Wai Māori and the Kāi Tahu Economy

Mō tātou, ā, mō kā uri a muri ake nei.

For us, and for our children after us.

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This report has been prepared by Aukaha (1997) Ltd., for Otago Regional Council on behalf of the seven papatipu rūnaka of Kāi Tahu with shared authority in Otago who are listed below.

Acknowledgement:

The preparation of this report was undertaken with assistance from the following rūnaka:

- Te Rūnanga o Moeraki
- Kāti Huirapa Rūnaka ki Puketeraki
- Te Rūnanga o Ōtākou
- Hokonui Rūnanga

Front cover photo: Wānaka looking northwest. Source: Aukaha, 2024.

Version (final): 30 September 2024

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Toitū te Mana, Toitū te Whenua: Kā Rūnaka

Kāi Tahu whānui, represented by 18 papatipu rūnaka and Te Rūnanga o Ngāi Tahu, hold mana whenua in Te Waipounamu. The term 'Kāi Tahu whānui' encompasses the three lines of whakapapa that make up the iwi; Waitaha, Kāti Māmoe, and Kāi Tahu.

Waitaha were the first people of Te Waipounamu, led by Rākaihautū, captain of the Uruao waka. Rākaihautū lit the first fires and is credited with digging the island's many lakes. His exploits are reflected in enduring place names and histories across the landscape. Waitaha were followed by the arrival of Kāti Māmoe in the sixteenth century and then Kāi Tahu about a century later. Through warfare, intermarriage and political alliances a common allegiance to Kāi Tahu was forged.

The mana of Kāi Tahu whānui rests in the 18 papatipu rūnaka,[1] seven of which are mana whenua in Otago. Papatipu rūnaka are a focus for whānau and hapū; they hold customary authority and maintain contemporary relationships within the areas they hold or share mana.

Three Kāi Tahu ki Otago papatipu rūnaka are based in Otago; Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki and Te Rūnanga o Ōtākou, whilst the fourth, Hokonui Rūnanga, is based in neighbouring Southland. Three Ngāi Tahu ki Murihiku Rūnaka – Awarua Rūnanga, Waihopai Rūnanga and Ōraka-Aparima Rūnanga – are based in Southland.

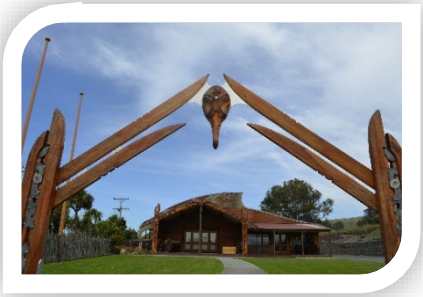
All seven rūnaka share interests in the inland areas of Otago extending to the lakes and mountains. The abundant assets and resources of shared interest areas were central to the Kāi Tahu economy. Economic activities were primarily built around mahika kai, a distinctive feature of the southern Kāi Tahu lifestyle. Seasonal mobility was an important means by which hapū and whānau maintained the ahi kā established by tīpuna.

Te Rūnanga o Moeraki

The takiwā of Te Rūnanga o Moeraki centres on Moeraki and extends from the Waitaki to the Waihemo, and inland to the Main Divide. Interests are concentrated on the Moeraki Peninsula area and surrounds, including Rakahineatea Pā, Koekohe, and Te Kai Hinaki with its boulders, and extending north and south to the boundaries of their takiwā.

Kāti Huirapa Rūnaka ki Puketeraki

The takiwā of Kāti Huirapa Rūnaka ki Puketeraki centres on Karitāne and extends from the Waihemo to Purehurehu, north of Hayward Point. Their takiwā extends inland to the Main Divide, sharing interests in the lakes and mountains to Whakatipu-wai-māori.



[1] Te Rūnanga o Ngāi Tahu (Declaration of Membership) Order 2001, c3.

Te Rūnanga o Ōtākou

The coastal rūnaka of takiwā of Te Rūnanga o Ōtākou centres on Ōtākou on the Otago Peninsula and extends from Purehurehu to Te Mata-au. The inland reaches of their takiwā includes shared interests in the lands and mountains to the western coast with rūnaka to the north and south.

Hokonui Rūnanga

The takiwā of Hokonui Rūnanga centres on the Hokonui region and includes shared interests in the lakes and mountains between Whakatipu-waitai and Tawhititarere with other Murihiku rūnaka, and those located from Waihemo south.

Te Rūnanga o Awarua

The takiwā of Te Rūnanga o Awarua centres on Awarua and extends to the coasts and estuaries adjoining Waihopai sharing an interest in the lakes and mountains between Whakatipu-Waitai and Tawhititarere with other Murihiku Rūnanga and those located from Waihemo southwards.

Waihopai Rūnaka

The takiwā of Waihopai Rūnaka centres on Waihopai and extends northwards to Te Mata-au Clutha River. Waihopai shares interests in the lakes and mountains to the western coast with the rūnaka south of the Waihemo.

Te Rūnanga o Ōraka Aparima

The takiwā of Te Rūnanga o Ōraka Aparima centres on Ōraka and extends from Waimatuku to Tawhititarere. Ōraka Aparima share interests in inland Otago with other rūnaka located south of the Waihemo, encompassing the lakes and mountains from Whakatipu-Waitai to Tawhititarere.

Contents

Executive Summary: The Kāi Tahu Economy Report

This report provides a Kāi Tahu assessment of the socio-economic impacts of freshwater management in Otago, which speaks to the development of a new Land and Water Regional Plan for Otago (LWRP). The LWRP will set out a new framework for managing freshwater and land to give effect to the National Policy Statement for Freshwater Management 2020 (NPSFM). This policy direction requires that the health and wellbeing of water bodies is prioritised. Mana whenua have interests in the lands and freshwater within the boundaries of the Otago Regional Council (ORC) and have been requested to provide an assessment on the socio-economic impacts of freshwater management for Māori.

