Te Koronga[1]: Mapping case studies

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Introduction

Mapping has its limitations; and as long as you understand this and know how to work with those limitations then mapping has its uses. Mapping, for Māori, is the expression of a symbiotic relationship with the gods. It is the convergence of tools and techniques that convey the idea that Indigenous peoples, including Māori, need them to communicate their understanding of and interests in (ancestral) landscapes. That is simply not true; they have their own techniques that have served them well for many generations. Non-Indigenous people and organisations will (probably) need these tools (GIS and maps) to deconstruct the mystery behind the framework of an oral lens and to reduce land to its simplest form of discrete points, lines and polygons to convey a sense of meaning for them. Yet for Māori, land is more than a series of points, lines and polygons arranged within an artificial Cartesian framework that display relative positions of objects on a map. It is a relationship; a high-level relationship that resonates with and co-constructs their sense of identity invested in those landscapes. Maps are, simply divested of the capacity to convey (cultural) relationships. What they are is another historical document of Māori connection to sites of significance; and Māori have taken advantage of this technology to express their connection and sovereign rights over their cultural landscapes.

Stories, genealogies and significant sites relative to the preservation of cultural heritage are important to all human collectives but especially to Indigenous peoples and hence, Māori. Indigenous peoples are traditionally oral based societies with a knowledge base that was maintained and passed on using oral methods. For Māori, oral narratives such as songs, genealogies, chants, theatre and storytelling were used to store their notions of who they were and how they connected to their ancestral territories. These methods were used to pass that knowledge forward to each successive generation. Embedded in these oral narratives were their notions of place, which informed their concept of a cultural landscape and cultural identity; this is the basis for mapping their cultural landscapes. While GIS and maps have their uses in (geographic and spatial) knowledge transmission, they cannot connect the Indigenous dots to provide a deeper inter-generational sense of understanding land.

We will share three case studies. The first is drawn from Dr Hauiti Hakopa's research and practice as a surveyor working for his iwi of Ngāti Tūwharetoa. The second is Chelsea Cunningham's research which she undertook in a Ngā Pae o te Māramatanga summer internship as a pre-cursor to her doctoral studies with her whānau of Ngāti Kahungunu. The third case study is from the Dr Anne-Marie Jackson led National Science Challenge Sustainable Seas research, in collaboration with Ms Ngahuia Mita and Dr Hauiti Hakopa, focusing on an example of how to utilise mapping for engaging in mātauranga.

Case Study 1: Tūwharetoa by Dr Hauiti Hakopa

Saturday the 8th of July 2017 was an historical moment for Ngāti Tūwharetoa. Hapū members from around the rohe (the Central North Island region centred on Lake Taupō and the Central Plateau) converged on Waitetoko marae, nestled on the eastern shores of Lake Taupō, to welcome iwi from around the motu and the Crown representatives for the signing of the Deed of Settlement. Te Ariki, Sir Tumu Te Heuheu, chief negotiators, hapū members and the Crown signed the Deed during the course of the day. This event signalled the culmination of a series of historical milestones that began, for me at least, in the early 1990s when I was seconded sideways into a mapping company to investigate Waitangi claims. That aside for the moment, the Waitetoko July event included pōhiri/pōwhiri, formal speeches by the Minister for Treaty of Waitangi Negotiations, the Honourable Christopher Finlayson and Te Ariki on behalf of Tūwharetoa, the official signing of the Deed followed by a hākari. For me though, this process began in the early 1990s.

In the 1990s I was part of a team, funded by Crown Forestry Rental Trust (CFRT), commissioned to undertake an investigation into breaches by the Crown against Ngāti Tūwharetoa pertaining to the Kaingaroa Number 2 (predating the Central North Island claim) and the Tauhara (North, Middle and South) blocks which eventually became part of the comprehensive claim. I was retained as a surveyor and began training as a cartographer under James Canning and Isobel Gentil, principals of a mapping company called Canmap working out of Rotorua. Both James and Isobel taught me the intricate details of aerial photography, the art of cartography and the tools involved in creating maps; moreover, they taught me the innovation of cartography, which I employed on several occasions when the technology changed over time. While cartography offered an innovative method for visualising spatial/geographic data, it was surveying that grounded me in data collection.

