

Māori values – Iwi Perspectives of Freshwater Management

¹ **Garth Harmsworth** (Te Arawa, Ngāti Tūwharetoa, Ngāti Raukawa)

² **Shaun Awatere** (Ngāti Porou)

¹ Landcare Research, Private Bag 11-052, Palmerston North
HarmsworthG@LandcareResearch.co.nz

² Landcare Research, Private Bag 3127, Hamilton
awateres@landcareresearch.co.nz



Landcare Research
Manaaki Whenua

Mana Kaitiaki



- Kaitiakitanga
- Rangatiratanga
- Whakapapa

Western Planning



- Western-centric
- Neo-liberal economics
- Globalised economies



Dominant Western Planning

Global pressures
e.g. climate change
globalisation
resource depletion



Mana Kaitiaki

Co-management

Resilience

Sustainability

Alternative paradigms
for urban planning





Mana Kaitiaki

Sustainability



Mana Kaitiaki



Western Planning



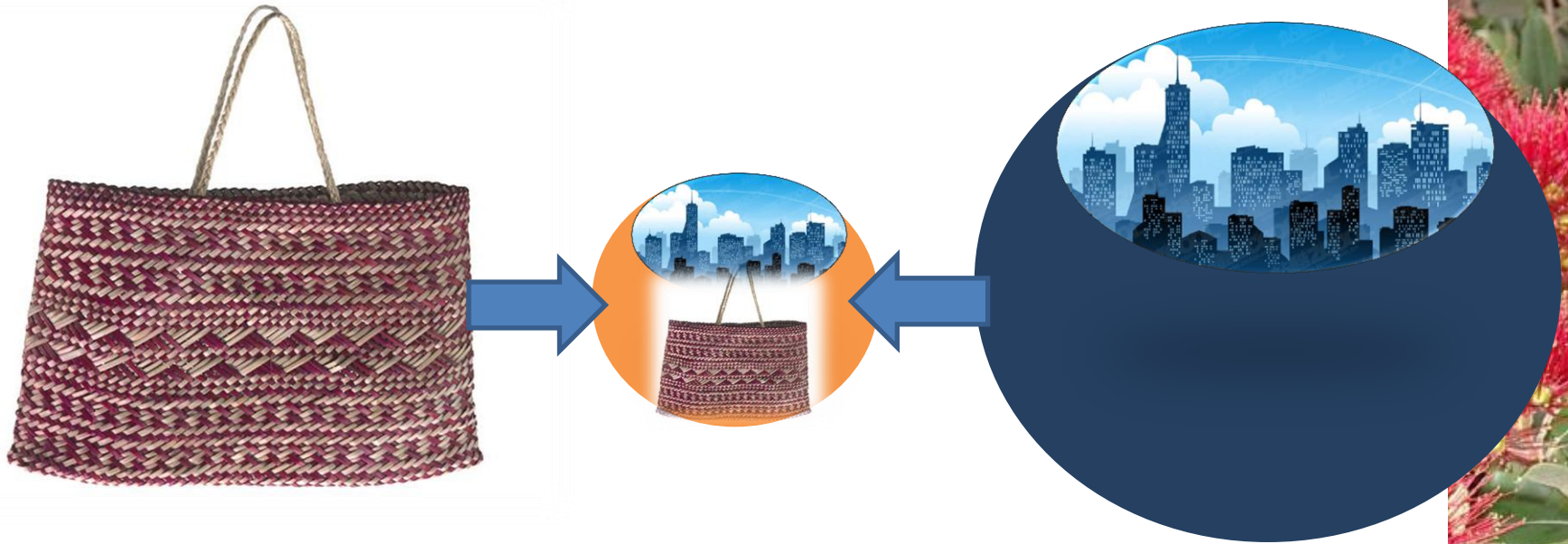
Common approach

- Co-option of Mātauranga Māori
- Descriptors of Mātauranga Māori in plans but not enacted
- Mana Whenua not empowered



Mana Kaitiaki

Western Planning



Co-planning

- Mana whenua empowered
- Mātauranga Māori acknowledged as valid
- Mātauranga Māori informed planning





Landcare Research
Manaaki Whenua

HE WERO

THE CHALLENGE



National Policy Statement: Freshwater Management 2011 – Tāngata whenua roles and interests

Objective D1

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

National Policy Statement: Freshwater Management 2011 – Tāngata whenua roles and interests

Policy D1 – Local authorities shall take reasonable steps to:

- A) Involve iwi and hapū in the management of freshwater and freshwater ecosystems in the region,
- B) Work with iwi and hapū to identify tāngata whenua values and interests in freshwater and freshwater ecosystems in the region,
- C) Reflect tāngata whenua values and interests in the management of, and decision-making regarding, freshwater and freshwater ecosystems in the region.



