

## **Manaaki Taha Moana: Enhancing Coastal Ecosystems for Iwi and Hapū**

**Report No. 18**

November 2015

### **MAI A WAIWIRI KI WAITOHU:**

**How Mātauranga Māori Enhances Iwi and Hapū Well Being and Ecological Integrity**



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**MAI A WAIWIRI KI WAITOHU:**

**How Mātauranga Māori Enhances Iwi and Hapū Well Being and Ecological Integrity**

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[With support from Horowhenua MTM team- Moira Poutama and Aroha Spinks.]

ISBN 978-0-9876639-7-9

ISSN 2230-3332 (Print)

ISSN 2230-3340 (Online)

Published by the Manaaki Taha Moana (MTM) Research Team

Funded by the Ministry for Science and Innovation

Contract MAUX0907

Main Contract Holder: Massey University

[www.mtm.ac.nz](http://www.mtm.ac.nz)

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Issue Date: November 2015

RECOMMENDED CITATION: Smith, H., 2015, *MAI A WAIWIRI KI WAITOHU: How Mātauranga Māori Enhances Iwi and Hapū Well Being and Ecological Integrity*, Manaaki Taha Moana Research Project, Massey University: Palmerston North/Taiao Raukawa Environmental Resource Unit: Ōtaki. 43 pages

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## MIHIMIHI<sup>1</sup>

Tuia i runga, tuia i raro, tuia i waho, tuia i roto, tuia te here tangata, ka rongo te pō, ka rongo te ao.

Ka tuku te ia o whakaaro kia rere makuru roimata atu ki te kāhui ngū kua hoki atu ki te waro huanga roa o te wairua, rātou kei tua o te ārai, takoto, okioki, e moe.

Tātou ngā waihotanga o te reka ki a tātou, ā, e mihi kau atu ana mātou ki a kōutou i kotahi ai te whakaaro i raro i te korowai whakamarumarū o tēnei taonga, Manaaki Taha Moana (MTM).

Tihei Mauri Ora, ki a tātou katoa.

Ki ngā taniwhā hikurauroa i putaputa mai ai i ngā rua kōniwhaniwha, ngā whare maire, ngā whare wānanga me ngā whare whakahuruhuru manu ā pūtea nei o te motu, tēnā koutou.

Ki ngā manu tioriori e karangaranga ana te taha wairua ki te taha tangata i runga i ngā marae mahamaha o Rongomaraeroa, whātoro atu ana ki ngā unaunahi nunui e pīataata mai rā i te nuku o te ika, te mata o te whē,

Tēnā hoki koutou, oti rā, tēnā tātou katoa.

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<sup>1</sup> Composed by Tipene Hoskins for Manaaki Taha Moana project, 2011.

Published by the Manaaki Taha Moana Research Team  
MAUX 0907 Contract Holder:  
Massey University  
Private Bag 11052  
Palmerston North  
New Zealand

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## EXECUTIVE SUMMARY

Manaaki Taha Moana (MTM) is a six-year programme, running from 1 October 2009 to 30 September 2015, with research conducted in two areas, namely Tauranga Moana region, Bay of Plenty and a 17 kilometre stretch of Horowhenua coastline between Hōkio and Waitohu Streams, just north of Ōtaki Beach, on the southwest coast of Te Ika a Maui/North Island, Aotearoa New Zealand.

The programme of research activities builds upon previous research with Ngāti Raukawa ki te Tonga in the lower Te Ika A Maui / North Island through 'Ecosystem Services Benefits in Terrestrial Ecosystems for Iwi and Hapū' (MAUX0502), led by Massey University and Landcare Research/Manaaki Whenua. MTM is a collaborative, action and kaupapa Māori research project that uses and bolsters Mātauranga Māori or Māori knowledge systems within whenua (lands), awa (waterways), repo (wetlands) and moana (seas and harbours).

A number of different organizations are contracted to deliver the research: Massey University's School of People, Environment and Planning provides integrative ecological economics and project management expertise, with Professor Murray Patterson being the MTM Science Leader (M.G.Patterson@massey.ac.nz); Manaaki te Awanui Trust in Tauranga, with Caine Taiapa as the Research Leader Māori for the Tauranga moana case study; Te Reo a Taiao, the Ngāti Raukawa environmental resource unit that trades as Taiao Raukawa, with Dr Huhana Smith as Research Leader Māori in the Horowhenua coastal case study; Cawthron Institute, based in Nelson, provide coastal and freshwater ecological expertise; and WakaDigital Ltd, based in Tauranga, provide information communication and technology expertise for both case studies.

The Horowhenua MTM research activities center on an area of interrelated Hapū (collective of multiple whanau groups), within a southwest coastal rohe (region) that was once extensive coastal forest, with streams, rivers, estuaries, a series of lakes, lagoons and dune wetlands that teemed with freshwater food and fibre resources and kaimoana (tidal and marine resources). The coastal, cultural landscape is bounded by the Tasman Sea and extends from the Hōkio Stream in the North, to the dynamic Waitohu Stream, wetland and estuary at Ōtaki Beach in the South. The case study includes awa and awa iti (rivers and streams), repo (wetlands), roto (dune lakes) and moana (seas and estuaries) within the coastal region. A range of activities are grounded by kaupapa Māori methodologies, hands-on actions to rehabilitate these once valued ecosystems and to record the narratives and aspirations of kaumatua and kai moana resource gatherers.

We understand that an interpretation of Mātauranga Māori relates to an evolving system of knowledge (te kauwae runga and te kauwae raro<sup>2</sup>) used by tangata whenua as indigenous people of these islands with associated rights to place through first discovery. Mātauranga Māori is a means to interpret and explain the world in which we live. It is anchored by a whakapapa reference system (interconnected genealogy) where this system of kinship illuminates tangible and intangible relationships between iwi, hapū and whānau, ancestors, lands, waterways and the natural world.<sup>3</sup> According to one of the project's key cultural advisors of Ngāti Tukorehe, Mr Lindsay Poutama, he would agree that:

"In terms of this kaupapa there is a direct relationship between our Atua Māori and all living things. Whakapapa provides the sequence and order and Mauri confirms the strength of those links back to each of the Atua. Mauri its presence and vitality is visible and noticeable, whilst its diminishment or lack equally visible and noticeable. The inter-relationship between all living

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<sup>2</sup> The metaphor of te kauwae runga and te kauwae raro (the upper and lower jawbones) was traditionally used in whare wānanga (houses of learning) to distinguish between sacred knowledge and earthly knowledge.

<sup>3</sup> Charles Te Ahukaramū Royal, 1998, Unpublished Chapter 3.0 'Te Ao Marama: The Māori World View', 75.

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things is whanaungatanga and the intimate knowledge of each of these links and their inter relationships is Mātauranga Māori.”<sup>4</sup>

Replenishing mauri has been the heart of our aspirations as kaitiaki, since the first discussions on revitalising the Ōhau River ‘Loop’ began in 1995, and to the start of planting trees and grasses at Te Hākari dune wetland in 2002. The MTM team has since built upon this practical nexus of Māori knowledge development, by creating more revitalization activities within the case study area.<sup>5</sup> The increased activity aims to readily re-connect more Hapū and Whanau to our customary knowledge bases that emerge from cosmological, genealogical, spiritual and natural realms. These bases have relevance to contemporary practices today by reapplying them in a different context to what our ancestors may have faced in the past<sup>6</sup>. It is important to reiterate at this point, that whilst Mātauranga Māori might be considered a modern term, it is stated by key Māori scholars (who actively respect, use and develop our Māori knowledge systems), that the:

‘...task is not merely to reconstruct a worldview so as to return to it... but rather to develop an understanding of aspects of that worldview, and to explore how they might inform a new paradigm...[Māori] have to shape a worldview that weaves these elements convincingly and into a lived whole. One way to do this is to draw connections between key themes and ideas in our traditional knowledge bases and critical issues facing human society everywhere. For why revitalise and revive mātauranga Māori if not to make a contribution to our world?’<sup>7</sup>

The contributions our MTM actions have made to our world, have been to grow more environmental hands-on projects to transform areas and inspire others within the wider Raukawa ki te Tonga and Iwi and Hapū affiliates’ rohe. Whether bringing disparate groups together who often do not have the will or the opportunity to work well in partnership with tangata whenua or local kaitiaki; planting riparians on streams to sea or by planting river meanders; saving dune lakes from eutrofication by fencing off from stock; raising wetland and dune lake water levels for increased waterbody and biodiversity health; planting-out wide coastal areas as buffers to climate change effects, or engaging more kaitiaki groups in hands-on surveys for shellfish health - each MTM project has aimed to draw connections between our cultural understandings of place, local resources, Iwi and hapū, and today’s critical environmental issues.

Our teams and informants well understand that Mātauranga Māori is a sophisticated and dynamic knowledge system, which over generations has been challenged and disturbed by misinterpretation, ignorance and disregard to its insights. In this report, we build upon some well-established Tainui tribal narratives, the role of whakapapa reference systems, some synthesis of our research, dialogue and oral reminiscences, and other relevant information that might help sustain this knowledge to underpin our environmental and human futures. Whilst we note impacts on inter-generational transference of knowledge or barriers to accessing this knowledge, more Hapū and Iwi participants are experiencing first hand that positive dialogue with active revitalization of fragmented ecosystems, is vital for their future generations’ wellbeing.

As the MTM research project progressed from 2009-2015, so did the strategic planning for a comprehensive, multi-project consolidation of our Porirua ki Manawatū Inquiry Treaty of Waitangi

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4 Personal communication between Mr Lindsay Poutama and this author, 14 September 2015.

5 The MTM revitalization projects across the case study are ably described in the MTM research report He Tirohanga Whanui of July 2015. This report also mentions many of the precursor projects that were taking place in other areas in the rohe.

6 S.M.Smith, 2007, *Hei Whenua Ora Hapū and Iwi approaches for reinstating valued ecosystems within cultural landscape*, Unpublished PhD Thesis, Te Pūtahi ā Toi, School of Māori Studies, Massey University, Palmerston North, 18.

7 After Charles Te Ahukāramu Royal, 2004, *Mātauranga Māori and Museum Practice*, A Discussion paper prepared for the Museum of New Zealand Te Papa Tongarewa, 3.



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Claim. This extensive research effort relates to the Crown's historic breaches in political, legal, historical, social, cultural and environmental matters of interest to Ngāti Raukawa ki te Tonga and affiliated Iwi and Hapū within the inquiry rohe.<sup>8</sup> In particular, the environmental research component is critical for unpacking the complexities of 'deeply embodied' historic narratives<sup>9</sup> and their impacts on environmental integrity and health across the rohe.

Therefore, in talking with various kaumatua, recognised Iwi and Hapū leaders and kai gatherers and by recording their experiences as kōrero tuku iho, their concerns or aspirations resonate. They are affecting how Mātauranga Māori enhances Iwi and Hapū well being and ecological integrity, to help bolster more opportunities for more Māori shareholders or landowners on ancestral lands. We encourage more to be proactive and positive decision-makers for their ecosystems, in more and more areas across the Iwi rohe.

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<sup>8</sup> The MTM team acknowledges that considerable information at Kōrero a Iwi recordings in July 2014, have not been collated for this research report. This important oral archive work will form a significant part of related Crown Forest Rental Trust funded research, which should be underway by October 2015.

<sup>9</sup> Terry Hearn, 2014, *One Past, Many Histories: tribal land and politics in the nineteenth century*, Commissioned by the Waitangi Tribunal for the Porirua ki Manawatu Inquiry, Wai 2200, #A152, 699.

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## INTRODUCTION

### 1.1 Background and context

Manaaki Taha Moana builds upon previous Foundation Research Science & Technology (FRST)-funded research with Ngāti Raukawa ki te Tonga in the lower Te Ika A Maui / North Island through 'Ecosystem Services Benefits in Terrestrial Ecosystems for Iwi and Hapū' (MAUX0502), led by Massey University and Landcare Research/Manaaki Whenua from 2005-2009. MTM through the Ministry for Business, Innovation and Employment (MBIE) is a collaborative, action and kaupapa Māori research project that uses and bolsters Mātauranga Māori or Māori knowledge systems within whenua (lands), awa (waterways), repo (wetlands) and moana (seas and harbours) alongside sciences to affect positive change.

A number of different organizations are contracted to deliver the research including: Massey University's School of People, Environment and Planning provides integrative ecological economics and project management expertise, with Professor Murray Patterson the MTM Science Leader (M.G.Patterson@massey.ac.nz) and Derrylea Hardy as Project Manager; Manaaki te Awanui Trust in Tauranga, with Caine Taiapa as Research Leader Māori for the Tauranga moana case study; Te Reo a Taiao, the Ngāti Raukawa environmental resource unit (Taiao Raukawa Environmental Resource Unit or Taiao Raukawa), with Dr Huhana Smith as Research Leader Māori in the Horowhenua coastal case study; Cawthron Institute, based in Nelson to provide coastal and freshwater ecological expertise; and WakaDigital Ltd, based in Tauranga to provide information communication and technology expertise for both case studies.

MTM is also built on many actions led by Iwi and Hapū in various areas of the Raukawa ki te Tonga rohe. The research team engages extensively with all Iwi and Hapū, kaitiaki (environmental guardians) and other end user groups, who have been set up in each case study region. Key groups include: Te Rūnanga o Raukawa; Raukawa ki te Tonga Trust (Mandated Iwi Organisation for Fisheries); Ngā Hapū o Ōtaki; coastal farms such as Incorporation of Ransfield's and Tahamata Incorporation, Waikawa to Kuku; Te Iwi o Ngāti Tukorehe Trust, Kuku; Ngā Kaitiaki o Ngāti Kikopiri; Ngā Kaitiaki o Ngātōkōwaru, Hōkio; Ngā Hapū o Hīmatangi, Hīmatangi; Ngā Kaitiaki o Ngāti Kauwhata, Feilding, and Muaūpoko Tribal Authority, Levin, amongst others.

Additional players within the MTM collaborative include: School of Architecture and Design, Victoria University, Wellington; Greater Wellington Regional Council, Wellington; Kāpiti Coast District Council, Paraparaumu; Waitohu Stream Care Group, Ōtaki; Royal Forest and Bird Society, Horowhenua; Horowhenua District Council, Levin; Hōkio Progressive Association, Hōkio; Horizons Regional Council, Palmerston North; Department of Conservation, Palmerston North and Wellington; local residents and landholders as relevant between Hōkio and Ōtaki. Taiao Raukawa and its MTM research team are linked to Iwi and Hapū within the Horowhenua case study region, and to Iwi and Hapū of Ngāti Ranginui, Ngāi Te Rangi and Ngāti Pukenga of the Tauranga Moana case study.<sup>10</sup>

The MTM research endeavour has tried very hard to be transformative in its activities in the promise that Aoteroa New Zealand with its two cultures - both indigenous and settler, with meaningful application of Mātauranga Māori to environmental revitalisation and cultural resillience, will finally acknowledge the importance of Māori knowledge systems, culture and identity. Māori knowledge

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<sup>10</sup> C. Taiapa, A Bedford-Rolleston and W Rameka. (2014) *Ko te Hekenga i te Tai a Kupe: A Cultural Review of the Health of Te Awanui, Tauranga Harbour*, Manaaki Taha Moana Research Report No 3. Massey University, Palmerston North.

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must also be considered valuable to everything government says and does. It needs to be welcomed and centered in all ways we conduct ourselves and do things in this country.<sup>11</sup>

## 1.2 Identifying critical themes within MTM

MTM is a research programme that has used and bolstered Mātauranga Māori or Māori knowledge systems within whenua (lands), awa (waterways), repo (wetlands) and moana (seas and harbours). It has devised critical themes that: reclaim the right of our Iwi and Hapū to reassert their identity to place; allow them to be authoritative in research and findings; identify and resist disturbances besetting place, and ensure resilience for the challenges of climate change, particularly for their coastal land holdings. The MTM team also tried to encourage more pro-active kaitiaki to assist in determining new models of thinking about ourselves, of how we exist, and how we can live sustainably on Papatūānuku.