Fast forward to 2010 when I attended the very first collaborative Indigenous-Google mapping workshop in Mountain View, San Francisco, adding to my data collection toolkit the suite of tools offered by the Google Earth platform. I was sponsored by the Indigenous Mapping Network, and fully funded to attend, by Google. I was also given permission to use a claimant group's data to test the Google platform. Again, the Google platform has its uses as long as you understand its limitations. My thinking at that time was to use an alternative and engaging method (besides a map) for re-visualising the spatial data that would accompany the Mana Whenua report and to help the layperson understand the spatial context of cultural information. It did not work out that way for reasons beyond the scope of this chapter. This was followed closely by a 2010 meeting in Christchurch for the Ngāti Tūwharetoa comprehensive claim culminating in 2013. I interviewed members of the 26 hapū of Tūwharetoa and compiled 150 plus maps for the Ngāti Tūwharetoa Hapū Profiles Map book using a combination of tools and skillsets I had gathered over many years.
In the 1990s we used a Computer Aided Drafting package called AutoCAD coupled to digitising tables and plotters (with a 4 MB buffer) to compile and produce maps which was a tedious and lengthy process; for example, it took approximately eight hours to plot 100 A3 maps using 3 desktops attached to 3 plotters containing 4 pens each. Today we use GIS

packages attached to Microsoft Power Point and printers to create A3 map books that depict connection to and knowledge of sacred sites.

In the 1990s I used my skills as a registered surveyor to track down data from Māori Land Court Minute books, Certificates of Titles, cadastral and topographic maps (NZMS 261's and 262's), ML's, aerial photographs, field books, Church marriage records and the National Archives. I then merged this with hapū cultural kōrero. All of the hard copy maps we used were rubber-mapped prior to digitising the information. A decade later, in the 2000s, the digital environment yielded online sources for harvesting data which aligned well with GIS and supported hapū cultural knowledge. All of the archival maps were digital and geo-referenced, making it easy to curate and integrate into GIS and transmit the cultural data onto base maps. Whatever the tools of the trade, Māori and mapping are not mutually exclusive events. In fact, our ancestors have been compiling maps using oral methods of their ancestral territories since they arrived on these shores of Aotearoa and Te Waipounamu.

Māori and mapping are largely a social organisational event that just happens to contain a technical component; this is where GIS and cartography are integrated into the event. In every mapping workshop that I have conducted with hapū, they have demonstrated that the backbone of mapping ancestral territories are the stories that connect them to their cultural landscapes. To capture the stories is to capture the essence of their connection to the land.

When I think of the communities I have worked with to create maps, I am pleasantly reminded of the earthiness of our people. When I think of the connection our people have with the land, I am reminded of the strong role land plays in their cultural identity. When I think of some of the people I have interviewed, I am reminded of the passion they have for their land, their ancestors and the legacy left for them to carry and convey to the next generation.

During the Tūwharetoa comprehensive claim I interviewed whānau from all 26 hapū. I am reminded of one koroua whom I had finally tracked down for a one-on-one interview. I made sure to leave Tūrangi early enough to get to Taupō because I wanted to visit the local bakery and grab some treats to share. With my food in hand I showed up at his place in Waitahanui. I pulled into his driveway to find that he had just returned home and was stepping out of his jeep. I approached him and we began talking; he was not sure he wanted to be interviewed (his face and body language told me he was unsure about the interview). So, I replied that it was no problem, and that he may as well help me eat the treats I bought with me. I retrieved them from the car and plonked them down on the boot. He looked at me and decided to invite me in to eat. He had a coal range and on the coal range, he had pork bones, which he offered up. He indicated to a seat at the table and laid out a plate for me. We began talking as I ate and I casually asked him a few questions, he gets up and retrieves a couple of topo maps marked up with kōrero; we begin the interview.

The mana whenua mapping project involved several discrete but integral components. Firstly, the preparation of a mapping proposal and brief, outlining the focus

of the project, the methodology employed, the resources required, the milestones and expected outcomes, and the proposed timeline. Secondly, the presentation of the mapping proposal to the iwi claimants for perusal, comment, changes and final ratification. Thirdly, conducting mapping interviews or workshops to gather oral data. Fourthly, designing and preparing the geodatabase for the project, processing the oral data in preparation for digitising into GIS, preparing a series of maps to complement the oral history report, and presentation of draft and final maps to iwi for ratification. And finally, empowering iwi to manage their cultural assets by implementing GIS training for their tribal members.