Framed and led by mana whenua from Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou and Hokonui Rūnanga, and supported by the three southern rūnaka Te Rūnanga o Oraka Aparima, Waihopai Rūnaka, and Te Rūnaka o Awarua under the umbrella of Te Ao Mārama Inc., the Kāi Tahu Economy report has been facilitated and written by Aukaha (1997) Ltd., a mana whenua owned consultancy, in consultation with ORC.

Background to the Report

The Kāi Tahu Deed of Settlement with the Crown recognised the rakatirataka of Kāi Tahu in their takiwā, particularly related to taoka. Wai māori is a significant taoka to Kāi Tahu, affording it protection under the exercise of mana and rakatirataka, and through kaitiakitaka practices. Prior to colonisation, Kāi Tahu economic activities focused on diverse economies that were controlled collectively for collective benefit.[2] For Kāi Tahu in Otago, the success of economic development over many centuries prioritised the health of the land and water as prerequisites for economic activity.

Since 1840, freshwater management policy and practices have not protected the health and well-being of waterways, contributing to their modification, degradation and a loss of indigenous biodiversity. At the same time, other practices that occurred in the context of colonisation have contributed to Kāi Tahu losing access to many of these diverse economies. Throughout this history, the degradation of both the waterways and the impact on economic activity of whānau has occurred side-by-side, with each contributing to each other in a downward spiral.

For decades, mana whenua have fought to protect the mauri of freshwater systems in their takiwā, including through the mechanisms under the 1997 Settlement with the Crown. The cost of financing and resourcing these processes is significant, and also imposes opportunity costs. As people and money are tied up in reactive, complex and

[2] Diverse economic activities relevant to the Kāi Tahu economy include unpaid labour, self-employment, and volunteer work; barter, fair trade, and gift exchange; cooperatives, family firms, social enterprises, and communal forms of labour; and communal and common property arrangements. Gibson-Graham, 2009; Amoamo, Ruckstuhl, & Ruwhiu, 2018.

costly resource management processes, they are not available to support proactive economic development activities.

Moreover, despite these significant efforts, waterbodies in Otago continue to face a multitude of threats related to over-allocation, waterway modification, and discharges of waste. Against this backdrop, in 2019, Otago's freshwater bodies were described as being at a "critical juncture"[3] due to existing planning provisions for freshwater management being inadequate to manage freshwater in the face of challenges for the state of the freshwater resource.

Implementing a new planning framework to give effect to the NPSFM provides an opportunity to change the course.

Report Structure

The report is structured in four chapters as follows:

Chapter 1 defines the economy as a concept and outlines the mana whenua values that underpin all aspects of Kāi Tahu culture and society, including economic activities. The scope and context of these definitions relates to freshwater management in the Otago region.

Chapter 2 provides an overview of Kāi Tahu economy over time, covering two time periods:

- **2.1** The development of the Kāi Tahu economy in Te Waipounamu since arrival from Te Moananui-a-Kiwa.
- **2.2** The economic influences and changes that occurred during European contact and settlements, and their impacts on the Kāi Tahu economy that had existed prior to contact.

Chapter 3 focuses on the contemporary context of wai māori in the Kāi Tahu economy, starting with an assessment of the Kāi Tahu economy following settlement with the Crown based on Te Ōhanga Māori framework.[4] This is followed by a summary of the effects that changes in the catchments have had for wai māori and mahika kai. The next section focuses on the Kāi Tahu freshwater economy, with reference to three case studies of mana whenua involvement in freshwater restoration projects in Otago:

- **3.3.1** He Pātaka Wai Ora
- **3.3.2** Te Nukuroa o Matamata
- **3.3.3** The Waiwhakaata Restoration Projects.

[3] Skelton, 2019, p.4.
[4] BERL, 2018.

This chapter culminates in a description of the costs and benefits of differing freshwater policy approaches for the Kāi Tahu economy.

Chapter 4 looks at the future of the Kāi Tahu economy for wai māori and mahika kai in relation to the proposed policy direction in Otago.

Report findings

Source information to inform the report findings and recommendations has been identified through primary and secondary methods. An initial review of literature was undertaken. This included a review of source material held on file at Aukaha for resource management purposes, for example, cultural impact assessments, submissions and evidence. Primary research was then undertaken via interviews with Rūnaka representatives based on an open-ended questioning approach.

In summary, the key findings from the report are:

1. Wai māori is a central component of the natural capital on which the Kāi Tahu economy is based.
2. Mātauraka and mahika kai practices provide a knowledge base for economic diversification, innovation, and growth.
3. The arrival of Europeans provided mutual opportunities for economic development, expanding and further diversifying the existing Kāi Tahu economy. The novelty of western technologies and economic models provided massive economic incentives, but increasingly commodified wai māori.
4. From the mid-nineteenth century, Kāi Tahu were increasingly excluded from economic development by physical and legislative barriers to access. Once the land was sold, Kāi Tahu were economically alienated; with no capital and uneconomic reserves, whānau only had their physical labour left to sell.[5]
5. At the same time, the environment was modified in ways that undercut the diverse economies of Kāi Tahu, and that contributed to environmental degradation.
6. Commencing in 1849, Te Kerēme culminated in the signing of a Deed of Settlement with the Crown in 1997, the provisions of which provided recognition of mana and rakatirataka, cultural and economic redress, and mechanisms to recognise mana whenua rights and interests, including in resource and freshwater management.
7. Meanwhile, economic activities that deprioritised environmental outcomes had continued to degrade freshwater ecosystems, including high-impact activities like alluvial goldmining, damming for hydro-electricity generation, the introduction of non-native plant and animal species, and the expansion and intensification of agriculture.

