

Murihiku Cultural Water Classification System: connections of people, water, land and science

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Overview



- Murihiku
- Freshwater Management context for whānau
- Ngā Kete o te Wānanga
- Murihiku Cultural Water Classification System
- Mahinga kai example
- Next steps
- Benefits to date

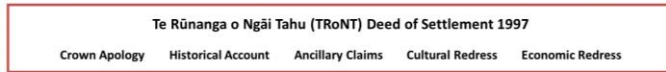
Murihiku



- Four Papatipu Rūnanga: Ōraka Aparima, Waihōpai, Awarua and Hokonui.
- Working relationship with other FW management agencies, including Environment Southland:
 - MoUs and Charters that guide many of these relationships
- Te Ao Mārama Inc (agency owned by the four Papatipu Rūnanga: RMA & LGA relationships)
- Other Ngāi Tahu ki Murihiku management structures to interact with other legislative relationships eg Te Roopu Kaitiaki (DOC); Tangata tiaki/Kaitiaki (Fisheries)

Te Ao Mārama Inc regulatory context*

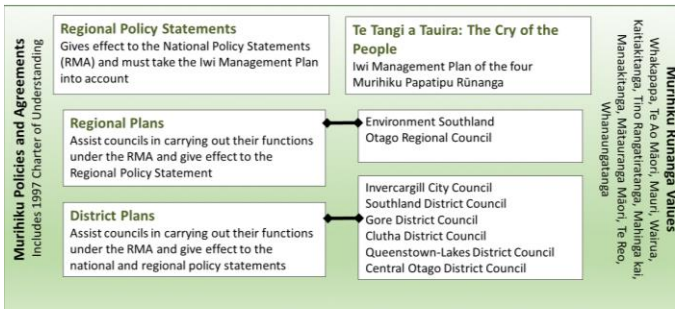
*RMA & LGA only



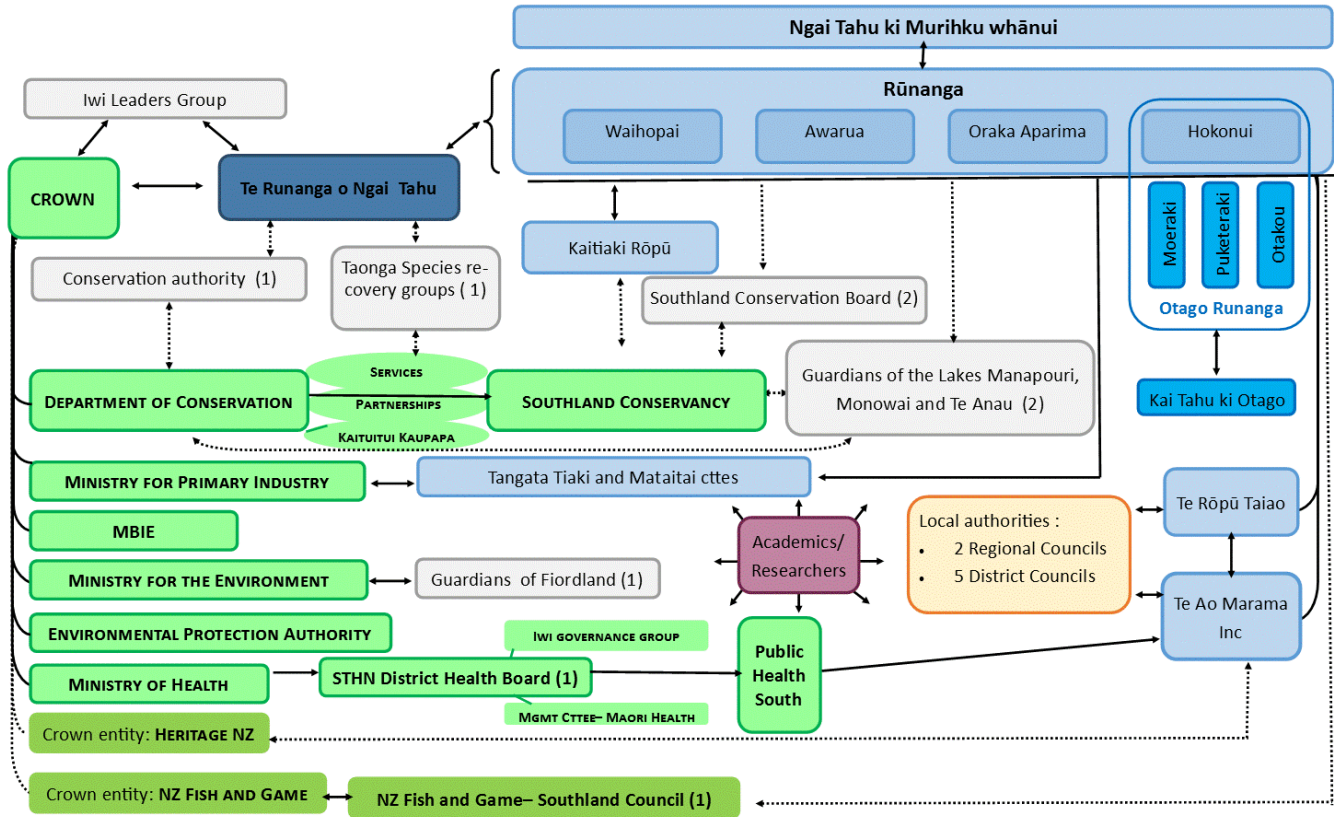
