13.

ME PĒWHEA TE WHAKARAUORA I NGĀ REPO O NGĀTI MANIAPOTO?

NGAHUIA HERANGI (WAIKATO-MANIAPOTO, NGĀTI RAUKAWA KI TE TONGA – KA AWATEA SERVICES LTD), KELLY RATANA (NGĀTI TŪWHARETOA, TE ARAWA – TAIHORO NUKURANGI)

A muri kia mau ki tēnā, kia mau ki te kawau mārō, whanake ake, whanake ake

Therefore, hold fast to the example of the cormorants' unyielding charge, to forever progress onwards and upwards

The project team would like to acknowledge Ngā Tai o Kāwhia, Hauāuru ki Uta and Nehenehenui Regional Management Committees for the opportunity to work alongside them throughout this project. It was an honour and privilege to share and learn together and we sincerely hope that the repo inventory and strategic framework will be a useful tool for directing future restoration efforts for whānau and the wider community.
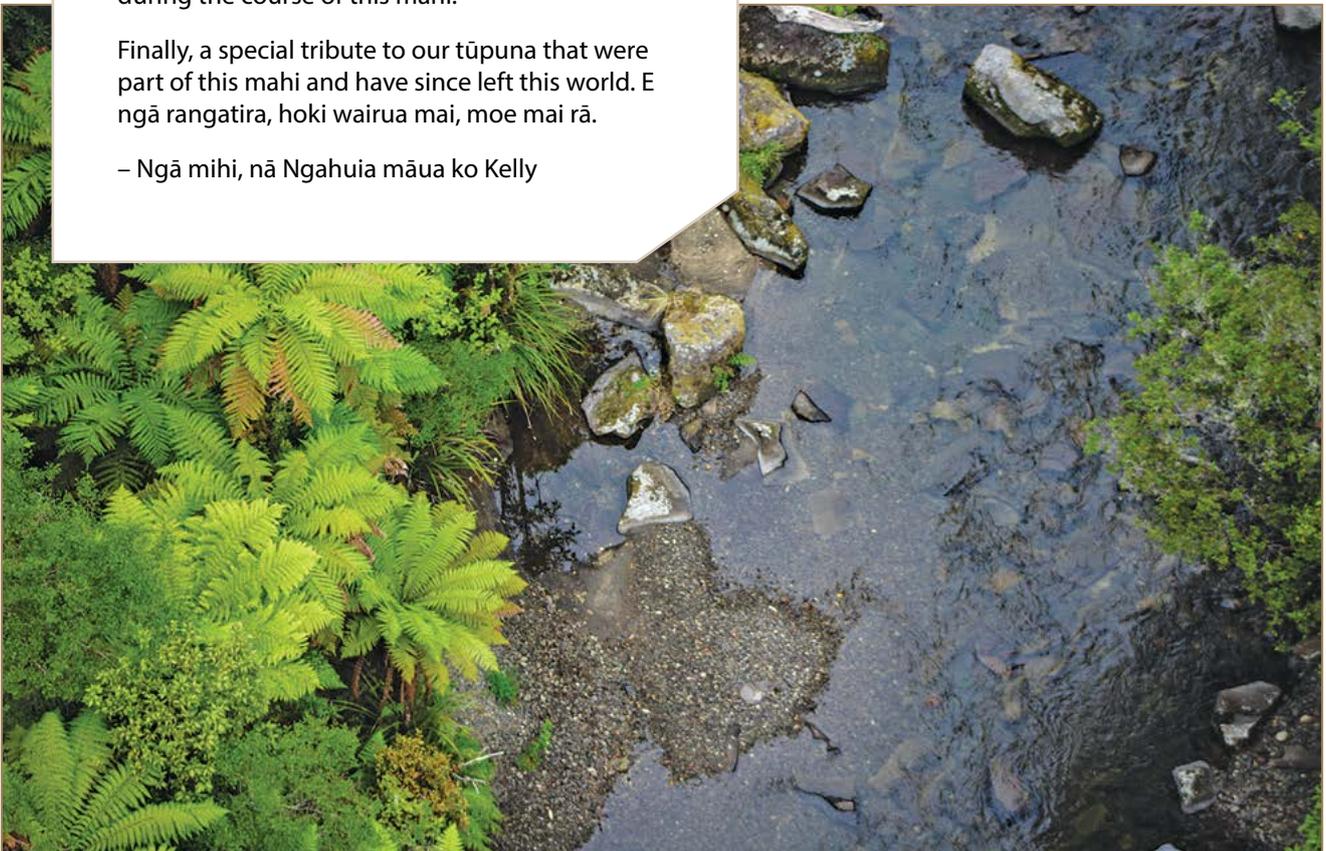
We also thank Te Wai Māori Trust, Hīkina Whakatutuki (Ministry of Business, Innovation and Employment – MBIE), Maniapoto Māori Trust Board (MMTB), and Taihoro Nukurangi (NIWA) for funding and supporting this project. We acknowledge all of the kaimahi involved from both the MMTB and NIWA for their support and technical guidance during the course of this mahi.

