




## The reconnection between mana whenua and urban freshwaters to restore the mouri/life force of the Kaiwharawhara

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**Auheke:** Kei Aotearoa nei kua roa noa atu ngā tāngata taketake e noho matapopore ana ki o rātou whenua, maunga, moana, roto, awa, kūkūwai me ērā atu pūnaha hauropi wai Māori hoki. I te tau 2017 i tīmatahia e Te Māra a Tāne he kaupapa haere-kōtūi i te taha o te iwi manawhenua a Taranaki Whānui ki te Upoko o te Ika, me ētahi atu hoa haere-kōtūi hoki, me kore ake pea ka whakahoungia te hauropi wai Māori, ngahere hoki o te awa Kaiwharawhara me tōna rohenga wai. Ko tēnei te rohenga wai tino nui rawa i roto i te taone matua o Te Whanganui-a-Tara, ā, he mea kairangi tonu ki te iwi, ki te ao hauropi hoki. Ko te moemoeā mō tēnei kaupapa e pēnei ana: “kia ora mai ano te mouri o te Kaiwharawhara”. Kei tēnei whakaputanga ka tirohia nga tūkanga matua, ngā wero me ngā mea angitu hoki i puaki mai i te wā ka tīmatahia tēnei kaupapa e Te Māra a Tāne. Kei ia hoa haere kōtūi tōna ake tirohanga, engari kotahi tonu te whāinga – kia tautoko te hono mai anō te iwi manawhenua ki tōna rohe. Arā ētahi kaupapa mahi i maea ake hei āwhina kia whakatutukingia tēnei whāinga. Hei tauira: (1) ko ngā rangi whānau i whakaritea kia taki haere mai te whānau o Taranaki Whānui ki Te Māra a Tāne; (2) ko te whakawhitinga o ētahi kākahi mai i Parangarahu me Wairarapa Moana ki te Roto Mahanga kei Te Māra a Tāne. I haere ngātahi te mātauranga me te pūtaiao i te wa ka whakawhitihia ngā kākahi nei. Nā tēnei kaupapa i whai wāhi mai ngā reanga katoa, tamariki mai, pakeke mai, me te aha ka whakatakotohia he tūāpapa mō te mahitahi i waenga i te iwi me Te Māra a Tāne. Kei te haere tonu tēnei kaupapa. Ka mutu ko taua tūāpapa i whakatūngia i runga i nga whāinga i whanake ngātahitia, i runga anō hoki i te whakaute mō ngā momo pūnaha mātauranga maha noa atu.

**Abstract:** In Aotearoa New Zealand, Maori have long held close connections with their lands, mountains, seas, lakes, rivers, wetlands and other freshwater ecosystems. In 2017, Zealandia ecosanctuary based in Wellington partnered with the Maori organisation Taranaki Whānui ki Te Upoko o Te Ika, alongside several others, to restore native freshwater and forest ecosystems of the Kaiwharawhara Stream catchment. The Kaiwharawhara is the largest catchment in the city of Wellington, and despite urbanisation in surrounding areas it has high ecological and cultural values. The vision for the ‘Sanctuary to Sea’ initiative is that the life force of the Kaiwharawhara is healed, “Kia Mouriora te Kaiwharawhara”. We examine the key steps, challenges and opportunities that have emerged from this project. The individual perspectives of project partners highlight a common objective: supporting iwi to reconnect with the land and water. Initiatives which help achieve this objective have included whānau days and the reintroduction of a mahinga kai species. Matauranga Maori and western science together informed the translocation of kakahi/freshwater mussels (*Echyridella menziesii* and *E. aucklandica*) into Roto Mahanga, Zealandia upper lake. This initiative provided a foundation for whānau engagement across ages, setting the scene for long-term collaboration. We discuss the ongoing project, the co-developed objectives and goals on which it is founded, and the development of open and collaborative partnerships that respect diverse knowledge systems.

**Keywords:** ecological restoration, freshwater mussel, kakahi, Maori knowledge, matauranga Maori, Sanctuary to Sea initiative, translocation, urban ecology, Zealandia eco-sanctuary, water catchment

## Introduction

In Aotearoa New Zealand, mātauranga Māori (Māori knowledge), te reo Māori (Māori language) and whakapapa (ancestral lineage) contextualise an intricate relationship between indigenous Māori people, the natural world, and its resources (Pihama et al. 2002; Harmsworth 1997; Marsden 1988). Te ao Māori (Māori worldview) is based upon the interrelationships of the taiao (environment) through the personification of all elements of life within the context of connected whakapapa (Harmsworth & Awatere 2013). This acknowledges a natural order where all living things are interdependent. In te ao Māori, shifts in mouri (life force; mauri in other dialects) of any part of the taiao would cause shifts in the mouri of each related component, resulting in the whole system becoming unbalanced (Harmsworth & Awatere 2013; Lyver et al. 2017a). Through local indicators developed over generations, Māori have been able to monitor fluctuations in the taiao and apply management techniques where appropriate (Townsend et al. 2004; Tipa & Teirney 2006; Panelli & Tipa 2007; Wehi 2009; Lyver et al. 2017b).