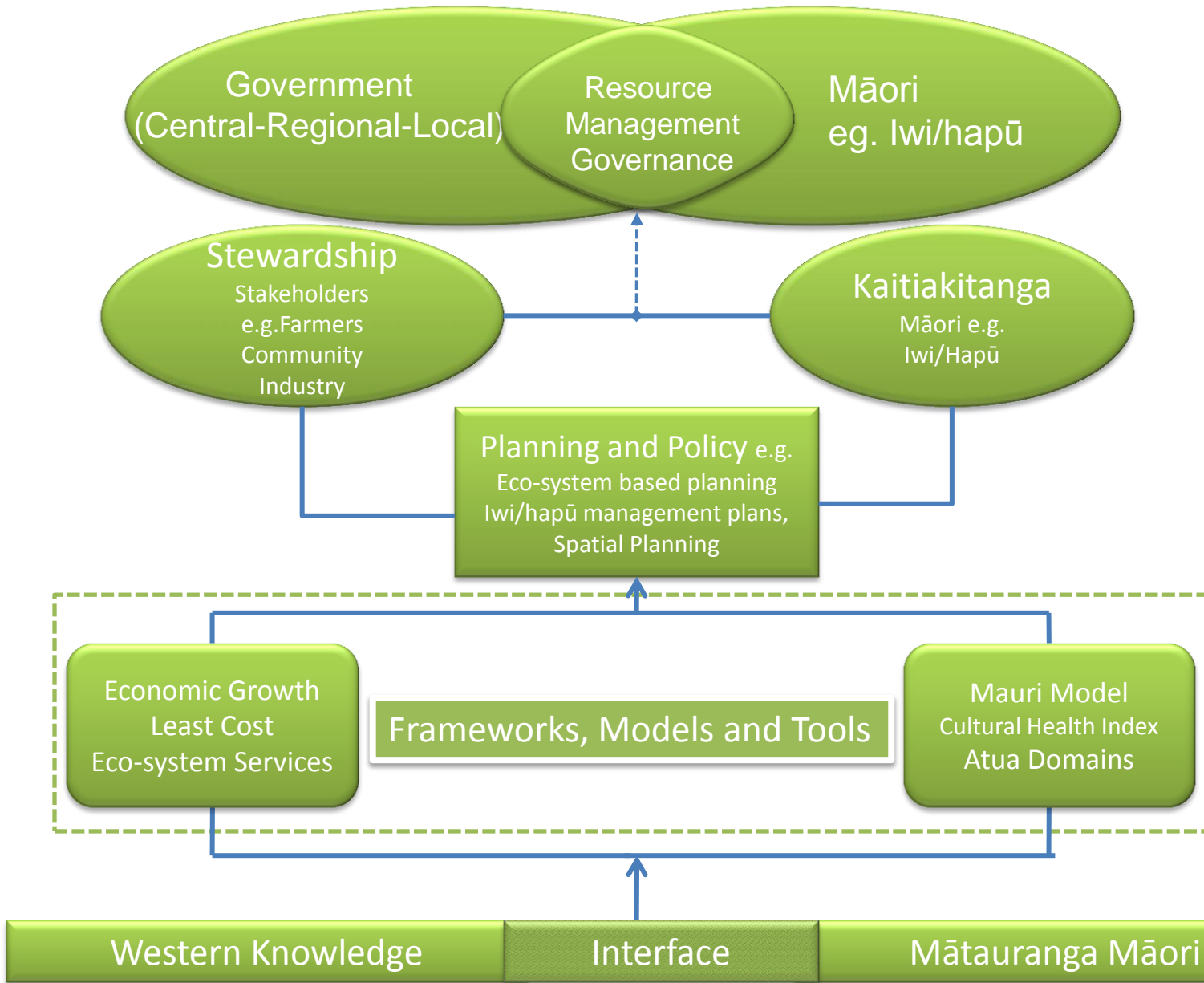
Landcare Research
Manaaki Whenua

NGĀ POU HERENGA

FRAMEWORK



Treaty Based Planning Framework



He Taura

Unitary Plan

Work-stream:
Built Environments

Kaupapa Māori Working Group



He Pātaka



Western Knowledge Interface Mātauranga Māori



He Pātaka

He Pātaka

Environmental
Monitoring

Ecosystem
Services

Te Aranga

Cultural
Monitoring

Resilience

Sustainability

Te Kōhao o te
Ngira

Mauri Model

He
Kāpehu

A values
compass

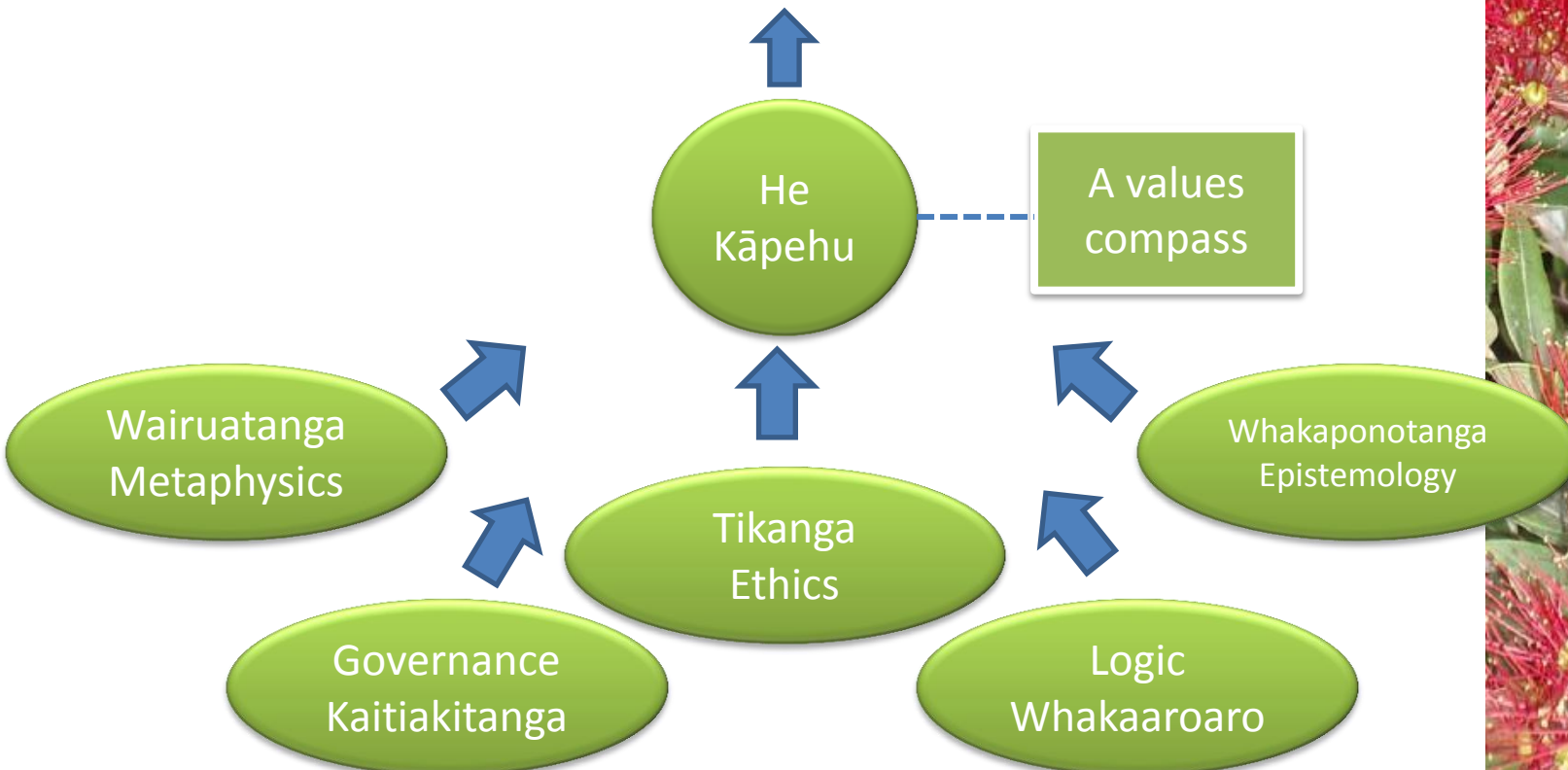
Wairuatanga
Metaphysics

Whakaponotanga
Epistemology

Tikanga
Ethics

Governance
Kaitiakitanga

Logic
Whakaaroaro



Integrating Maori values into Policy

- Positive working relationships
- Capability development
- Mātauranga Māori is context specific
- Achieves joint aspirations/outcomes
- What is the role of property rights?



Integrating Maori values into Policy

- Recommend starting at a high level
 - Outcomes
 - Goals/objectives
 - Monitoring
 - Indicators
- Values inform all aspects of policy



Integrating Maori values into Policy

- Outcome: A marae can provide traditional kai – tuna, for manuhiri(manaakitanga)
- Goals/Objectives
 - Access to mahinga kai
 - Min Mean flow
 - Water quality
- Monitoring
 - CHI
 - Atua Domains