Finally, a special tribute to our tūpuna that were part of this mahi and have since left this world. E ngā rangatira, hoki wairua mai, moe mai rā.

– Ngā mihi, nā Ngahuia māua ko Kelly

'For Maniapoto, wetlands and swamps are highly valued as traditional sources of fisheries and materials........part of the ancestral landscape........sources of mahinga kai........also provide materials and resources for rongoā, raranga and whakairo and were important places to store and preserve taonga.'
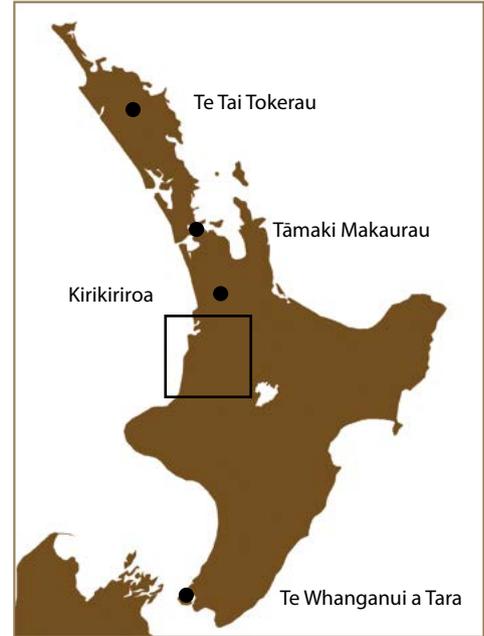
– Ko Tā Maniapoto Mahere Taiao

Previous and current page: Upper Waipa River. Photo: Maniapoto Māori Trust Board

HOW DO WE GO ABOUT RESTORING THE WETLANDS OF NGĀTI MANIAPOTO?

In 2014, the Maniapoto Māori Trust Board (MMTB) and Taihoro Nukurangi (NIWA) collaborated on a project to identify marae (Māori social and cultural centres) aspirations, values, issues, and priorities for the restoration of the Upper Waipā River catchment (Fig. 1). As a result, 53 priority actions were identified. The protection and restoration of repo (wetlands) and puna (freshwater springs) were top priorities, resulting in the formation of these key project objectives:

1. Identify repo and puna, and associated mātauranga (knowledge) within the rohe (region)
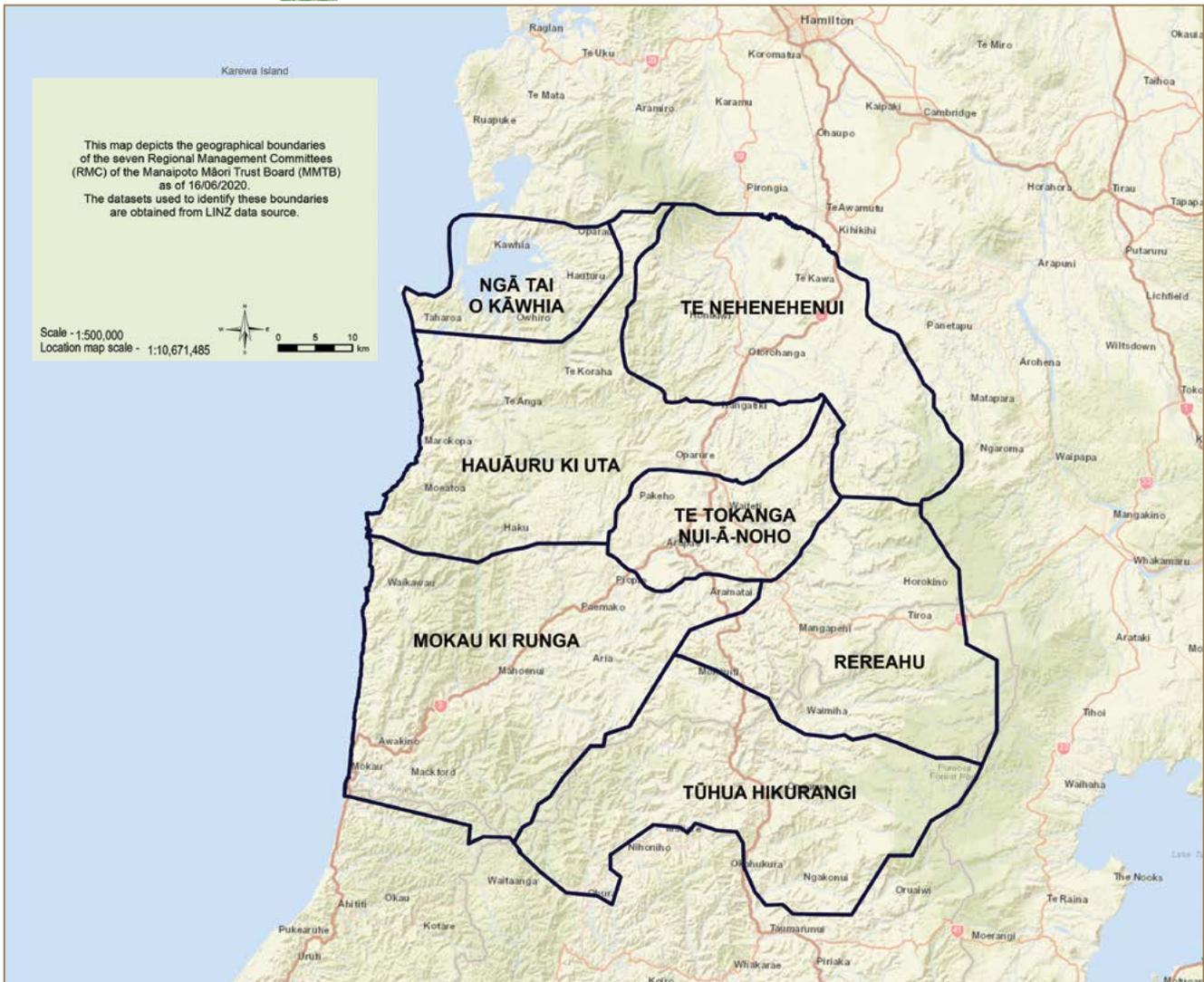2. Develop a strategic framework to prioritise restoration efforts.

Figure 1. Map of Maniapoto Iwi Regional Management Committee Boundaries 2020. Source: Maniapoto Māori Trust Board

UNDERSTANDING THE CHALLENGES

The restoration of repo and puna requires knowledge regarding their location, size and significance, as well as the desire for restoration to occur.
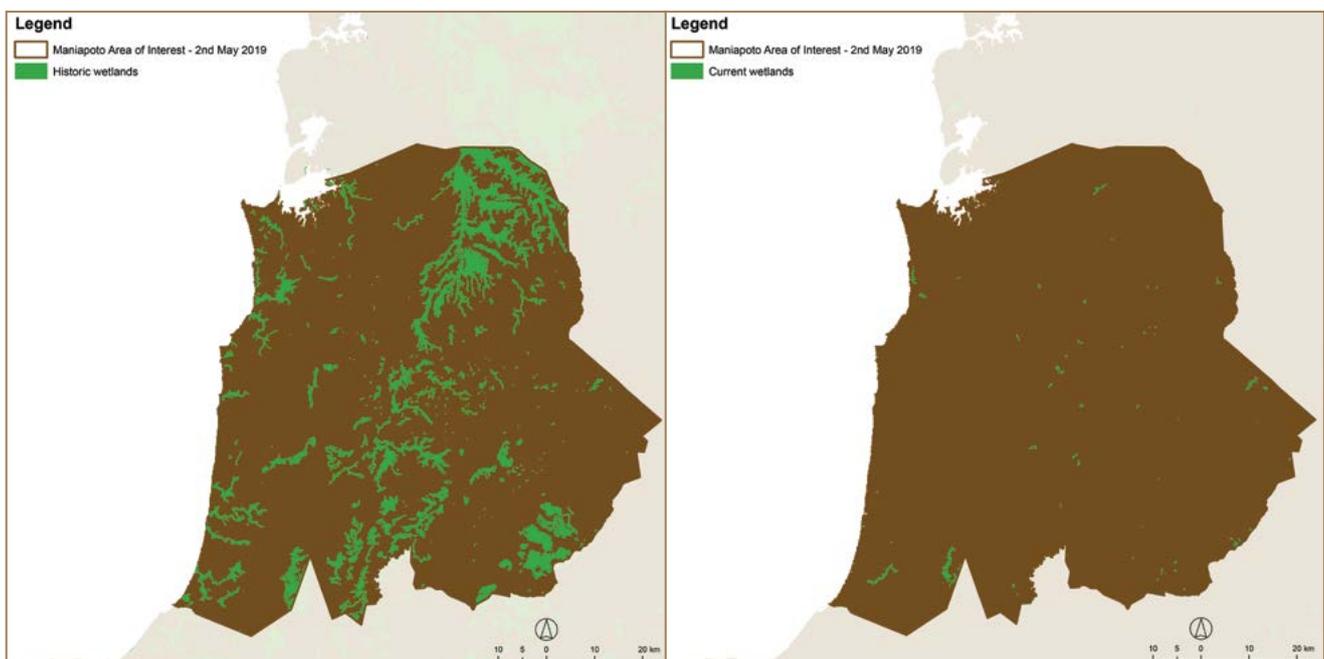
Repo are increasingly viewed as integral components of the landscape, but in 2008 only 8% remain in the Waikato region, compared with coverage in 1840 (Fig. 2). While restoration and protection of these ecosystems are desperately needed, it can be overwhelming to think about the large amount of mahi (work) needed, often with too little resources available, and limited or no suitable strategies to guide restoration priorities. Furthermore, for many hapū (subtribes) and iwi (tribes), as well as for Maniapoto whānau (families), there was a lack of clear priorities defined by them, using their mātauranga ā-hapū, ā-iwi (iwi and hapū knowledge).