Traditional management of freshwater in Aotearoa New Zealand has been significantly disrupted since European settlement (Kahn 1999; Ruru 2009, 2013; Ataria et al. 2018). Furthermore, while the inclusion of tangata whenua (people of the land) in freshwater management is required by both law and policy (Conservation Act 1987, Resource Management Act 2002), many approaches to management have struggled to meaningfully incorporate this (Kitson et al. 2018). Cross-

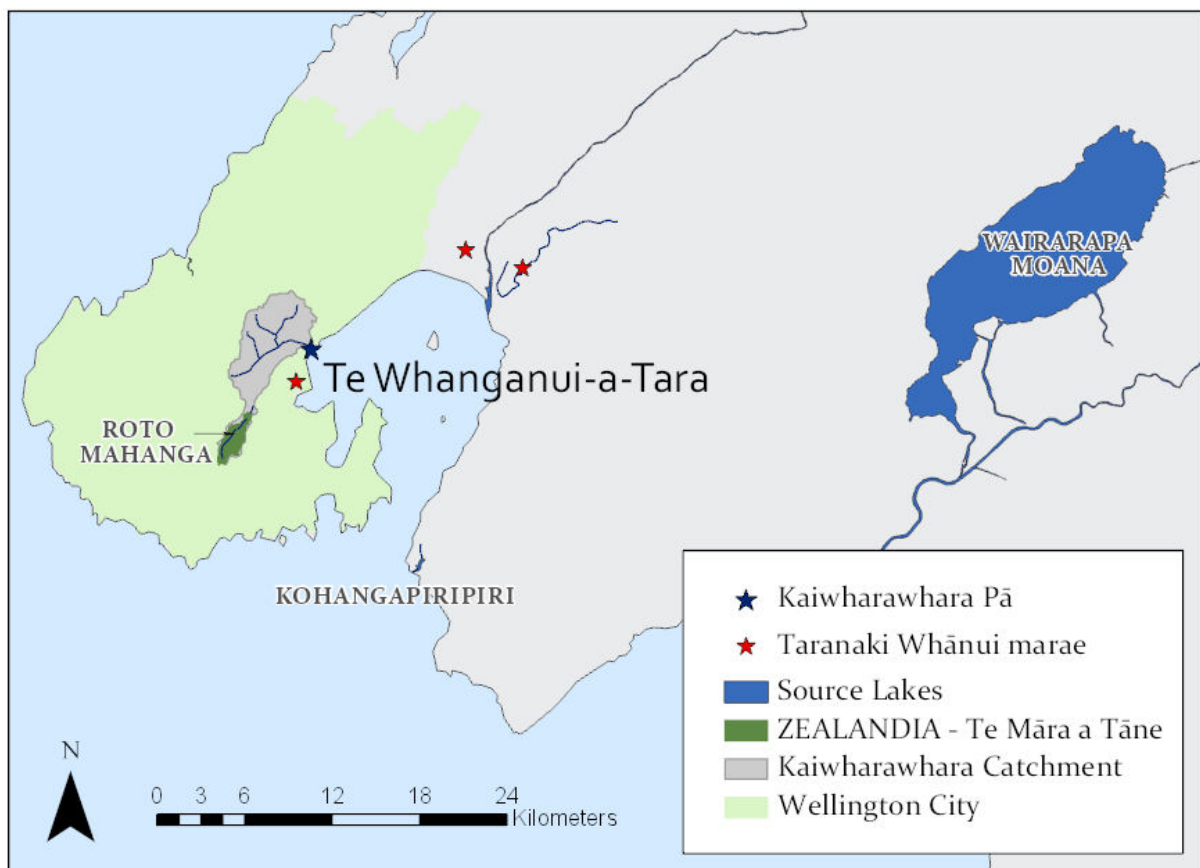
cultural integrated catchment initiatives should involve, if not be led by, indigenous knowledge holders to develop enduring partnerships that will facilitate kaitiakitanga (ethos of sustainable resource management/guardianship), thus benefiting both people and the environment (Clapcott et al. 2018; Hepi et al. 2018; Collier-Robinson et al. 2019).

Here, we outline a case study of disconnection, and the beginning of a reconnection between mana whenua (people with authority over land or territory) and a freshwater system in New Zealand's capital city (Wellington). We use narratives that provide insights into the process and outcomes of this work so far, as well as learnings for future initiatives (Lowe & Fraser 2018). We focus on a kākahi (freshwater mussel; *Echyridella menziesi* and *Echyridella aucklandica*) translocation project to demonstrate how specific projects can draw on mātauranga Māori and support the process of reconnecting with freshwater systems.