In this report, the key themes (listed above) align with each revitalisation project undertaken within the Horowhenua case study, where it is strategic for our Iwi and Hapū to strengthen them and exercise tino rangātiratanga to determine better environmental futures. We need to combine voices with evidence-based research to underpin practical action that revitalises and enhances freshwater coastal ecosystems into the marine. In support of this too, MTM has developed a strongly cross-cultural and collaborative kaupapa or practice.

As Research Leader for the Horowhenua case study, collaboration with respectful specialists has achieved accelerated outcomes for ecosystems, with related, mutual benefits for landholders too. For example, in building very strong relationships with specialists at the School of Architecture in the Faculty of Architecture and Design at Victoria University, Wellington, our MTM team and kaitiaki engaged with design theory, visual technologies and illustrative software at the landscape level, which helped our kaitiaki *see* and *understand* the potential of devised case study projects. Our weekend or week long wānanga assisted Iwi and Hapū to evaluate and define their preferred options for enhancing and restoring their coastal ecosystems, all the while working alongside a range of support coming from different entities including: regional and local councils; other universities; environmental groups, and independent research groups including Whakaue: Research for Māori Health and Development, and Te Tau a Nuku/ Ngā Kaihorahora Whenua Māori o Aotearoa.

These interactions both early and later in the research endeavour, also brought our collaborating groups up to speed with the complexities of the environmental issues at hand. These complexities were developed into a confident, cross-cultural framework to ensure that our research approach remained purposeful as the knowledge generated had to be directly useful for our Whanau, Hapū and Iwi. Therefore, six practical projects with multiple, ongoing activities became other main tools to engage kaitiaki in improving coastal ecosystems in the Horowhenua case study region.<sup>12</sup> In combining energies, our team also forged better tools in very practical terms to arrest further cultural disintegration, ecosystem degradation, and loss of taonga species such as tuna (eel), toheroa and others within the coastal case study area.

This report attempts to collate aspects of key informants' experiences and understandings in direct relation to the positive actions we currently have underway. Our team is assured that Mātauranga

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<sup>11</sup> Waitangi Tribunal. 2011, *Ko Aoteroa tēnei: a report into claims concerning New Zealand Law and policy affecting Māori culture and identity*. Te Taumata Tuatahi, Waitangi Tribunal, Wellington, page xviii.

<sup>12</sup> For more information and detail, please see

Smith, H., Spinks, A. & Poutama, M., 2014, *HE TIROHANGA WHĀNUI : An Overview of Ecosystems undergoing Rehabilitation within Manaaki Taha Moana, Horowhenua Case Study*, Manaaki Taha Moana Research Project, Massey University: Palmerston North/Taiao Raukawa Environmental Resource Unit: Ōtaki.

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Māori or local knowledge generated through observation and experience over generations and time, enhances coastal waterways, streams, rivers and dune wetlands to the marine environments today. Development of this as ‘whakatupu mātauranga’ is to arrest further inter-generational separation from our once intricate relationships to ancestral, coastal places and our resources into the sea. Using and developing this knowledge is crucial for the sake of future generations that follow.

The report also acknowledges other Māori conceptual views of water and our human relationships to it. In particular,

Ko te mātauranga he wai nō ruawhetū

*Māori knowledge flows from the cosmos / the stars*

Kia mahara koe i te puna inā inu koe i te wai

*When you drink the water, remember the spring*

He pukenga mai te hohanga tangata, he nohanga tangata, he putanga korero

*The spring is likened to a repository of knowledge where the grinding stone made by humans is used; regarded as the place for human wellbeing, and the site from whence knowledge flows*

He wai ki te tāne, he toto ki te wahine.

*Like the water of men, like the blood of women*

Ko wai koe?

*Who are you?*

Ko wai ahau?

*Who am I?*

I am water.<sup>13</sup>

In many ways, these words provide more context upon which to anchor this report and appeal to our people to reconnect with their whakapapa relationships with freshwater and the environmental messages of today. Our people must be active in the positive transformation of Te Ao Turoa - our environment, our coastal water bodies, and for ensuring our kei uta or hinterlands are resilient.

## **2. MĀTAURANGA MĀORI IN CUSTOMARY NARRATIVE AS A WHARIKI (WOVEN FOUNDATION) FOR ECOLOGICAL AND HUMAN WELL-BEING**

The MTM team acknowledges the mana of Iwi and Hapū of Raukawa ki te Tonga where the whakatauki, “E kore au e ngaro, he kakano au i ruia ma i Rangiatea, *I will not be lost, a seed strewn from Rangiatea*”, continues to resonate. This whakatauki is understood to have strong associations with many other Iwi, whose ancestors crossed the Pacific by waka to arrive in Aotearoa New Zealand. Ngāti Raukawa and tribal affiliates within the rohe descend from Hoturoa of the Tainui waka. It is well known too that Ngāti Raukawa ki te Tonga or Raukawa Au ki te Tonga (the current that moves south) has ongoing historical and cultural associations with areas outside of these boundaries, including rohe in Kāwhia, Waikato, north of Taupō and towards Tauranga.

Today, Ngāti Raukawa ki te Tonga encompasses regions to the south extending to Te Ūpoko o te Ika or the Wellington region. The hau kainga rohe encompasses the Rangitīkei river in the north, to the Kukutauaki stream just south of Te Horo, and east from these boundaries to the peaks of the Tararua (Te Tuarā Tapu o Te Rangihaeata) and Ruahine ranges,<sup>14</sup> described in the whakatauki or pepeha, “Mai i Waitapu ki Rangataua, mai i Miria te Kakara ki Whitireia”, which encompasses these lands

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<sup>13</sup> Dr Rangi Matamua delivered this powerful message in his keynote address at the inaugural He Manawa Whenua conference, in Kirikiriroa/Hamilton on 1 July 2013. He provided one of the opening addresses at this conference, organised by Te Kōtahi Institute based at the University of Waikato.

<sup>14</sup> Sourced from research compiled by Jessica Kereama for Taiao Raukawa work compiled for Manawātū River Leaders' Accord, 2013-2014.

and waterways as from the sacred spring of Waitapu to Rangataua, and from the principle first site of Miria te Kakara (near Feilding) to Whitireia, Porirua.

#### **BOX 2.1 Statement of Ngāti Raukawa<sup>15</sup>**

*Mai i Waitapu ki Rangataua, Miria Te Kakara ki Kukutauaki*

Ngāti Raukawa and affiliates (like Kauwhata, Tukorehe [Kuku], Wehiwehi, [Waikawa and Manakau]) descend from the Tainui waka traditions and tribal bases. There has been a complex Māori history of warfare and conquest over land and resources in Horowhenua, which began circa 1819 with the migrations from Kāwhia Harbour by Ngāti Toa Rangātira led by Te Rauparaha.

Such complexities cannot be described in detail for the District Plan, but will be present in future Iwi Management Plans, as they are developed across the region. There are also other Iwi within Horowhenua area, and Ngāti Raukawa acknowledges their interests.

It is relevant to mention that Ngāti Raukawa have two traditional homelands. The first, in the southern Waikato and northern Taupō districts, centres on Maungatautari - the ancestral mountain of Ngāti Raukawa. Many important sites, such as birthplaces of ancestors, related urupā (cemeteries), pā sites, battle sites, marae of origin, houses of learning, and more, are found here. In Ngāti Raukawa tradition, this northern region has four traditional districts. They are referred to as: Ngāti Raukawa ki Wharepūhanga – south and east of Te Awamutu between Maungatautari and Waipapa. Ngāti Raukawa ki Maungatautari is centred around the ancestral mountain for the Iwi, Maungatautari then extending northeast to Cambridge. Ngāti Raukawa ki Te Kaokaoroa-o-Pātetere includes the mountain ranges stretching north of Tokoroa towards the Kaimai Range, west of Tauranga. Ngāti Raukawa ki Te Pae o Raukawa from Tokoroa is located south along the Waikato River to Waihaha on the westside of Lake Taupo.

The second region is Ngāti Raukawa-ki-te-tonga – Ngāti Raukawa of the south, which is of relevance to Horowhenua district. This region stretches from the Rangitikei River, west of Manawatū, to Kūkūtauaki Stream just north of Waikanae. A large group of Ngāti Raukawa migrated there from the first region in the early decades of the 19th century, and to this day their occupation and settlement is reflected in the large number of Ngāti Raukawa marae between northern Waikanae, stretching to the Rangitikei region. Historic (and more contemporary) meeting houses stand on land blocks within different environments that result from the actions of Ngāti Raukawa and affiliated Iwi ancestors. Of importance too are the whakapapa (genealogical) and on-going relationships to this day that have been retained between the two Ngāti Raukawa regions.

Ngāti Raukawa, and other politically affiliated Iwi in the rohe, gained rights to land, resources and water bodies according to tikanga Māori and Māori customary land “laws” such as take raupatu, the right by conquest, and take tuku for land allocations that arose from their kin, Te Rauparaha. Some other customary and descriptive ways in which our people and affiliates identify their rights to land, resources and environments in Horowhenua are listed as follows:

- Take tupuna -Ancestral right, by reason of ancestry;
- Take taunaha -Bespeak, right through oral claim;
- Take noho- Occupation rights;
- Take rahui- Reason of reservation;
- Ahi kā- Right of occupation, and
- Ahi kā roa- Occupation over a long period of time.

<sup>15</sup> Sourced from the Draft Tangata Whenua chapter for Horowhenua District Plan Review documents September 2012. Written by this author with assistance from Jearld Twomey (chair of when chair of Taiao Raukawa Environmental Resource Unit from 2007-2014.

In the wider tribal region, there are 21 functioning marae reserves of Ngāti Raukawa and affiliates' interest. In Horowhenua district there are 11 such complexes between Waitohu and Hīmatangi that define the identities of key hapū and their relationships to local environments. Despite land tenure changes over time, Ngāti Raukawa and their affiliates have held onto tracts of ancestral lands. Embedded cultural markers, whether urupā, burial grounds, cemeteries; pā sites, former papa kainga, coastal, peat and wet land middens; important eel weirs at dune lakes, boundary markers, important foothills and mountain ranges, puna wai or freshwater springs, marker trees, kauwhanga-a-riri or battlegrounds, cultivation sites, and many other sites of historic and ongoing significance across the Horowhenua region, still persist. There are also cross-lwi interests over various areas and natural systems in Horowhenua.

Today too, there are a range of major environmental rehabilitation projects underway within this cultural and historic landscape, where kaitiaki interests and responsibilities to the ecological and biodiversity decline issues for freshwater rivers and streams, long tracts of coastal land to sea, dune wetlands and remnant forests, are being addressed in a collaborative, solutions-focused fashion.

## 2.1 A Mātauranga Māori foundational approach

As observed in the introduction to this report, a Mātauranga foundational approach to research endeavours might also be “likened to the universe as unfolding or evolving ‘i te Kore’ out of nothingness or potential being, into the night realm ‘ki te Po’, and onto the twilight dawn, into the world of light, or day to day existence, ‘ki te Ao Marama’.”<sup>16</sup>

Profound Māori thought or philosophies encompasses views of being and not being, which deal directly with the relationships between spirit and matter.<sup>17</sup> The symbols of the sexual act as culminating in the birth of a child emerging out of the world of darkness within the womb into the light of the natural world, or the tree developing from the seed to the fruit, ‘mai i te kākano ki te hua’, are activities that represent ultimate potential, creativity and the promise of wellbeing in a state of perpetual becoming.<sup>18</sup> This is relevant to hua or the fruits as outcomes from the range of MTM projects and the processes of engagement that the team activated to ensure cultural, spiritual and physical change amongst our peoples, to transform our whenua and set revered waterbodies on the journey to health again.

Māori customs, values and attitudes are drawn from conceptual origins of the universe. Similar to other tribal versions that recite creation events, the author of this report's whanau or family whakapapa account also begins with Io Matua,<sup>19</sup> the parent or origin of all things. Io may be regarded as the originator of knowledge within Te Kore, an ultimate entity responsible for creating the where wānanga or learning centre for spiritual powers and their activities. Io created a reference system based on creative potential and the constant state of becoming, which highlights sacred, philosophical explanations of the nature of the universe. Whakapapa reference systems also carefully order ‘ngā tohu whakamahara ki ngā whakatupuranga tangata’,<sup>20</sup> which may be an arrangement of spiritual and physical transitions from various atua, entities or environmental properties, to those

16 M. Roberts, W. Norman, N. Minihinnick, D. Wihongi, & C. Kirkwood, 1995, 'Kaitiakitanga: Māori perspectives on conservation', *Pacific Conservation Biology*, Vol. 2, 8.

17 Barbara Sproul, 1979, *Primal Myths: Creating the Worlds*, Harper & Row, Publishers, New York, 337.

18 S. M. Smith, 2007, *Hei Whenua Ora Hapū and Iwi approaches for reinstating valued ecosystems within cultural landscape*, Unpublished PhD Thesis, Te Pūtahi ā Toi, School of Māori Studies, Massey University, Palmerston North.

19 This whakapapa version is a particular system that considers Io Matua as the parentless one, but not all whakapapa systems share Io as the originator. Sourced from Charles Te Ahukāramu Royal, 2006, 'Māori creation traditions', Te Ara - the Encyclopedia of New Zealand URL

<http://www.TeAra.govt.nz/NewZealanders/MaoriNewZealanders/MaoriCreationTraditions/en> The whānau whakapapa version reflects tribal differences and the introduced influences of religion and other nineteenth century changes or adaptations to Māori ways of knowing. This whānau preface may also be based on other nineteenth century versions of origin narratives. Based on Charles Te Ahukāramu Royal, 2004, *Mātauranga Māori and Museum Practice*, Discussion paper prepared for National Services, at the Museum of New Zealand Te Papa Tongarewa, 18.

20 The generational markers list the spiritual transpositions to the first parents, to environmental properties as gods and then onto to the creation of humankind.

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ancestors responsible for trans-locating from other Pacific island ‘homes’ (such as Hawaiiki or Rangiātea) through time, space and generations.

Origin narratives will vary between different tribal groups but there are common shared themes. For this rohe, a range of Tainui whare wānanga traditions relate to creation narratives that begin with Hani and Puna, then Ranginui and Papatūānuku. Reknown Māori scholar Pei Te Hurinui Jones ‘tracked down the archaic phraseology of the esoteric knowledge of the Tainui preisthood’<sup>21</sup>. His accounts were derived from knowledge developed by Pōtatau Te Wherowhero (renown as the first Māori King of the Kingitanga movement) and his following of the Io religion of the Tainui preisthood. Te Wherowhero was taught an esoteric version of the Creation.<sup>22</sup> In the Io religion, the world evolved from Io, the Supreme Being. According to Jones, his dwelling place is at ‘the apex and centre of Creation. Io evolved through eight stages from Te Kore or the Formless Void. In this conception two elements were introduced and merged in Io, namely:

Te Ira tāne, or the male essence, which was personified in the celestial being named Hani, or the Questing one. Te Ira wahine, of the female essence was personified under the name of Puna, the Spring-well.’<sup>23</sup>

In relevant ways too, so much of our Tainui customary knowledge issues from springs and water. The Hani and Puna accounts precede Papatūānuku as the Earth mother and Ranginui as the Sky father. According to Tainui waka traditions, the Hani and Puna conception stories propagated the beings that live in the sea, including fish; the fish that live in freshwater and the beings that live on the land.

Priestly recitations named them as ‘Hani a te waewae i kimi atu’ – Hani the Traveller and Questing One’ and ‘Puna he rau- the Overflowing Spring-well.’<sup>24</sup> Papatūānuku as the Earth mother and Ranginui as the Sky father would then become the parents from whom all deities, environmental entities and Iwi and Hapū Māori descend. As part of this shared belief, the separation of earth and sky narrative features, as does the activity of spiritual powers and other supernatural entities.