<p>Councils' Responsibilities</p> <p>Operate under a defined purpose and framework, and are accountable to their communities.</p> <ul style="list-style-type: none"> Strategic plans, Decision making with Māori (s81), Committees and delegations. 	<p>RMA National Directives</p> <p>Policy Statements (Coastal, Freshwater, Electricity transmission and generation)</p> <p>National Environmental Standards (Air, Contaminants in soil, Drinking water, Telecommunications, Electricity,)</p>	<p>Statutory Provisions</p> <p>Areas, species, activities and their importance and association to Ngāi Tahu are listed in the Ngāi Tahu Claims Settlement Act (e.g., statutory acknowledgements, taonga species, mātaītai, mahinga kai, etc)</p>	<p>TRoNT Policies</p> <ul style="list-style-type: none"> Mō tātou, ā, mō kā uri ā muri ake nei, Ki Uta Ki Tai, Freshwater Policy, Ngā Matapono ki te Wai. 	<p>Wāhi Tapu and Archaeological Sites</p> <p>Identification, recording, management and protection of recorded and unrecorded sites and areas</p>
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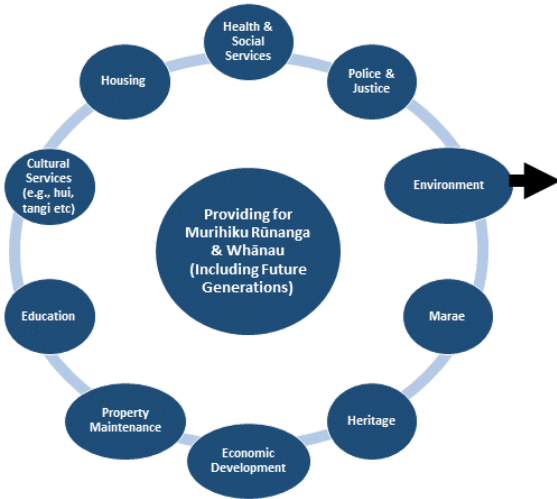
- TAMI is mandated by four rūnanga within Murihiku.
- Is all legislation equal?
- Two legal definitions of freshwater.