Māori still map their land in a similar manner as those early ancestors such as Reko, Huruhuru, Tuki and Te Heuheu. This is how they relate to their lands. This is how they contribute to a Māori mapping project; by telling their stories. This is the makeup of their tūrangawaewae, their mana whenua, mana moana and mana tangata. How do we portray these instances of mana? Clearly, maps are an incomplete method.

The milestones of this project reflected the initial approach and thrust of the mapping project at the beginning. Ostensibly, to capture geographic locations of significant sites, along with their place names, for the purpose of creating a series of maps which reflected how iwi used and occupied the land. Yet on the ground, when working with the people in a workshop or one-on-one interview, a measure of flexibility and fluidity was required to change and adapt to what was appropriate and important at a specific instance in time to meet the objectives.

The Mana Whenua report provided a vehicle for negotiating iwi status with the Crown and in so doing support claims to resource control and use in the region. The final maps could eventually form the infrastructure for developing an environmental plan. The entire document could also be used as a basis for cultural and traditional knowledge curricula for the benefit of future generations. Since the actual purpose of this report was to identify mana whenua and mana moana over a large and distinctive area to which the iwi claimants laid claim, it was important for the iwi claimants to identify and clarify the extent of cultural information to commit to a map.

Maps depicting the spatial extent of rohe whenua can be addressed in two ways. Firstly, by using the existing survey or cadastral boundary data that delineate the ancestral territories, and secondly, by using traditional evidence and landmarks which illustrated how iwi used and occupied their ancestral territories. Since the Mana Whenua report is first and foremost about establishing mana whenua by iwi, it was essential to determine rohe boundaries in two ways: one, using oral and traditional information which depicted customary use and occupation of their ancestral landscapes; and two, examining the extent of the place names embedded into the landscape by their ancestors.

Customary usage of an area implies knowledge and the prior existence of māra kai, rua kūmara (storage pits for kūmara), knowledge of fishing grounds and coastal resources. Alongside, are associated practices, location and knowledge of traditional resources such as plants used for weaving, wood for carving and rongoā (medicines), knowledge of ancient travelling routes and sites significant to the identity of iwi. Occupation of an area refers to

areas of continuous use, habitation, settlement, naming, knowledge and control over such areas. It can also include stories and legends about places, ecological knowledge of the regions, and place names indigenous to the area. Habitation sites include kāinga, pā sites or fortified settlements, wānanga sites, battle sites, urupā or burial grounds, tauranga waka, tribal landmarks, sacred sites and sites of rituals, and marae. The toponyms or place names are a distinct and major consideration as they define the ancestral mana embedded into the landscape. Furthermore, place names are the ancestral footprints woven into the landscape.

This storehouse of customary knowledge and practice, forms part of the unique identity of iwi woven into the landscape, leaving footprints, which, can be interpreted by those custodians or keepers of this knowledge. Knitting all this information together are the genealogies, stories and songs epitomising the deeds that occurred in these places, the ancestors who breathed and bled their very lives into the landscape, and the oral traditions, which preserved this type of knowledge to the present day. Thus, identifying the custodians of this knowledge was essential to the process of creating the maps. Once the custodians of the storehouses were identified, the next task was to set out the mapping themes, which would inform and guide the mapping interviews. The rest is history.

The lessons learned from engaging in a mapping programme which articulated the mana whenua, mana moana and mana tangata are invaluable in terms of understanding the sense and depth of connection Māori still have with their ancestral places. It was equally invaluable learning how to work with people on the ground and engaging with the living repositories. Drawing out the information in a meaningful way, whilst thinking about how to engage the technical aspects of the actual mapping itself. It is useful or, rather, mandatory to have a good grasp of te reo Māori and of the tikanga associated with being Māori. If the mapping coordinator does not have the language, it becomes a technical process. Mapping instances of mana is not a technical process, it is a tikanga process. To observe this process of tikanga is to be proficient in the Māori world and the spatial information technology world.

Case Study 2: Mapping pēpeha by Chelsea Cunningham

Pēpeha (expression of whakapapa) outlines your whakapapa or genealogical connections in relation to geographical topographies and people such as, maunga (mountain), awa (river) waka (canoe) iwi (tribe), hapū (sub-tribe), marae (meeting house) and tūpuna (ancestors). According to Hakopa (2011, p. 3), "Māori position themselves geographically and culturally in the world using a variety of methods such as whakapapa and pēpeha". Whakapapa has been a fast growing passion of mine over the last few years. My experience has shown that learning and engaging with whakapapa provides an opportunity to not only explore your own personal identity, but more importantly the identity of your whānau (family) and iwi. The desire to understand whakapapa, by first engaging with it through maunga, awa, pā and marae, is an example of learning whakapapa by embedding yourself within a particular environment. This then guided the idea around mapping pēpeha by way of not only revisiting the places in which we connect to genealogically but also, researching the pūrākau

(Māori narratives) of these places and producing a map of our pēpeha.