The Ngā Repo o Maniapoto project sought to address these challenges by developing an inventory and a decision-support framework to strengthen the capacity of whānau and the Maniapoto Māori Trust Board to action their restoration priorities.

Whānau checking maps and mātauranga shared.
Photo: Ngahuia Herangi

This map depicts the tribal boundaries of Ngāti Maniapoto for the purpose of its Treaty of Waitangi settlement. This map illustrates the historic (1840) and current (2008) wetland extent within the Ngāti Maniapoto boundaries. Ngāti Maniapoto recognises that there are areas where there are common interests and shared mana with neighbouring iwi that reflect mutual historical association and whakapapa relationships.

Sourced from LINZ Data Service and licenced for re-use under the Creative Commons Attribution 4.0 New Zealand licence.

Figure 2. Maps of wetland historic (1840) and current (2008) extent (represented in green) in the Maniapoto tribal rohe, Waikato region. Adapted from Ausseil et al. 2008, Manaaki Whenua – Landcare Research

MEETING THE CHALLENGE GATHERING OUR MĀTAURANGA

With initial support from Te Wai Māori Trust, MMTB, and NIWA kaimahi (staff) held wānanga (workshops) with whānau from Ngā Tai o Kāwhia Regional Management Committee (RMC) to develop Ngā Repo o Kāwhia.

To gather the necessary mātauranga to guide the mahi, the following techniques were used:

*   Interviews were held using a novel mapping technique called 'eBeam', which helped identify repo, puna and mātauranga-ā-hapū associated with repo in the rohe of Maniapoto.
*   Through wānanga, a strategic decision support framework was also developed to help whānau prioritise their restoration efforts.

The Vision Mātauranga Capability Fund (VMCF, Ministry of Business, Innovation and Employment – MBIE), enabled us to further refine and improve the process and framework with two further RMCs – Te Nehenehenui and Hauāuru ki Uta.

Throughout the entire project, kaimahi from MMTB and NIWA worked hard to nurture a collaborative relationship. This was established from project set-up through to the ongoing work to action restoration at the priority sites identified. The steps involved are outlined in Figure 3.

Much of the mahi involved in faciliating hui and collecting information was led by MMTB in partnership with their whānau. NIWA provided the support and technical role to collate and map the info, and help develop the final models for repo prioritisation.