Implementation pathways

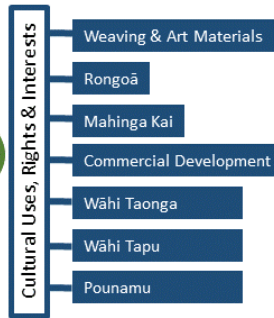


Rūnanga multiple portfolios



Core pillars

Tino Rangatiratanga	Ki Uta Ki Tai	Wairua	Whakapapa	Kaitiakitanga	Mahinga Kai
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Core pillars

Manaakitanga	Mātauranga Māori	Te Reo	Mauri	Whanaungatanga	Te Ao Māori
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Examples of Methods & Tools Used

Input into National Park & Conservation Management Plans
 Tenure reviews; Input into Fishery Management Plans
 Restoration projects; Input into Regional & District Plans
 Resource management; Commercial opportunities
 Customary fisheries management; Bylaws; Rāhui, Mātaihai
 Wānanga; Funding applications & supporting other applications
 Relationships; Input into Regional Policy Statements
 Monitoring & research; Interpretation panels
 Involvement with whale strandings & recoveries
 Involvement in oil spills; Aquaculture management areas;
 Education; Effects of erosion & sea level rise; Mining permits
 Tribal & rūnanga properties; Concessions; Hearings; Consents
 Species management; Input into Council Infrastructure strategies
 Nohoanga establishment & management; Submissions

Ngā Kete o Te Wānanga: Mātauranga, Science and Freshwater Management Research Programme

- Bringing together of mātauranga and science knowledge systems to inform and improve decision-making and freshwater management in New Zealand
- Two case study areas: Murihiku and Canterbury
- Collaborative project with whānau, for whānau.



Mātauranga Māori

- Holistic - encompassing all aspects of knowledge and seeks to understand relationships between all component parts and their interconnections to gain an understanding of a whole system
- Based on own principles, frameworks, classification systems, explanations and terminology. Adaptive, dynamic, acquired through direct experience and observations and handed through the generations.



Development of the Murihiku case study

- Required understanding the Murihiku freshwater management context and needs of whānau
- Drivers/needs and criteria for research:
 - The need of mātauranga Māori and science knowledge systems working together to provide a more complete understanding of past/present cultural values and the factors affecting them.
 - Establishing baselines.
 - Framework for management, monitoring and compliance.
 - A data management system for Māori.
 - Revitalising mātauranga Māori and reconnecting whānau.
 - Succession planning.

Murihiku Cultural Water Classification System



Thematic scope:

- Classify and develop Murihiku standards and baselines on waters of different cultural uses, including that of mahinga kai, nohoanga, pounamu etc. Revitalise mātauranga Māori.

Freshwater Decision-Making Processes

- Multiple freshwater management processes to provide for Ngāi Tahu ki Murihiku uses and needs for water.

Moving beyond monitoring to a classification system for Māori.

Geographic Scope

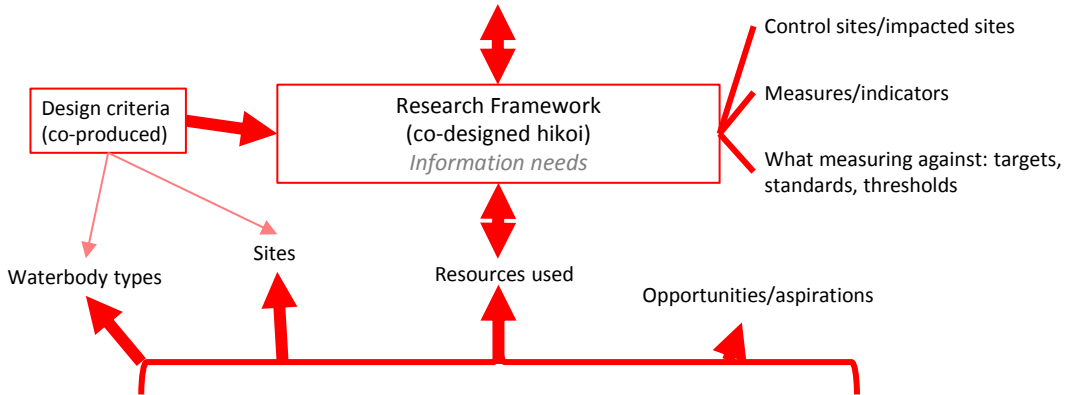
Te Koroka Cultural Landscape



- Relevant spatial scale – Ki Uta Ki Tai.
- Range of cultural values/uses, incl. pounamu.
- Draws upon historic & contemporary sources of knowledge.