## Project Background

### Site description

The Kaiwharawhara, home of Taranaki Whānui, is located on the western slopes of Te Whanganui-a-Tara (Wellington harbour) and is Wellington city's largest water catchment (Fig. 1). Today, the Port Nicholson Block Settlement Trust is the recognised mandated post-settlement authority of the Wellington region representing a number of Taranaki iwi (tribe): Taranaki, Te Ātiawa, Ngāti Ruanui, Ngāti Tama,



**Figure 1.** Map showing location of the Kaiwharawhara catchment in the Wellington region and key areas of interest relevant to the Sanctuary to Sea project.

Ngāti Mutunga and others, collectively known as Taranaki Whānui Ki Te Upoko o Te Ika (hereafter Taranaki Whānui). Taranaki Whānui hold mana whenua for this rohe (area) and have responsibilities as kaitiaki (guardians) for the natural, historical and cultural aspects of the land and water.

The Kaiwharawhara catchment has both historical and cultural importance to Taranaki Whānui, with several hapū (kinship groups) migrating from their homelands in Taranaki to settle in and around Te Whanganui-a-Tara in the early 1800s (Ballara 1959). The Kaiwharawhara in particular is important as one of the earliest Taranaki Whānui kainga (homes) was established in the Kaiwharawhara in 1824–1825 by Ngāti Tama and Ngāti Mutunga iwi, who migrated to the region during the Nihoputa migration (Love 1993). The name Kaiwharawhara references the importance of the area as a traditional mahinga kai (food gathering place) site, specifically for sourcing of the wharawhara plant (coastal astelia *Astelia banksii*) that was both eaten, and used for making garments. Following European arrival the land at Kaiwharawhara was traded by the New Zealand Company, and its inhabitants were eventually forced to relocate elsewhere (Adkin 1959). The catchment underwent significant change, and ultimately suffered from forest clearance, the establishment of two large dams and many culverts and other barriers to natural water flow for the city water supply (Boffa Miskell 2011).

### **Zealandia and Kia Mouriora te Kaiwharawhara/ Sanctuary to Sea**

Zealandia is an organisation and an ecosanctuary; the sanctuary is also known as Te Māra a Tāne. Zealandia staff and volunteers manage the 225 ha sanctuary that was established by the Karori Wildlife Sanctuary Trust in 1996 (Campbell-Hunt 2002). The sanctuary is fenced to exclude introduced mammalian predators, allowing native flora and fauna to thrive. Located at the heart of Wellington City, Zealandia has a 500 year vision to restore a lowland broadleaf-podocarp forest at the headwaters of the Kaiwharawhara stream (Fig. 1). This restoration initiative has, to date, reintroduced 21 species of fauna that were once extinct in the area (Zealandia Te Māra a Tāne Conservation and Restoration Strategy 2018–2038) and mature native trees are becoming increasingly dominant (Blick et al. 2008). The recent spill over of numerous bird species (e.g. tīeke/saddleback – *Philesturnus rufusater*, kākā – *Nestor meridionalis*) and other wildlife beyond the fence has led Zealandia to expand its restoration sights, including through the establishment of a whole-of-catchment restoration initiative, the ‘Sanctuary to Sea’ project (Zealandia 2016). Given Zealandia does not directly manage any land beyond the sanctuary fence, this project is based entirely on collaboration and partnerships.

The ‘Sanctuary to Sea’ project extends on an integrated catchment management framework which has, at its foundation, a collaborative decision-making process to inform action on a holistic continuum from ridge tops to the sea (Phillips et al. 2010; Fenemor et al. 2011). This project recognises that despite the significant impacts of urbanisation on the Kaiwharawhara stream (such as heavy metal contamination from industrial areas and run off from roads and roofs), it still has many ecological and social values (Boffa Miskell 2011). It is the largest catchment (17 km<sup>2</sup>) in the Wellington City area, it has a rich cultural history, and is the only stream in Wellington City with a relatively natural estuary in the Wellington Harbour (Todd et al. 2016). The stream and tributaries also pass through dense cover of native bush, with approximately 34% of the original native bush cover still remaining (Blaschke et al.

2004). The overarching aims of this project are to facilitate the ecological enhancement of the Kaiwharawhara water catchment, and to promote the connection between people and nature while supporting the development of a nature-rich city (Zealandia 2018).

A core goal for Zealandia has been to build a collaborative relationship with mana whenua to support their role to act as kaitiaki (The Karori Wildlife Sanctuary Trust 2000). Significant interest in the ‘Sanctuary to Sea’ project was expressed by members of Taranaki Whānui, and as such it was seen as a key opportunity through which significant progress towards the Zealandia-iwi partnership could be made. Thus, one of the objectives of the ‘Sanctuary to Sea’ project is to partner with mana whenua in order to realise their interests in the catchment restoration project. Therefore, Taranaki Whānui became strategic partners in the project at its inception, alongside key stakeholders (Greater Wellington Regional Council; Wellington City Council; Department of Conservation; Wellington Water Ltd; Morphum Environmental Ltd, an environmental consultancy).