From the perspective of our team, this exercise proved an exemplar model for empowering whānau at 'the flax roots', while providing the technical support to help them both lead and meet their expectations for the project outcomes.
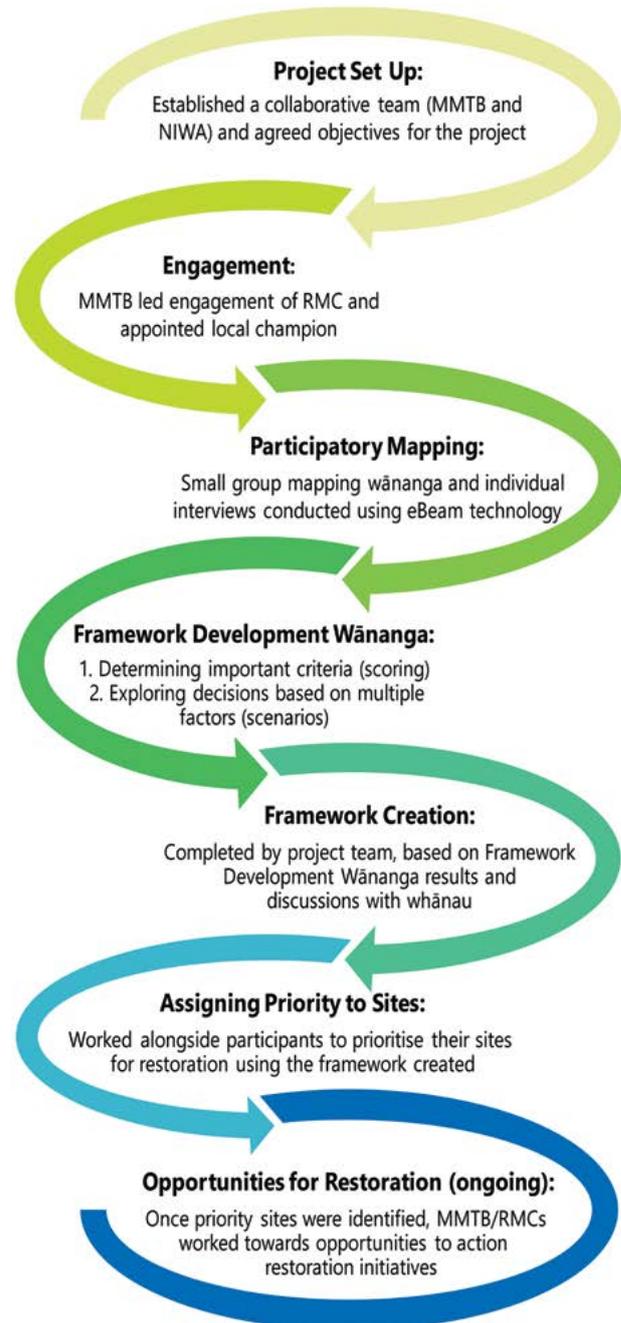

Project Set Up:
Established a collaborative team (MMTB and NIWA) and agreed objectives for the project

Engagement:
MMTB led engagement of RMC and appointed local champion

Participatory Mapping:
Small group mapping wānanga and individual interviews conducted using eBeam technology

Framework Development Wānanga:
1. Determining important criteria (scoring)
2. Exploring decisions based on multiple factors (scenarios)

Framework Creation:
Completed by project team, based on Framework Development Wānanga results and discussions with whānau

Assigning Priority to Sites:
Worked alongside participants to prioritise their sites for restoration using the framework created

Opportunities for Restoration (ongoing):
Once priority sites were identified, MMTB/RMCs worked towards opportunities to action restoration initiatives

Figure 3. Key steps completed during the project

Interviewing key knowledge holders

The identification of existing repo and puna involved interviewing knowledge holders. During these sessions we asked questions regarding:

- the location of repo and puna
- their size
- their significance (e.g. fisheries, function – gathering kai or collecting paru or raupō, cultural state, or use)
- the desire for restoration to occur at a site
- the feasibility of restoration to be achieved immediately, at a later date, or never (i.e. physical and legal access to the site)