HE TAUIRA NO NGĀI TAHU

A NGĀI TAHU EXAMPLE





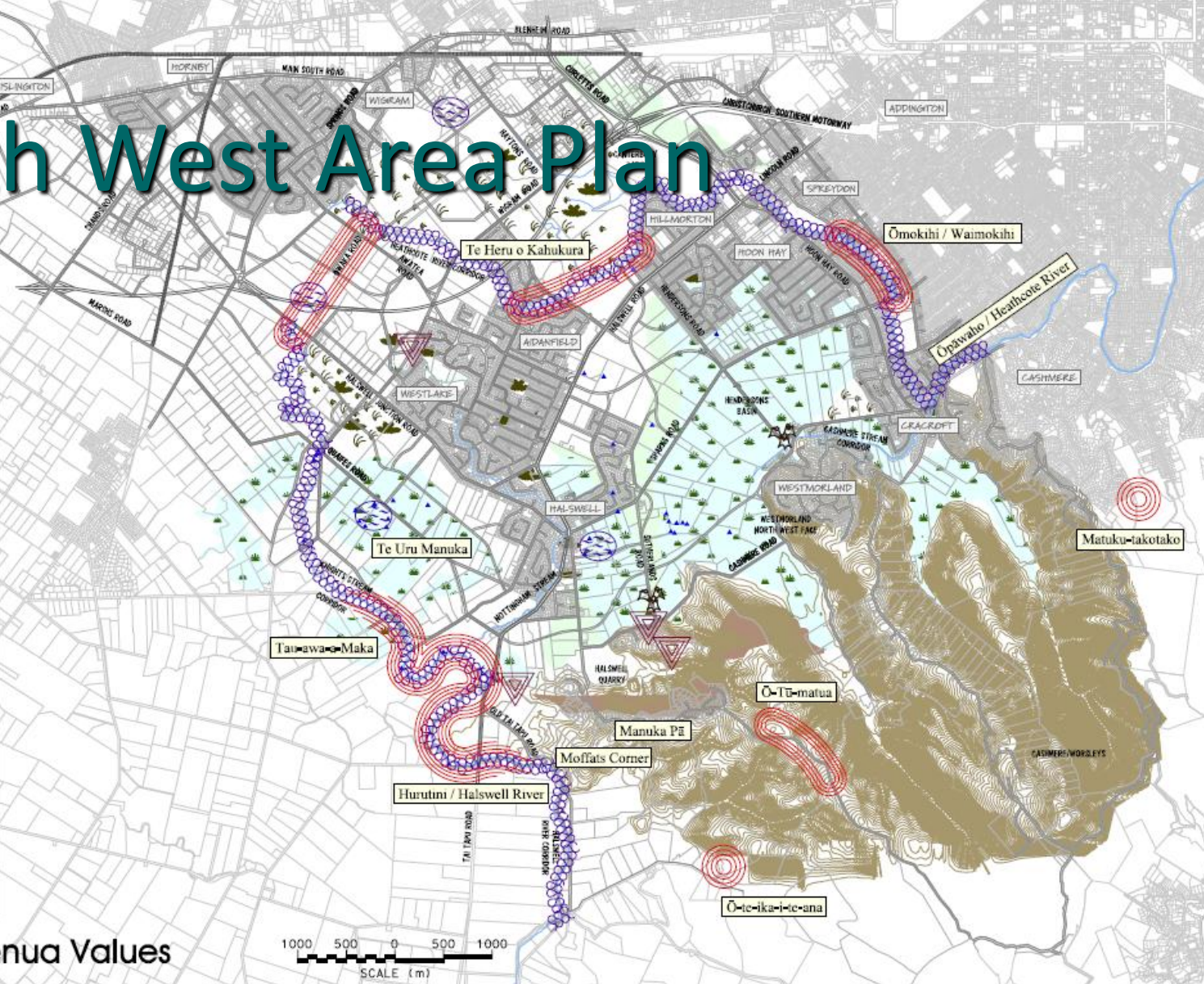
South West Area Plan

Key

- Traditional Places and Sites of Significance
- Archeological Sites
- Traditional Headwaters
- Significant Habitat Corridor and Waterway
- Current Springs
- Other Major Rivers & Streams

Historical Landcover - no longer present (circa mid 1800's)

- Manuka
- Flax / Toe Toe and / or Flax Swamp
- Raupo Swamp
- Grass Land
- Fern / Fern & Grass
- Kahikatea Stumps



Plan 5: Tangata Whenua Values



SOUTH WEST CHRISTCHURCH AREA PLAN

Ip20B107
Mar. 2009

DISCLAIMER
The Council does not guarantee the accuracy of the data or information contained in this draft concept plan. Whilst every endeavour has been made to compile data and information that is up to date and relevant, not all of it has been, or is capable of being verified. The draft plan, and others for the south-west area of Christchurch, should not be relied upon for the purposes of any proposed property transaction, including subdivision or land use approvals and building consents. The land use options provided in the draft concept plans do not guarantee that any or all of the land is suitable for development.



South West Area Plan

- Objective 5.1: Protect and enhance traditional and valued places (known and yet to be discovered), including mahinga kai sites.
- Objective 5.2: Use appropriate Māori names and associations for place, street, and park names.
- Objective 5.3: Restore indigenous flora and fauna, in particular in and around traditional mahinga kai sites.
- Objective 5.4: Represent historic and contemporary Māori culture in building design, artwork, furniture and interpretation materials in public open space.
- Objective 5.5: Protect and restore the Heathcote River/Ōpawaho and Halswell River/Hurutini and their catchments from contamination and sedimentation, particularly through the improved treatment of stormwater run-off.
- Objective 5.6: Protect and create a buffer zone around significant headwaters and springs feeding rivers.
- Objective 5.7: Develop and restore indigenous riparian, forest, grassland and wetland habitats.
- Objective 5.8: Provide for the cultural harvest and long-term utilisation of natural resources.
- Objective 5.9: Incorporate tangata whenua cultural practices and values into community activities and facilities.
- Objective 5.10: Involve hapū and rūnanga in the protection and recognition of their cultural values, including archaeological surveying of significant sites, cultural interpretation and monitoring, and protection and restoration of mahinga kai.



Awatea Basin





Lincoln





HE TAUIRA ANŌ

ANOTHER EXAMPLE



Whakatauki from the Iwi Māori National Summit on Freshwater Management, 2009

- Kei te ora te wai, kei te ora te whenua, kei te ora te tangata
- *When the water is healthy, the land and the people are healthy (nourished)*

An outcome could be a whakatauki



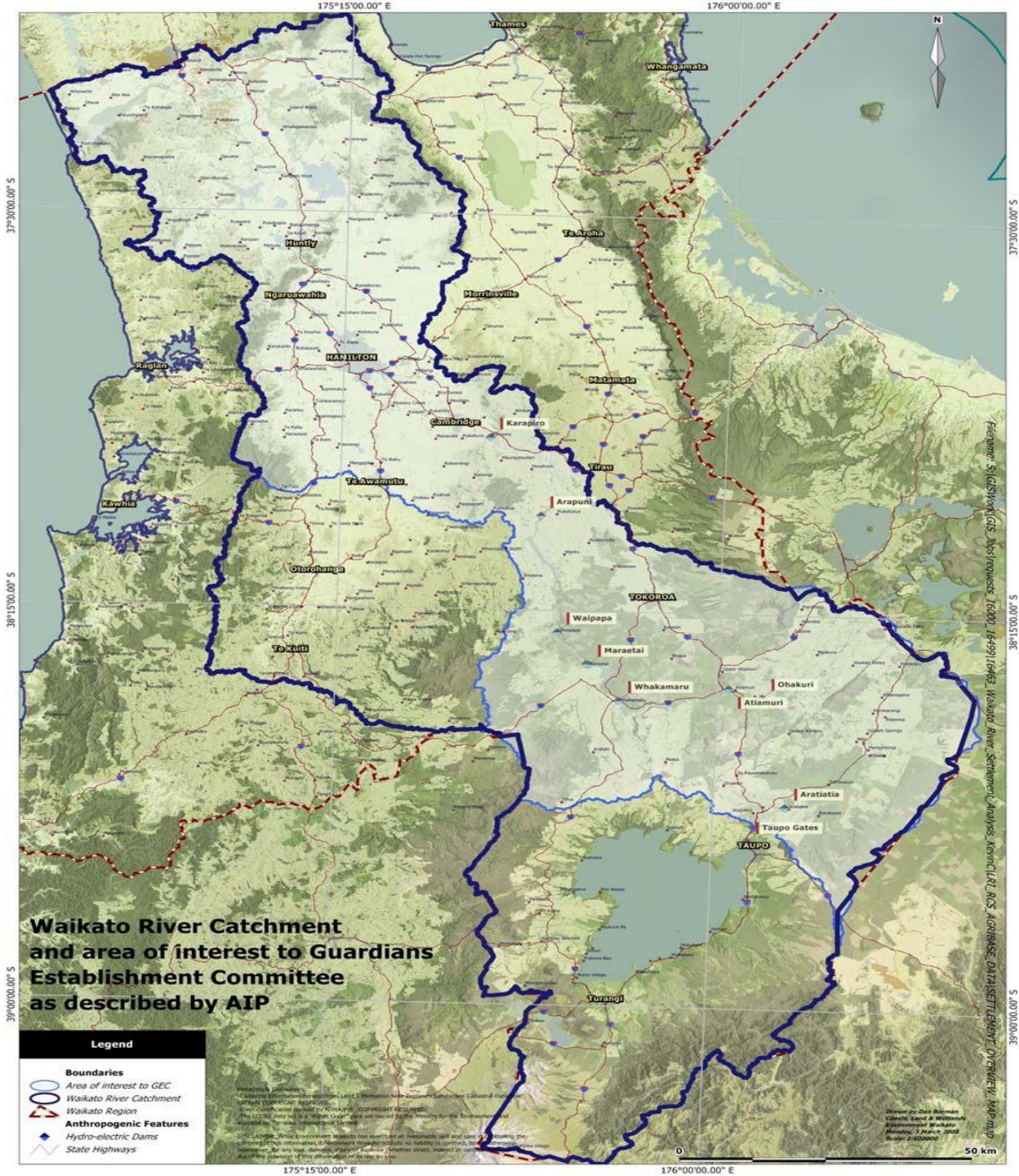
Waikato river – vision or outcome is:

Tooku awa koiora me oona pikonga he kura tangihia o te maataamuri

The river of life, each curve more beautiful than the last

- “Our vision is for a future where a healthy Waikato River sustains abundant life and prosperous communities who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato River, and all it embraces for generations to come”
- “Restore the mauri of the river”





Waikato River catchment boundary

Waikato river objectives

- Ko te nako, ko te Kaitiakitanga o te Ao Tūroa
 - Restoration and protection of Te Awa o Waikato and all its waterways
 - Restoration of all fisheries and habitat
 - Research and monitoring of all environmental impacts



NGĀ INENGA

MONITORING TOOLS



Monitoring/indicators

- Is the outcome/goal achievable in some timeframe?
- how do we measure progress towards this?
- How do we know we are making progress? What incremental steps?

We could use Māori monitoring approaches, tools, indicators



Indicators (Nga Tahu paper examples)

- Ability to drink water – noting that this is what our tūpuna were able to do, and we know we can't do this with many waterways now
- Ika
- See water flowing
- Healing properties for the health of our people – noting that our kaumātua used the water for its healing properties



Monitoring tools

- Identifies values and what constitutes ‘health’
- Provides a Māori perspective of state/condition of rivers/streams – Māori aspirations and goals
- Use of mātauranga Māori (knowledge) and Māori values (affirms relationship or connection to place)
- Identifies issues and change from a Māori viewpoint
- Links Māori wellbeing to river/stream health
- Use of indicators and assessment
- Feeds into reporting
- Links to planning and policy
- Supports actions (e.g., restoration projects, riparian planting, hapū/marae projects, mahinga kai, capacity building, GIS)
- Helps build capacity
- Can measure towards outcomes/aspirations/goals



Monitoring methods and tools (to June 2011)

- Cultural Health Index (CHI) Tipa & Teirney 2003, 2006)
- Cultural indicators of wetlands (Harmsworth 1999, 2002)
- State of Takiwa “toolbox” (iwi environmental monitoring and reporting tool), see www.ngaitahu.iwi.nz
- Adaptation of the Cultural Health Index (CHI) by Tiakina te Taiao for their own use and application in the upper South Island (Te Tau Ihu) (Young et al. 2008, Harmsworth et al. 2011)
- CHI for estuarine environments (Tiakina Te Taiao – Walker 2009)
- Development of coastal and marine health index (presently underway)
- Development of cultural indicators for lakes (underway by Ngai Tahu)
- Te Mauri model (Dr Kepa Morgan 2007, 2006)
- Significance assessment method for tangata whenua river values (Tipa 2010)
- KEIAR framework (Waikato case study) (Dixon 2011)



Monitoring methods and tools (other to June 2011)

- an internet-based Iwi resource management planning tool (Kaitiaki Tools) (NIWA 2009)
- Iwi Estuarine Monitoring Toolkit (Ngā Waihotanga Iho) (Rickard & Swales 2009a,b)



Complementary assessment/monitoring approaches (adapted from Harmsworth 2002)

Māori knowledge or culturally based	Community–scientific based	Professionally based – including scientific or technical assessments
<p>Cultural values mapping Cultural impact assessment Iwi monitoring of cultural-heritage sites Iwi monitoring of contaminated sites Cultural health index (CHI) Māori wetland, ngahere and estuarine indicators Culturally based environmental indicators Require in-depth Māori knowledge and understanding of particular environments and issues Understanding of Māori values, goals, and aspirations. Examples: •Māori values •Cultural sites, Mahinga kai, pa, kainga •Cultural history •Taonga lists •Te Mauri •Knowledge on uses and preparation of taonga •Land management, development issues •Cultural information systems, Could include culturally based assessments for river and stream water quality Coastal survey and monitoring of marine environs.</p>	<p>SHMAK Waterway Self Assessment Form Community based environmental performance indicators Amateur surveys Require moderate levels of technical input and skill but scientifically robust and part-value based. Cost effective, relatively simple and short duration. Examples: •Stream and river condition and health •Community based indicators •Community values •Community coastal surveys •Non technical assessments •School monitoring programmes</p>	<p>River and stream water quality monitoring methods Coastal survey and monitoring Archaeological survey Scientific environmental indicators Laboratory analysis Require higher levels of technical input and skill, robust sampling strategies, analysis and interpretation, expensive. May be time-consuming. Examples: •Chemistry, water quality, nutrients •Hydrology •Water table modeling •Botanical mapping, classification of plants •pH •Bacterial counts, pathogens •Giardia, Cryptosporidium •applications •Satellite imagery •Studies of fish, macro-invertebrates, macrophytes. •Archaeological survey</p>

<p>Māori knowledge based</p>	<p>Community – scientific based</p>	<p>Scientific based</p>
<p>Māori indicators – In depth Māori understanding and knowledge of particular environments. Understanding of Māori values, goals, and aspirations required. Examples:</p> <ul style="list-style-type: none"> • Taonga lists; • Key sensitive taonga indicators; • Te Mauri/ wairua; • Knowledge on uses and preparation of taonga; • Land-uses, point discharges, modification, impacting on cultural values and uses. • Key pest species 	<p>Community based indicators – requiring low levels of technical input and skill but scientifically robust and part-value based. Cost effective, relatively simple and short duration. Examples:</p> <ul style="list-style-type: none"> • Hydrology; • Soils/Nutrients; • Intactness of wetland; • Connectivity/Buffering or Fragmentation; • Introduced plants; • Animal damage; • Modifications to catchment hydrology; • Water quality within catchment; • Other landuse threats; • Key undesirable species; • % catchment in introduced vegetation; • Animal access. 	<p>Scientific indicators – requiring higher levels of technical input and skill, robust sampling strategies, analysis and interpretation. May be time consuming. Examples:</p> <ul style="list-style-type: none"> • Chemistry, water quality, nutrients; • Hydrology; • Water table modeling; • Botanical mapping, classification of plants; • pH; • Bacterial counts; • Giardia; • Cryptosporidium; • GIS applications; • Satellite imagery; • Studies of fish, macro-invertebrates, macrophytes.