### **Mana whenua partnership in Kia Mouriora te Kaiwharawhara/Sanctuary to Sea**

Taranaki Whānui involvement and leadership in the Sanctuary to Sea project led to the adoption of the following vision for the catchment: Kia Mouriora te Kaiwharawhara—that the life force of the Kaiwharawhara is healed; and, a push to promote informal recognition of the awa (river) as a living entity. A key issue identified by the strategy group was that the Taranaki Whānui whānau (extended Taranaki Whānui family) currently had limited connection with the area despite its significance, and re-establishing this connection was considered crucial. A programme of whānau days and catchment visits was established, with the first in February 2018. This involved, for example, a day where whānau travelled through the catchment to discover places of special interest (e.g. remnants of old forest and restoration projects) and develop a better understanding of pressing environmental issues in the catchment. The events were advertised through whānau social media pages, and transport provided to facilitate participation. While attendance numbers were recorded, no formal research was carried out on these days.

Opportunities have also begun to emerge that can support whānau in growing their connection with the catchment while participating in the restoration of the awa and the Zealandia sanctuary. An example of this, described in more detail below, was a kākahi translocation to Roto Mahanga (the upper lake within Zealandia sanctuary). Zealandia had begun the planning for the kākahi translocation before the Sanctuary to Sea project began, and the project was later identified as a project of interest to Taranaki Whānui leadership.

### **Case study: te whakakāinga anō i ngā kākahi [kākahi translocation]**

Kākahi (species of freshwater mussels from the genus *Echyridella*) are important components of aquatic ecosystems (Vaughn et al. 2004), but are also one of the most threatened taxa in the world (Lydeard et al. 2004). Aotearoa New Zealand has three extant species of freshwater mussel, all of which are classified as either ‘Threatened’ or ‘At Risk’ (Grainger et al. 2013). In the past, kākahi (the local name for these





**Figure 2.** a) Kākahi/freshwater mussel; b) Kete design used during the whakawhiti kākahi from Lake Wairarapa; c) Kākahi were carried in their respective woven kete during the release into Roto Mahanga at Zealandia (photo credits: Lindon Miller).



freshwater mussels, see Fig. 2a) were regarded highly by some iwi as an important mahinga kai species, and the shells were also used extensively as cutting tools (Hiroa 1921; Firth 1959; Grace 1959). They were particularly valuable as an easily accessible ‘living food store’ and kākahi shells have been found in middens alongside moa bones. Kākahi feature in many Aotearoa New Zealand place-names, and in kōrero (stories), waiata (songs), and whakataukī (proverbs), remnants of their particular importance in the past (Mead & Grove 2003).

In 2018, two species of freshwater mussel (*E. menziesii* and *E. aucklandica*) were reintroduced to Roto Mahanga, an artificial lake that forms the headwaters of the Kaiwharawhara within Zealanda (Figs 1, 2). The goals of the project included conservation, public engagement, research, promotion of and support in sharing mātauranga Māori, and potential future bioremediation of the Kaiwharawhara catchment. Overall, the translocation involved the collection, transport, quarantine, and release of 200 kākahi belonging to the two species described. Fifty *E. aucklandica* were translocated from Lake Wairarapa, and 150 *E. menziesii* from Lake Kohangapiripiri, involving mana whenua from Ngāti Kahungunu Ki Wairarapa, Rangitāne o Wairarapa, and Taranaki Whānui.

Tangata whenua historically translocated aquatic animals using vessels made from natural fibres as part of ahumoana tawhito (ancient aquaculture; McDowall 2011; Taikato & Ross 2018). Local mātauranga Māori was used to inform the planning of the kākahi translocation, and kete harakeke (flax baskets) were used to collect and transport kākahi, both for the translocation itself and for a pre-translocation experiment (Fig. 2; McEwan et al. In Press). Locally-sourced kete were commissioned from experienced weavers of mana whenua at both source locations, which meant that the appropriate materials, tikanga (custom), and karakia (ritual chant) featured in their creation, and that mātauranga could be shared as desired by the weavers.

A key element of this project was the collection days, through which tangata whenua were a central part. One of these days was at Lake Kohangapiripiri (Fig. 1), which is part of the Parangarahu Lakes Block in East Harbour Regional Park. It is co-managed by Taranaki Whānui and Greater Wellington Regional Council. Many people were involved in the collection day, including Taranaki Whānui whānau, representatives of Greater Wellington Regional Council, staff from Zealanda, PhD researcher and freshwater ecologist Amber McEwan, and public media (Māori TV, TV one and Radio NZ). The day involved kōrero and sharing of knowledge regarding the kākahi. Tamariki (children) carried the kete kākahi and assisted with other elements of the collection (e.g. biosecurity). The event was scheduled alongside the annual whānau planting day at the lake with in mind the intention of sharing knowledge and resources. Ultimately, through this project mana whenua played an active role in bringing kākahi from one part of their rohe to another to foster healthier freshwater systems.