Why is whakapapa/pēpeha important to understand?

Barlow (1991, p. 173) defines whakapapa as "the genealogical descent of all living things from the gods to the present time; whakapapa is a basis for the organisation of knowledge in respect of the creation and development of all things". Hakopa (2011, p. 4) established that whakapapa "is also the instrument whereby Māori derived their intimate connections to the land and how they articulate their sense of belonging to their sacred places, stretching back hundreds of years". It is through whakapapa that we are able to identify 'who' and 'where' we come from. This gives us an identity and establishes those connections we have to people, land and atua (deities) (George, 2010). Whakapapa is a corpus of embedded knowledge. The process of acquiring embedded knowledge about whakapapa through listening, reading, writing and engaging in whakapapa through maunga, awa, marae and pā sites is a lived reality of whakapapa.

The mapping of pēpeha is a task that required an in-depth look into the past using the tools available in Māori oral tradition including, waiata, karakia, mōteatea and pūrākau. By doing so, you can create a timeline of events, people and places that create a narrative that starts from the past, brings us to the present and guides us into the future. The whakapapa that defines my geographical and cultural centre is captured concisely in the pēpeha below; it represents how I position myself within this world as a descendant of Ngāti Kahungunu, and has guided this case study.

> Ko wai te waka, Takitimu
> Ko wai te tangata, Tamatea Arikinui te tangata
> Ko wai te tohunga, Ruawharo Tupae Te Rongo Patahi Putahi
> Ko wai te maunga, Kahurānaki o Te Matau a Māui Tikitiki a Taranga
> Ko wai te awa, Ka titiro whakararo ki te awa o Ngaruroro Mokotuararo ki Rangatira
> Ko wai te iwi, Ngāti Kahungunu e!

This case study involved collating pūrākau about the specific geographical and genealogical connections to places and people outlined in the above pēpeha, therefore was centred on my Kahungunu whakapapa. Data collection consisted of personal communication with three kaumātua within the Ngāti Kahungunu region and a literature review specifically focused on pūrākau and whakapapa of Ngāti Kahungunu. Literature reviewed did not produce many references because I found that there were many disparities between many of the stories and the literature. This case study involved an extensive range of pūrākau and whakapapa. Therefore, for the purpose of this publication I will focus on the awa, Ngaruroro-Mokotuararo-ki-Rangatira.

Ko wai te awa, Ka titiro whakararo ki te awa o Ngaruroro-Mokotuararo-ki-Rangatira
What is the name of the river, looking downward to the river of Ngaruroro-Mokotuararo-ki-Rangatira

Ngaruroro Awa (as seen in *Figure 1*), owes its name to the tidal influx of fish, which penetrated well into the interior of the river. This is just one version of the whakapapa of this awa name and it came from the explorer Mahu Tapoanui. He was in the Ngāti Kahungunu area, when his dog disturbed a shoal of upokororo (grayling fish) while crossing the river. The fish (upokororo) took fright and fled up the river, creating ngaru (waves), it has since been known as Ngaruroro (Parsons, 2013). While most people only refer to this awa as Ngaruroro, its full name is Ngaruroro-Mokotuararo ki Rangatira. Mokotuararo is the name of one of Ruawharo's sons. Ruawharo sacrificed his son at the mouth of Ngaruroro in order to make sure the people of Ngāti Kahungunu will have an abundance of food for his descendants for the rest of time. Rangatira is said to be the name of another awa that branches off Ngaruroro, or the name of a place in which this branch of the awa flows to.

Ngaruroro is a long river, the headwaters lie beyond the Kaweka and the Ruahine Ranges then break onto the Heretaunga plains through a gorge at Maraekakaho. Ngaruroro has changed course many times due to natural disasters such as flooding. The great flood of 1867 caused the biggest change of course as it diverted the awa to Pakowhai via Omahu (Parsons, 2013).