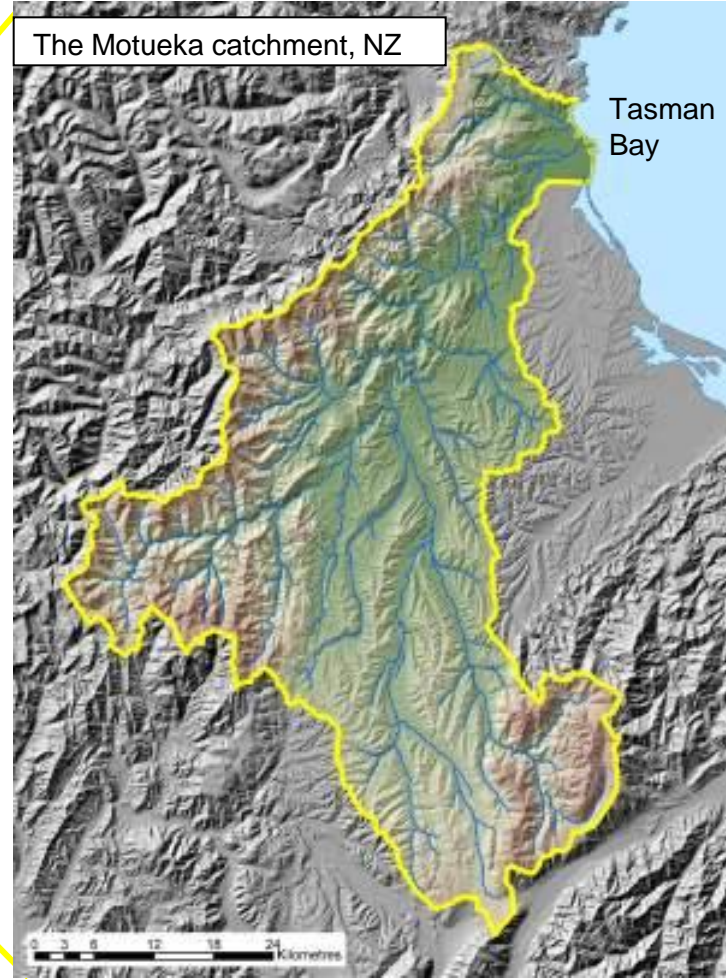


Cultural River Health

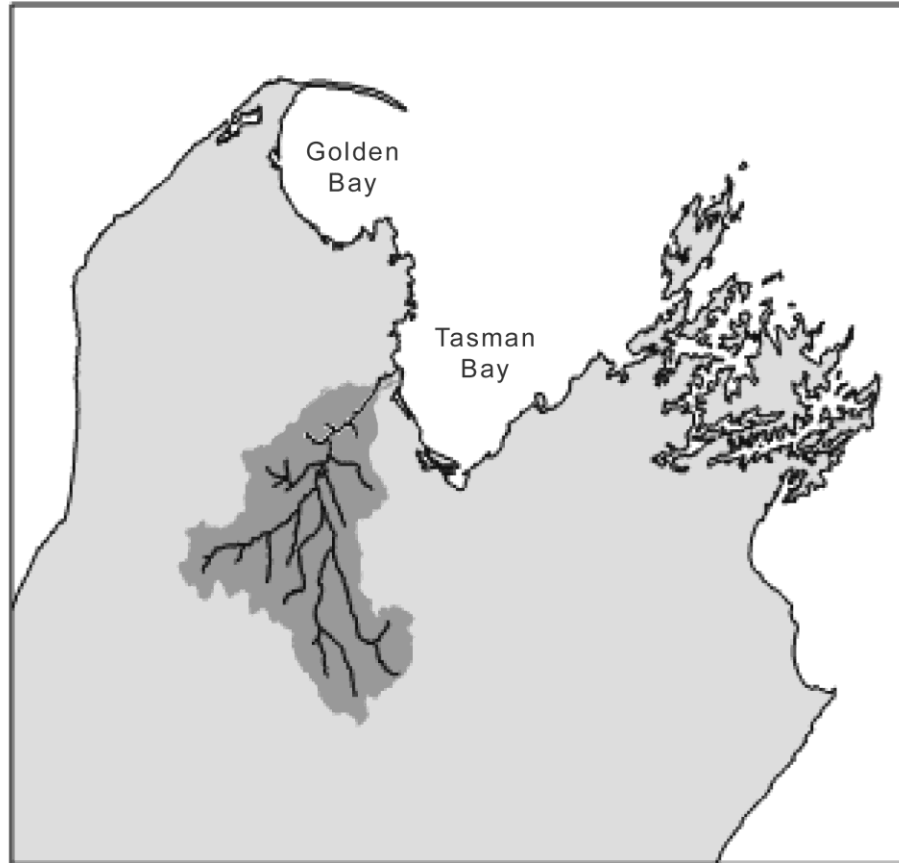
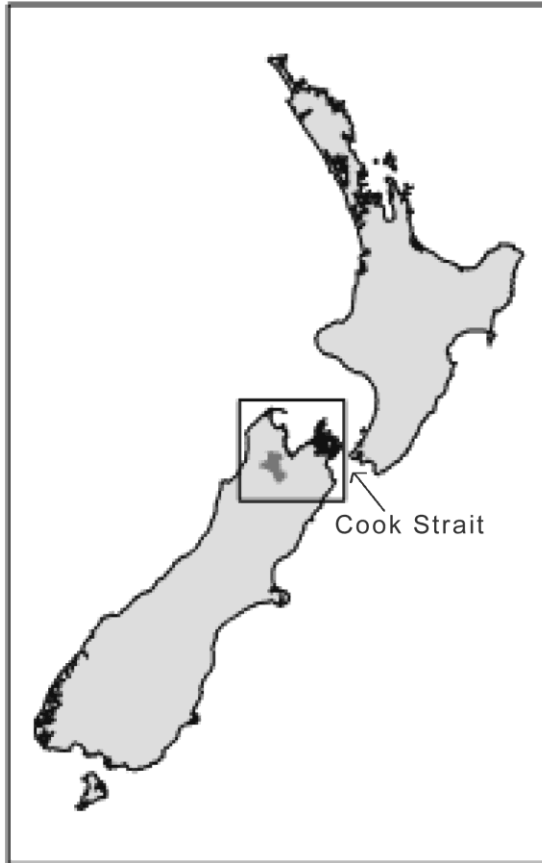
- Provides a Māori perspective of rivers/streams – Māori aspirations and goals
- Use of mātauranga Māori (knowledge) and Māori values (relationship or connection to place)
- Identifies issues and change from Māori viewpoint
- Links Māori wellbeing and river/stream health
- Use of indicators and assessment
- Reporting
- Planning and policy
- Actions (e.g., restoration projects, mahinga kai, capacity building, GIS)



ICM for the Motueka



Location: Motueka catchment across to Nelson



Cultural monitoring in Motueka (2005 – 2010)

Cultural monitoring/reporting can:

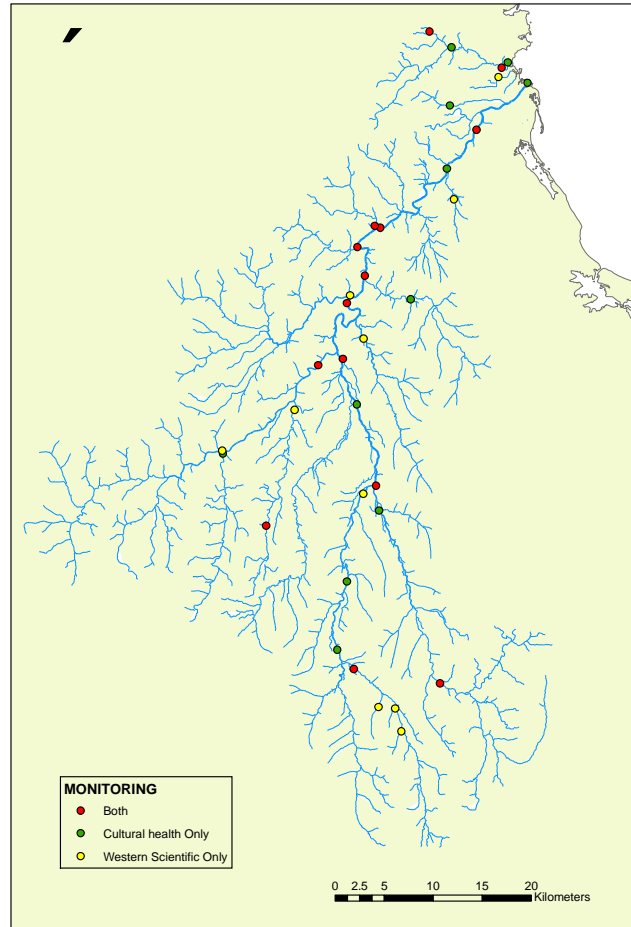
- Provide an indigenous knowledge/perspective on the environment;
- Articulate cultural values & aspirations;
- Identify trends/change from a Maori perspective;
- Be collated/aggregated to report on the iwi/hapū state of the environment (from a cultural perspective);
- Help contribute to responsibilities under kaitiakitanga, whakapapa, tino rangatiratanga, etc;
- Give responsibilities and importance of tangata whenua engaged in Resource Management (RMA 1991);
- Build iwi /hapū/whānau capacity in Resource Management;
- Feed into other SOE reporting (i.e. local, regional, national)



Cultural indicator assessment



Motueka and Riwaka catchments



Ngā Atua domains framework

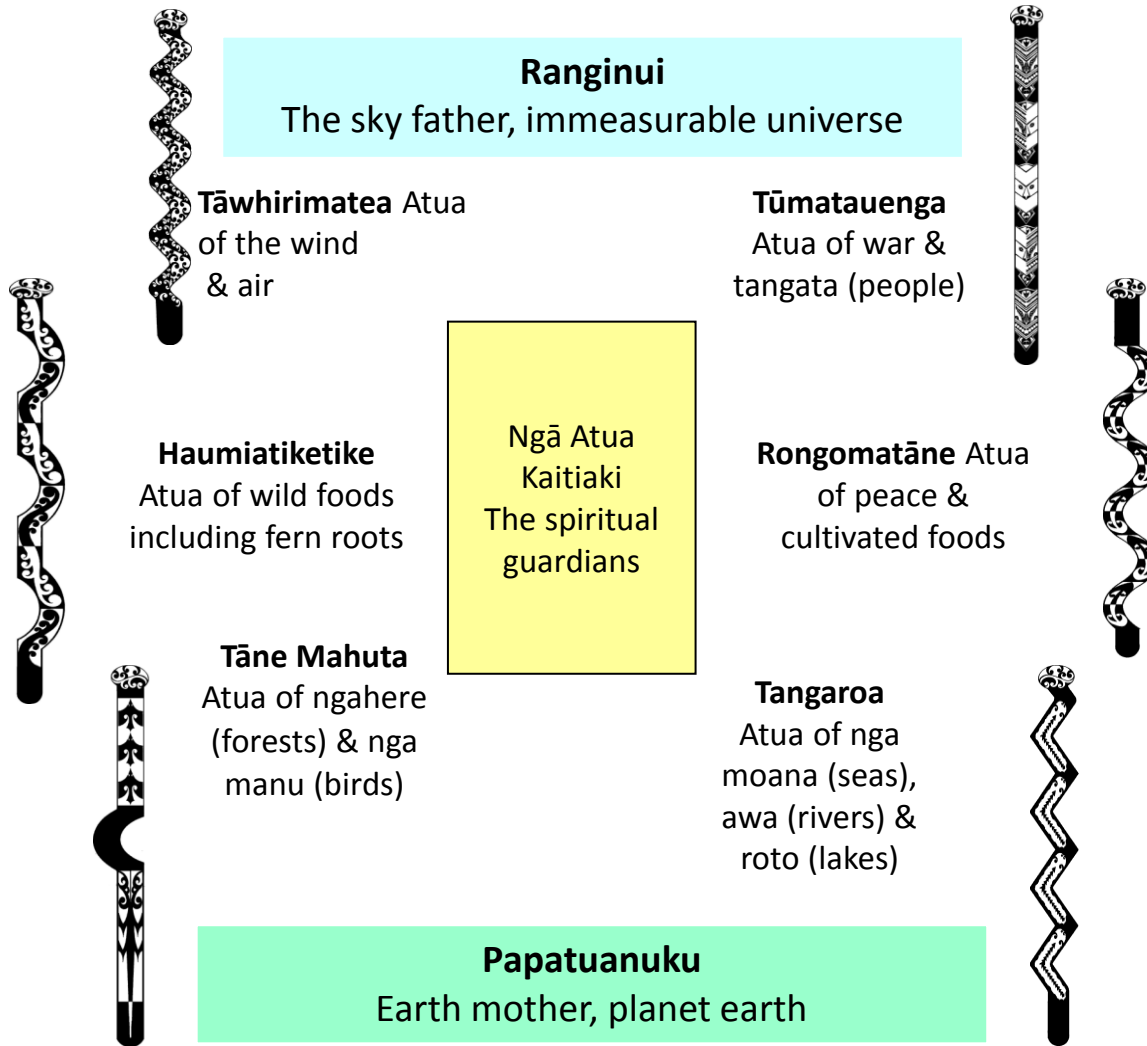


Figure 1: Atua (departmental gods) domain framework Source: Tiakina te Taiao.