[5] Marx, 1887.

8. Regional planning frameworks continued to promote economic development as the key driver for water allocation and use, while ecological and environmental outcomes have been deprioritised, contributing to the degraded state of many freshwater systems.

9. Environmental degradation has contributed to the near collapse of indigenous ecosystems, and consequently, the virtual destruction of the Kāi Tahu economy related to mahika kai.[6]

10. The loss of mahika kai has resulted in direct costs through the loss of food sources for whānau and for trade and exchange. Associated indirect costs include health impacts and the social and economic effects of loss of connection consequent on loss of an economic base, loss of employment, outward migration and the collapse of communities.

11. Within a framework where the health and wellbeing of water bodies and ecosystems are not prioritised, the cultural obligation of mana whenua to ensure that freshwater systems are kept in a healthy state for future generations has also imposed significant costs. These include the direct time and monetary costs of restoration projects, and the substantial costs of involvement over many years in resource consent and plan development processes to advocate for change. Time spent in these activities is time that has been lost to a variety of economic and social opportunities.

12. A planning framework that does not require all resource users to maintain the health of the environment they are operating, provides an economic advantage to those who choose not to. This puts Kāi Tahu resource users operating within the framework of mātauraka and tikaka at a comparative disadvantage.

13. The prioritisation of the health and wellbeing of waterways as the basis of policy direction aligns with mana whenua values and expectations for freshwater management in Otago. This approach will provide a level playing field that is likely to promote environmental conditions that better support diverse economic activities, providing fertile grounds for the growth of the Kāi Tahu economy and for building economic partnerships with others.

14. Kāi Tahu ecological restoration projects illustrate the significant economic and social benefits that investment in these activities can return, including employment opportunities, capacity and capability building, and opportunities for commercial growth and innovation.

[6] Currently over 75% of indigenous freshwater fish and bird species are categorised as 'threatened' or 'at risk,' with over 50% of freshwater fish and around 25% of birds showing a decreasing population trend. Statistics New Zealand, 2023.

1 Ko te Tika, ko te Pono: Key theories and values

This chapter lays out the ethical, social and political context that underpins the Kāi Tahu economy Information is presented in three sections, relating the concept of an economy, and the values, rights, and duties that inform economic decision-making processes for Kāi Tahu as mana whenua in Otago.

1.1 The economy as a concept

The first section discusses the origins and meanings of the word 'economy' based on western etymology and economic theory. The diverse economies framework, which sees the economy beyond the transactional to include economic, social and cultural outcomes, as well as 'hidden' aspects of our economy like volunteering, charitable work, and environmental outcomes.

1.2 Kāi Tahu values framework

This section outlines the role that mana whenua values play in the diverse economies of Kāi Tahu, as an ethical basis for decision-making. This includes a description of the four core values of mana, tapu, whakapapa, and mauri.

1.3 Mana whenua values and resource management

This part of the report drills down into the core values to identify related values that guide decision-making in the Kāi Tahu economy. Key to these values is the balance between the rights and the duties that Kāi Tahu are bound by as mana whenua. Several mana whenua values relevant to resource management are discussed, including:

1. Rakatirataka
2. Kaitiakitaka
3. Whakawhanaukataka
4. Manaakitaka
5. Kai hau kai
6. Utu
7. Mātauraka

These rights and duties are derived from the interplay between the core values of mana, tapu, whakapapa, and mauri, and pose significant implications for Kāi Tahu economic activity.

1.1 The economy as a concept

This section introduces the kaupapa of the Kāi Tahu economy by exploring relevant economic theory. This starts with a modern definition and a description of the etymology of the term 'economy' through western history. Over time, economic outcomes and principles in western societies have increasingly emphasised individualism and wealth creation, underpinned by philosophies that dictate that outcomes are viewed through an ethically neutral lens.[7]

This mainstream or capitalistic economic approach is then contrasted with an overview of the 'diverse economies' framework, which locates economic development within a social, cultural, and ethical context, such as is the case in the Kāi Tahu economy. Unique characteristics like cultural knowledge and value systems are incorporated and utilised in diverse economies, which promote and value non-economic outcomes and profits from economic activities. Thus, diverse economies take an approach that balances economic decisions against ethical outcomes.[8]

At its most basic, an economy can be described as "a complex set of activities, or social relationships, concerned with the production, distribution and consumption of goods and services".[9] They can take various forms and operate at different scales, from local to national to international. Economies incorporate different systems, values, and principles, and are affected by overlapping geographic and demographic factors such as history, culture, ethics, norms and values, technology, and ecology. These factors provide context, content and conditions that fundamentally influence the way that an economy functions.[10]

The concept of an economy in western traditions evolved out of ideas that were formed thousands of years ago in ancient Greece, derived from the word 'oikonomia', which simply translates as 'household management.' Oikonomia was the study of human behaviour as a relationship between ends and the means of achieving those ends when faced with choices. An action was only considered economically rational when it was frugal in its use of means and sought to achieve a worthwhile end – and what was meant by rational related to ethics.[11] Similarly, for Kāi Tahu, the ethical frame for economic activity is derived from a set of foundational values, described in Sections 1.2 and 1.3 below.

However, the culture of economics in modern society bears more similarities to another ancient Greek economic concept, 'chrematistics,' focused on the generation of excessive wealth.[12] As neoclassical economics became dominant in the twentieth century, economics narrowed to be more akin to chrematistics, becoming the study of the formation of market prices for the purpose of making money.[13] In Te Waipounamu,

[7] Lesham, 2016.
[8] Amoamo, Ruckstuhl, & Ruwhiu, 2017; Amoamo, Ruwhiu, & Carter, 2018.
[9] Amoamo, Ruwhiu, & Carter, 2018, p. 68.
[10] Amoamo, Ruckstuhl, & Ruwhiu, 2017; Amoamo, Ruwhiu, & Carter, 2018.
[11] Lesham, 2016.
[12] Ibid.
[13] Parks & Gowdy, 2012.

the rise of the market economy approach paralleled the contraction of Kāi Tahu economic activities over the nineteenth and twentieth centuries.