The kākahi were released into Roto Mahanga at Zealanda in August 2018, with tangata whenua associated with both collection sites present. Tikanga was followed through pōwhiri (welcome ceremony) by Taranaki Whānui to welcome both the kākahi and visitors to the sanctuary, followed by a hīkoi (walk) up to Roto Mahanga, during which children transported kākahi in their respective kete (Figs 2b, c). Rangatira (leaders) recited karakia while the tamariki released the kākahi into the lake with the assistance of Amber McEwan, the lead ecologist. Opportunities for informal kōrero occurred during the hīkoi and the subsequent whakanoa (process of removing restriction) and afternoon tea. The general atmosphere was one of excitement, achievement, and connection.

## Analysis and discussion of narratives

Narratives from four key participants in the Kia Mouriora te Kaiwharawhara/Sanctuary to Sea project were collated through a series of interviews. All interviewees are co-authors on this article. The following questions were addressed: (1) How do you whakapapa to the Kaiwharawhara? (2) What are your visions for the Kaiwharawhara? (3) What first drew you to the Sanctuary to Sea project, and why is a collaborative approach important for this project? (4) What worked well in terms of collaboration and starting the reconnection? (5) What could have been done differently/better? Key themes emerging from the answers to these questions are explored below.

### Whakapapa of the interviewees

A diversity of hapū are represented within Taranaki Whānui. Two co-organisers of the kākahi translocation descend from Taranaki Whānui, one had a connection and affinity to the Kaiwharawhara through his Ngāti Ruanui and Taranaki links, more specifically Ngāti Haumia (Taranaki) and Ngāti Tupaea hapū, both resident at Te Aro (centre of Wellington City). Another co-organiser has whakapapa to Ngā Rauru Kīitahi and Ngā Ruahinerangi. She was born in the Kaiwharawhara water catchment at Ngaio, and spent her childhood exploring alongside the awa. Two of the interviewees did not whakapapa to the catchment, but had a long personal connection through conservation work in the area. One interviewee commented: “Ngāti Tama has the stronger connections to the Kaiwharawhara, as they had cultivations up the valley to Ōtari” (Taranaki Whānui iwi member).

### Vision for the Kaiwharawhara

All interviewees highlighted that reconnection with the whenua and the mouri of the area was a primary vision for the Kaiwharawhara. As one participant said: “The mouri aspect whereby we actually are physically connected to the whenua through cultivation or traditional use, all these things have been broken in a way, disconnected. [...] You can have a healthy environmental ecosystem, but if mana whenua are not connected to that ecosystem in a traditional way, then the mouri will not be healthy” (Taranaki Whānui iwi member).

Giving the Kaiwharawhara back its voice was another vision identified for the Sanctuary to Sea. One participant stated that this could be achieved through encouraging the next generation of active kaitiaki: “We need to help foster a sense of responsibility, enacting our role as kaitiaki within our whānau and creating opportunities for people to reconnect with the awa. With regular connection in the taiao, we will begin to rebuild an intimate relationship with it, and learn to live more sustainably, aligning with tikanga Māori. [...] strengthening the relationship will lead to developing the confidence within Taranaki Whānui people to stand up and speak out as mana whenua on the number of issues impacting the awa” (Taranaki Whānui iwi member).

This statement was supported by statements from the management at Zealanda, who commented: “I would really love to see us having increasing focus on youth, so people recognise there are opportunities for careers in this area, and more young people are able to take up those opportunities” (Zealanda manager).

### Importance of a collaborative approach

The lower Kaiwharawhara and estuary was historically

important for local hapū as being the site of the original pā and cultivated gardens. Despite being modified, it retains high cultural and ecological values with a natural estuary to the harbour and a remnant of native bush at Trelissick Park – a Wellington City Council reserve. Protection and enhancement of the estuary is an important part of the Sanctuary to Sea restoration initiative as it is critical for the migration of fish to and from the sea and the upper Kaiwharawhara catchment, including Zealandia. Further, the location of the project and presence of unique species means that it has high relevance to urban communities, with one interviewee commenting: “It was the lower part of the catchment that attracted me initially because it is quite unique. You jump on your bike 5 minutes north of the railway station and go into old regenerated bush. [...] Kererū are coming down there now; Sanctuary to Sea is part of that broader vision, we cannot think of Zealandia without thinking of the Kaiwharawhara, it is a doorway, a corridor. [...] The project captured my interest with particularly tuna [eel] as a taonga [treasure] species, and whatever else might migrate up and down, in terms of indigenous fish” (Taranaki Whānui iwi member).