Participatory mapping and data collection

To capture this information we used eBeam technology to aid the participatory mapping method. This provides participants with a map on which to indicate, or 'digitise-as-you-go', location of a repo or puna using a stylus 'pen' (a pen-like mouse that is able to draw on the projected surface), digital screen, and Geographic Information Systems (GIS). Participants draw on the image projected onto the screen using the stylus pen, and digitally capture the location of their sites. This was used in both one-to-one interviews as well as in group mapping sessions (Fig. 4).
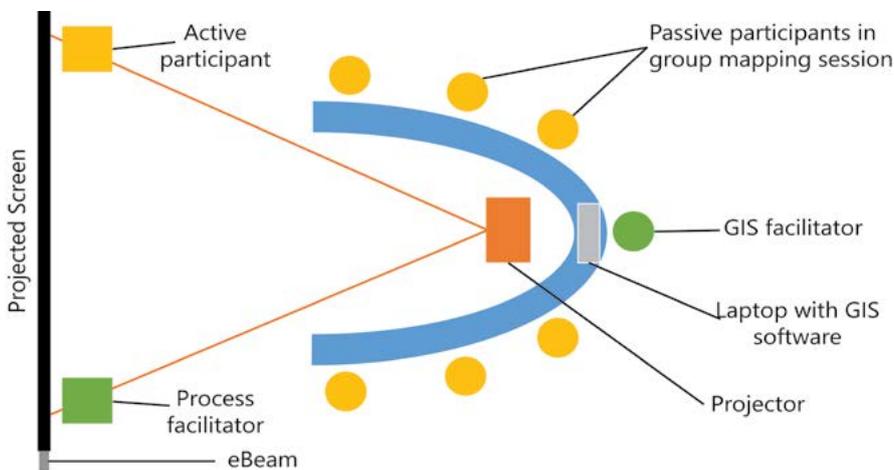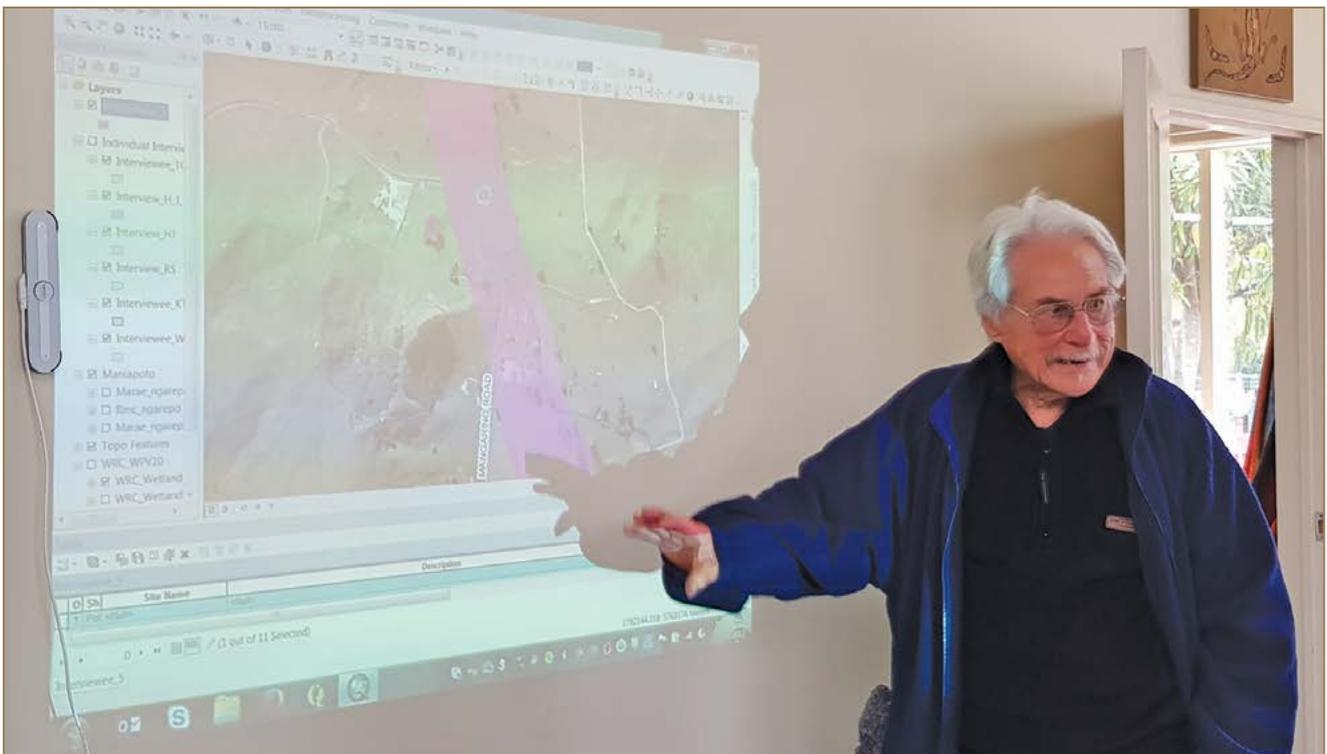

Figure 4. Example of setup for group mapping session

Actual interview with key knowledge holder taking place. Photo: Ngahuia Herangi

RESTORATION FRAMEWORK WĀNANGA

The framework for prioritising restoration efforts was developed through two wānanga using scoring and scenario exercises. These sessions reflected on some of the key aspects considered when whānau were deciding in what order they would like restoration to occur. They also explored key factors that made a site important to them and how they made these decisions. The whakaaro (thoughts) shared in these wānanga formed the basis for developing the framework concept, and eventually a decision-support matrix.

In the framework development wānanga we used a scoring activity with participants from each of the RMC's – Ngā Tai o Kawhia, Te Nehenehenui and Hauāuru ki Uta. Each participant were given 'dots' to allocate towards each value (e.g. kai; mahi; wai), use (e.g. repo for harvesting watercress and tuna (freshwater eels); site where paru (muds used for dying) was found; puna (freshwater spring) used for drinking water), or association (e.g. nil; kōrero hītori (historical associations)), which were then tallied to help inform the prioritisation framework.