Western economic theory has expanded in recent years to include an environmental context, for example, by recognising natural capital and ecosystem services.[14] This approach more aligns with manawhenua perspectives of a relationship with the environment in which people are an active and equal part of te taiao. In the modern context, these 'ecological economics' aim to "bring the economy back within the earth's 'sustainability limits' or 'planetary boundaries,' where environmental systems can naturally regenerate."[15]

Whakaahua 1: The Economic Iceberg

Source: Community economies Collective, n.d.

Similarly, diverse economies recognise economic activity beyond the capitalistic focus on wage labour, commodity markets, and capitalist enterprise, to encompass alternative, hidden, and informal types of economy.[16] The economic iceberg is a

[14] Ibid; Skidelsky, 1989.
[15] Ramos & Hynes, 2019, p. 13.
[16] Amoamo, Ruckstuhl, & Ruwhiu, 2017; Amoamo, Ruwhiu, & Carter, 2018.

common representation of the economy that illustrates the extent of a diverse economy 'below the surface' (see Whakaahua 1 above).[17] The iceberg model of diverse economies aims to take representations of the economy beyond 'capitalocentrism,' in which all economic activities are seen in relation to capitalism.[18] In the context of the Kāi Tahu economy in Otago, a diverse economy framework considers economic and social outputs in terms of what economic development constitutes for Kāi Tahu as mana whenua. Diverse economies are "politics of collective action that involve conscious and combined efforts to build a new economic reality – one that captures the intricate exchange of socio-economic logics, such as market and non-market, paid and non-paid, and capitalist and alternative or non-capitalist."[19] The result is an economy that incorporates esoteric values beyond financial gain.[20] Such is the case in the Kāi Tahu economy, underpinned by mātauraka and tikaka that provides an evidentiary and ethical framework for economic activity in southern Te Waipounamu.[21]

Wai māori is central to this economy, not only due to the fundamental importance of wai as a source of hydration and habitat, but as highway from the mountains to the sea, which supported vital supply chains for kai and raw materials for manufacture and trade. Water provided the basis for these activities, affording it great status, but also elevating the risk if anything disrupted the delicate balance of freshwater systems.

This reflects a diverse economic framework, in which the mauri of wai māori is seen as a prerequisite for the health of the wider environment including that of people. A key element underpinning this is the recognition that people are part of this environment, supported by a moral code that emphasises intergenerational decision-making as a means of ensuring long-term economic growth.

Despite the shifts that the mainstream economy has taken to incorporate environmental ethics, resource management retains a focus on managing environmental impacts. In the context of the Otago Land and Water Plan, this approach includes the management of freshwater systems, including roto, maka, kūkūwai, and awa. However, for manawhenua, the idea of "managing" an awa is incomprehensible; rather, the onus is on us to manage our behaviour so as to enable the river to manage itself.[22]

[17] Gibson-Graham, 2002.
[18] Ibid.
[19] Amoamo, Ruwhiu, & Carter, 2018, p. 68.
[20] Biggart & Delbridge, 2004; Yang, 1989.
[21] Amoamo, Ruckstuhl, & Ruwhiu, 2017; Amoamo, Ruwhiu, & Carter, 2018.
[22] Brendan Flack, 2023, personal communication.

1.2 Kāi Tahu Values Framework

At the basis of mana whenua values are the primary concepts of tika (meaning 'that which is correct') and pono (meaning 'that which is authentic'). When paired, these concepts create an ethical framework for decision-making and activity. They are the basis for tikaka, law and lore across all spheres. Their use is grounded in mātauraka; the accumulated ancestral knowledge that ancestors have handed down across generations as a taoka for manawhenua today.

While the role of ethics in western economics and finance is "insignificant",[23] mātauraka and tikaka underpin all spheres of life for Kāi Tahu, including the economic. Central philosophies and beliefs within tikaka emphasise collectivism, balance with nature, and intergenerational decision-making. These values directly influence the Kāi Tahu economy in terms of what economic activity is undertaken, how and where it is done.

For example, the Kāi Tahu economy is based within a worldview that sees people as an integral part of te taiao. Rather than seeing people as the central element around which everything in the environment revolves, the environment is seen holistically with humans playing their role in the wider ecosystem. This means that, for Kāi Tahu, economic activity is undertaken within a context that sought good outcomes for the whole environment, including the people. Thus, economic activity is undertaken in such a way that this natural balance could be maintained now and for mokopuna in the future.

A set of foundational values inherent in this worldview provides an ethical framework that underpins correct behaviour, law, and justice in Kāi Tahu society.[24] These are also the values that underpin decision-making related to economic activity and resource allocation. Four core values – mana, tapu, whakapapa, and mauri (see Tūtohi 1 below) – that are present across all realms in Kāi Tahu society, are fundamental in defining the parameters for economic activity to occur. As a diverse economy, the Kāi Tahu economy in Otago went "beyond the economic realm"[25] to engender a set of cultural imperatives that elevated the nature of the environment and the elements within it above the status and pre-eminence of people. The enactment of these core values predisposes economic activity to an environmental model that "acknowledges a natural order to the universe, a balance or equilibrium."[26]

The obligation to respect and protect the environment is derived from the significant mana and tapu of the natural environment. Natural elements like water, earth, and air are very early ancestors that came into being at the time of the atua and the creation of the world. As a result, their tapu is heightened, as is the obligation to protect them as taoka handed down from tīpuna and held in trust for mokopuna to come.