Restoring the mahinga kai, particularly within the awa, was an important element in Taranaki Whānui’s decision to partner in the Sanctuary to Sea initiative. Stories of fishing in the Kaiwharawhara catchment and its surroundings were often told in the interviews, for example one interviewee said: “The old man used to take me eeling out the back of Makara, and I remember catching eels out there. [...] If there is an opportunity to reestablish mahinga kai, traditional food gathering practices around our tuna and other taonga species that the Kaiwharawhara may be able to support, then I can see Taranaki Whānui becoming more inspired by that. [...] There is evidence internationally that shows one way you reestablish endangered species is to allow indigenous people to reconnect with their traditional harvesting practices because then they become kaitiaki in every sense of the word and make sure rāhui, proper restrictions and control, are put in place. [...] Zealandia is a sanctuary, so [...] we wouldn’t want to promote any traditional harvesting practices up there. But the Kaiwharawhara is a broader catchment [...] if we could get to the point where it could be possible to harvest” (Taranaki Whānui iwi member).

The potential for collaboration in restoration is not only seen for the Kaiwharawhara but also for Zealandia as a whole. Zealandia interviewees hoped that initiatives such as discounted memberships and whanau days would encourage mana whenua to experience the restoration that has occurred at Zealandia, and to start to see ways where they might participate in or lead projects; they also acknowledged that this was just the start of the journey and that much more would be needed to make continued forward progress in this area.

For conservation managers and scientists, conserving or restoring sites of cultural significance or working with taonga species requires consultations with mana whenua as part of the commitment under the Treaty of Waitangi and to national regulatory laws. Interviewees expressed a desire to take a step further in building partnership with local hapū to foster true partnership with mana whenua in the sanctuary’s restoration initiatives. This was seen as improving the validity and quality of projects. As one person commented: “This [partnership] is a fundamental element of Zealandia’s second-generation strategy ‘Living with nature’ and is considered critical to successful restoration in Aotearoa New Zealand. Reconnecting people with nature, and in particular providing mana whenua with

support to act as kaitiaki for their rohe, furthers those central goals. We also recognise our commitment under the Treaty of Waitangi, or Te Tiriti o Waitangi, to work in partnership to care for the places such as Zealandia” (Zealandia manager).

This was extended on by another interviewee, who said: “In [...] work [...] with the RMA, with councils and DOC, consultation with iwi is a big part of that. But [...] it is better to talk at the hapū level and take the time, to actually go and talk to people rather than just getting a tick from the nominated iwi representative via email. [...] it made it more legitimate [...]. More comprehensive, more authentic, not as in adding an embellishment [...]. If there was no iwi involvement, it wouldn’t be a good project” (freshwater scientist).

There was a strong acknowledgement amongst the interviewees that some of the local mātauranga has been lost, and a powerful desire to look at new ways to both initiate knowledge gathering and transfer knowledge, including through the weaving of traditional knowledge and other scientific approaches. One interviewee said: “Unlike kōura [crayfish] or tuna there wasn’t as much written information recorded on kākahi. [...], much of this was specific to the traditional harvesting practices of kākahi which had been recorded by early Pākehā ethnographers. I struggled to find kaumātua [elders] who held knowledge associated with kākahi. [...] this is the impact that colonisation has had on our oral traditions. With additional impacts, such as lack of access to customary mahinga kai sites and environmental degradation, we haven’t been able to safely gather kai from the environment. As a consequence, inter-generational knowledge exchange has not occurred and a disconnection between our people and the whenua has grown. Because kākahi have disappeared from many of our awa in recent generations, the initiator to spark these discussions has been missing. An important aspect of this translocation was to capture some of this information for the benefit of this project as well as securing this knowledge for future generations” (Taranaki Whānui iwi, and Zealandia staff member).

The statement above highlights that the loss of mātauranga could in many instances be perceived as a fundamental barrier to building a foundation in te ao Māori for many projects. However, this pattern of loss should also be seen as a fundamental reason for increased efforts to support iwi to capture and share mātauranga through the many conservation projects that occur throughout Aotearoa New Zealand. Furthermore, there are multiple-layers of knowledge that can be drawn on to enrich restoration and research projects, as one of the interviewees notes: “As a tribal collective, we will be open to whatever mātauranga is out there, whatever that can be used to reestablish the mouri and our relationship to the whenua. [...], including learning western science if that helps. Mātauranga is about our aspirations as well, it is quite a catch all concept now and it is entirely legitimate that mātauranga includes the aspirations of iwi and hapū” (Taranaki Whānui iwi member).

### What is working well in this engagement process

There was a general sense that the Sanctuary to Sea partnership was going well. Multi-tribal events that bring a strong tikanga aspect to the collaboration was acknowledged by all interviewees, and as one person commented: “The kākahi translocation with Rangitāne and Ngāti Kahungunu worked particularly well, because there was a tikanga aspect to it, it involved people” (Taranaki Whānui iwi member).