Framework development wānanga scoring activity with participants of Ngā Tai o Kāwhia. Photo: Ngahuia Herangi

Framework development wānanga scoring activity with participants of Te Nehenehenui and Hauāuru ki Uta. Photo: Ngahuia Herangi

Developing a decision support matrix

A decision support matrix (see Table 1) is a logical structure for whānau to use when assessing all sites and assigning them to a priority tier (Fig. 5). The aim was to allow for more structure and transparent prioritisation to support restoration decision-making. Four key areas of importance for prioritising were identified: kai, mahi/other, associations, and access.

The matrix was populated with mātauranga shared during interviews and, together with whānau, was used to prioritise sites into one of the four tiers. This resulted in an initial set of priorities, with sites ranging from those to be actioned immediately, to those that required a longer term strategies to complete. In total, 266 sites were captured through interviews with 19 knowledge holders. Sites comprised 104 repo, 86 puna, and 76 other features all mapped using eBeam. Twenty-four taonga species (culturally important) were also identified and documented with each site, including native plants – harakeke (NZ flax) and raupō (bulrush), and fish – kākahi (freshwater mussels) and tuna (freshwater eels) (Fig. 6). This infomation is a huge asset for whānau as they begin restoration of their valued repo and puna.

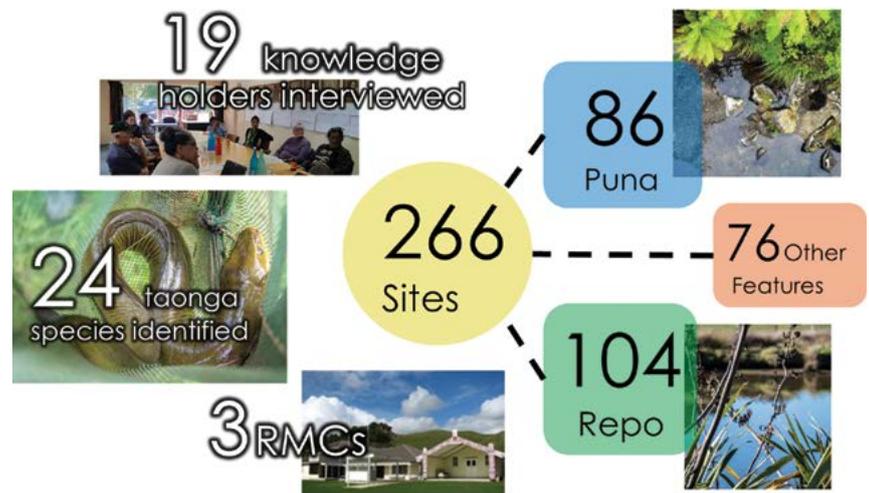**Figure 5. Each site was assessed with whānau and assigned into one of these four priority tiers**

Figure 6. Mapping inventory

Table 1. Decision support matrix developed as a framework to structure mātauranga and help guide the assignment of restoration priorities (red box). This matrix is populated with hypothetical example sites.

SITE ID	SITE NAME	DESCRIPTION	WHO?	PUNA/REPO/OTHER?	WAI	KAI MOST IMPORTANT?	KAI OTHER USE?	MAHI/OTHER MOST IMPORTANT?	MAHI/OTHER OTHER USE?	ASSOCIATION WĀHI TUPUNA?	ASSOCIATION KŌRERO?	ACCESS PROPERTY RIGHTS?	ACCESS RELATIONSHIPS?	ACCESS PHYSICAL?	MEA MOTUHAKE?	CONDITION?	PRIORITY?	WHY?
1	Te Puna	Puna used for drinking water, also site where patu was found.	JB	Puna	Āe					Kao	Āe	Kao	Aua	Āe		Poor	3	Drinking water site, relationship with owner unknown, also poor condition, not sure if still present.
2	Te Repo	Repo for harvesting watercress, harakeke and tuna. Mānuka branches used for making hīnaki.	JB	Repo	Kao	Tuna, Watercress		Harakeke	Mānuka	Kao	Kao	Āe	Āe	Āe		Ok	1	Important kai and mahi site, accessible through property righ, condition ok, able to improve with restoration efforts.

Repo and puna inventory

Each site mapped as a part of this project added to the growing inventory of repo and puna identified throughout the Maniapoto rohe. The inventory was also checked and verified by whānau throughout our wānanga, allowing time for whānau to amend and ensure accuracy. Sites captured during interviews were stored in a spatial inventory (GIS layer), held by MMTB for exclusive use by the RMC and MMTB (unless otherwise approved by whānau). The inventory can be updated and added to as more interviews are conducted or as more knowledge is documented.