The first parents Ranginui and Papatūānuku emerge from a dynamic or active vehicle of understanding that initiated a model for human existence. Their supernatural offspring or atua (environmental properties) are often listed as Rongomatāne, Tāne-nui-ā-rangi (Tāne Mahuta), Tangaroa, Haumiatiketike, Tawhirimatea, Tumatauenga and Ruunuku<sup>25</sup> (or Ruaumoko). Each entity is responsible for natural arenas or phenomena. In Māori tradition, these senior atua also have specific roles as kaitiaki or guardians. Tāne was the kaitiaki of the forest; Tangaroa of the sea; Rongo of herbs and root crops, and Hine Nui Te Pō of the portals of death.<sup>26</sup> The other remaining senior atua are attributed to other environmental properties too.

Atua created the natural world and humankind where humans are only one aspect of a larger, extended family. Related animals and plants to humankind are considered the senior relations or ancestors in an all-encompassing genealogy.<sup>27</sup> In this way ‘ancestors’ are not only human ancestors, but are the antecedents of the entire natural world.<sup>28</sup> Such interrelationships agree that all animate

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21 Pei Te Hurinui Jones, 2010, *King Pōtatau*, Huia Publishers: Wellington, 238.

22 *ibid.* 238.

23 *ibid.* 239.

24 *ibid.* 240.

25 Ruunuku, the name of the god of earthquakes as recorded in the whanau whakapapa book.

26 Rev. Māori Marsden & T.A. Henare, 1992, *A Definitive Introduction to the Holistic Worldview of Māori*, Ministry for the Environment Manatū Mō Te Taiao: Wellington, 9.

27 Todd Taipa, 2000, ‘Māori Values and the Wastewater 2006 Project’, Paper prepared for the Palmerston North City Council, 3

28 Charles Te Ahukaramū Royal, 2004, *Mātauranga Māori and Museum Practice*, Discussion paper prepared for National Services Te Paerangi at the Museum of New



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and inanimate objects have divine origins where the atua or spiritual entities are noted as the source of all life and existence. Therefore, whakapapa is the system of kinship that illuminates such tangible and intangible relationships between Iwi, hapū and whānau, ancestors, lands, waterways and the natural world.<sup>29</sup>

The nature and dimension of whakapapa transmits or expresses the attributes of atua, where their activities are recalled and recited on occasions to reaffirm connections to the environment, ancestors and generations to come.<sup>30</sup> Narratives about atua are also viewed as essential metaphors or compelling stories that guide, lead and influence members of Iwi and hapū through life. In this way too, atua shaped the natural world and acted in particular ways to secure their position in the world. Their amazing exploits and genealogies are re-expressed through Māori origin stories, customs, practices, the visual language of whakaairo (carving), kowhaiwhai (painting), whatu raranga (weaving) and in other institutions of Māori knowledge development. Atua and their endeavours are considered role models for humankind's behaviour and aspirations. In repeating or retelling these stories, they become creative acts that mimic the original conception of the world.<sup>31</sup>

Other narratives of relevance to the descendants of Tainui waka is the ascent of Tāwhaki or Tāne through the twelve heavens to obtain the baskets of knowledge. This journey symbolises an individual striving toward insight and understanding.<sup>32</sup> Another overarching narrative is about Maui tikitiki a Taranga and his significant female relations who all performed influential feats. Maui acquired fire from his kuia, Mahuika. With the jawbone of the kuia named Muriranga-whenua he fished up Te Ika a Maui (the North Island) and made a patu with which to subdue Ra or the sun. By capturing the sun, entering the underworld, or fishing up an island, Maui and his powerful female relations represent the character of individuals, who can bring about change and development within a community. It was to his ancestress, Hine-nui-te-po that Maui eventually succumbed when he failed in his quest to attain immortality.<sup>33</sup> Such legendary heroes and heroines therefore acted as exemplars of human potential.

As evident in other origin or cosmological narratives, the interdependency of gender roles maintained and sustained the collective, and their activities. The atua Tāne-nui-ā-Rangi [Tāne the greatest son of Rangi] played an important role in separating his parents, the earth and sky. In his personification as Tāne Mahuta [god of the standing forest] he would later lead his brothers on the ultimate search for the female essence or uha, which culminated in the conception of human kind. During his search, Tāne Mahuta made numerous procreative attempts with important supernatural female entities, where their coupling created different trees, insects and birds, but not the appropriate female element for securing humankind. His mother Papatūānuku later instructed him on where to find the human element or kurawaka or the red earth of Papatūānuku, at her puke or mons veneris. She also guided him and his brothers on how to activate the potential of human kind.<sup>34</sup>

In keeping with these customary activities of ultimate potential, creativity and promise of well being to come, the brothers resolved to mould a female from from the red earth. While each brother contributed to the creation process, Tanemahuta breathed life into the inanimate form to create the

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Zealand Te Papa Tongarewa, 21.

29 Charles Te Ahukaramū Royal, 1998, 'Te Ao Marama The Māori World View', Unpublished Chapter 3.0, 75.

30 Todd Taiapa, 2000, 'Māori Values and the Wastewater 2006 Project', Paper prepared for the Palmerston North City Council, 3.

31 Charles Te Ahukaramū Royal, 2006, 'Māori creation traditions', Te Ara - the Encyclopedia of New Zealand URL

<http://www.TeAra.govt.nz/NewZealanders/MaoriNewZealanders/MaoriCreationTraditions/en>

32 Annie Mikaere, 1994, *Māori Women: Caught in the Contradictions of a Colonised Reality*, 1, URL <http://www.waikato.ac.nz/law/wlr/1994/article6-mikaere.html>

33 ibid

34 Pei Te Hurinui Jones & Bruce Biggs, 2004, *Nga Iwi o Tainui: the traditional history of the Tainui people*, Auckland University: Auckland, 2.

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ira tangata, the first human- a woman called Hineahuone. Tāne Mahuta would later couple with her to produce the first human child, a female known as Hine-ti-tama or the dawn maid. After her birth and as part of a cleansing ritual, the umbilical cord of Hine-ti-tama was severed and buried with her afterbirth in the earth. Appropriate rituals were then enacted that instigated the customary significance of returning the whenua as placenta and pito or dried umbilical remains to the earth.<sup>35</sup>

Customary Māori society valued knowledge systems that were generated through integrated ways of knowing. The notion of bio-cultural diversity<sup>36</sup> in landscape recognises inter-linkages between linguistic, cultural and biological diversity. Māori embraced such an integrated system as a means of maintaining the mana or authority of peoples to place and by enhancing the quality of their lives within healthy, sustained environments. Bio-cultural knowledge has been apparent throughout human history, especially amongst indigenous, minority, and local societies who maintained close material and spiritual ties with environments. Over generations, different indigenous communities around the world accumulated wisdom about their environments and its functions, management, and sustainable use.<sup>37</sup>

Certain knowledge was preserved in various Māori institutions for dissemination at different levels. Higher learning taught Iwi and Hapū leaders advanced forms of knowledge including tribal whakapapa or genealogy, the arts of warfare and peace, astronomy, navigation, horticulture, and whakairo or carving<sup>38</sup> - all essential knowledge bases for the welfare of people. Within the concept of respect and gender interdependency, Māori fostered relationships with natural areas not only for the practical purposes of resource use of the land and sea for daily sustenance, but for deeply spiritual reasons that involved recognition and propitiation of ancestor gods<sup>39</sup> by tohunga on the tūāhu or altars in areas of natural vantage and importance. The institution of whare wānanga related to a mental process of learning, where the ritualistic aspects of wānanga were deeply inspired by relationships with the natural world, which seemed to speak directly into human experience.<sup>40</sup> Wānanga education developed mental discipline and adeptness in several different fields of study. People could be educated as tohunga with their specialist knowledge, be trained as the keepers of whakapapa, teachers, manual labourers, conservators, and leaders. Individuals with the appropriate skills would then instruct those chosen for specific roles, where proper maintenance and transmission of knowledge to succeeding generations was vital for the cultural survival of Iwi and hapū.<sup>41</sup>

Customary Māori society acknowledged a natural order of the universe where everything had intrinsic tapu. Each person within a collective had his or her own intrinsic value. This intrinsic tapu

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35 Based on research conducted by Te Ikanui Kapa and Jeff Fox, Concept Developers for *Blood Earth Fire: Whangai Whenua Ahi Kaa* an exhibition about the transformation to Aotearoa New Zealand at the Museum of New Zealand Te Papa Tongarewa, Wellington. The author was lead curator Māori who produced and commissioned research from Māori scholars for use within the exhibition.

36 Tove Skutnabb-Kangas, 2000, *Linguistic Genocide in Education- or Worldwide Diversity and Human Rights?* Lawrence Erlbaum Associates Inc: Mahwah, New Jersey, 65.

37 Derived from Terralingua, a non-profit, international organization founded in 1996 by a group of professionals working in the fields of anthropology, linguistics, biodiversity conservation, and human rights who share a fundamental belief that the challenge of protecting, maintaining, and restoring the diversity of life on earth is the challenge of supporting and promoting diversity in nature and culture. URL <http://www.terralingua.org> Tove Skutnabb-Kangas, 2000, *Linguistic Genocide in Education- or Worldwide Diversity and Human Rights?* Lawrence Erlbaum Associates Inc: Mahwah, New Jersey, 87.

38 Waitangi Tribunal, 'Maori Education in New Zealand: A Historical Overview', Te Wānanga Capital Establishment Report: Full Report, Waitangi Tribunal: Wellington. URL <http://www.waitangi-tribunal.govt.nz/reports/viewchapter.asp?reportID=39e13093-2f4d-4971-aca0-28e811572755&chapter=4>

39 Evelyn Stokes, 2004, 'Contesting Resources Māori, Pākehā, and a Tenurial Revolution', *Environmental Histories of New Zealand*, Oxford University Press: Auckland, 35.

40 Charles Te Ahukāramu Royal, 2004, *Mātauranga Māori and Museum Practice*, Discussion paper prepared for National Services, at the Museum of New Zealand Te Papa Tongarewa,

p 21.

41 *ibid*, 21.

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was the potentiality for power that began with their existence or conception. Women and men were bonded to their source of being and therefore their mana.<sup>42</sup> In this way women and men were responsible for maintaining a balance not only in relationships between peoples of the collective, but with the environment and all living things. Sustaining resources depended on them getting optimal balance for survival. Within Māori knowledge systems, male and female principles were essential for procreation, as was their interdependency and complementarity of roles to each other.

In particular, the whakatauki or proverb *he taonga nō te whenua, me hoki anō ki te whenua*, as what is given by the land, should return to the land, encapsulates the power of procreation and potential. The proverb explains why land shapes tangata whenua as people of the land. It instils strong obligations in people to sustain resources by getting the balance right for their own survival. This maxim applies to the endeavours of our MTM research, as we increase the areas being left in healthy states for future generations.

## 2.2 Kōrero tuku iho: Being authoritative with research findings for contemporary times

It is clear to our team that Mātauranga Māori is embedded in customary narratives, proverbs or understandings, which can provide powerful messages for contemporary times. It is in how we translate that understanding for others to understand, which remains the critical ongoing activity.

Our informants's kōrero tuku iho underpinned the development of more environmental rehabilitation activities in the Horowhenua case study region, in particular when transforming Lake Waiorongomai region just north of Waitohu Stream, Ōtaki. In being authoritative with the research findings, the shareholders for this large valued ecosystem were able to come together to help bring about the required 'change and development within their community' and revitalise their sacred lake again.

At wānanga held in 2013-2015 at Raukawa Marae and on site at the lake, landholders focused on their Hapū leading the revitalization of this taonga, its taonga species within, its related stream to sea and surrounding wetlands - both extant and ephemeral. Key weekend wānanga and workshops on site were an opportunity for these land beneficiaries to act with local kaitiaki, neighbouring leases and interested groups within the local community. The groups and whanau came together in a Māori marae environment or on whenua by the lake to envisage greater protection and enhancement of its biodiversity values within a wider and sensitive coastal region. This Hapū-led group developed all processes towards the series of action plans. As beneficiaries of Lake Waiorongomai Trust they encouraged each other towards greater involvement, especially in tuna (eel assessment workshops) and the series of native tree plantings for the 2014 to 2015 winter season.<sup>43</sup>

In talking with a range of informants throughout the case study region, the MTM team was fully aware of the recurring themes of loss and regret that the natural environment was not like how they recalled as children, at the time of their grandparents or even great-grandparents. In their day everything natural was highly respected mainly because it fed you (and entertained you) but also because it was a place with strict protocols that deferred to the environmental or spiritual entities within in it. Many had a sound understanding of the tikanga or customary protocols applied to the

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42 Michael Shirres, 1997, *Te Tangata: the human person*, K&M Print: Palmerston North, 37.

43 The Lake Waiorongomai revitalization project is subject to comprehensive analysis as part of MTM researcher Aroha Spink's PhD studies. She is mandated by shareholders of Ngā Hapū o Ōtaki and respected Hapū leaders to present the findings on Lake Waiorongomai after her PhD thesis is submitted. To this end, presenting more in this report on restoring health to Lake Waiorongomai for the benefit and cultural survival of Iwi, Hapū and whānau, is restricted. As part of the MTM mandate overall however, Lake Waiorongomai revitalization is another project that involves environmental groups, farmers and local authorities, and provides for ongoing educational opportunities for ngā taurua ki Whakatupuranga Rua Mano and Te Rito Kura Kaupapa, Ōtaki.

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gathering of kaimoana as taught to them by their kaumatua or grandparents. They lamented how modernity's progress, especially for increased and larger vehicular access to coastal regions (that were once accessed only by foot) increased stressors on shellfish resources. As raised by Mrs Maire Johns of Muhunua and Kuku, who was raised on the gathering shellfish and fishing,

"The reason why we don't like motor bikes and trucks on the beach is because a lot of the Toheroa's [are] on low tide- they're all up the top of the beach, they're not down in the water, it's only when the tide covers them over... You know, Bill Page and them they had tractors - they only went up on the dry part.

That's half the trouble, you go out there and see some of the bikes have run over the Toheroa parts and you know, as you can see some of them coming up. Well, they're dead and that's not right and that's the reason why we go mad at them, taking their bikes out there. This happens all along the coast and you can see when you do that the Toheroa does not stay in one place, it shifts all the time and that's the reason why they are shifting - because of what's going on out the beach."<sup>44</sup>

Our MTM efforts drew on local understandings of customary practices and their insights to also help protect original occupation and resource harvest areas, special burial or other wāhi tapu areas in each projects' vicinity. Each whanau and hapū group worked hard to try and overcome capacity issues for local Māori participants in the interest of better resource management processes for the coast into the marine.

As known by informants and as acknowledged by the MTM research team, there are related spiritual entities in many of our natural waterways and other sites adjacent to the sea. Based on this understanding, kaitiaki of the MTM projects actively encouraged others to observe re-articulated, inter-generational protocols based on kaumatua practices as taught to them by their parents, which they strictly observed to protect spiritual significance, special coastal waterways, dune wetlands and stream systems and related resources into the sea.

As previously recorded in earlier studies:

Kaumātua of Tūkorehe confirmed that there had long been both cultural and common sense protection measures for sensitive sacred and natural areas, for related biodiversity, resources at the beach and within the coastal waterways. Narratives of occupation and settlement recounted how inter-tribal contest secured customary land tenure from the beach, the adjacent flood plain and dune systems. For this reason, these areas were regarded as restricted to human access and resource use within the vicinity. As people who knew the coastal environs well when seeking sustenance or at seasonal harvest, kaumātua accounts also recalled long observed and consistent protocols.

"You only go out there... if you're going out there to get pipis or toheroas, the old people used to say now you only go out there and get what you need."<sup>45</sup>

Any catches, gathered shellfish or 'hauling' for fish at sea or the estuary were taken well into

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44 Mrs Maire Rapaha Rehia Johns in personal communication with Moira Poutama, recorded 07/12/2013, 23 Kuku Beach Road, Kuku.