Furthermore, one interviewee considered that the multiple



dimensions of tikanga associated with harvesting kākahi enriched the project, stating that: “Anybody can go and buy a plastic bucket and fill it with mussels, but [...] having these kete created for this specific purpose meant that we were tika [correct] and authentic in the way that we were acknowledging the kākahi. It also led to developing relationships with our wider whānau members to get involved” (Taranaki Whānui iwi, and Zealandia staff member).

Additionally: “I learned [...] about weaving from the kairaranga [...] using mātauranga Māori [...] is knowing the relevant background and tikanga and saying the karakia at the same time. I think we’ve done well with how we sourced the kete for this project, because it was right in term of the intellectual property side of things [...] The work I want to do next involves looking for differences between kākahi species and their responses to different types of disturbance, one which is taking them from one place and putting them into another. I am doing that in a lab environment. I don’t need to use the kete to collect the kākahi for this experiment, but I want to because I know the people who made them, and it feels appropriate – they have become a part of the journey we are weaving” (freshwater scientist).

People were also seen as the driving force behind that success by all interviewees. A great turn out of people from various ages and a diversity of backgrounds, and numerous families with children. Interviewees noted that: “It was massive, there was about 100 people, and kids were part of that, it was just beautiful. You had cultural exchange between tribes, that was the strength of it and that’s what got a lot of people there. And then there was a massive media explosion of interest in it!” (Taranaki Whānui iwi member).

Furthermore “On the day of the translocation, of significant value was the sense of whakawhānaungatanga [process of establishing relationships] for everybody involved. Bringing this sense of togetherness into the wider project will be an important component to ensure that our shared vision is achieved” (Taranaki Whānui iwi, and Zealandia staff member).

In addition, the partnership approach to the kākahi translocation was seen as a unique way to raise awareness on the fate of freshwater mussels in Aotearoa New Zealand and foster learning to the broader audience. One Taranaki Whānui iwi member said: “[...] it was our first opportunity to learn about kākahi which was pretty special. [...] lot of people [...] had never realised we even had freshwater mussel [...] in Aotearoa. [...] Reintroducing kākahi to this catchment was beneficial to raise awareness of the species and the issues impacting on its habitat [...]” (Taranaki Whānui iwi, and Zealandia staff member).

The series of whānau days co-organised by Zealandia and Taranaki Whānui prior to the kākahi translocation in the aim to reconnect mana whenua with the Kaiwharawhara were also seen as an important step leading to the success of the collaboration. The activities as well as people involvement (staff at Zealandia, Taranaki Whānui whānau, and Sanctuary to Sea partners) in these events helped strengthen the relationships. One interviewee supported this idea through this statement: “What also worked really well, but not at such a big scale, has been every single whānau day event that we’ve organised. Zealandia has clearly supported it and whānau have been there in varying numbers. Just walking around has been good, and just getting more of the whānau up to the sanctuary is an aspiration. [...] The Zealandia CEO being seen supporting the engagement, the whānau appreciate that we are not just another visitor, there is a special relationship here” (Taranaki Whānui iwi member).

The focus on partnership was reinforced by Zealandia management “Our organisation [Zealandia] is very open to ensuring we work in partnerships for even better outcomes. We have also met key people who have transformed our engagement with mana whenua, and the whānau have been especially open to the events and opportunities that have emerged. It is this openness to engagement on all sides that has been crucial” (Zealandia manager).

### What could have been done better

In general, interviewees felt that there was little to improve as the events and collaboration were both considered highly successful. Improvements were instead individual. Developing capacity after Treaty settlement, particularly in terms of environmental issues, was seen critical for both Taranaki Whānui and conservation managers. As a Taranaki Whānui iwi member said: “We are still finding our feet, there are a few key whānau members involved with taiao mahi [work] in this region. We settled nearly 10 years ago [...]. We still have a long way to go to move on from its impacts on our capability around environment and connection to whenua. [...] we are going to be different here in Wellington city, different to other iwi. And it is fine being different but it will mean different tactics and strategies to engage with our people [...] There is an opportunity for Taranaki Whānui to have a place in Zealandia, not only at the governance level but in having a part of the whenua that we can tend and engage with” (Taranaki Whānui iwi member).

This lack of capacity was seen by Zealandia management as a key barrier to better collaboration with mana whenua. They noted that there is always incredible willingness to engage, but people are stretched to capacity when multiple organisations are constantly seeking input, and this input is often provided on top of ‘day-to-day’ jobs. Despite this, two interviewees also highlighted the importance of meeting face to face, at the hapū level for a more successful collaboration. For example, one commented: that “[...] the importance of meeting kanohi ki te kanohi [face to face] is often overlooked. [...] iwi engagement, particularly in the early stages of project development, should be done this way to make sure that relationships are built on a solid foundation [...] while having conversations at an iwi governance level is important, efforts to meet at a marae level would have additional benefits” (Taranaki Whānui iwi, and Zealandia staff member).