Example communication mechcanism developed for whānau

COMMUNICATING OUR MAHI AND PROTECTING INFORMATION

The project team wanted to ensure whānau were able to walk away from the process confident that they could communicate their mahi and its outcomes to their various committtee, marae hui (meetings), and hapū forums.

We created summary report booklets and large posters about the project, including names of repo and puna. Large maps identifying their sites were given to the whānau and marae as a koha (gift) and acknowledgement of their involvement, knowledge, and energy. We were also careful to create versions that had varying levels of entry – with one version each for the Regional Management Committee, containing all their whakaaro and kōrero (discussion), and separate versions for MMTB and NIWA that contained only information that whānau agreed could be shared publicly.

Whānau checking maps and mātauranga shared. Photo: Ngahuia Herangi

KEY LEARNINGS

Kaitiaki (guardians), mana whenua (Indigenous people with primary rights and responsibilities over an area), and hapū are often the most reliable source of knowledge regarding the location of repo and puna. This is evidenced by 55 different puna being mapped in our project compared with 2 noted on a standard NZ topographic map of the Maniapoto region. This is a significant contribution to the data set to which the RMC's and MMTB now have access.

The way whānau use and physically interact with repo is often the most tangible method through which they can express their values. These are underpinned by concepts such as mauri (life force), whakapapa (geneology), manaakitanga (hospitality), and kaitiakitanga (the exercise of guardianship). Prioritisation of repo for restoration is then driven by the desire to restore a more holistic sense of well-being across all of these values.

Advantages to eBeam as a novel methodology include:

- Interactivity, ability to zoom in and out, and enable or disable different layers of data (e.g. topographic maps, satellite imagery, marae locations) in the interview process.
- The accuracy of capturing shapes (as opposed to points) on the landscape.
- The efficiency of the process. In previous years, hardcopy maps and vivid pens were used, which required transferring and digitising data, a system that compromised the accuracy of the extent of the area.

'This process for restoration of wetlands was more than what we as kaitiaki can physically do for our repo and puna...it's also about restoring connections and, importantly, about restoring people.'

– Participant in wānanga

- Initially, many participants were apprehensive about orientating themselves on the digital maps; however, as the interview progressed, they became more confident. The facilitator often had to guide the mapping, but in all but a few cases participants directed the drawing of shapes, remaining very active and ensuring accuracy.
- Despite initial apprehension, by the end of the process, participants often commented on how much they enjoyed the process.
- Throughout the life of the project the use of eBeam technology (hardware and software) was supplied by NIWA. Since then, MMTB have purchased their own eBeam technology.

Other learnings we also noted included:

- Despite MMTB and NIWA having an established relationship for over 6 years. Regardless, we have an agreement and process for protecting the kōrero and information gathered from the project.
- The strategic restoration framework was seen as a way to structure the kōrero, highlight the collective values of these sites, and support a more transparent whānau priority-setting process.

Framework development wananga scoring activity with participants of Te Nehenehenui and Hauauru ki Uta. Photo: Ngahuia Herangi

WANT TO LEARN MORE?

Note: If you are having problems with the hyperlinks below try copying and pasting the web address into your browser search bar.

References

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Levine AS, Feinholz CL 2015. *Participatory GIS to inform coral reef ecosystem management: Mapping human coastal and ocean uses in Hawaii.* Applied Geography 59: 60–69.

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Tipa G, Williams E, Herangi N, Dalton W, Skipper A, Iti W 2014. *Maniapoto priorities for the restoration of the Waipā River catchment. NIWA Client Report, WEL2015-3.* Hamilton, New Zealand: NIWA.

Useful websites

eBeam technology
https://www.luidia.com/edge

MBIE Vision Mātauranga Capability Fund
https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/investment-funds/vmcf

Ngā rauranga mo ngā kaupapa Māori GIS Mahere – Data sources for Māori GIS mapping
https://storymaps.arcgis.com/stories/a62e2ca240ec401785b96a05fbf89eb7

Ngā Repo o Maniapoto
https://waimaori.maori.nz/wai-ora-fund/maniapoto-iwi-trust

Ngā Repo o Maniapoto wetland inventory
https://www.niwa.co.nz/te-k%C5%ABwaha/research-projects/ng%C4%81-repo-o-maniapoto-maniapoto-wetland-inventory

Te Kāhui Manu Hokai (Maori GIS network)
https://www.tekahuimanuhokai.org

Te Wai Māori Trust
https://waimaori.maori.nz

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