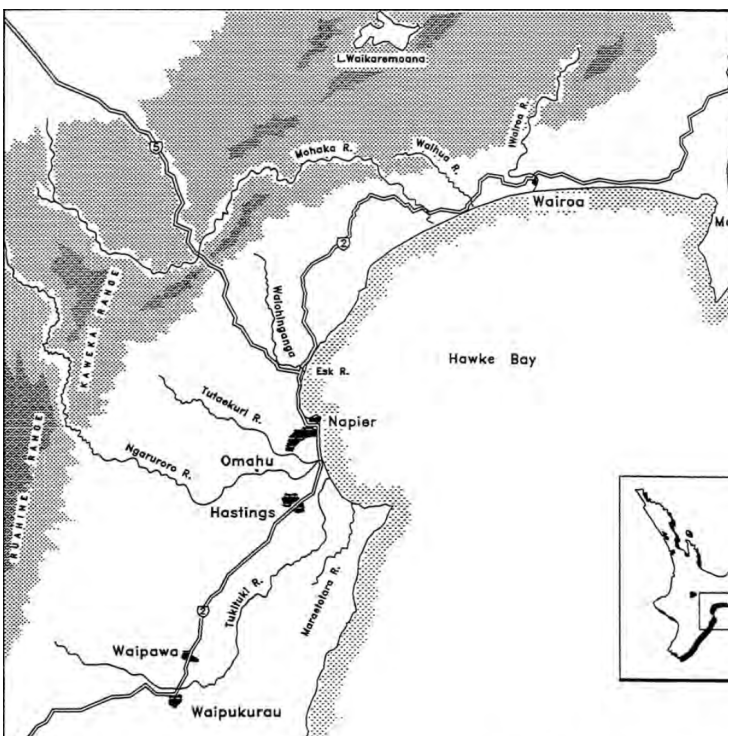


Figure 1 *Modern location map of Ngāti Kahungunu region. Adapted from Te Whanganui a Orotu Report. In Waitangi Tribunal (1995, p. xiv).*

At different periods of occupation, the Ngaruroro Awa became a tribal boundary. Rangitāne and Ngāi Tara iwi were located on the South bank of the river, these two iwi occupied Heretaunga before Ngāti Kahungunu migrated (Parsons, 2013; Pishief, 1997). It was difficult to find any literature detailing any accounts in which Kahungunu himself was within the Heretaunga region. However, a local historian recounts a story to me about him and his father Tamatea Pokai Whenua.

Tamatea Pokai Whenua

Tamatea Pokai Whenua, also known as Tamatea Ure-Haea is a well known and avid explorer. As Mitchell (1972 p. 56) put it "he had in his veins the blood of the Pacific Ocean Viking, his grandfather (Tamatea Arikinui), and the blood of one who could stride over geograpical obstacles, [like] his father (Rongokako)". Tamatea Pokai Whenua and his wife Iwipupu had a son named Kahungunu. Kahungunu was born at Tamatea's pā, Tinotino, that was built at Orongotea on the North West shore line of the Hokianga (Mitchell, 1972). Being the explorer that Tamatea was known to be, there are many stories of his journeys both on the water and the land. The one that will be shared is a story that was told to me from a local Hawkes Bay historian. It is known that Kahungunu settled in the Mahia region with wife Rongomaiwahine. It is also known that Kahungunu did not spend much time in the Heretaunga region. However, this story retells of a father-son trip between Tamatea Pokai Whenua and Kahungunu in which they travelled up the Ngaruroro River, naming many places along the way. Italics is used to put emphasis on the story being told and will be used throughout.

> *He [Tamatea Pokai Whenua] brought Kahungunu down here to the Ahuriri Harbour on a sort of father and son bonding session when Kahungunu was still a boy. They camped around the islands [one island known as Tapu-te-ranga) in around the [Whanganui-a-roto, lagoon] harbour [of Napier] for several weeks just enjoying the kai moana and there would have certainly been some of Whatu Mamoe[2] here at that time. Then they went off, left their waka, which at the time was Takitimu II and then they made their way up the Ngaruroro River with a group of followers and a lot of the place names further up the river are named from that journey. Place names like Otupoupou, which is just in front of the Omahu Marae area (seen in figure 1), that was where he looked in his basket, a calabash one, and he thought one of his lizards had died, one of the ones he had picked up down here and so he had a stick and poupou, prodded it and it opened its mouth and he saw it was still alive so they named the place here it happened Otupoupou. Further up the river at Omahu is Ohiti or Owhiti if you say it correctly. That was named from something that had to do with that, that trade. Torohanga was another one. Tamatea stopped at a rock sitting on the hillside and he said a prayer to his atua through the rock. But as you go up the river almost all the place names right up to the Ruahine Ranges and beyond are named from different events that happened on that trip* (Personal communication,

22 January 2017).

I find this story very exhilarating knowing that both Tamatea Pokai Whenua and Kahungunu travelled along the Ngaruroro River. Although the river has changed direction since then it would be a great opportunity to not only map this journey but also to walk or paddle it as well, as we retrace the journey of our ancestors.