Methods

- Training, field assessment (geo coordinates, place), reporting, and GIS entry and analyses;
- Assessment forms (iwi indicators), score sheets–ratings.
- Inventory: Site status, mahinga kai, total CHI score, Score 1-5: 1 – poor; 5 – excellent



Indicators (examples)

Tangaroa

- Water Clarity
- Water Flow
- Water Quality
- Shape and form of river, riverbank condition, sediment
- Insects
- Fish

Tāne Mahuta

- Riparian vegetation
- Catchment vegetation
- Bird life (species)
- Ngahere/Taonga
- Pests

Haumia tiketike

- Mahinga kai
- Rongoa

Tūmatauenga

- Human activity, Use of river
- Access
- Cultural sites

Tāwhirimātea

- Smell

Mauri / Wairua

- Feeling, taste, wellbeing

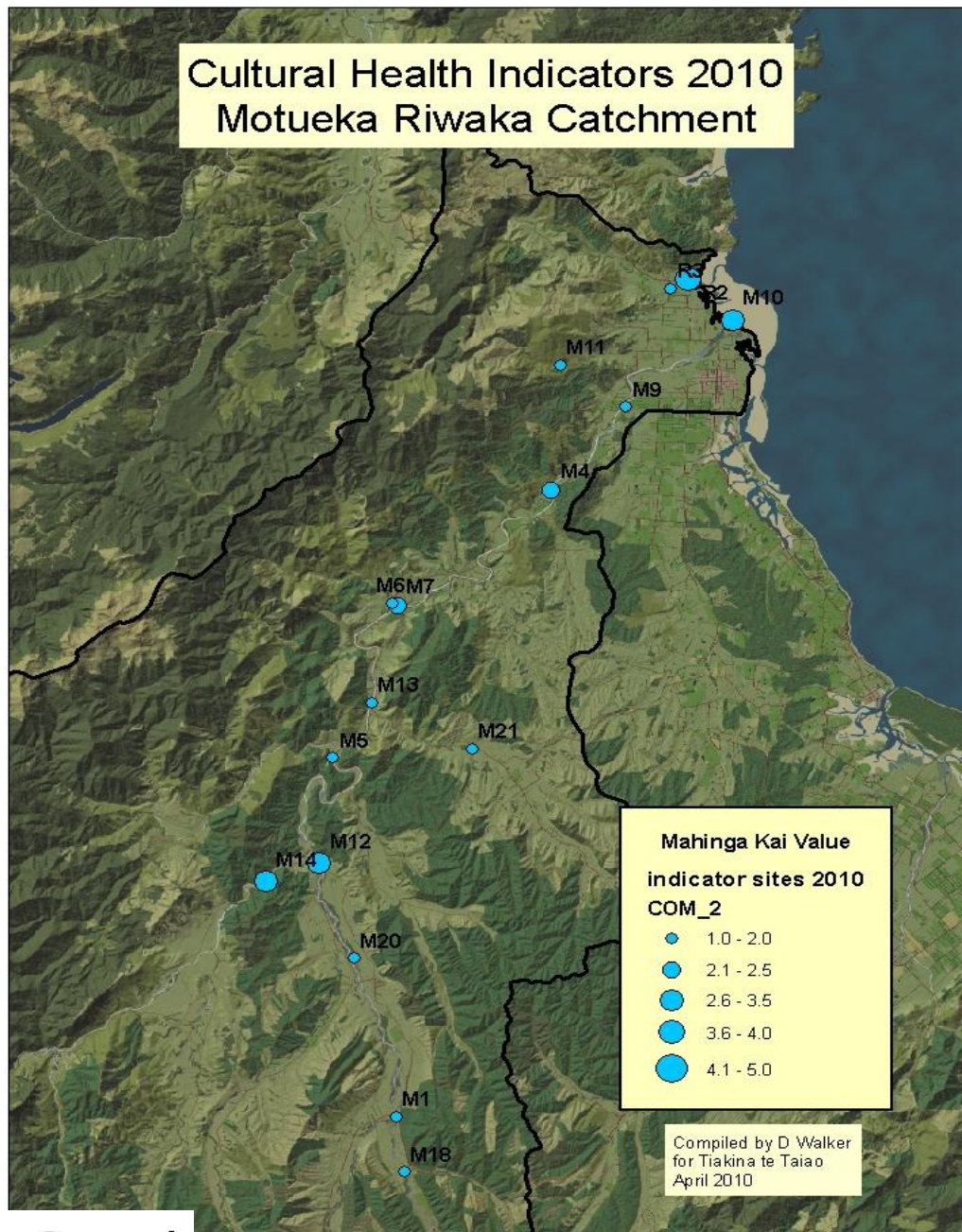
Links between science and cultural indicators



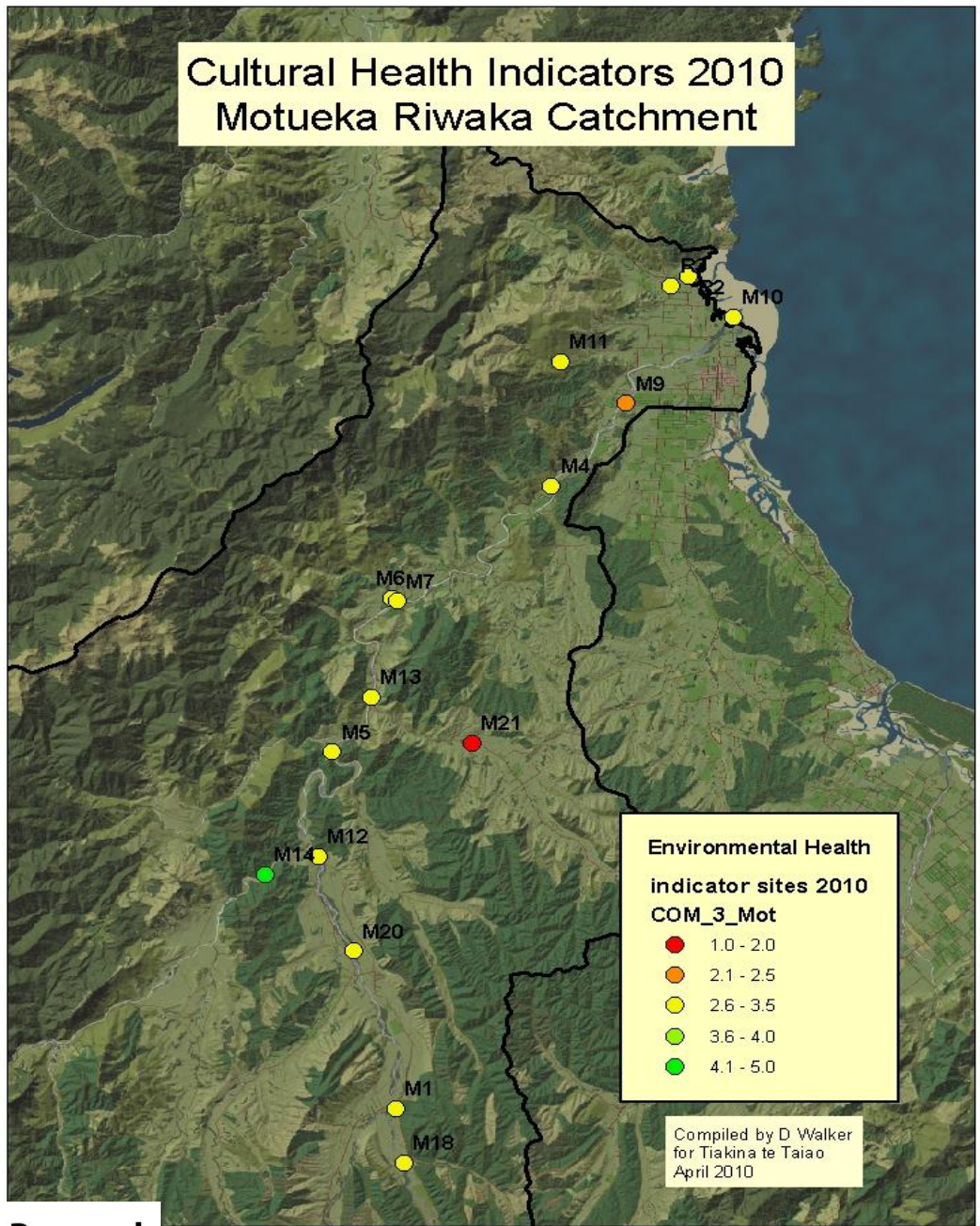
Indicator assessment and recording



Cultural Health Indicators 2010 Motueka Riwaka Catchment



Cultural Health Indicators 2010 Motueka Riwaka Catchment



Compiled by D Walker
for Tiakina te Taiao
April 2010



- **1** Indicates no real change in the environmental health or mahinga score over the period monitored
- \ indicates a fall in the environmental health or mahinga kai score over the period monitored
- / indicates a rise in the environmental health or mahinga kai score over the period monitored
- U** indicates a fall then rise in the environmental health or mahinga kai score over the period monitored
- ∩** indicates a rise then fall in the environmental health or mahinga kai score over the period monitored