[23] Blommestein, 2006, p. 54.
[24] Potiki & Potiki et al, 2019-2021, unpublished manuscript.
[25] Kuokkanen, 2011, p. 93.
[26] Harmsworth & Awatere, 2013, p. 274.

Tūtohi 1: Core Kāi Tahu values

Core Kāi Tahu values

Kāi Tahu do not see their existence as separate from te taiao, but as an integral part of it, which is reflected in economic activity. In an economic context, te taiao, the environment provides the primary resources and environmental conditions for Kāi Tahu economic development. Wai māori is a central and crucial component of this environment and of the Kāi Tahu economy. This is the context for the definitions provided below.

Mana is the power derived from atua and ancestors that is held in trust by those in the present for the future generations. Mana does not just relate to people; in te taiao, mana is attributed to landscapes, natural features, water, and flora and fauna. The mana of these elements is derived from different sources including:

- Natural characteristics
- History, events, and the actions of tīpuna
- Presence, abundance, and sustainability of taoka
- Associated economic activities and the security of current practices
- Strategic value to future economic development.
-

An economy that reflects mana is "an economic system in which decisions regarding investment, production, consumption, and wealth distribution are influenced by the interplay of mana-enhancing interactions between people and the environment."[27] Thus, for humans, mana dictates who has the authority to make economic decisions, hence the term mana whenua. In Kāi Tahu society, wealth was only meaningful if it was able to provide for mokopuna in the future. Because of this, a lack of sustainability was seen as a loss of mana.[28]

Related to the concept of mana is the term mana whenua, which refers to whānau and hapū with customary links and rights to a place or location. Several means of acquiring mana whenua status as recognised under tikaka:

- **Umu takata** – Rights through conquest
- **Take whenua** – An inherited right
- **Mahi takata** – ancestral right of discovery and naming
- **Tūturu te noho** – Rights of settlement
- **Kai taoka** – an exchange of land or resource for taoka
- **Tuku whenua** – traditional gifting of land and resources
- **Take tīpuna** – A right established by an ancestor asserting their rights over land or resources.[29]

Tapu is the source of mana and different levels of tapu influence the perceived mana. In an economic context, the level of tapu can reflect the risk of an activity to a resource. Water, for example, is vital for life, so the risk associated with its loss is hugely significant, highly elevating the mana and tapu of water. Certain activities, actions and states also affect tapu, and in turn, the level of tapu affects the actions that can be undertaken under tikaka. Levels of tapu in the environment are assessed to judge whether economic activities like taking kai can be undertaken, and in some cases, conditions were such that economic activities were prohibited.[30]

[27] Dell, Staniland, & Nicholson, 2018, p. 55.

[28] Potiki & Potiki, et al, 2017-2021, unpublished manuscript; Ministry of Business, Innovation & Employment, 2024; Ministry of Justice, 2001.

[29] Kāi Tahu ki Otago, 2005, p. 27.

[30] Potiki & Potiki, et al, 2017-2021, unpublished manuscript; Ministry of Business, Innovation & Employment, 2024; Ministry of Justice, 2001.

Whakapapa provides the framework for mātauraka and tikaka related to the economy to be handed down over time. Implicitly, this approach recognises the past, present and future as equally important and intrinsically linked. The knowledge, ethics, and practices that inform and guide economic activity as 'best practice' are handed down through this whakapapa. The maintenance of whakapapa through time and into the future is paramount to economic growth.[31]

Mauri refers to the life force of all things, which is seen as a physical manifestation of health. For Kāi Tahu, an environment with an intact mauri is a prerequisite of economic activity like mahika kai. If a taoka is not healthy, sustainable and abundant, its mauri is not intact, collection of resource may not be appropriate at the usual level, if at all. Sustainability of natural capital for future generation is vitally important, lest the people go the way of the moa.[32]

1.3 Mana whenua values and resource management

The core values give rise to related values derived from the interplay between mana, tapu, whakapapa, and mauri. These confer economic rights and responsibilities that determine how resources are managed and regulated.

The balance of rights and duties is connected to the principle of utu, or reciprocity, which is central to economic development and resource management in the Kai Tahu economy. Often wrongly interpreted as 'revenge', utu can be more accurately defined as "a means of seeking, maintaining, and restoring harmony and balance".[33] Utu relates to both the prevention of resource depletion (e.g., through the application of restrictions and controls on use), and the promotion of personal relationships (e.g., through trade and gifting practices). The overall aim is for economic activity to have a net-zero impact, thus achieving ea (balance) as a means of ensuring resilience. In this context, the act of taking without restoring balance is considered hara, a transgression.[34] In this context, 'balance' relates to stability of the system, also referred to as dynamic equilibrium.[35] Central to the role of utu in the economy is the balance between the two interconnected values of rakatirataka, which confers ancestral rights, and kaitiakitaka, which bears responsibilities.

[31] Ibid.

[32] Ibid.

[33] Ministry of Justice, 2001, p. 3.

[34] Te ao Māori acknowledges a natural order to the universe, a balance or equilibrium, and that when part of this system shifts, the entire system is put out of balance. The diversity of life is embellished in this world view through the interrelationship of all living things as dependent on each other, and Māori seek to understand the total system and not just parts of it; Harmsworth & Awatere, 2013.

[35] Balance is a guiding belief of Māori reality, but while everything is focused on "working toward equilibrium… this is always temporary and contingent" because reality itself is dynamic rather than static; Salmond, 2012, p. 121 as cited in Rout et al., 2021. All beings are "striving for dynamic equilibrium and exist in a cyclical time where past and future are always part of the present;" Rout et al, 2021.