45 Personal communication with Mrs Maire Rapaha Rehia [Aunty Hummer] Johns (nee Seymour) and Mrs Ruhia [Buddy] Martin (nee Holder), on 07/05/2000 (conversation recorded by Clinton Putu as interviewed by Mr Gary Wehipeihana, Mrs Yvonne Wilson Wehipeihana and Huhana Smith). Further conversations were conducted on 21/05/2005 at "Te Rangitāwhia" cottage, 27 Kuku Beach Road, Kuku.

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the dry sands or better still, taken home to prepare and cook. By not cleaning catches or cooking gathered food on the beach, this was a cultural precaution, a sign of respect to those subjugated by earlier battles to maintain the region. In other ways it also made good sense not to foul areas of resource collection.<sup>46</sup>

Similarly, when shellfish gathering with her parents Aunty Enid Bevan of Manakau recalls:

“They only ever took enough in the way of Toheroa and Pipi for family. They would never overstock themselves with it! One of the reasons was that in those days you never had a fridge - you had a food safe on the wall.”<sup>47</sup>

These simple messages were further harnessed and expanded upon to overcome disjuncture between the natural environment, peoples and their overall health for ongoing Hapū wellbeing.

Another informant for MTM was Gene Gregory, who is a son-in-law of Jim Poutama.<sup>48</sup> Jim was renown in Kuku for his knowledge and skills with eeling and shellfish gathering for the marae. Gene fondly recalled his long conversations with Jim and how his father-in-law was dismayed at the impacts upon toheroa on the Horowhenua coast. While Jim was concerned for ghost shrimp (‘wormholes’) destabilizing the wet tidal zone or habitat of toheroa, he was more gravely concerned by how the annual harvests of toheroa at sites along the Horowhenua coast allowed the taonga species to be exploited, disregarded and wasted.

“... During the time of the open season... they [toheroa] were decimated. They were found in the tips by the hundreds not even opened and eaten, but biffed away!”<sup>49</sup>

Aunty Enid Bevan also added,

“... the last time I looked for Toheroa was in 1993. Even then it was getting hard to find. The part that gets me is when people would go out when they opened the season up. It surprised us how many people would come up to you and say ‘what are you looking for?’ and my sister Beryl saying ‘well if you don’t know what you’re looking for why would you come?’ Well they advertised it everywhere - you can go and collect! As we were walking back through the sand dunes we’d see Toheroa dumped, unopened. Really wasteful! What a waste, why did they even go out there? It was amazing people were so wasteful and there was no need for it.”<sup>50</sup>

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46 S.M Smith, 2007, *Hei Whenua Ora Hapū and Iwi approaches for reinstating valued ecosystems within cultural landscape*, Unpublished PhD Thesis, Te Pūtahi ā Toi, School of Māori Studies, Massey University, Palmerston North, 6.

47 Personal communication with Mrs Enid Bevan and Moira Poutama, recorded at 29 Waikawa Beach Road, Manakau.

48 Jim Poutama is father of Moira Poutama, one of MTM researchers and cultural informant, Lindsay Poutama.

49 Personal communication with Mr Gene Gregory and Moira Poutama, recorded 09/06/2013, 3 Leander Place, Flagstaff, Hamilton.

50 Personal communication with Mrs Enid Bevan and Moira Poutama, recorded at 29 Waikawa Beach Road, Manakau.



**Figure 2.2.1** KETE or Tool Kit of Aims, theories and methods for Manaaki Taha Moana

This kete or toolkit is based on Mātauranga Māori principles. It has been developed over the last decade. With kaupapa Māori, action, local knowledge development and collaborative research efforts applied, the team is confident to have fulfilled our research aims to enhance more beneficial outcomes for physical/practical, conceptual/spiritual interrelationships, and the interdependencies that exist (and should exist) between our peoples and their natural environment. These increased interconnections are essential to maintain a unique Māori worldview, whereby our ecosystems and their services are revitalised and revalued by Māori for our future health and wellbeing.

### 2.3 THEORIES: Augmented by environmental ethics

With the aforementioned in mind, the team also well recognises how world views have adapted or changed due to Hapū no longer being able to live their lives with an abundance of natural kai resources. Therefore, in many instances as mentioned, our relations carry out lives in ways that are very different to those experienced by their parents, grandparents, great grandparents and their

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ancestors before them. Eye witness accounts might recall the community fishing or hauling parties up to 1960s - mid 1970s when a whole community of Māori and non-Māori were fed according to the tikanga of customary fishing, or sustained by the regular communal, summer harvests of shellfish and their drying for the winter months. Many a story from informants now no longer with us, attested to the jars of rare Māori (referred to as lollies) on pantry shelves - or ngaungau where dried pipi are like sweet, chewing gum.

Today, when considering environmental ethics 'to advance the understanding of interdependencies between the well-being of human societies and the performance of their biophysical environment', our MTM team well understands the strength of emphasising 'historic, social, and cultural issues together with the life sciences, to fully assess environmental change.'<sup>51</sup>

### 2.3.1 Place-based education on sites

Place-based education has been another ongoing method of drawing more kaitiaki, interested communities, specialists and senior kura kaupapa students together. The expanded kaupapa Māori and action research projects offered very tangible ways to overcome peoples' detachment to environmental learning by literally placing them inside 'the consciousness'<sup>52</sup> of the ecosystem and its resources. For example, when the team responsible for harakeke splitting and replanting it in areas of the Kuku Ōhau estuary (that had been opened up by a local resident's track through shareholders' land in 2013), these young men or rangatahi responsible for being rehabilitating this area, began the vital process for bringing others of their generation to follow their lead. Interestingly, some of them had also been kohanga reo children who helped plant out areas at Te Hākari in 2005. By working on the harakeke-replanting project over winter in 2013-2014, they also committed others to come and help on more planting days over the June to July 2015 planting period in Kuku Ōhau Estuary revitalization project. By their actions, they effectively persuaded our own to contribute further to the active protection of our coastline, particularly from destructive vehicle access but not accesses that are limited to fishing and shellfish gathering.

Another key whanau informant explains the significance of Kuku Ōhau estuary when he recalled the stories of his late father, Uncle Gary Wehipeihana Senior.

"I am named after my father Gary who had a huge influence on my life. My first visits out to the beach at Kuku were with my father. I remember the fence at the end of the beach road. There was that fence on the right to the water - the Ōhau River. I remember as a child the Ōhau came right in front of that part at the end of the beach road. It seemed like it ran all the way to the Waikawa. It was wide with a steady flow. It ebbed and flowed with the tide... I always used to think, what is a fence doing at a beach? My dad was a very simple man with his reasoning and rational. His korero was that side of the fence (to the right) is for Ngāti Tukorehe and only Ngāti Tukorehe people can go on that side of the fence! Straight away I thought well 'that's cool', for as a kid 5, 6, 7 years old I thought 'far out only I and my cousins can go on that side of the fence', and on the left side was public access - anyone could go there. But only Ngāti Tukorehe could cross over the other side of the fence! I have never ever forgotten that. It's important because as an adult, I hate seeing division fences or ropes at beaches these days. As much as I don't like that concept, the concept of 'that side of the fence being for us' has stuck with me right up until now. It was huge!"

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51 The book information page on website is: <http://www.e-elgar.com/shop/handbook-of-research-methods-and-applications-in-environmental-studies>. The official online eBook version is: <http://www.elgaronline.com/view/9781783474639.xml>

52 Sourced from Wally Penetito, 2004, *Theorising a 'Place-Based' Education: Ahakoa kai tahi, tera a roto te hahae ke ra*. Keynote address to NZARE conference, Westpac Stadium, Wellington, 24-26 November 2004, 11.

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Our team is assured that Uncle Gary would have approved of the installed gate with twenty-four keys issued, the attractive car park with native plantings, and its island of signs, garden, stones and driftwood. While it was a major change for local Iwi and Hapū and Kuku residents to come to terms with the gate and to force the issue, it was due to many from within and outside the district disrespecting the area and making it untenable for others to enjoy. Enough became enough.

To date, we have been further assisted by a co-funded Department of Conservation Community Conservation Partnership opportunity for 2015-2017, to plant out the immediate 2.2-hectare area adjacent to the Ōhau River estuary. With most of our farm board directors, tribal trust and farm operations team with local residents, regional/local council representatives and environmental groups, honouring this rohe for its fisheries, shellfish resources and rare bird and plant biodiversity, it is clear that intergenerational accord can guard and protect this valued estuarine ecosystem.

### 2.3.2 Recognized localised systems of knowledge.

With this preliminary oral history overview<sup>53</sup> and collating and analysing what was shared by our informants throughout the case study region, the exercise enabled us to begin assessing the impact that re-engagement in coastal revitalisation of valued ecosystems is having on our collective mana and wellbeing.<sup>54</sup>

For example, the team well recognized the value of localised knowledge development as recorded in our shellfish reports<sup>55</sup>. In particular, the 2014 shellfish survey opened many eyes to overall poor shellfish health between Hōkio and Ōtaki, with a general taking for granted that our shellfish were healthy for humans to eat. Despite the initial concerns raised at Walwiri Stream mouth as the basis for the expanded coastal research, the experience so enthused local kaitiaki Moko Morris of Ōtaki that she,

“... was thrilled to have my children involved in this local Hapū initiative, whose vision is to secure better outcomes for all who enjoy the moana (sea). We learnt and laughed alongside all those contributing to the future health of Tangaroa (entity of the sea). It was an honour to be engaged in active kaitiakitanga and to strengthen whanaungatanga (interrelationships) amongst us.”<sup>56</sup>

According to Te Whena Lewis, another locally-based and renown fisherman with long-term knowledge and experience as a key supplier of kaimona for his marae at Waikawa and Kuku, his recollections of fishing practices included:

“When I was a young fella and we used to visit the beach at Waikawa mostly for kai, we used to go with our uncle. He was the main tutor for everybody that got kai in Manakau - Bob Rori was his name. Any spare time we had was spent at the beach. We would stay there at night, light a big bonfire and we would fish all night. When I say all night, Uncle Bob would watch the sea, he could read the waves, read when the fish were about, when they were plentiful then

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53 As mentioned earlier, the Waitangi Tribunal undertook considerable collation of Māori knowledge from a whanau perspective during the Kōrero Tuku Iho recordings in mid 2014. With new research projects for generic technical reports to be undertaken on a range of topics for the Waitangi Tribunal, with Inland Waterways-Cultural Perspectives and Historical funded by CFRT, more comprehensive local knowledge of place will be enhanced and mapped by predominately Raukawa-led research teams from October 2015.

54 It is important to highlight that not all participants in oral archive wanted to be recorded in this report, so in respect of their determinations (and whilst their comments resonated) they are not included in this report.

55 Please refer to our 2014 shellfish reports *Kaimoana on Beaches from Hōkio to Ōtaki*, *Horowhenua* and *Faecal Contamination of Shellfish on the Horowhenua Coast*.

Citations below in endnote 61-62.

56 MTM Media Release: ‘Iwi and Hapū Conduct Survey of Horowhenua Shellfish’, April 2014.



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we would go out for 2 or 3 drags. We would have so much fish that on our way home we would drop fish off to all our aunties and uncles. Herrings, kahawai, lemon fish, the odd snapper - all cleaned and filleted! They would give us rewena or cartwheel bread, then we would go home and have a big feast at about 5-6 in the morning. Then we would think about going to school!”<sup>57</sup>

Te Whena Lewis and many others clearly maintain this important exercise of manaakitanga, or increasing one’s mana of standing by the continuous act of giving, supporting and sustaining others. When resource gathering takes place today too, customary fisheries kaitiaki and local kaitiaki still observe karakia to Tangaroa (entity of the sea) or the rites of returning their first catches to sea or rivers, whether it be returning the ‘first whitebait in the net’<sup>58</sup> or in nets at the coast, or when our kaitiaki make a point of sharing catches with kaumatua or elders who can no longer make it out to the coast, as Te Whena continues to do.

In seeking other examples of more protective mechanisms from a Mātauranga Māori perspective, it is clearly outlined in Te Taihauāuru Iwi Forum Fisheries Plan 2012-2017, the important role customary fisheries kaitiaki have for Māori communities. It follows that:

‘In terms of fisheries, the role of kaitiaki allows for Māori communities to have availability to an abundance of kai from both the freshwater and saltwater environments. The kaitiaki role is one that is locally defined and managed, commonly at a hapū level. It is not a position of ownership but an individual and collective role to safeguard ‘ngā taonga tuku iho’ (those treasures that have been passed down) for the present and future generations.

In safeguarding these taonga, Māori fishing practices have been refined over hundreds of years to create a balance between use and the health of our aquatic environment. Refinement of our fishing practices occurs through wānanga where we transfer our mātauranga to the next generation who are able to continue with fulfilling our obligations and responsibilities to Tangaroa.’<sup>59</sup>

Our locally defined customary fisheries kaitiaki within the case study, manage our related Hapū resources when they are gathered for the tables at marae, particularly those presented at life-crisis

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57 Personal communication between Te Whena Lewis and Moira Poutama at 28 Waikawa Beach Road, Manakau on 06/12/2013.

58 Personal communication between Paul Hapeta and the author at 658 State Highway One, Kuku on 29/08/2015.

59 Taihauāuru Fisheries Forum, 2012, *Te Taihauāuru Iwi Forum Fisheries Plan 2012-2017*, Te Ohu Kaimoana, Wellington.

#### MANAGEMENT OBJECTIVE 1: Customary Fisheries

Our customary non-commercial fisheries are healthy, sustainable and supports the cultural wellbeing of Te Taihauāuru Iwi.

#### PERFORMANCE MEASURES

1. Iwi, Hapū and whānau of Te Taihauāuru can gather kaimoana for their customary non-commercial purposes.
2. The amounts authorised under customary permits are able to be harvested.
3. Te Taihauāuru Iwi adopt and implement the Fisheries (Kaimoana Customary Fishing) Regulations 1998 by 2017.
4. High quality and reliable forms of non-commercial fishing data are known and fully utilised in fisheries management decisions.
5. Iwi fishers use traditional and contemporary mātauranga in Iwi management strategies.
6. The role of kaitiaki, whānau and Iwi to responsibly manage fisheries is well understood and upheld.

#### IWI COMMENTARY

Customary fishing plays an important role in Māori communities. However, it is largely affected by the fragmented approach Iwi and Hapū have to managing fish. The non-commercial sector as a whole lacks good information and monitoring mechanisms are required to track what state the fisheries are in. Most are witness to the localised depletion that occurs inshore and in particular those species that are most favoured by many such as pāua and koura. By Iwi and Hapū bridging the gap and working together to address issues such as the lack of information (including non-reporting of recreational fishing) and knowledge, better outcomes could be achieved. A key concern for the state of non-commercial fisheries is the lack of good information. This is critical to assessing the state of our fisheries and the environment. Without good information, the difficulty in managing without knowing what is out there and what state the fishery is in, would jeopardise the long term sustainability of our fisheries.

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occasions like tangihanga (funery rituals at marae). This practice relates directly to an honouring of the departed and the care and support the Iwi take for the whanau pani (grieving families) at this time. Customary catches are also sourced with a permit and presented when expressing manaakitanga at hononga mareikura (weddings), christenings, whanau reunions, significant birthdays for kaumatua, or when engaging in other Māori events such as major Treaty claims hui or large kaupapa based wānanga. Non-commercial customary fishing also notes how 'fish are an important traditional food source for many Iwi, Hapū and Whānau for whom special and enduring relationships to the sea exist, and places of customary food gathering importance still have relevance today.'<sup>60</sup>

When Keremihana Heke of Levin and Kuku commented on the experience of the shellfish survey in April 2014<sup>61</sup>, he highlighted that,

"having our tamariki (children) involved and exposing them to the stories of their pakeke (adult relations) about the numbers of shellfish gathered in past years, was invaluable. I was reminded of how important it is for my own mokopuna (grandchildren) that we continue to work with our environment for the betterment of the resource for future generations. Nā Rangi tāua, nā Tuānuku tāua - We are all descendants of the Sky and the Earth."