Kaitiaki of Ngaruroro

There are two known taniwha of the Ngaruroro; Karukaru and Wahaparata. The kaitiaki of our whānau marae, Kohupātiki is Wahaparata. A local historian explains more.

> *The two that I've been told, one is further up the river called Karukaru, I was talking to [a kaumatua from Bridge Pā] one day and I said, I was over at anonymous A3 recently and she was telling me about Karukaru the taniwha of the river at Omahu. But I said that must have been your taniwha in the past because the river didn't flow through Omahu until after 1867, it flowed through Roys Hill behind Flaxmere over near Bridge Pā right down Longlands Road and back to Havelock North. When I mentioned Karukaru, anonymous B picked it up and she said that was our taniwha, its rua was where Te awa o te atua stream flowed into the old Ngaruroro river. That's where our old people said where Karukaru, her lair was. I said that is possible but after 1867 when the river changed course she would have had to change course with it, couldn't live on dry land. When anonymous A talked to me about Karukaru she was at the river at Omahu I know she had red hair but not much more than that. Down at the mouth of river, the taniwha there was in the form of a wave that made its way up the river this was when the tide was coming in, like a small tidal wave. The wave passed Kohupātiki very regularly, particularly for young people there would have been a bit of superstition attached to this wave that came so regularly every 12 hours or so. There was a place on the old Ngaruroro River when it went to Havelock North, there was a place on the river called Te Waha o te Parata which is the point where the tide coming in fizzed out. In other words that's where the waves stopped. This produced the belief that it was this taniwha Parata. The Parata in Māori mythology is a monster that lives deep under the sea and its breathing in and breathing out causing the tides. The fish do tend to follow the incoming tide [bringing kai with it]. Anonymous A also told me she looked after the children of the river. Even if one did drown she would put the body on the side so that they could be found and not washed out to sea* (Personal communication, 22 January 2017).

These stories were just two of many stories that were shared. This knowledge could definitely help to construct a map of the old Ngaruroro Awa, as it flows much differently today. Mapping and retracing the taniwha trails would also be a great journey to undertake, as with the one with Tamatea and Kahungunu. This case study just shows the potential

of something bigger, to be able to map our whakapapa with our whānau for not only our tīpuna, but ourselves in the sense that we get a strong understanding of who we are, and the whakapapa in which we all come from.

Conclusion

This case study exhibits how mapping geographical and genealogical connections can be done, simply by following the knowledge of Māori oral traditions, which are now embedded in pūrākau. It is these pūrākau and our whakapapa, which can guide and transcend the mapping of pēpeha. Our engagement with these ancestral landscapes is the most precious and understanding the opportunities to learn from this should not be taken for granted. The prospect to map pēpeha sends me in the direction I want to explore. The expectation is to enhance knowledge of our pēpeha and whakapapa as well as affirming our Māori identity and health and wellbeing.

Case Study 3: National Science Challenge Sustainable Seas Hui-te-ana-nui: Understanding Kaitiakitanga in the Marine Environment by Ngahuia Mita, Anne-Marie Jackson and Hauiti Hakopa

The *National Science Challenge Sustainable Seas Ko Ngā Moana Whakauka* is a 10 year programme of research with a primary objective to "enhance utilisation of our marine resources within environmental and biological constraints". Our Project is 3.1.1 entitled Hui-te-ana-nui: Understanding kaitiakitanga in our marine environment (Hui-te-ana-nui). This research had two objectives. Firstly to examine mātauranga associated with the marine environment through archival research and examination of key texts and; secondly to undertake a desktop examination of literature, reports and frameworks relating to Māori perspectives of the marine environment. The project team was Dr Anne-Marie Jackson (nō Ngāti Whātua), Ngahuia Mita (nō Te Aitanga-ā-Māhaki) and Dr Hauiti Hakopa (nō Ngāti Tūwharetoa). Ngahuia Mita created this innovation from the findings of Objective 1.