Table 2 : Mahinga kai results for 16 selected sites in the Motueka Catchment 2006 - 2010						
Site #	Name	2006	2007/08	2010	Trend	Possible explanation for trend
R2	Puketawai	3.9	2.2/3.2	4	U	Streamside weedy vegetation cleared then replanted
R3		3.6	3.1/2.4	1.8	\	Probably overrated at the beginning
M1	Kohatu	3.3	1.9/1.9	1.3	\	Probably overrated at the beginning
M4		3.5	3.9	2.3	∩	Possibly a seasonal variation
M5		3.7	2.7	2	\	Probably overrated at the beginning
M6	Graham	3.6	2.8	1.4	\	Probably overrated at the beginning
M7	Pokororo	3.6	3.2	3.5	—	No change
M9	Melting Pot	3.5	1.8	1.5	\	Site changed in 2007/08
M10	Motueka Mouth	4	3.5	3.5	—	No change
M11	Brooklyn Stream	4.3	2.1	1.5	\	Probably overrated at the beginning
M12	Hinetai	3.7	2.2	2.9	U	Possibly a seasonal variation and initially overrated
M13		3.4	1.8	1.6	\	Probably overrated at the beginning
M14		3.8	2.3	3.3	U	Possibly a seasonal variation and initially overrated
M18		3.2	2.2/3.2	2	\	Probably overrated at the beginning
M20	Tapawera	3.1	1.1/1.9	1.8	U	Riverbank earthworks have degraded site
M21	Dovedale	3.4	2.1	1.6	\	Probably overrated at the beginning

- ^[1] Indicates no real change in the environmental health or mahinga score over the period monitored.
- \ indicates a fall in the environmental health or mahinga kai score over the period monitored
- / indicates a rise in the environmental health or mahinga kai score over the period monitored
- U indicates a fall then rise in the environmental health or mahinga kai score over the period monitored
- ∩ indicates a rise then fall in the environmental health or mahinga kai score over the period monitored

Table 1: Environmental Health Component for 16 sites in the Motueka Catchment 2006 - 2010

Site #	Name	2006	2007/08	2010	Trend	Possible explanation for trend
R2	Puketawai	3.6	2.1/2.3	3.5	U	Riparian vegetation cleared then replanted
R3		1.9	2.6/2.9	2.8	/	Improvement in Tangaroa score
M1	Kohatu	3.9	3.2/3.4	2.6	\	Cattle access wetland which drains into river
M4		3.3	3.3	3.2	—	No change
M5		4.1	3.4	3.4	\	Riverside trees harvested, earth disturbance yet to recover
M6	Graham	3.9	3.3	3	\	Perhaps overrated at the start
M7	Pokororo	3.9	3.5	3.5	—	Perhaps overrated at the start
M9	Melting Pot	3.8	2.5	2.5	—	Changed location of site 2007, probably no change
M10	Motueka Mouth	3.7	1.9	3.4	U	Dip in scores in 2007/08, from earthworks in the river
M11	Brooklyn Stream	4.3	3.9	3.3	\	Perhaps overrated at the start
M12	Hinetai	3.8	3	3.5	U	Dip in Tangaroa score, possibly seasonal variation
M13		3.8	2.8	3	—	Perhaps overrated at the start
M14		4.1	4.5	4.1	∩	Rise in 2007 score, probably seasonal variation
M18		3.2	3.1/3.3	3.1	—	No change
M20	Tapawera	3.4	2.4/3.1	2.9	\	Riverbed earthworks has increased
M21	Dovedale	3.5	2	1.7	\	Gradual deterioration in site, drought conditions in 2010

Key References

- <http://www.waitangi-tribunal.govt.nz/doclibrary/public/reports/generic/Wai2358/Wai2358W.pdf>
- Ministry for the Environment (MfE) 2003. Sustainable Water Programme of Action. Ministry for the Environment <http://www.mfe.govt.nz/issues/water/program-action/index.html>
- Ministry for the Environment (MfE) 2005. Wai Ora: Report of the Sustainable Water Programme of Action Consultation Hui. Ministry for the Environment. <http://www.mfe.govt.nz/publications/water/wpoa-hui-report-jul05/html/index.html>
- Sharples P. 2009. Opening address Iwi Māori National Summit on Freshwater Management. 10 December 2009. Accessed Nov 2010-April 2011. <http://www.beehive.govt.nz/speech/iwi+m%C4%81ori+national+summit+freshwater+management>
- Ruru, J. 2009. The Legal Voice of Māori in Freshwater Governance: A Literature Review. Landcare Research report. ISBN 978-0-473-15854-5. 103p.
- Boffa Miskell Ltd. 2009. Exploration of Māori participation in Freshwater Management. Final Report (MfE)
- Land and Water Forum 2010. Report of Land and Water Forum A Fresh start for Freshwater. 53 high level recommendations.
- **National Policy for Freshwater Management 2011. Summary of Board on Inquiry recommendations and Minister for the Environment's Decision (2011)**
- **National Policy Statement for Freshwater Management (NPS) 2011**

Emerging key areas to discuss (for policy)

- **Indigenous rights, Māori customary rights, property rights** – clarification of ownership (tino rangatiratanga, mana motuhake, whakamana) – land, waterways, coastal
- **Management and use of freshwater** (requires a robust management framework, new governance structures, co-management? (NPS – Involve iwi and hapū in the management of freshwater and freshwater ecosystems in the region, participation in the management of freshwater)
- **Kaitiakitanga and mana (environmental guardianship) – cultural protection and management of habitats, taonga, sites** – e.g., Protection and enhancement of the freshwater environment, cultural sites, habitat and species sustainability, ecosystems, taonga, mahinga kai ...
- **Actions on the ground:** Collaborative projects (partnerships) e.g., Restoration projects, enhancing mahinga kai, kaimoana, use of cultural and environmental monitoring, indicators etc.
- **Building capacity** for iwi/hapū, and within Council
- **Research**, freshwater research, Māori led projects, recognition and use of mātauranga Māori



Iwi outcomes/aspirations

- **Ownership of water** – Propriety rights, customary rights (Te Tiriti o Waitangi, tino rangatiratanga, mana motuhake)
- **Engagement** processes/frameworks with iwi/hapū – meaningful relationships with councils
- **Decision-making, management and use of water, management and use of cultural resources**, achieving the right governance arrangements, co-management of freshwater incl. mahinga kai, kaimoana, māhinga mātaimai sites (standards, quality, condition) – Maintain areas (and access to) for customary practice and use
- **Protecting/sustaining/enhancing habitats, ecosystems and species** (e.g., taonga fish spp., tuna, shellfish, plants, birds, significant or iconic species etc.), mahinga kai
- Recognition and use of **mātauranga Māori**
- **Water quality** – Definitions around **mauri** (setting cultural standards, limits, thresholds, benchmarks) – in response to deteriorating water quality in NZ
- **Water allocation** (water quantity limits) – response to increasing competition for the allocation of rights to water