Murihiku Cultural Water Classification System

Management Framework



- Current/contemporary context
- Connections and associations
 - Impacts
 - Current context (what is already monitored, information already gathered, gaps identified)
 - Current management context - area specific

- Historic context
- Collation of historic literature (pre 1880s)
 - Post 1880s literature
 - Archaeology
 - Maps
 - Place names analysis
 - Historic impacts
 - Historic vegetation/landscape

Preparation: Site selection,
 Training , Health & Safety,
 Biosecurity measures,
 Permitting.

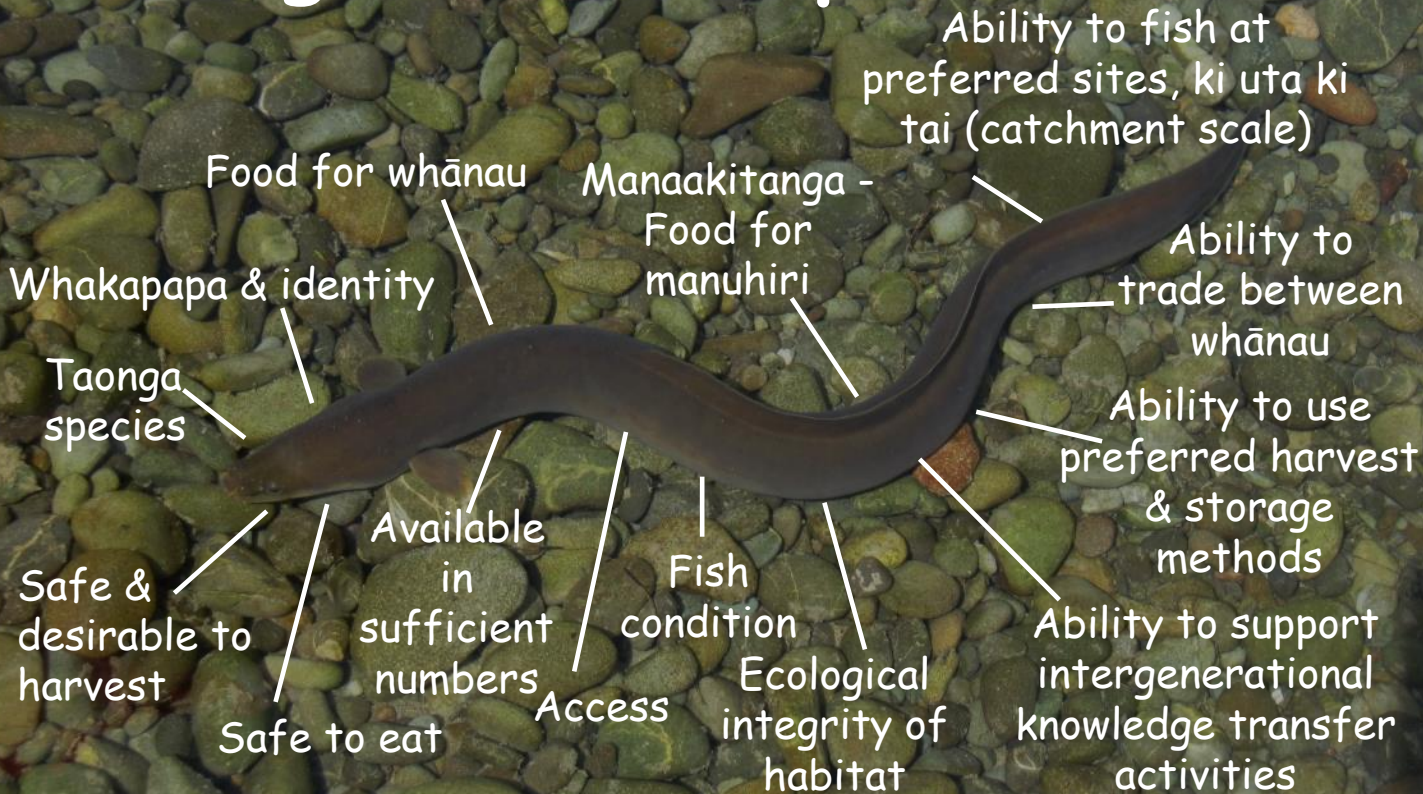
Reflect, adapt, reapply

Mahinga kai

- Resources harvested
- Ability to access the resource
- Site/s where gathering occurs
- Act of gathering and using resource
- Health and condition of the resource
- Principal 'environmental indicator'



Mahinga Kai example



(source Williams and Crow 2016)

Attributes for mahinga kai species

Nutrients

Periphyton

Flow regime

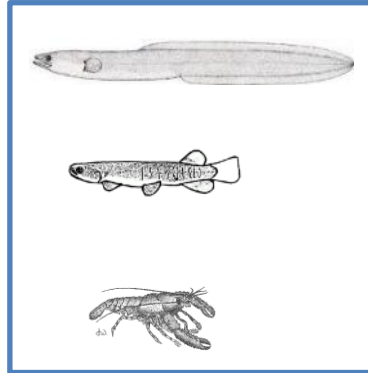
Fish habitat

Fine deposited sediment

Invertebrate habitat

**Invertebrate
abundance/biomass
and quality**

Other kai/food species



Water clarity

Dissolved Oxygen

Water temperature

pH

Toxicity

Pathogens, disease

Fish passage

Introduced predators & competitors

**Associated species eg kakahi and hosts,
and interactions between species & ecosystem**

**Connections and health of other ecosystems –
which support different life stages**

Attributes for mahinga kai activity

Attributes for mahinga kai species

Available in sufficient numbers

Long term harvest prospects

Intergenerational knowledge transfer

Connections/ki uta ki tai

Connected to all other attributes

Preferred sites

Site specific nature of some attributes

Access

Eg. Bank stability
nuisance algae

Flow