We sourced and examined ancient karakia (incantations), mōteatea (chants), pēpeha (tribal sayings), whakataukī (proverbs), and pūrākau (stories) regarding the marine environment available through the Hocken and Alexander Turnbull libraries, sources within the Journals of the Polynesian Society and Ngā Moteatea (collected and edited by Tā Apirana Ngata and Pei Te Hurinui Jones). We built upon pilot archival work undertaken at the Hocken Library, Archives New Zealand and National Library (completed by Ms Ngahuia Mita in collaboration with Dr Jackson and Dr Hakopa) funded through Ngā Pae o te Māramatanga. The key method for this research was archival research including retrieval, examination, databasing and analysis of the material. We also used contemporary literature where necessary in order to give further explanation to contrast and compare ancient practices derived from archival sources with current Māori beliefs; and practices associated with kaitiakitanga of the marine environment today.

One of the most important outcomes of Hui-te-ana-nui was to provide whānau, hapū, iwi and communities with a plethora of mātauranga associated with kaitiakitanga

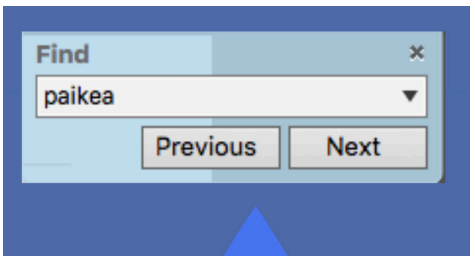
within the marine environment. Information, which can be used in practical ways to inform engagement with and management of the marine environment. For the purposes of Hui-te-ana-nui we have created an example of what a map of archival sources could look like and how individuals, whānau, hapū, iwi and communities could access and utilise these sources via a map. As part of the data collection process for Hui-te-ana-nui the archival sources, that were collected, used for the body of the report, were tabulated and created a database of sources categorised by keywords. The exemplar of the map we have created was done using Prezi (a presentation tool) in order to show how these sources could be organised and displayed on a map.

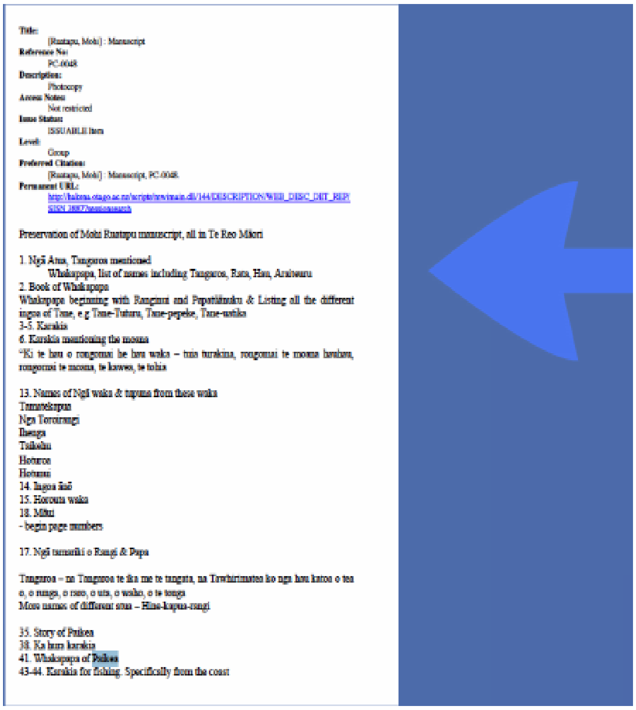
However, in order to create a usable map for this material Google maps, Google earth or other types of GIS software could be utilised. The key idea for presenting the data in this way is to show the relationship of the archival material and their locality and therefore the whānau, hapū, iwi and communities within this area. The benefit for viewing and analysing the material in this way is that it can provide valuable archival and historical information about kaitiakitanga in specific locations and allow whānau and communities to access them.