In the wider case study region, inanga (whitebait) remains a taonga species and their annual harvest is a highly valued activity for many relations and neighbouring Iwi and Hapū. In particular, between the Walwiri and Waitohu Streams, whitebaiting with recognized localised systems of knowledge about the resource, follow in the footsteps of kin. It is a well-guarded, customary pastime that starts in late winter or mid August. Our Ōhau River's 'Loop' phased research approach has focused on both inanga and habitat knowledge and restoration of ideal habitat. In the first Ōhau River report in November 2011<sup>62</sup>, then May 2015,<sup>63</sup> and in our IBook documentary records to co-funders<sup>64</sup>, our findings included recommendations to remove accumulated fine sediments from the 'Loop' and potentially re-connect adjacent lagoons to form a continuous channel with fish-friendly culverts. The second report recommended that some yet to be determined flow should be diverted from the Ōhau River into the top of the 'Loop' to alleviate the poor water quality recorded there. This would require further study and funding to help calculate the flow requirements for the mahinga kai and taonga species like inanga, whilst maintaining flood protection for Tahamata farm. More suitable riparian fencing and planting native species was also recommended to provide shade, habitat and filtering of sediments from farm runoff.<sup>65</sup> For key whitebaiters and first hand observers of change in the Ōhau River meander region,

'Long-term white-baiters definitely knew of the times before the Cut. There are many stories of these experiences. An example when the whitebait were running, is that a flour sack was very quickly filled to bursting at various sites along the river meander. In those times, inanga could be so plentiful that excesses were fed to chickens or used as fertilizer on domestic

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60 Ibid. 15.

61 MTM Media Release: *Iwi And Hapū Conduct Survey Of Horowhenua Shellfish*, April 2014.

62 See our first report, C.Allen C, K. Doehring , R Young, J Sinner, 2011. *Ōhau Loop Phase 1: Existing Status And Recommendations For Improvement*, Manaaki Taha Moana Research Report No. 5. Cawthron Report No. 2041

63 See D.Taylor, K.Doehring , J.Sinner, H. Smith, 2015. *Ōhau Loop Phase 2: Enhancing knowledge of inanga habitat*, Manaaki Taha Moana Research Report No. 25, Cawthron Report No. 2695.

64 For example Te Wai Ora Fund is a fund from Te Wai Māori Trust. The purpose of the fund is to enable Māori to obtain funding and develop expertise to promote and advance Māori interests in freshwater fisheries through development, research and education. MTM gained funding for the whitebait projects with Cawthron Institute for 2014-2015 as part of Ōhau River 'Loop' Phase 2. See <http://waimaori.maori.nz/research/purpose>

65 Ibid. iii.

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vegetable gardens.’<sup>66</sup>

While white baiting is all about the annual anticipation of tranquility to be found by a river or stream and in eagerness for the whitebait fritter delicacy, this taonga species is also badly affected by poor water quality; loss of spawning areas due to stock access; barriers to fish movement, other impacts from poor farming practices at site, from other farms and their impacts upstream, particularly where the Kuku Stream, is largely unfenced. Another major threat is the uncontrolled commercialization of the resource. For a threatened freshwater species the latter is particularly untenable.

Many efforts are underway for Ōhau River ‘Loop’ but poor quality water in the Kuku Stream continues to flow through many properties of the Kuku hinterland and directly into the Ōhau River. Whanau recall large whitebait shoals that used to come right up the Kuku Stream and past the Soldier’s Road region<sup>67</sup>, but today such observations are virtually non-existent. Similarly, in summer to autumn months shellfish gathering of pipi and tuatua might be continuing practices alongside the wider community, however as observed and reported in previous MTM research findings<sup>68</sup> there are multiple stressors and health issues facing these resources in the coastal region between Hōkio and Ōtaki. This is due to farming and grazing practices that do not consider the wealth that derives from ensuring that freshwater is protected.

## 2.4 Resisting disturbances through ancestral narrative and Treaty claims research

Within the coastal case study region, the MTM team and its supporters consider ecosystem restoration as vital for reasserting Hapū identity, for re-edifying ancestral associations and responsibilities for place, and for sharing these increased connections with younger generations. Contemporary affiliates respect the rights afforded by their ancestors’ historic conquests; consequent settlement in areas with rights to ecological resources; their long-term occupation of place; their engaging with place and developing knowledge over time, and the protocols developed for sustainable use over generations. Today, with more Hapū and Whanau engaging in more hands-on action, they too improve their personal encounters and knowledge with valued ecosystems.

As a means to resist further disturbances to place, it is through the current and developing Treaty of Waitanga claims research process for the Porirua ki Manawatū [PKM] region, that a preliminary scoping paper overviewing the complex nature of historic occupation, patterns of occupation and exercise of customary rights was outlined.<sup>69</sup> Whilst not a comprehensive not conclusive document at all, as part of our local knowledge we know our Hapū arrived and settled the region from around early 1820s onwards in a series of heke initiated by Te Rauparaha (who through his mother had Ngāti Huia of Ngāti Raukawa descent lines, Ngāti Kauwhata and Ngāti Wehi Wehi). Te Rauparaha, his sister Waitohi, Te Rangihaeata their nephew and other chiefly figures within Ngāti Toa - all supported the heke as translocations of related people. While many of Ngāti Raukawa settled along the coast under the mana of Te Whatanui, Ngāti Kauwhata and Ngāti Tukorehe came down under the leadership of Te Ahu Karamu. In particular, Ngāti Kauwhata came down the Rangitīkei River to enter the Awahuri district where they established their principal settlement at the confluence of the

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66 D.Taylor, K.Doehring, J.Sinner, H. Smith, 2015. *Ōhau Loop Phase 2: Enhancing knowledge of inanga habitat*, Manaaki Taha Moana Research Report No. 25, Cawthron Report No. 2695, 16.

67 Recollection of Ruhia Martin, the author’s aunt and a key informant during PhD studies.

68 See our reports Newcombe E, Smith H, Poutama M, Clark D, Spinks A, Ellis J, Sinner J 2014. *Faecal contamination of shellfish on the Horowhenua coast*. Prepared for Taiao Raukawa and Manaaki Taha Moana. Manaaki Taha Moana Research Report No. 23. Cawthron Report No. 2573, and

Newcombe E, Poutama M, Allen C, Smith H, Clark D, Atalah J, Spinks A, Ellis J, Sinner J 2014. *Kaimoana on beaches from Hōkio to Ōtaki*, Horowhenua. Manaaki Taha Moana Research Report No. 22. Cawthron Report No. 2564.

69 Robyn Anderson, 2014, *Porirua Ki Manawatū Inquiry: Historical Issues Scoping Report For Hapū and Iwi Broadly Associated with Ngāti Raukawa*, 9.

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Mangāone and Ōroua Rivers. Peoples of Tuwharetoa and Ngāti Maniapoto as well as others settled on what became known as Te Reureu block.<sup>70</sup>

“... These different Iwi/hapū battled with and, to a certain extent, displaced the peoples whom they had found living there. They began to exercise rights through *tuku*, resource use, building of *kaingā* and *pā*, and by marrying in with some of the leading families of the peoples whom they found still in occupation - as was required to establish relationship with *atua* and *taniwha*, and to gain knowledge and strengthen relationship with the land and its waters. There also continued to be movement within the wider area occupied in response to key battles – *Haowhenua*, *Kuititangā*, and others - the arrival of the first missionary (Hadfield) soon followed by others, and by Crown action - as well as backwards and forwards from the Central North Island, *Maungātātari* and *Waikato* region (whence their *heke* had originated) to keep the fires alight and the relationship strong. At 1840, this loosely- defined confederation were considered to exercise authority over a region extending from north of the *Rangitīkei* River to north of *Waikanae* (at *Kukutauaki* Stream), and extending from sea to mountain range, as part of a wider regional control established by *Ngā Tāngata Heke*.’

The many strands of the Treaty claims research work for this PKM region will consider the complexity of movements, and in many ways the strands of research shall delve further into narratives that are not readily known. The scoping paper contends that,

‘This is not a single narrative... the different lines of *whakapapa* and experience will be fully explored through... two Oral and Tradition projects. This is a matter... of key relevance to an investigation of historical grievances of the claimants. How those complex histories were interpreted by Crown officials and Crown-created institutions of Native Land Court and Commissions of Inquiry was crucial to matters of identity, their standing within the Māori world and their capacity, ultimately, to engage with the Crown and the modern economy.’<sup>71</sup>

As an Iwi member of Ngāti Tukorehe and affiliated Hapū, we also have a distinct Treaty Claims process underway under the group, *Tū Te Manawaroa* (relationships of endurance and resilience). This involves other Iwi and Hapū of our related *rohe* within our claim linking up with *Koputaroa*, *Koputara* and *Hīmatangi* regions, whereby the research shall span our relationships with *Toarangatira*, *Te Ātiawa*, and also our ancestral origins to *Whatihua* (from who Ngāti Tukorehe originates) and *Turongo* (from who Ngāti Raukawa originates). The *Tū Te Manawaroa* team shall lead our *Raukawa Mātauranga* in the key regions listed in Box 2.1 and highlight our interconnections between northern and southern *rohe*. The team shall investigate who were the non-sellers of land; highlight our links the important *Kingitanga* and *Kotahitanga* movements, and be a *whanau*-driven claim overall. Treaty claims research is an act of resisting any further inter-generational disturbance by consolidating our *Mātauranga* through ancestral narrative, whilst using the Treaty claims research process.

## **2.5 Reedifying identity to place through historic maps and recent archaeological finds**

In this section, certain land areas within the MTM case study region have been highlighted to discuss how identity and association to place (as forms of local knowledge) can be reedified through the recent revelation of historic maps that came about due to recent archaeological finds.

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<sup>70</sup> *ibid.*, 9.

<sup>71</sup> *ibid.*, 9

To explain this consolidated identity to place, it was in June 2015 that historical associations within whenua were unearthed and brought to notice by a Transpower operation when maintaining their power lines. As part of the Bunnythorpe-Haywards (BPE-HAY) reconductoring project, Transpower aims to replace the existing conductor (wire) of the transmission lines with a slightly heavier conductor. As such, the conductor sags further and earthworks were required between the towers (mid-span) to maintain the required clearance (for obvious reasons) to the ground, for obvious reasons! The proposed activity was therefore to lower and reduce the level of areas where the replacement conductor came closer to the ground surface than previously. The New Zealand Electrical Code of Practice for Electrical Safe Distances (ECP34) and Transpower Standard TP.DL 12.02 set the minimum clearance distance.<sup>72</sup> The position of the conductors is fixed by the transmission corridor and existing towers. Transpower considered raising the towers either side of the span to increase the clearance to the ground. However, they discounted this option as benching and levelling for crane pads and access track upgrades may have resulted in significantly more earth being disturbed. There would also be greater disturbance to the landowner and greater financial costs.

In following Transpower's accidental find protocol when the finds were made, Troy Hobson (then Farm Manager of Tahamata) was contacted. He consulted Tahamata Incorporation Board of the coastal farm as the lands and peoples belong to a range of Hapū of Ngāti Tukorehe. He advised later that the finds be discussed with a board member who had lots to do with heritage matters, namely the author of this report. At a marae-based hui held in late June, with a group of Transpower representatives present, key Ngāti Tukorehe cultural advisors, kaumatua and whanau leaders present were pleased to be on site to bless the area, to acknowledge the other finds on a neighbouring farm, to review the finds, and to then to support the authority application to Heritage New Zealand, which was signed off by Tahamata Incorporation and this author.<sup>73</sup>



Figure 2.5.1. Above: Aunty Yvonne Wehipeihana Wilson's hand hovering over the midden.

Such recent encounters helped our Whanau members and Tahamata Incorporation re-edify closer affiliation to place, as the middens uncovered were located in the dune ridgeline area overlooking numerous original pā and former papa kainga, located by the banks of the Ōhau River.



Figure 2.5.2. Right: *Dosinia anus* (ringed venus shell), cockles in ash and soil.

<sup>72</sup> Generally speaking for the new conductor, this tolerance is 8.0 metres (7.5 metres under ECP34 plus 0.5metres for construction tolerances. Generally, small volumes of soil averaging 30m<sup>3</sup> had to be leveled with an average depth of 0.5m. The excavated area was then re-contoured and remediated to the landowner's satisfaction. The intent of Transpower was to make the mid-span earthwork sites as useable as possible.

<sup>73</sup> The process for an Archaeological Authority under Heritage New Zealand Pouhere Taonga Act 2014 is for when an activity will or may modify or destroy the whole or any part of any archaeological site or sites within a specified area of land. This is regardless if the site is a recorded archaeological site or is entered on the New Zealand Heritage List.





Figure 2.5.5. Below: Map WNC ML 364 1881 showing lower course of Ōhau River.<sup>74</sup>



74 Kevin Jones, 2015, *Archaeological assessment of hill crest lowering at S25/146 and S25/147*, Ōhau River area, Bunnythorpe-Haywards (BPE-HAY) reconductoring project, for Transpower, Kevin L. Jones Archaeologist Ltd, Wellington.

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Of great importance were the maps that surfaced from the archaeologist's report (one included in Figure 2.5.5) whereby the finds are marked with a red star. Kaumatua and cultural advisors along with key Māori Land Court minute accounts of ancestral relationships to these places in the maps, regard such records or visuals as valued 'whakatupu mātauranga' bases, upon which to develop and expand content using interrelated mātauranga and local knowledge of place. This will be undertaken in relation to Treaty claims research work.

## **2.6 Building resilience for future challenges including Climate Change.**

Finally for this report, it was in July 2014 that the Intergovernmental Panel on Climate Change (IPCC) Working Group Report clearly established how human action has been the dominant factor in warming that has taken place since the middle of the last century. "The impacts of climate change will leave no part of the world untouched and unaffected."<sup>75</sup> The report states further the essential need for, "...urgent, concerted adaption and mitigation measures both to at least dramatically reduce, if not prevent, destruction of homes, global food insecurity, water shortages, economic instability, and potential increases in violent conflict, due to more extreme weather and climate change."<sup>76</sup>

Later in October 2014, it was noted by the Green Party of New Zealand, how the "European Commission has agreed to cut emissions by 40% from 1990 levels by 2030." When questioned by the Green Party in January 2015, the National government refused to reveal a 2030 target. When projected emissions are expected to rise by 50% in the next 10 years under the current government's policies, "New Zealand has a moral responsibility to act, and a unique opportunity to transition to a smarter, cleaner, more prosperous economy."<sup>77</sup>

Where do Whānau, Hapū and Iwi and their mātauranga Māori or knowledge bases of place stand in this situation? According to Dr Rhys Jones, Māori health is dependant on the stability of social, cultural and economic determinants, all of which depend on the sustainability of natural ecosystems.<sup>78</sup> As indicated in the Millennium Assessment Report 2005 and more recently stated by the Intergovernmental Panel on Climate Change, there will be a range of climate change stressors for the world. Climate change and excessive nutrient loadings are the two main drivers that will become more severe.<sup>79</sup>

In Aotearoa New Zealand (and for the MTM case study region) the most important direct drivers of ecosystem change will increase in the first half of the 21st century. Unfortunately, over 50% of Māori asset bases are in industries that are all climate change dependent and therefore vulnerable - fishing, forestry and agriculture.<sup>80</sup> For our southwest coastal region of Horowhenua to Kāpiti, the localised and forecasted extremes of climate change relate to wide-ranging meteorological hazards. They have been assessed as increasing threats to lifelines and services coming from more frequent heavy rainfall events and associated floods causing a range of problems from erosion and landslides in hill country, to further sedimentation of waterways in coastal plains. Sea level rises will increase the impact of high tides and storm surges on coastal erosion too. Flooding will make groundwater aquifers near the coastline vulnerable to saltwater intrusion. Changes in temperature and rainfall

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<sup>75</sup> Sourced from <http://www.ipcc.ch/>

<sup>76</sup> Sourced from <http://www.ipcc.ch/>

<sup>77</sup> Sourced from <https://www.facebook.com/nzgreenparty/photos>

<sup>78</sup> Dr Rhys Jones, 2013, 'Climate change and Māori health', in Katene, S & Mulholland, M., (eds.) *Future challenges for Māori : He kōrero anamata*, Huia Publishers: Wellington.