Utu is very much a key element. Traditionally, and people still do it; the first fish, you throw back, or with a bird you would let it go. You are always returning something back to the resource showing that respect that it is not just a thing to be taken. You need to understand that there is a need to keep a resource system working and functioning well. It is also in respect of the deity whose domain it is you are working in. You didn't just have a right to go in and take without that element of reciprocity, understanding how that works. It is respect really, both for the deity in charge of it and for the resource. That customary returning of the first catch is also mindful of a sustainable ethic as well.

Reciprocity is not also for your family. If you caught a fish, you would share it with whānau and people who may not be able to go and fish or haven't got that opportunity. That's really how it works, and you just catch what you need for a feed, not to fill the freezer.

Edward Ellison, Te Rūnanga o Ōtākou, 2022

Rakatirataka refers the exercise of mana, which bestows decision-making rights, including the right to make economic decisions. These rights are balanced by obligations, including those associated with kaitiakitaka. The duty of kaitiakitaka, often translated as 'guardianship,' is not merely about guarding or caretaking; it involves acting as an agent for environmental protection in decision-making, on behalf of tīpuna and mokopuna. The focus of kaitiakitaka is to ensure environmental sustainability for future generations, as expressed in the whakataukī, 'Mō tātou, ā, mō kā uri a muri ake nei.' Thus, economic decisions that uphold mana and whakapapa achieve balanced outcomes for the whole system, in order to enable intergenerational sustainability and wealth.

Māori did not own whenua, they belonged to it, and their rights regime was one of resource user rights rather than ownership rights. Individuals, whānau (extended families), and their hapū (clans) had overlapping areas where they could hunt, harvest, and fish within their wider rohe (territory). The rangatira (chief) had mana over resources within the rohe, and the land and water the rangatira expressed authority over was an extension of their personal mana.

Firth (2011) as cited in Rout et al (2021)

Other related values like whanaukataka and manaakitaka place obligations on the exercise of rakatirataka. Whanaukataka refers to the maintenance of whakapapa connections as a source of unity and kinship.[36] Not only does this refer to relationships with human kin groups, whanaukataka encompasses the idea that all elements of the environment are interconnected and mutually dependent, an idea often referred to as ki uta ki tai. Economically, whanaukataka emphasised primary trading relationships and the processes of gift exchange with wider whānau, but also further emphasised the ethics of reciprocity and balances, as primary resources were linked to people by whakapapa, reinforcing the duty of care. Maintaining environmental balance was a requirement in this system, in order to ensure economic security for mokopuna in the future.

[36] Mead, 2003.

Closely related to whanaukataka, manaakitaka is the principle that acknowledges others through the expression of aroha, hospitality, generosity, and mutual respect.[37] In the Kāi Tahu economy, manaakitaka manifests itself through the sharing of economic assets as a sign of wealth and generosity, for example, kai and taoka, as an expression of one's mana as the host.

While manaakitaka is strongly linked to the provision of kai, these connections can be further amplified through the practice of kai hau kai, the sharing and exchanging traditional foods and resources as a statement of mana. As in every culture, certain types of kai are associated with people and place, reflecting identity and wealth. Serving these foods for guests or giving them as koha shows respect for the recipient and expresses the identity, wealth and generosity of the gift givers. As the status of local foods became linked to identity, they were seen as delicacies, further raising their profile and renown, and that of the associated people.[38]

The 'hau' in the term kai hau kai refers to the relationship between the giver and the receiver, with the kai itself reinforcing that connection and signalling the importance of the relationship. These practices reinforced and strengthened the economy by reaffirming these relationships.[39]

A central value that underpins economic activity and the application of the wider values framework is the concept of mātauraka. This is the ancestral knowledge base from which Kāi Tahu values and practices descend, as a reliable reference source derived from generations of evidence and experience. Mātauraka is reinforced and refined over time, with each generation adding to the body of knowledge through observation, experimentation, and study.

Application of mātauraka to economic activities like mahika kai is important to enable provision of sufficient resources to promote a thriving, healthy population and trading opportunities, and also to promote technological development. Mātauraka is not static but evolves over time and will continue to be developed for the future.

Mātauraka is also a source of considerable knowledge for environmental risk assessment. Tīpuna used a range of subtle observations including assessments of water colour and depth, odour and taste, and the appearance of other species or signs in the environment, in order to ascertain whether a species should be harvested or not.

Mātauraka provides an evidentiary base for tikaka, the system that guides appropriate behaviour and accepted procedures, including in the economic relationship between people and the environment. Tikaka is based on a general understanding that people are part of the environment, and so we have a responsibility to care for the environment. In turn, the environment looks after the people and provides resources for economic development. Thus, for economic activity to be secure into the future, tikaka dictates that the wellbeing of the environment must be unheld. Tikaka and kawa are based on

[37] Potiki & Potiki, et al, 2017-2021, unpublished manuscript.
[38] Kaan, Bull, Cowan, & Pohio, 2015; Te Papa, 2019.
[39] Payne, 2020.

traditional practices but are dynamic and continue to evolve in response to different situations.

2 Ka mua, ka muri: Wai māori and the Kāi Tahu economy

The focus of this section is the evolution of the Kāi Tahu economy in relation to wai māori and freshwater ecosystems in the Otago region of Te Waipounamu. Structurally, this is presented in two parts based on a chronology. This timeframe starts from the arrival of tīpuna from Te Moananui-a-Kiwa to Te Waipounamu and the development of the Kāi Tahu economy from those origins. This timeline continues through to the 1990s, covering the period of Pākehā settlement and the establishment of kāwanataka, and focussing on the trajectory of the Kāi Tahu economy and the mauri of freshwater and mahika kai as cornerstones of the Māori economy in Otago.

2.1 Mai i Te Moananui-a-Kiwa ki Te Waipounamu: The evolving Kāi Tahu economy

This part relates to the period from the arrival of tīpuna from the Pacific and their settlement in Te Waipounamu, through to the late eighteenth century, when first contact was made between Kāi Tahu. This period describes the original state of the Kāi Tahu economy that evolved from mātauraka and tikaka brought by tīpuna who settled from Te Moananui-a-Kiwa sometime before the start of the fourteenth century.