For the purposes of this example, we have used a piece of archival material specifically connected to Whangarā and Te Tairāwhiti (the East Coast of the North Island) where Ngāhuia has whakapapa connections. The map begins on a large scale with a full size map of Aotearoa, New Zealand, which we have named Te Mahere Kaiao o Aotearoa, the living map of Aotearoa. The map then zooms in to a closer view of the East Coast, and then further in showing Whangarā specifically. The next aspect of the map displays an area which contains links to, he kiriata (video/videos), he kōrero (discussion/oral recordings) and ngā pānui (written documents). The figures below demonstrate the features of this map that we have discussed. Following this is a landing page, which demonstrates three options to access resources video, oral and written. The examples we have given here are what could, potentially, be shown through accessing both the he kiriata and ngā pānui tabs. Specifically, a video showcasing Whangarā marae and the surrounding area as well as an archival document that pertains to Ngāti Konohi and Ngāti Porou ancestor Paikea. This document, written by Mohi Ruatapu, includes whakapapa information pertaining to Paikea and other tūpuna, as well as stories and whakapapa. Should this map go on to be created as an interactive database of archival and other materials we have also considered the importance of maintaining the mana of the sources and the whānau, hapū and iwi to whom they ultimately belong. Therefore, it is thought that within a potential map and database there would be levels of access. At the discretion of the whānau hapū, or iwi that they belong to, there would be a firewall system, which, would allow certain people access to parts of the map or certain sources using a specific username and password.

The benefits of creating Te Mahere Kaiao, or a living map are that it enables us to not only share the archival and secondary sources that we have accessed throughout the project, it also enables others to use these in a practical way. Organising archival material through the process of building a map also allows us to align the pūrākau and whakapapa

kōrero within the locations, which they come from. This means that ecosystems based management in these areas would be informed by the mātauranga held within archival materials, in these areas. Below is a set of images that show each step of using the map, as described previously. These images create an example for what a possible map of archival material and secondary sources based on our research for Hui-te-ana-nui.





Title:
[Ruatapu, Mohi] : Manuscript
Reference No:
PC-0048
Description:
Photocopy
Access Notes:
Not restricted
Issue Status:
ISSUABLE Item
Level:
Group
Preferred Citation:
[Ruatapu, Mohi] : Manuscript, PC-0048.
Permanent URL:
http://hakena.otago.ac.nz/scripts/mwimain.dll/144/DESCRIPTION/WEB_DESC_DET_REP/SISN 3887?sessionsearch

Preservation of Mohi Ruatapu manuscript, all in Te Reo Māori

1. Ngā Atua, Tangaroa mentioned
Whakapapa, list of names including Tangaroa, Rata, Hau, Araiteuru
2. Book of Whakapapa
Whakapapa beginning with Ranginui and Papatūānuku & Listing all the different ingoa of Tane, e.g Tane-Tuturu, Tane-pepeke, Tane-uetika
3-5. Karakia
6. Karakia mentioning the moana
"Ki te hau o rongomai he hau waka – tuia turakina, rongomai te moana haehae, rongomai te moana, te kawea, te tohia

13. Names of Ngā waka & tapuna from these waka
Tamatekapua
Nga Toroirangi
Ihenga
Taikehu
Hoturoa
Hoturoa
14. Ingoa ika
15. Horouta waka
18. Māui
- begin page numbers

17. Ngā tamariki o Rangi & Papa

Tangaroa – na Tangaroa te ika me te tangata, na Tawhirimatea ko nga hau katoa o tea o, o runga, o raro, o uta, o waho, o te tonga
More names of different stars – Hine-kapua-rangi

35. Story of Paikea
38. Ka huru karakia
41. Whakapapa of Paikea
43-44. Karakia for fishing. Specifically from the coast

Concluding thoughts of the three case studies

Indigenous peoples, including Māori, around the world face unique challenges pertaining to their ancestral territories in planning for and protecting their notions about those ancestral territories. For Māori, issues related to mana whenua, the protection and maintenance of cultural assets, their language, their histories and their stories will benefit from the creation of maps that reflect their notions of mana. Conceding this, mapping technologies such as GIS offers a unique suite of tools that will go a long way in moving toward this objective. The key to getting it right is to ensure the mana and tapu of all the whenua kōrero remains intact during any part of the process; this requires an understanding of cultural conventions.

Endnotes

1. Te Koronga is a Māori research excellence group at the University of Otago, Dunedin, New Zealand co-led by Dr Hauiti Hakopa and Dr Anne-Marie Jackson.

2. Mamoe are from the Ngāti Awa from Hokianga and Whakatane (Pishief, 1997). They were led by their chief Koau Pari (Pishief, 1997). They are also known to be the people who built Ōtatara and Hikurangi Pā (Pishief, 1997). Whatu Mamoe may or may not be connected to the hapū from Ngāi Tahu, the connection has not been found (Personal communication, 22 January 2017).

3. The historian mentioned people in his interview that will remain anonymous. When they are mentioned they will be referred to as anonymous A and anonymous B.

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