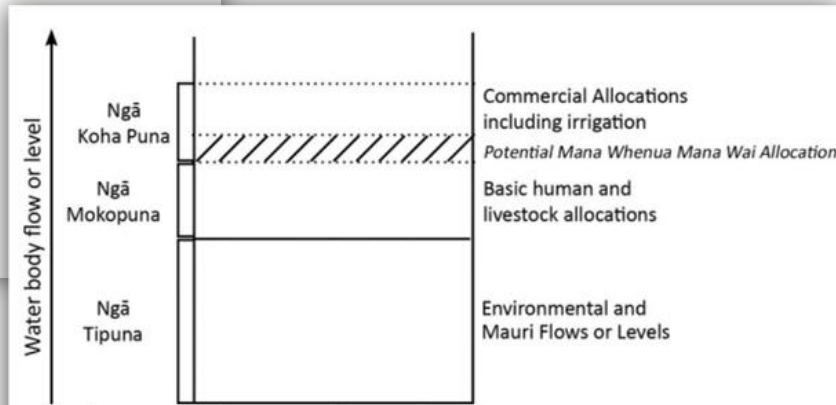


Figure 3. Allocation hierarchy for Ngā Puna Aroha.

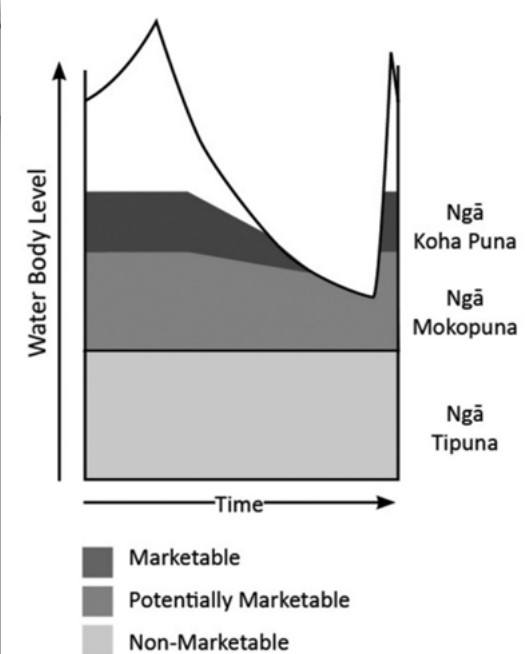


Figure 4. Potential water-trading allocation framework based on the principles and proposed water allocation hierarchy of Ngā Puna Aroha.

# Can we (be bothered to) do mana enhancing modelling?

What is the relevance now with the new government?

If the new government wants to repeal environmental legislation to shift focus from environmental and collective wellbeing to development of resources at any cost?

**Table 2.** Issues and opportunities for Māori in water allocation.

1. The opportunity for authentic Treaty-based partnership in water policy at national, regional, catchment, and rohe scales
  2. Cultural flows and allocations that reflect Treaty principles and could provide redress for past alienation of Māori from their waters as taonga
  3. Ensuring market mechanisms for water allocation are based on holistic principles and recognise and provide for iwi and hapū rights and interests in water
  4. Enabling of mātauranga and tikanga in policy and processes, for example alongside hydrological and economic principles and in the development of flow regimes and allocation limits
  5. The need to build iwi and hapū capacity and capability to engage more generally in water allocation planning and processes, and in catchment management
  6. The need to develop central and local government capacity and capability to overcome systemic blockages and institutional inertia, and to enable and empower iwi and hapū in water allocation planning and processes
-

# More politricking? Outright racism? Or just totally short-sighted disservice to ourselves?

“Since the Crown has already demonstrated some ability to recognise te ao Māori concepts, it now needs to enable Tiriti-based governance and management at national, regional and catchment scales...


Bicultural rhetoric needs to be replaced by a commitment to a Tiriti-based system that upholds the mana of us all, and all that we are responsible for, including Te Mana o te Wai. Otherwise, what is the real ‘why’ behind TMOTW?”

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## COMMENTARY

NEW ZEALAND  
GEOGRAPHER WILEY

## Stop drinking the waipiro! A critique of the government's ‘why’ behind Te Mana o te Wai

Lara B. Taylor<sup>1,2</sup> 

<sup>1</sup>Ngāti Tahu Ngāti Whaoa, Te Arawa, Ngāti Kahungunu, Ngāi Tahu

<sup>2</sup>Manaaki Whenua Landcare Research, Lincoln, New Zealand

### Correspondence

Lara B. Taylor, 333 Motutara Road, Muriwai Beach, Rodney, Auckland 0881, New Zealand.

Email: [taylorl@landcareresearch.co.nz](mailto:taylorl@landcareresearch.co.nz)

*He rā ki tua.*

*Better times are coming.*

fair and just ‘settlement’. One clever approach taken in the Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 has been to recognise a freshwater body (the

Taylor, L. B. (2022). Stop drinking the waipiro! A critique of the government's ‘why’ behind Te Mana o te Wai. *New Zealand Geographer*, 78(1), 87–91. <https://doi.org/10.1111/nzg.12328>



# Modelling Symposium

## Thank you! Questions? Patai?

### Mana enhancing modelling:

1. Models fit for the purpose of the NPS-FM and Te Mana o te Wai – methodology used for report
2. Modelling for mana more generally (outcomes focused) – variety of pathways
3. Develop a 'mana model' (akin to mauri modelling e.g. Dr Kepa Morgan's Mauri Model, or Ian Ruru's Mauri Compass)
4. Modelling that enhances mana of each other – an opportunity for all of us?



“Dear Prime Minister,  
New Zealand’s rivers, lakes &  
aquifers are in a dire state.

If you proceed with your  
proposals to undo the country’s  
freshwater policy, they will only  
get worse.”

Extract From An Open Letter from  
50 freshwater experts and leaders to  
Prime Minister Luxon.

[Link to full letter in description.](#)