Main themes include:

- Migration, exploration, and settlement
- Primary resources and technological innovation
- Mahika kai and economic diversification
- Relationships and trade.

The evolution of the Kāi Tahu economy set the foundation for the integration of Pākehā economic activity following contact at the end of the eighteenth century.

2.2 Te taeka mai o te Pākehā: Key themes in the settlement period

This part relates to the period from first contact and early interactions with Pākehā from the late eighteenth century, including the signing of Te Tiriti o Waitangi in 1840 and the establishment of Crown governance, continuing through to the settlement of the Kāi Tahu claim in 1998. This is presented as a timeline of events linked to discussion of key themes.

2.3 Te Kerēme: The Waitangi Tribunal and the Ngāi Tahu Claim Settlement

This section provides a brief timeline of Te Kerēme, the Ngāi Tahu claim to the Waitangi Tribunal, and the Settlement that was enacted under the Ngāi Tahu Claim Settlement Act 1998.

2.1 Mai i Te Moananui-a-Kiwa ki Te Waipounamu: Development of the Kāi Tahu economy

The early economy of Te Waipounamu developed out of the mātauraka that tīpuna brought with them from Te Moana-nui-a-Kiwa. Aotearoa was the last stop in a journey that had lasted six millennia, driven by a culture of exploration in which discovery and settlement was a planned process undertaken strategically via directed navigation.[40] The first people brought generations of knowledge and innovation with them, providing a solid foundation for economic development and growth.

Astronomical knowledge was a key knowledge system of these tīpuna, who used the stars as a "roadmap"[41] that had guided them across thousands of kilometres of ocean providing a structure for economic development.[42] This mātauraka extends to a complex system of time based on the maramataka, a rigorous calendar linked to movement of celestial bodies and the phases of the moon that was simultaneously universal across different groups, but also highly specific to location. As a result, the maramataka was strongly influenced by seasonal and environmental changes, reflecting a highly mobile society and providing a framework for economic activity and development.

First settlements, kāika, were established along the coast in line with previous practice during navigation across the Pacific. At the same time, tīpuna undertook methodical exploration of every coastline and island of the archipelago, identifying available resources as the basis for economic development.

We now know that climate variations including a period of warming at the time made it easier than ever to travel this far south. Regardless, on arrival, the climate was the biggest threat that tīpuna faced, having moved from the tropics to the southern edge of the temperate zone. By traveling around 20° south by latitude, tīpuna now faced much lower temperatures on average and the challenges posed by marked seasonal changes.

Challenges to economic development due to climate were immediate and severe. Plant species that tīpuna had brought as sources of food and materials, like kūmara, hue, taro, and aute, did not survive.[43] Kaimoana provided a staple base as it had in the tropics but had to be gathered daily, leaving no contingency. Before long, animal species like pigs and chickens brought to establish sustainable populations were quickly converted into ready kai. Moa, which were abundant and widespread, became a major food source for early Māori, providing crucial food security while establishing a firm social and economic base. With species available in the area ranging in size from under 20kg to over 200kg (see Whakaahua 2 below), one moa could often provide food for several

[40] Walter, Buckley, Jacomb, & Matisoo-Smith, 2017.

[41] Whaanga, Harris, & Matamua, 2020, p. 14.

[42] Mātauraka related to Māori concepts of time developed from that distilled over the history of Pacific navigation and voyaging, dating back to the eastward spread of the so-called 'Lapita' people from Melanesia into the Pacific over 3,000 years ago; Irwin, 2005. The success of this approach that brought tīpuna across thousands of kilometres of intentional exploration based on mātauraka-based practices is one of the best examples of the scientific and empirical underpinnings of this knowledge; Harris, Matamua, Smith, Kerr, & Waaka, 2013; Husband, 2020.

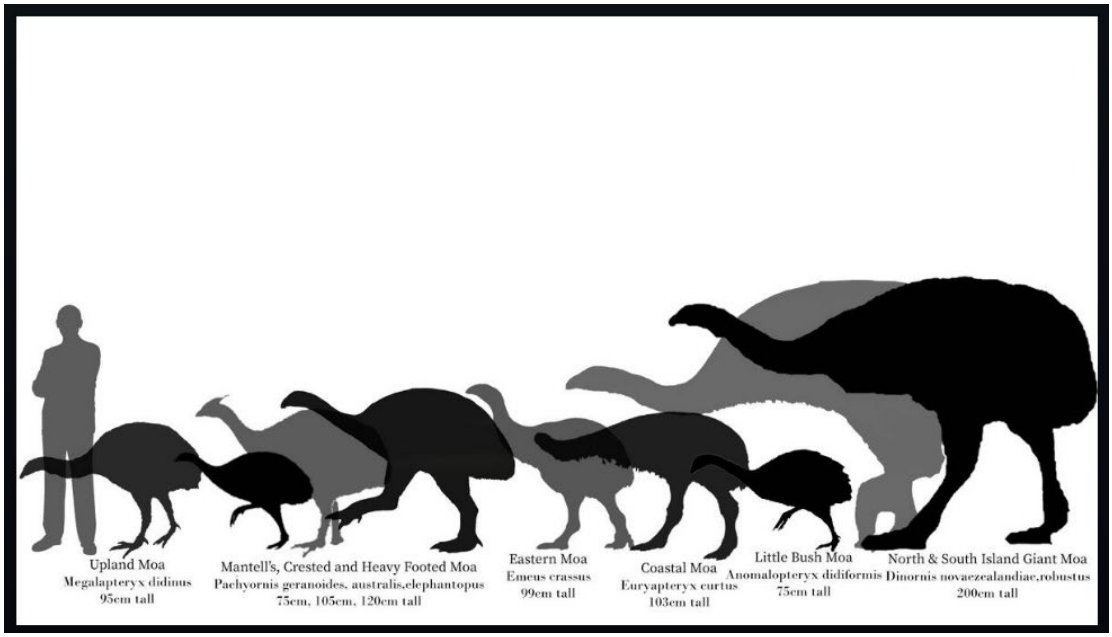
[43] Druett, 2021.