Sediment

Riparian vegetation

Land use & tenure

Desirable to harvest

Eg. Taste/palatability eg algae can taint flavour

Safe to eat and gather

Eg: Human pathogens
(water contact and consumption)

Cyanobacteria

Periphyton (slippery rocks)

Toxicants/food safety

Fine deposited sediment

Bank stability

Preferred methods

Eg. Flow
nuisance algae

sediment

Associated resources available eg bracken fern for harvest methods

Next Steps: Murihiku

Continuation of thematic scope:

- Classifying and developing Murihiku standards and baselines on waters of different cultural uses.
- Revitalising mātauranga Māori & reconnecting whānau.

Some of the steps:

- Analysis of pilot results: review, adapt, reapply.
- Follow up monitoring hikoi–river sites.
- Review hikoi data, past & present state of cultural use.
- Visualise and draft ‘groupings’ of water-related dependencies.



Next Steps: Murihiku

Development of other cultural health indices:

- Research design requirements for CHI for other water bodies other than rivers/streams (interviews, literature review, sampling methodology and statistical research design).
- Test & validate method

Data security & management

- Describe database requirements and specifications.
- Prototype & protocols for data use.
- Test & validate

Transfer of approaches



Benefits so far

- Improved policy advice – tested, collated, timely, strategic.
- Freshwater research questions that are relevant to Murihiku Rūnanga – saves time and capacity.
- Better understanding of/between disciplines leads to increased productivity and clarity.
- Strategies and policies relevant to Manawhenua (Ki Uta Ki Tai) and policy responses provided in a way that can connect with freshwater management processes.
- Translating and working across multiple scales and domains.