<sup>79</sup> Millennium Ecosystem Assessment core writing team, 2005, *Millennium Ecosystem Assessment Synthesis Report*, Pre-publication final draft. Approved by MA board on March 23, 2005, United Nations Environment Programme, Millennium Ecosystem Assessment Secretariat, World Resources Institute, Washington, DC, 17.

<sup>80</sup> Jones, 77



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regimes will cause problems for plant and animal pest eradication programmes.<sup>81</sup> As the likely climate change scenarios predicted for the coastal region are experienced more frequently, with more extreme weather events and associated flooding of coastal areas,<sup>82</sup> more solutions-focused projects like extensive re-vegetated buffers on coastlines must combine with range of other solutions including managed retreat from the coastline, to help mitigate adverse effects of flooding, high tides, storm surges, salt water intrusions, temperature and rainfall fluctuations for key Māori economic agricultural bases.

With this in mind, more combined Iwi and Hapū voices, actions and transformation of valued ecosystems draw connections between key themes and ideas found within local knowledge bases to help identify the critical issues facing communities over freshwater health within rohe (regions), and importantly to co-create the solutions. Our teams asked where might our Mātauranga Māori worldview and local knowledge of place exist within this complex of effects? How might understanding aspects of the Mātauranga Māori worldview be explored and developed to inform new paradigms for resilience?

In October 2015, further funding was secured for a targeted and focused research project until 2017 that this author (as principle investigator) will lead with Iwi and Hapū researchers, Māori farm boards and leaders, our Massey and Victoria University collaborators, a leading climate change scientist and geomorphologist. The successful 'Adaptation Strategies to Address Climate Change Impacts on Coastal Māori Communities' is a Vision Mātauranga project funded by the 'Deep South' National Science Challenge and administered by National Institute for Water and Atmospheric (NIWA). It aims to develop a framework for building resilience in coastal Māori farming communities by identifying culturally-informed, climate change adaptation strategies and testing their economic, environmental and cultural implications through a series of three designed, whole-of-farm scenarios.

The project will build Māori capacity to proactively and productively adapt to climate change, leading to new processes of effective social engagement of dealing with this issue. Because of quite specific ownership patterns and Hapū relationships to coastal tracts of whenua, key Iwi and Hapū participants have the potential to act as role models for other coastal farms in New Zealand.<sup>83</sup>

This proposed research will address climate change impacts on coastal communities, providing information and capability to help Māori envisage economically sustainable adaptation strategies that will enhance and restore Māori cultural relationships to the coast. The research proposes new forms of holistic engagement with and within coastal societies, which will lead to proactive approaches that anticipate change as well as benefit from it. Māori communities collectively hold land as sources of 'cultural identity and mana', a world view where private property values are not based on market monetary values. Preservation of such Māori values in the face of major coastal changes is a significant challenge. In addition, adaptation to sea level rise in rural and peri-urban areas needs to be done differently to that in cities because of the less intensive forms of coastal development. In considering water management, for example, it must account for more extensive flooding and potential salination of groundwater for the communities who depend on it. This participatory action research project will focus on two case study farms to capture the specific risks

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81 National Institute of Water and Atmospheric Research Ltd, 2005, *Executive Summary: Meteorological Hazards and the Potential Impacts for Climate Change in the Horizons Region*, xviii.

82 Marie A Brown, R. T. Theo Stephens, Raewyn Peart and Bevis Fedder, 2015, *Vanishing Nature: facing New Zealand's biodiversity crisis*, Environmental Defence Society: Auckland, 106.

83 Derrylea Hardy et.al, 2015, Submitted proposal document for 'Adaptation Strategies to Address Climate Change Impacts on Coastal Māori Communities', The Deep South - Te Kōmata o Te Tonga National Science Challenge, National Institute of Water and Atmospheric Research (NIWA) and Ministry for Business Innovation and Employment (MBIE): Wellington.



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and opportunities of local areas, based on projected future climate change-related impacts in the region. In this project our research design and methodology will again be based on findings from MTM and our Rae ki Te Rae Bicultural Design Studio. Both will continue to address resilience strategies for local Iwi and hapū in the Horowhenua. The action research methods of MTM preserve and restore natural biodiversity and integrity in wetlands and estuaries, and their relationships to a wide range of aquatic species. Rae ki te Rae will again use a combination of hui and design to integrate complex information from a wide range of different disciplinary sources, to address problems associated with vulnerable settlement patterns, inappropriate farming practices, Iwi resource management and the degradation of critical ecosystems in the region.

**BOX 2.6.1 SUMMARY OF RESEARCH - 'ADAPTATION STRATEGIES TO ADDRESS CLIMATE CHANGE IMPACTS ON COASTAL MĀORI COMMUNITIES'**

The project will build Māori capacity to proactively and productively adapt to climate change, leading to new processes of effective social engagement of dealing with this issue. Because of quite specific ownership patterns and Hapū relationships to coastal tracts of whenua, key Iwi and Hapū participants have the potential to act as role models for other coastal farms in New Zealand.

This proposed research will address climate change impacts on coastal communities, providing information and capability to help Māori envisage economically sustainable adaptation strategies that will enhance and restore Māori cultural relationships to the coast. The research proposes new forms of holistic engagement with and within coastal societies, which will lead to proactive approaches that anticipate change as well as benefit from it. Māori communities collectively hold land as sources of 'cultural identity and mana', a world view where private property values are not based on market monetary values. Preservation of such Māori values in the face of major coastal changes is a significant challenge. In addition, adaptation to sea level rise in rural and peri-urban areas needs to be done differently to that in cities because of the less intensive forms of coastal development. In considering water management, for example, it must account for more extensive flooding and potential salination of groundwater for the communities who depend on it.

This participatory action research project will focus on two case study farms to capture the specific risks and opportunities of local areas, based on projected future climate change-related impacts in the region.<sup>84</sup>

### **3. CONCLUSION**

This report focused on a preliminary exploration and respectful use of some collated local knowledge of place, and related coastal ecosystems for kai or food resources. It is not an exhaustive account of the depth and breadth of local knowledge of place, as that knowledge or kōrero a Iwi will form a greater part of the Porirua ki Manawatū Inquiry for the Waitangi Tribunal Claim for Ngāti Raukawa ki te Tonga and other affiliated Iwi and Hapū, funded by the Crown Forest Rental Trust (CFRT).

As suggested throughout this report though, our Iwi and Hapū need to shape a worldview that weaves our knowledge elements convincingly and into a lived whole. Our kaumatua, kaitiaki, cultural advisors and resource gatherers as informants highlighted in this text, challenge us to take responsibility for the part we play in the global, indigenous collective, whereby we *must* fashion *new* models of thinking about ourselves, and *create* ourselves within *this* world.

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84 Derrylea Hardy et.al, 2015, Submitted proposal document for 'Adaptation Strategies to Address Climate Change Impacts on Coastal Māori Communities', The Deep South - Te Kōmata o Te Tonga National Science Challenge, National Institute of Water and Atmospheric Research (NIWA) and Ministry for Business Innovation and Employment (MBIE); Wellington.

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Simultaneously, our Treaty partners must respect Iwi and Hapū as key partners in biodiversity protection and enhancement. Bi-cultural approaches to decision-making processes and active conservation are increasingly important dimensions for biodiversity protection in Aotearoa New Zealand. In a recent publication on the crises facing biodiversity, ‘jurisprudence of the Environment Court has also recognized the unique relationship that Māori have with the natural world, and the divergence of their perspectives from traditional Western resource governance’.<sup>85</sup> We know whilst numerous Acts offer specific considerations to the relationship between Māori and the natural world, the reality on the ground is quite different. For example, biodiversity policies ‘might be saying the right things, but what happens on the ground can fail to implement it’.<sup>86</sup>

Therefore to overcome these shortfalls, our kaitiaki took control, actively participated and shared their aspiration in our hands-on actions across six taonga ecosystems to increase the promise of wellbeing to come, not only for valued ecosystems, but also for the health of our future generations. As Sir Meihana Durie (quoted in Smith 2011) noted,

“Fundamentally, tino rangatiratanga is about the realisation of collective Māori aspiration. And despite the many faces of contemporary Māori society and the wide range of views, which exist, there is nonetheless a high level of agreement that the central goal of tino rangatiratanga is for Māori to govern and enjoy their own resources and to participate fully in the life of the country. Māori want to advance, as Māori, and as citizens of the world”.<sup>87</sup>

To conclude, we anchored this report with evidence of the active reconnection of our people with their whakapapa relationships with freshwater, and the environmental messages of today. As highlighted, we must be active in the positive transformation of Te Ao Turoa - our environment, our coastal water bodies, and that our hinterlands are resilient for increased pressures. We dedicate this report to all our Iwi, Hapū and Whanau kaitiaki and cultural advisors who came forward over the years of the MTM experience. They supported the assurance that our collective mana atua, mana whakapapa, mana whenua and mana tangata be enhanced through increased knowledge development on our terms. We have demonstrated throughout the considerable range of activities in MTM, that Iwi and Hapū should continue to lead the way to overturn environmental decline in partnership, in collaboration and in cohort with other specialists’ expertise.

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<sup>85</sup> Marie A Brown, R. T. Theo Stephens, Raewyn Peart and Bevis Fedder, 2015, *Vanishing Nature: facing New Zealand’s biodiversity crisis*, Environmental Defence Society: Auckland.

<sup>86</sup> Email correspondence. 4 June 2015 *Wild Things: Addressing terrestrial, freshwater and marine biodiversity loss* conference flyer.

<sup>87</sup> Smith, H., 2011. *E Tū Ake : Māori Standing Strong*. Wellington: Te Papa Press, Museum of New Zealand Te Papa Tongarewa.

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## BIBLIOGRAPHY

Allen C., Doebling, K., Young, R., Sinner J., 2011. *Ōhau Loop Phase 1: Existing Status And Recommendations For Improvement*, Manaaki Taha Moana Research Report No. 5. Cawthron Report No. 2041.

Anderson, R., 2014, *Porirua Ki Manawatū Inquiry: Historical Issues Scoping Report For Hapū and Iwi Broadly Associated with Ngāti Raukawa*, 9.

Brown M. A, Stephens R. T. T, Peart R & Fedder, B., 2015, *Vanishing Nature: facing New Zealand's biodiversity crisis*, Environmental Defence Society: Auckland.

Draft Tangata Whenua chapter for Horowhenua District Plan Review documents September 2012.

Hardy D., et.al, 2015, Submitted proposal document for 'Adaptation Strategies to Address Climate Change Impacts on Coastal Māori Communities', The Deep South - Te Kōmata o Te Tonga National Science Challenge, National Institute of Water and Atmospheric Research (NIWA) and Ministry for Business Innovation and Employment (MBIE): Wellington.

Hearn, T., 2014, *One Past, Many Histories: tribal land and politics in the nineteenth century*, Commissioned by the Waitangi Tribunal for the Porirua ki Manawatu Inquiry, Wai 2200, #A152.

Jones, K., 2015, Archaeological assessment of hill crest lowering at S25/146 and S25/147, Ōhau River area, Bunnythorpe-Haywards (BPE-HAY) reconductoring project, for Transpower, Kevin L. Jones Archaeologist Ltd, Wellington

Jones, P., 2010, *King Pōtatau*, Huia Publishers: Wellington.

Jones, P., & Biggs B., 2004, *Nga Iwi o Tainui: the traditional history of the Tainui people*, Auckland University: Auckland.

Jones, R., 2013, 'Climate change and Māori health', in Katene, S & Mulholland, M., (eds.) *Future challenges for Māori : He kōrero anamata*, Huia Publishers: Wellington.

Marsden. M, & Henare, T.A., 1992, *A Definitive Introduction to the Holistic Worldview of Māori*, Ministry for the Environment Manatū Mō Te Taiao: Wellington.

Millennium Ecosystem Assessment core writing team, 2005, *Millennium Ecosystem Assessment Synthesis Report*, Pre- publication final draft. Approved by MA board on March 23, 2005, United Nations Environment Programme, Millennium Ecosystem Assessment Secretariat, World Resources Institute: Washington, DC.

National Institute of Water and Atmospheric Research Ltd, 2005, Executive Summary: Meteorological Hazards and the Potential Impacts for Climate Change in the Horizons Region, xviii.

Newcombe, E., Smith, H., Poutama, M., Clark, D., Spinks, A., Ellis, J., Sinner, J., 2014. *Faecal contamination of shellfish on the Horowhenua coast*. Prepared for Taiao Raukawa and Manaaki Taha Moana. Manaaki Taha Moana Research Report No. 23. Cawthron Report No. 2573.

---

Newcombe, E., Poutama, M., Allen, C., Smith, H., Clark, D., Atalah, J., Spinks, A., Ellis, J., Sinner, J., 2014, *Kaimoana on beaches from Hōkio to Ōtaki*, Horowhenua. Manaaki Taha Moana Research Report No. 22. Cawthron Report No. 2564.

Penetito, W., 2004, 'Theorising a 'Place-Based' Education: Ahakoa kai tahi, tera a roto te hahae ke ra.' Keynote address to NZARE conference, Westpac Stadium, Wellington, 24–26 November 2004, 11.

Roberts, M., Norman W., Minhinick N., Wihongi D., & Kirkwood C., 1995, 'Kaitaikitanga: Māori perspectives on conservation', *Pacific Conservation Biology*, Vol. 2.

Royal, C., 1990, *Ngāti Kikopiri Environment Management Report*, Te Wānanga o Raukawa: Ōtaki.

Royal, C., 1998, Unpublished Chapter 3.0 'Te Ao Marama: The Māori World View'.

Royal, C., 2004, *Mātauranga Māori and Museum Practice*, Discussion paper prepared for National Services Te Paerangi at the Museum of New Zealand Te Papa Tongarewa.

Shirres, M., 1997, *Te Tangata: the human person*, K&M Print: Palmerston North.

Skutnabb-Kangas, T., 2000, *Linguistic Genocide in Education - or Worldwide Diversity and Human Rights?* Lawrence Erlbaum Associates Inc: Mahwah, New Jersey.

Smith, S.M., 2007, *Hei Whenua Ora Hapū and Iwi approaches for reinstating valued ecosystems within cultural landscape*, Unpublished PhD Thesis, Te Pūtahi ā Toi, School of Māori Studies, Massey University, Palmerston North.

Smith, H., Spinks, A. & Poutama, M., 2014, *HE TIROHANGA WHĀNUI : An Overview of Ecosystems undergoing Rehabilitation within Manaaki Taha Moana, Horowhenua Case Study*, Manaaki Taha Moana Research Project, Massey University: Palmerston North/Taiao Raukawa Environmental Resource Unit: Ōtaki.

Sproul, B., 1979, *Primal Myths: Creating the Worlds*, Harper & Row, Publishers, New York.

Stokes, E., 2004, 'Contesting Resources Māori, Pākehā, and a Tenurial Revolution', *Environmental Histories of New Zealand*, Oxford University Press: Auckland.

Taiapa, C., Bedford-Rolleston, A., and Rameka, W. (2014) *Ko te Hekenga i te Tai a Kupe: A Cultural Review of the Health of Te Awanui*, Tauranga Harbour, Manaaki Taha Moana Research Report No 3. Massey University, Palmerston North.

Taiapa, T., 2000, 'Māori Values and the Wastewater 2006 Project', Paper prepared for the Palmerston North City Council.

Taihauāuru Fisheries Forum, 2012, *Te Taihauāuru Iwi Forum Fisheries Plan 2012-2017*, Te Ohu Kaimoana, Wellington.