And further: “If I was to use mātauranga Māori in science again, I would do it differently based on what we learnt from this project – specifically, I wouldn’t try to implement mātauranga Māori techniques myself [...]. I would have spent more time meeting with the Lake Wairarapa hapū and hearing their stories and hopes, related to the kākahi. It wasn’t until afterwards that I learned that this would have been the best thing to do, rather than to limit consultation to the iwi representative level” (freshwater scientist).

Finally, one interviewee expressed the desire to see mana whenua collaboration expanding to more pro-active relationships in monitoring and caring for the environment as well as enriching local mātauranga through the creation of waiata and kōrero associated with the awa. They noted that: “Typically, species translocations have provided opportunities for engagement with iwi. However, I would like to see this engagement extend to a fuller relationship where iwi are involved in ongoing monitoring and research opportunities. [...] us utilising this pool of knowledge and skills to create different opportunities to experience and engage all the senses

in relation to the Kaiwharawhara taiao [...]. Ultimately, [...] to see whānau members standing together as kaitiaki on behalf of the Kaiwharawhara, rediscovering knowledge associated with the area, harvesting directly from the environment to support whānau ora, and creating our own kōrero and waiata alongside the awa” (Taranaki Whānui iwi, and Zealandia staff member).

### Emerging Learning

Three key steps in building an active partnership between Zealandia and mana whenua have so far emerged from the Sanctuary to Sea project that could be useful in other contexts. These include: 1) Reconnecting the whānau with the rohe, 2) Influencing project strategy, and 3) Implementing restoration (Fig. 3).

#### Reconnecting the whānau with the rohe

This was a key reason for Taranaki Whanui participation and leadership in the Sanctuary to Sea project. It is consistent with other work through which elders and ecosystem users have considered how the diminished mouri within an environment affects the ability of mana whenua to source traditional foods and/or materials (Lyver et al. 2017a; Geary et al. 2019). Today, opportunities for traditional harvesting can be limited, particularly in urban environments where many mahinga kai species are absent or high levels of pollutants in waterways make harvesting unsafe (Hikuroa et al. 2018). In the

Kaiwharawhara catchment, the current absence of harvesting opportunities encourages mana whenua and conservation managers to seek new approaches to facilitate reconnection with the whenua. Here, this took the form of whānau days and the kākahi translocation.

#### Influencing strategy

Mātauranga Māori cannot be defined as knowledge alone and should be understood within the intricate web of relationships of the natural and spiritual world that forms the foundations of te ao Māori (Clapcott 2018; Kahui & Cullinane 2019). The presence of Taranaki Whānui within the Sanctuary to Sea strategy group from the outset has led to the goal of a te ao Māori foundation for the project. Without this involvement, the project would likely have reflected Zealandia and stakeholder’s visions alone. Instead, the key concepts that are contributing to this foundation include the informal recognition of the awa as a living entity, and the adoption of the vision ‘Kia mouriara te Kaiwharawhara’. This partnership alongside the experience of the kākahi translocation and whānau days will hopefully lead to further restoration initiatives that are led by Taranaki Whānui.

#### Implementing restoration

The success of the collaboration during the kākahi translocation was important due to the involvement of people from a range of backgrounds, and tikanga being practiced and enriched. This enabled the restoration initiative to support and promote



Figure 3. Schematic representation of Māori engagement process for the Zealandia Sanctuary to Sea project.



mātauranga Māori, for example through the making of kete and use of karakia. This project is now being extended through the development of cultural health indicators by mana whenua, which are to be monitored and assessed to support the restoration of the area. Cultural assessment tools such as the Cultural Health Index, Māori wetland indicators, and the Mauri Assessment Model are among the most frequently used in Aotearoa New Zealand to inform governance and improve understanding of Māori perspectives on environmental health (Harmsworth et al. 2011; Harmsworth et al. 2016; Lyver et al. 2017b). These cultural approaches and frameworks aim to increase Māori participation and inclusion in decision-making, to achieve multidimensional goals and desired indigenous outcomes (Harmsworth et al. 2011; Cisternas et al. 2019).

## Conclusion

The Sanctuary to Sea project is still early in its establishment phase, so its long-term success is yet to be realised. However, there are several aspects of engagement with mana whenua that have worked extremely well so far and should be considered for other similar projects. Actions include for example the focus on the awa with its rich cultural significance, as well as developing a collaboration with mana whenua at the inception of the project to partner in strategy development. Such actions helped underpin the project with principles that align with mana whenua aspirations. An additional important approach was recognising the need for a process of reconnection for whānau and implementing activities and events that supported this process. The project leaders recognise that this is far from complete but also that it needs to involve a diversity of opportunities to engage. Finally, special projects such as the kākahi translocation provide an opportunity to share mātauranga and develop new stories, though a continued long-term partnership approach will be crucial to fully realise the aspirations of the Sanctuary to Sea project.

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