Taylor, D., Doehring, K., Sinner J., Smith, H., 2015. *Ōhau Loop Phase 2: Enhancing knowledge of inanga habitat*, Manaaki Taha Moana Research Report No. 25, Cawthron Report No. 2695.

---

### Websites and media releases

URL: <http://www.ipcc.ch/>

URL: <https://www.facebook.com/nzgreenparty/photos>

URL: <http://www.TeAra.govt.nz/NewZealanders/MaoriNewZealanders/MaoriCreationTraditions/en>

URL: <http://www.waikato.ac.nz/law/wlr/1994/article6-mikaere.html>

URL <http://www.terralingua.org>

URL <http://www.waitangi-tribunal.govt.nz/reports/viewchapter.asp?reportID=39e13093-2f4d-4971-aca0-28e811572755&chapter=4>

URL: <http://waimaori.maori.nz/research/purpose>

URLs: <http://www.e-elgar.com/shop/handbook-of-research-methods-and-applications-in-environmental-studies>.

<http://www.elgaronline.com/view/9781783474639.xml>

MTM Media Release: Iwi And Hapū Conduct Survey Of Horowhenua Shellfish, April 2014.

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## APPENDICES

### APPENDIX 1

As the Raukawa region runs from the mountains to the sea, and includes land blocks, dunes and rivers, streams, aquifers, wetlands, subterranean waters, lakes, lagoons and estuaries, these important water features need revitalizing to a healthy state. They include:

1. Awa (Rivers) - Rangitikei, Manawatū, Ōhau, Ōtaki with smaller rivers or streams including the Walwiri, Waikawa, Hōkio and Kukutauaki.
2. Heke kai (places for migratory species) that were traditionally caught and eaten, including tuna (eel – seven varieties); the inanga, (the adult of the minnow; and the fry of the smelt – Williams 1985); and mahitahi or maitai, which is the whitebait most commonly eaten.<sup>88</sup>
3. Wai Māori – The migratory species above live in dune lakes, fed by puna (springs) from subterranean aquifers, and the streams that link dune lakes north-south or west to the sea. The state of the dune lakes, linking streams and subterranean aquifers, are important for the health and survival of these tuna (eels) and also for taku tai moana species such as tuatua, tuangi, toheroa and tohe manga. Repo (wetlands) are also important places for species to breed.

#### **Mai a Waitapu ki Rangataua, mai a Miria te Kakara, ki Whitireia.**

While these are the boundaries for Te Rauparaha and Ngāti Toa - for Ngāti Raukawa, the northern boundary remains the same (Waitapu) but the southern boundary is different. Waitapu is north of Poupatatē Marae on the Reureu block near Tokorangi, beside the Rangitikei River. A stream in a paddock there is so small it sometimes dries up in summer. Rangataua is near Kakariki, and is the place where Te Rauparaha first crossed the Rangitikei River. A reserve at Kakariki is called Miria te Kakara and while it is currently owned by Ngāti Toa, the Ngāti Parekohatu hapu of Raukawa also has a strong association there. For Raukawa, the southern boundary is Kukutauaki stream, just north of Waikanae, running east-west between two former oxidation ponds. The stream is no longer there.

#### **1. BRIEF HISTORY:**

With the lead of Te Rauparaha and Te Rangihaeata, a confederation of three Iwi was formed to settle in the Kāpiti and Manawatū/Horowhenua coastal area in the early 19<sup>th</sup> century. The three Iwi were Ngāti Toa, Ngāti Raukawa and Te Ātiawa from Kāwhia, inland Waikato and Taranaki. According to some records, the four main Ngāti Huia heke were: Te Heke Karere, 1825; Te Heke Whirinui, 1826, led by Te Ahukaramu; Te Heke Kariritahi, 1827, led by Nepia Taratoa; and Te Heke Mairaro, 1828, led by Te Whatanui. Some of the first places settled were the Papangaio block at the Manawatū river mouth, and Rangiuuru, near the Ōtaki river mouth.

#### **2. RAUKAWA TERMINOLOGY:**

hāpua = lagoon                      roto (rō) = lake                      wahapū = estuary                      whaitua = landscape  
taiwhanga = coastal landscape      puna = spring                      kōpū = belly, body of water  
tuawhenua = an inland geographical feature like a range, or a plain, the volcanic plateau.

#### **3. RANGITIKEI RIVER:**

Several Hapū of Ngāti Raukawa are situated just south of the Rangitikei River. While Parewahawaha Marae is now to the north of the river, this is due to a change in the river course, as it was previously south of the river. There are four contemporary Marae, and two former Marae in close vicinity to the river. There is a taniwha associated with the northern regions of the river in Te Reureu valley. Waitapu (as above) was a place of healing associated with Mere Rikiriki, aunt of the prophet Ratana. These kaitiaki are fantails of the Waitapu boundary. Waitapu is a Raukawa tupuna who married Te Rangiita of Tuwharetoa. Travelling down river and beginning in Te Reureu Valley, there are a range of Marae:

1. The northernmost whare was Te Kotuku Marae. It had fallen into disrepair but restoration is currently underway. It has Ngāti Kahungunu and Ngāti Raukawa associations.
2. The next is Poupatatē Marae of Ngāti Pīkahu, Hapū of Ngāti Whakatere.

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<sup>88</sup> Sourced from research compiled by Jessica Kereama for Taiao Raukawa work compiled for Manawatū River Leaders' Accord, 2013-2014.

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A saying of King Tawhiao was such that “my house shall be built of Patatē (seven finger plant) and hina (whiteywood).”

3. The name of the taniwha in the Rangitikei River near Poupatatē Marae is Te Harurunui. It is associated with a puna (spring) and situated where the Kereama family used to have a farm.
4. Te Tikanga-a-Tawhiao, Tokorangi, Ngāti Waewae, Tuwharetoa, Ngāti Pīkiahū.
5. Te Marae o Hine and Marae atea is no longer standing. There remains an urupā. Ngāti Matakore is the name also given to The Square, Palmerston North and is associated with Rongorito.
6. Te Hīri o Mahuta Marae (the seal of King Mahuta) is Ngāti Rangatahi and Ngāti Matakore. It is located on Pryces Line, Halcombe.
7. Miria Te kakara and Rangataua are both near Kakariki and distinguish the boundaries of Te Reureu block. Miria Te Kakara is associated with Ngāti Parekohatu, descendants of Te Rauparaha’s mother and daughter of Korouaputa, the grand-daughter of Huia.
8. Ohinepuhiawe Marae is of Ngāti Parewahawaha (north side of Rangitikei River) at Bulls, is known as the Gateway into Raukawa. Urupā above the cliff are located on Whiteman’s Rd (further north east, but south of river). Te Rauparaha’s cousins, including Te Nge o Raukawa are buried there.
9. Land between two streams Makōwhai and Mahakikāroa some 1.3kms wide is on either side of Taylor’s Rd, out to the Ohakea airbase, near Tangimoana Rd and to the river. Ngāti Raukawa has interests in these blocks. Poutu, Matahūi and Marama-i-hoea are also land interests for Raukawa as they are associated with Parewahawaha, Ohakea in this vicinity. There are Tenths Reserves. Nepia Taratoa is thought to be buried at Matahūi, and a church called Te Wahangū o Nepia was previously at Poutu.
10. Taumata o Te Ra Marae relates to Ngāti Manomano, Halcombe. This Hapū are closely associated with Parewahawaha and Ngāti Pareraukawa.
11. Makerērua swamp, between Shannon and near Tokomaru has Ngāti Raukawa and Rangitane interests.

#### **Ōroua River:**

The Hapū and Marae on the Ōroua River, are all Ngāti Kauwhata.

1. Aorangi Marae, Maniaihu whare, Ngāti Tahuriwakanui, Aorangi Rd, Feilding.
2. Kauwhata Marae, Ngāti Hinepare. Milson Line Extension, Feilding.
3. Te Iwa Marae atea, Ngāti Turoa, Awahuri Marae used until 1930s.
4. Pakingahau Marae atea, Te Whare o Te Ara o Rehua, *Te Ara o Rehua Trust*, Aorangi 1 Sec 3A3B, Aorangi 1.
5. Ngāti Kauwhata have land at Rangiotu, south west of Palmerston North (the Rangitāne Marae there is built on Ngāti Kauwhata land).
6. Ngāti Kauwhata also has a block of land called Aorangi on the Ōroua River.

#### **Coastal – Rangitikei to Manawatū:**

1. Tawhirihoē, at Tangimoana - Ngarongo, Hinemata, Takihiku. Ihakara Tukumarū built a pā to protect Raukawa’s interests on the Rangitikei River. Rev Arona Te Hana, his cousin, had his cattle run there.
2. Kaikokupu, Pukepūke and Omanuka lagoons, with streams to sea. Ihakara offered Crown agents Buller and Featherston three mere (taonga as hand held weapons) to secure ownership of the three lakes for Raukawa. They took the mere and conversely gave the lakes to Ngāti Apa.
3. Lake Koputara, Himatangi Beach Rd. Owned by Raukawa – Ngāti Parewahawaha, Ngāti Kikopiri, Ngāti Tukorehe, Ngāti Pareraukawa, Ngāti Turanga encompasses 76 acres.
4. Omarupapaku (Round Bush), Foxton north.

#### **4. HIMATANGI, HIMATANGI BLOCK, FOXTON: HAPŪ, MARAE**

1. Himatangi Marae, Ngāti Te Au, SH1.
2. Paranui Marae, Ngāti Turanga, near Paranui Rd, just south of Himatangi Beach Rd, SH1.
3. Motuiti Marae, Ngāti Rakau Paewai, past Motuiti Rd, north of Foxton. Urupā, SH1.

#### **Manawatū River:**

##### **Raukawa Stories about Tupua (Ancestors) and Taniwha**

1. Ōkatia came from the Puketoi ranges, east of Pahiatua. Ōkatia was a tupua (a supernatural entity), a huge totara tree that was imbued with enormous mana, ihi and wehi. He formed the Manawatū River

and split up Tararua (a young man) and Ruahine (an old lady). Ruahine was an ancestress of Rangitane. There is a rock named Te Ahu a Turanga by the road in the Manawatū Gorge. Turanga is the father of Ruahine and comes from Turi (Aotea waka). Te Āpiti, the gorge is a tapu place because it is the place where Ruahine was separated from her young lover, Tararua. Te Ahu a Turanga overlooks a place in the river where a taniwha called Whangaimoana sits beneath a rock, keeping it always out of the water, no matter high the flow of the river. Whangaimoana comes down river as far as Poutu, Shannon. Te Ahu a Turanga is the mauri for the wāhi tapu, the gorge. Okatia's mission was not only to carve the winding pathway of the river, but also to ensure the safe passage of all the species, which migrate from Tonga and other parts of the Pacific, from the ocean inland to the wetlands where they can breed.

2. Another taniwha called Peketahi is situated in the loop of the Manawatū at Te Awahou. Ihakara Tukumarū brought it down from the Puniu River in the Waikato. A third taniwha, Papangaio (also the name of a pā), is associated with the Manawatū River from its mouth and some distance upriver.
3. All of Raukawa had interests in the Papangaio block, which was previously south of the Manawatū River before the Whirokino cut went through in the 1950s and the river changed its course to go south of that block. Ihakara Tukumarū of Ngāti Ngarongo sold the Awahou block, which stretched east to the Manawatū River heads north. A pā called Te Whārangi was near the river mouth.
4. Raukawa is associated with the Manawatū River as far north as (and including) Tokomaru. The Hapū are Ngāti Ngārongo and Ngāti Whakarete at Shannon (Whakawehi Marae, Poututerangi whare);
5. Coming south-west, Ngāti Hinemata and Tāhikihiku of Kereru Marae, Koputoroa. Te Repo o Hinemata is a wetland at Koputoroa. Endangered native species here include the pūpūrangi (black carnivorous snail), the kokopu (native trout) and hauhau (mudfish).
6. Past Paiake Rd are Ngāti Pareraukawa and Ngāti Tukorehe. Ngāti Pareraukawa owns part of Easton Park, Foxton.
7. Ngāti Hinemata and Ngāti Tāhikihiku have land at Matakara (inside the river loop). Ngāti Turanga is associated with the Paretao block in vicinity of the Foxton water tower and a small piece of land at Te Awahou is owned by the Cook whanau, of Ngāti Kikopiri.
8. Karere Lagoon, Ngāti Wehiwehi – Karere Rd, Longburn. Te Whetu married a Rangitane woman and they lived there.
9. Huia Marae, Ngāti Huia. SH1, Poroutawhau, south of Foxton.

#### Coastal – Manawatū to Ōtaki:

1. Matau Marae, Clay Rd, Poroutawhau. Ngāti Huia. Also urupa, Te Rangihaeata buried there, Paeroa Rd.
2. Ngāti Pareraukawa, Ngatokowaru Marae, Hokio Beach Rd. Five hapu have interests in Lake Horowhenua – Pareraukawa, Hikitanga, Parekohatu and two more.
3. Ngāti Kikopiri at Papaitonga (Waiwiri) and land blocks south of the lake off Muhunua West Rd. Urupā include Hirewanui. Ngāti Kikopiri territory described by Adkin as “Muhunua was about a mile or two in width and about 16 miles long, from the coast to the crest of the Tararua range at the southern peak of Nga Puke-turua (Mt Dundas) and at Hanga-o-hia-tangata (Arete Peak). Its southern boundary was the lower course of the Ōhau River to the Ma-korokio stream junction. Ngāti Kikopiri had five pā tuna (eel weirs) on the Walwiri stream.”<sup>89</sup>
4. Ngāti Hikitanga interests are from north-west of Papaitonga north west to Hokio Beach, which includes Mahoenui kainga overlooking the lake.
5. Dune lakes between Ōhau and Hokio - Taratoa Pekapeka wetlands through Nepia Taratoa, Parewahawaha and Hapū of Ngāti Tukorehe have extensive wetlands at Te Hakiri (or Te Hākari as it is known today.)
6. Ōhau River was renown for its kai associated with river mouth. This includes whitebait, inanga and shellfish such as pipi, tuatua, kokata and toheroa. Concerns about quantities of water extracted for farming and Levin town use along its stretch.
7. Tahamata Incorporation farms coastal ancestral land blocks on behalf of shareholders or original owners from whanau and Hapū of Tukorehe. A series of pā and papa kainga moved inland from the coast to where Tukorehe Marae for Ngāti Tukorehe is now located on SH1, Kuku.

<sup>89</sup> See Horowhenua Land Commission 1896 and Charles Te Ahukaramu Royal, *Ngāti Kikopiri Environment Management Report*, February 1990.



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8. Incorporation of Ransfield's farms the coastal ancestral land blocks on behalf of shareholders or original owners. Wehiwehi Marae for Ngāti Wehiwehi, is located on SH1 at Manakau.
  9. Lake Huritini (now privately owned) is located near Waikawa.
  10. Lake Waiorongomai is a dune lake between Ōtaki and Waikawa - Ngāti Maiotaki, Ngāti Pare, Ngāti Hurihia, Ngāti Huia, Ngāti Kapumanawawhiti are current responsible kaitiaki. This lake is now undergoing major revitalisation. At Waiorongomai fencing is underway to prevent cattle getting into lake.
  11. Pukehou blocks – all sold, except those of Incorporation of Ransfields.
  12. Te Pou o Tainui Marae, Ōtaki is of Ngāti Kapumanawawhiti.
  13. Rangiuru pā, near the mouth of Ōtaki River is significant to Ngāti Raukawa.
  14. All the Hapū and affiliated Iwi of Raukawa had interests in the Taumanuka block, from the Ōtaki River mouth north for some kilometres, including the Ōtaki Health Camp.
  15. Raukawa gave land east of Taumanuka towards Ōtaki to the Church Mission Society for Ōtaki Māori Boys College, where Te Wānanga o Raukawa is currently located. There are two houses on the land, and streams run through it (however they are not well-protected).
  16. Raukawa Marae in Mills Rd, Ōtaki is of Ngāti Maiotaki, Ngāti Pare and Ngāti Koroki affiliation. This is a Matua Marae or parent marae for Raukawa ki te Tonga. Opened in 1936, the Marae trustees include representatives from all or most Raukawa Hapū. The kōruru represents Motai, from whom both Ngāti Raukawa and Ngāti Toa descend.

**Ōtaki to Kūkātāuāki (& off-shore islands):**

1. Katihiu Marae is the southern-most Raukawa Marae located at Swamp Rd, Te Horo. Of importance to Ngāti Huia, Ngāti Tamatehura and Ngāti Tūwhakahewa.
2. The Haowhenua battle involving the three Iwi of Ngāti Raukawa, Ngāti Toa and Te Atiawa (1834) was fought west of Te Waka Rd in between Swamp Rd and Lethbridge Rd, Te Horo.
3. The Manawatū-Kukutauaki land blocks stretched from the Manawatū River in the north to the Kukutauaki stream in the south.
4. The battle of Te Kuititanga (1839) involved the three Iwi again. The Waikanae River, north of Ōtaihangā, fought it. Seventeen Raukawa men were killed and buried there by Te Manutoheroa of Te Atiawa.
5. Kāpiti Island – Raukawa interests at Rangātira Pt, the northern end, and some of the offshore islands.
6. Mana Island – Te Rangihaeata built a whare called Kai Tangata on the island (south end), and when his mother Waitohi died, a monument was constructed nearby in her memory.
7. Tamihana mentioned species including huia, kotuku and albatross - eels, and fish as reasons to come to the region. (Te Rauparaha 1845? - ) p 10.

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## APPENDIX 2

### Overview of Manaaki Taha Moana programme

#### Background:

“Enhancing Coastal Ecosystems for Iwi: Manaaki Taha Moana” (MAUX0907) (MTM) has been a six year (2009-2015), gold-rated, MBIE-funded, bicultural research collaboration between western scientists and Iwi researchers in Horowhenua and Tauranga Moana. Research was conducted primarily in two case studies: Tauranga moana and the Horowhenua coast (from the Hōkio Stream to Waitohu Stream). This programme builds upon Massey University’s previous research with Ngāti Raukawa in the lower north island: ‘Ecosystem Services Benefits in Terrestrial Ecosystems for Iwi’ (MAUX0502).

Prof Murray Patterson was the Science Leader of MTM in collaboration from Manaaki Te Awanui Trust and Caine Taiapa in the Tauranga Moana case study; Te Reo a Taiao Ngāti Raukawa Environmental Resource Unit and Dr Huhana Smith in the Horowhenua coast case study; WakaDigital Ltd; Cawthron Institute; Massey University; and Market Economics Ltd. The research team tried its best to engage extensively with local communities and end users through a variety of means. The MTM programme website is: <http://www.mtm.ac.nz>.

The central research question of MTM is: “how can we best enhance and restore the value and resilience of coastal ecosystems and their services, so that this makes a positive contribution to Iwi identity, survival and welfare in the case study regions?” Our aim is to improve social, economic, environmental and/or cultural wellbeing, taking a “whole of catchment” approach. Action Plans were produced for improving coastal ecosystems in each rohe. The key features of this research are that it is: cross-cultural; interdisciplinary; applied/problem solving; technologically innovative; and integrates the ecological, environmental, cultural and social factors associated with coastal restoration.

We held a very successful one-day “Matariki Ahunganu” symposium in Tauranga on 4 July 2014, attended by over 100 people representing a diverse range of Iwi/hapū as well as other stakeholders and government agency representatives. This symposium showcased our MTM research and its practical applications both in Tauranga and the Horowhenua, and has provided us with a good platform to run a national symposium to further enhance the benefit transfer of our research to other Iwi and regions throughout New Zealand.

We held a National Symposium and hīkoi on 23-24 March 2015. We had 85 attendees at the representing 30 different organisations from regions throughout NZ. On the second day of this event, 34 people participated in field trip/hīkoi, which enabled participants to see first-hand some of the coastal areas that have been the focus of our research along the Horowhenua coast, and to hear from our research team, kaumatua and kaitiaki.

#### The Main Outcome Benefits to New Zealand are:

- Outcomes from Horowhenua Action-Research (led by Taiao Raukawa in consultation with relevant Hapū). These ‘action research projects’ have provided practical outcome benefits to Iwi, and importantly in the long run, they have provided an excellent exemplar for other Iwi research projects in maximising the learnings and practical uptake of Iwi-led ecological restoration projects. The importance of this suite of projects was recognised by the Department of Conservation who awarded the MTM team the inaugural ‘Kaitiakitanga Conservation Award’ (September 2013). Six action research projects were completed 2013/2014, resulting in specific beneficial outcomes for Iwi/hapū ranging from significant capacity building, empowerment of Iwi/hapū and tangible improvements resulting from these ecological restoration projects. Covering a diverse range of ecosystem and habitat types, they include: (a) Lake Waiorongomai restoration involved putting in place mechanisms based on our research for restoring a highly degraded coastal lake that is of high significance to Iwi/hapū. The outcomes of this research are significant not only in terms of the magnitude of Iwi/hapū involvement ranging from practical measures like harakeke plantings through to engagement of local kura kaupapa in their learning activities, but also in bringing real change to the attitude of pākehā farmers and increased levels of institutional awareness of such issues by local government agencies. (b) Shellfish and habitat restoration has been a promising exercise in co-learning between marine scientists and kaitiaki, whereby knowledge has been exchanged and explored, with wānanga focused on how this knowledge can be harnessed to re-seed shellfish beds and implement other shellfish restoration projects. (c) Wetland Restoration in the Ransfield Incorporation farm – this research involved researching the dynamics of an invasive pest, where

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teams of people were brought together with ideas submitted for a kaitiaki-designed pontoon roller for potential mechanical extraction. (d) Ōhau Loop Restoration – a number of recommendations from our earlier research were implemented, e.g. in collaboration and sponsorship of the Horizons Regional Council, for successful whitebait habitat enhancement. (e) Kuku Ōhau Estuary Enhancement – this focussed on bringing about behavioural change from estuary users to halt ecological damage caused by activities such as inappropriate vehicle use. (f) Walwiri Stream Restoration – this demonstrated other dimensions of coastal ecological restoration, including the role of landscape architecture design (in collaboration with Victoria Univ.), and economic analysis of various riparian planting options through Masters’ study at Massey Univ. A software package was designed to assist agencies in undertaking cost-benefit analyses of riparian planting which, although not specifically designed for this purpose, could provide a robust practical tool that is required under the new provisions of Section 32 of the RMA.

- Outcomes from Tauranga Moana Action-Research (Ngāti Ranginui, Ngāi Te Rangi and Ngāti Pūkenga). Key action research projects in Tauranga with direct outcome benefits are: (a) Coastal Cultural Health Index (CCHI) of ‘Te Awanui Tauranga Harbour’, which involved a process of defining and then measuring the ecological health of Tauranga harbour, with the end-goal of providing culturally-informed indicators to enable agencies such as the Bay of Plenty Regional Council (BOPRC) to better manage the harbour in such a way that Iwi values were enhanced. Likely outcomes are that major degradation and biodiversity hotspots of concern to tangata whenua will be identified as priorities for BOPRC attention. This is the first ‘coastal’ cultural health index to be developed in New Zealand, hence there is significant interest in this index elsewhere in New Zealand. (b) Te Maunga Waste Water Project. This project, which received significant co-funding from Tauranga City Council, built on frameworks and knowledge developed in MTM to develop Iwi-based environmental monitoring and remediation of wastewater impacts. (c) Other research projects in Tauranga such as the ‘spatial dynamic modelling’ will have outcome benefits to New Zealand, on a longer timeframe, because they are more focused on policy end users and frameworks.
- Co-Learning from both Case Studies: we have developed, implemented and published a framework for successful cross-cultural, collaborative, transdisciplinary research with local Iwi/hapū and diverse stakeholder groups that takes into consideration the multi-faceted and holistic nature of environmental restoration at a catchment level. This research approach, and the approach to cross-cultural communication and interactions more generally, is a pivotal contribution to groups who wish to work together in ways that genuinely consider Mātauranga Māori and Western Science in environmental management decision making.

### ***Strong Networks with Māori and other Stakeholder Groups***

The very strong networks between our research team, tangata whenua and other ‘end users’ that were present well before the submission of the funding proposal for this research, have been strengthened and have grown more substantially, as evidenced through the significant research uptake and benefit transfer of tools developed in MTM, and the end user receptiveness to recommendations made in MTM reports. We deliberately employed participatory action research and kaupapa Māori research methods, fostering end user relationships to ensure ongoing engagement in our collaborative research. Key aspects include:

- Strong End-User and Iwi Networks. Extensive engagement with tangata whenua (Ngāti Raukawa and all affiliated Iwi and hapū, including neighbouring Iwi Muāupoko in the case study area; Ngāti Ranginui; Ngāti Pūkenga; Ngāi Te Rangi, Waitaha), and with a wide range of non-Māori end user groups, has continued to provide a very good implementation pathway for both the conduct of our research itself, and for the uptake of knowledge and tools developed in the programme by “end users”. Tangata whenua representatives are members of our research team itself, as well as other Iwi/hapū representatives and kaitiaki being involved in training and groundwork for assessment of ecosystem health and in provision of mātauranga Māori input into research design, implementation, analysis and assessment. We have significant end user involvement in MTM through various mechanisms including hikoi/wananga, workshops/ hui, and joint collaborative research/restoration arrangements with other academics/research providers. Increasing numbers of Iwi, hapū, whanau and kaitiaki are engaging in our research. Members of our team also meet with 54 mandated Iwi authorities.
- Extensive Institutional Support. We gained substantial cash and in-kind co-funding/support from a variety of groups who we liaised with regularly over research plans, tool development, research findings and, importantly, in the successful development and implementation of action plans (see previous sections). Notable examples are BOPRC, Tauranga City Council, Horizons Regional Council, Greater Wellington Regional Council, Te Ohu Kaimoana, Department of Conservation, and the Manaaki te Awanui and Taiao Raukawa Iwi

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trusts in our case study areas. We also partner with other research providers including NIWA, Univ. of Waikato, Victoria Univ., and others at Massey Univ. MTM team members are currently working with experts from: NIWA, Ngā Whenua Rahui, Department of Conservation and Horizons Regional Council for hornwort management, are linked to IUCN Thematic Group Ecosystems and Invasive Species, Australia, and are finalising Terms of Reference for a trans-Tasman collaboration around invasive weeds in dune lakes and wetlands; on an Ministry for Environment panel to develop indicators and set limits for estuarine health; part of a group developing Marine Environmental Monitoring Protocols (MPI) with NIWA, Auckland Univ. and Cawthron; and are involved in the Rena Environmental Recovery Monitoring Programme. We are increasingly attracting substantial co-funding.

- Information Technology to Facilitate Knowledge Uptake. Our 3D participatory table, “Coast view” and the integrated mapping platform (see [mtm.ac.nz](http://mtm.ac.nz)) that has also been built into the 3D table and also as an online platform, and the E-ika and CCHI tools are innovative ways of presenting research ideas and findings to end users, particularly Iwi and hapū, who will also receive training sessions/workshops to learn how to use these tools themselves.

At least 17 Iwi currently use the E-ika system developed by WakaDigital and Te Ohu Kaimoana, with even more Iwi intending to participate in the development and adoption of the CCHI toolsets. One significant indicator of the uptake of the MTM research and the interest that it has generated is that our website over the last year has had 1000-1500 unique hits *per day*, which is very high for a research project website.

#### **The main RS&T benefits to New Zealand are:**

- Te Hekenga i Te Tai a Kupe. This report provides a foundational mātauranga Māori perspective on Tauranga moana, beginning with an investigation into the disempowerment of kaitiakitanga and rangatiratanga within Tauranga Moana. The basic cultural philosophies and principles that form the basis of kaitiakitanga and rangatiratanga are described, including the disempowerment of management authority in Tauranga Moana, and how legislative mechanisms have impacted kaitiakitanga and rangatiratanga of Tauranga Māori. The report then reviews the re-emergence of kaitiakitanga in today’s contemporary setting and discusses some of the limitations and challenges Tauranga Māori face as kaitiaki in the resource management systems of today. The report then summarises the unique relationship tangata whenua of Te Awanui have with their coastal environments and resources, highlighting major pressures experienced by coastal systems of Te Awanui.
- Coastal Cultural Health Index (CCHI). This publication uses information from ‘Te Hekenga i Te Tai a Kupe’ report to develop and apply a cultural framework to guide the design of cultural indicators. This framework outlines the processes and methodology for effective and meaningful use of cultural indicators. The framework acknowledges the value of mātauranga Māori and aims to identify and incorporate mātauranga unique to hapū and Iwi. This framework led to a set of 25 indicators that form the CCHI, across three distinct evaluative domains: ‘environmental’, ‘mahinga mataitai’ and ‘cultural’.
- Prototype Spatial Dynamic Model of the Tauranga Harbour Catchment. In terms of the ‘integrative’ analysis that is much sought after by end users, an exciting development has been our spatially-explicit model that connects up a ‘land use model’, with an ‘economic’ and ‘population’ model, so that the origin of stressors on Tauranga harbour can be understood in a more holistic way. This integrative modelling system of Tauranga harbour catchment from ‘mountains to sea’ is understood to be one of the first of its kind worldwide, insofar as it incorporates economic sectors and dynamics in far greater detail than has previously been the case. At this stage, the model is near completed in terms of a data populated framework, but requires significantly more testing and evaluation before it can be released in use for planning and policy analysis purposes. The eventual aim of this modelling system will be to better calibrate the production of land-based stressors with ecological and biological impacts on the harbour, which we now have a good understanding of from our previous comprehensive ecological survey of the harbour. It should be noted: (a) this model builds on the more broad-brush mediated scoping model developed in the first year of MTM; (b) this model attempts to draw together the detailed ecological and cultural research undertaken in MTM, as well as a recently completed very detailed analysis of the Tauranga economy (Patterson et al., 2014); (c) the development of a more broadbrush integrative model of the Horowhenua case study was initiated in 2013-14 in conjunction with Taiao Rawkawa.
- Statistical Ordination Model of the Effect of Ecological Stressors. Research by the Cawthron Institute has involved developing a more powerful statistical model for understanding the effect of multiple stressors affecting estuarine macrofaunal communities in the Tauranga harbour. This information is not only important in its own right, but it will ultimately be used in the spatial-dynamic modelling framework referred to above.

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These multivariate models developed by our team, provide superior explanation of the impact of key stressors on biological communities, than commonly previously used univariate models.

- Ecological Survey of Tauranga Harbour. Two journal articles have been submitted based on further analysis of the ecological survey of Tauranga harbour. One article reports on a multivariate index of the health of benthic communities that improves upon common practice; another reports that when contaminant metals are found together, ecological effects occur well below the levels indicated by current standards, suggesting these standards require urgent review. Cawthron Institute also compiled several GIS layers of habitats and anthropogenic stressors within Tauranga harbour to conduct a cumulative impact analysis, leading to preparation of a third journal that is about to be submitted for publication. One very important implication of this further statistical analysis of ecological survey data has been empirical evidence that points to the thresholds of contaminants (according to the ANZECC) guidelines being significantly too low for benthic communities because they do not take account of cumulative effects.

- Cross-Cultural Knowledge Dialogue. The MTM team has had an increasing focus on ways in which research knowledge can be best communicated across cultures and academic disciplines; as this is considered to be an important aspect of our MTM research, and in fostering implementation of action research plans and recommendations from our research programme. Three peer-reviewed publications put forward ideas and suggested principles for enhancing cross-cultural dialogue, including a chapter in an Edward Elgar Publishing, *Handbook of Research methods and Applications in Environmental Studies*, edited by Matthias Ruth. This research was carried out in conjunction with a number of international researchers, including a visit from a research team from the University of British Columbia, led by Professor Kai Chan.