days. Evidence from middens shows that moa and moa eggs were common foodstuffs at the time, and many items like fishhooks and awls were made from moa bone.[44]

Once the infrastructure to preserve large quantities of moa meat were established and moa habitat was opened up to enable easier access and movement for hunting,[45] the annual cull of moa accelerated. At the same time, climactic changes turned to a period of relative cooling. It was in this context that moa quickly declined to the point that they could no longer keep up with attrition, becoming scarcer, until eventually becoming extinct 100-150 years after arrival from Te Moananui-a-Kiwa.[46]

The loss of the moa had a huge impact on the early Kāi Tahu economy. The initial challenge of finding alternative sources of food was only the beginning. In many ways, the extinction of the moa shaped the ecological and social thinking of Māori. Knowledge sourced from whakataukī demonstrates the impact that the loss of the moa had on cultural knowledge and indigenous species; these same whakataukī are used today as a warning of the impact of loss on future generations.[47]

Whakaahua 2: Size comparison of Moa species



Source: zoobuilder21, 2024.

The result of this harsh lesson was the refinement of mātauraka specific to southern Te Waipounamu, based on the natural resources and attributes available to whānau. The economic development that this enabled was underpinned by intergenerational decision-making and that upheld the mana and mauri of the environment, expressing the lessons learned from the loss of the moa. Within this ethos, three primary market activities emerged that underpinned Kāi Tahu economic development: technological innovation; mahika kai; and trade and enterprise.

[44] Potiki, 2011; Szabo, 2013; Walter, Buckley, Jacomb, & Matisoo-Smith, 2017; Worthy, 2015.
[45] Central Otago Ecological Trust, 2019; McGlone, 2001.
[46] Rawlence et al, 2012.
[47] Wehi, Cox, Roa, & Whaanga, 2018.

Tūtohi 2: Whakataukī referencing moa

Huna i te huna a te moa *Hidden as the moa hid*
Kua ngaro i te ngaro o te moa *Lost as the moa was lost*
Kua ngaro ā-moa te iwi nei *The people will disappear like the moa*

Source: Wehi, Whaanga, & Cox, 2018.

2.1.1 Technological innovation

Early technology in Te Waipounamu evolved out of technological skills and mātauraka that tīpuna brought from the eastern Pacific. Some resources that first peoples encountered were familiar; those that were not fuelled innovation, which is "critical to boosting economic growth."[48] Examples of the resulting advancements includes the improvements in the design and construction of fishhooks, new processes to extract fibre for the weaving of clothes, and the development of methods for working stone. This part of the report focuses on innovations in stone technology, particularly related to pounamu, a key product that fuelled the Kāi Tahu economy.

Early stone-working practices were based on at least 2,500 years of technological practice,[49] advanced through centuries of migration. These practices were a significant component of the economy in the Pacific.[50] On arrival, tīpuna quickly identified the location of available stone resources, including familiar stone types, but also locating unfamiliar specimens.[51]

Initially, stonework was focused on familiar stone types like basalt and chert based on Pacific carving practices (Rout & Reid, 2019). Harder metamorphic rocks like pounamu were wholly unfamiliar and while tīpuna recognised the potential of their material properties, Pacific techniques like stone-hammering were not effective, so new methods were required.[52] The development of techniques for working stone in this period provides "the clearest evidence for an early phase of rapid and effective exploration" and provided tīpuna with opportunities to build a "socially and economically viable" society.[53]

The material properties of pounamu, like hardness, durability, and density, gave it practical usefulness to make tools like toki, whao, and mere. However, the visual qualities, such as colour, lustre, and translucency, made pounamu valuable beyond practical use. The beauty of the stone and the skill of the carver elevated the finished product, influencing the way that consumers responded to it. For example, while mere

[48] Ding, 2022.
[49] Kirsch, 1997.
[50] Clark, Reepmeyer, Melekiola, & Martinsson-Wallin, 2014.
[51] Walter, Buckley, Jacomb & Matisoo-Smith, 2017.
[52] Beck & Mason, 2010; Moore & McFadgen, 2006.
[53] Walter, Buckley, Jacomb & Matisoo-Smith, 2017.

pounamu are known to have been used in battle, they were extensively used for ceremonial and other purposes.[54]

The combination of these properties with the rarity of the resource made pounamu a powerful luxury trading item, over which Kāi Tahu held a monopoly. As advances were made in the methods for working pounamu, tīpuna established supply chains and centres for the manufacture of stone tools. To generate even greater value, processes for acquiring raw stone and facilities for tool manufacturing were established to produce stock for trade.[55] Archaeological evidence indicates the demand for these products was strong, with pounamu tools being found extensively across the whole of Aotearoa.[56]

2.1.2 Mahika kai

Technological development also drove efficiencies that enabled advancements in mahika kai practices, further fuelling economic development. Despite the challenge posed by the extinction of the moa, tīpuna had refined mātauraka in response to the local environment and developed extensive area knowledge. This allowed them to identify alternative target species, incorporating the learning they had gained from watching a species extinction and utilising innovative technologies for storage and transportation. These factors enabled mahika kai to evolve into a cornerstone practice around which the emerging Kāi Tahu economy was built.

The loss of the moa had massive impacts for tīpuna, causing "an irreplaceable loss of function for New Zealand's terrestrial ecosystems".[57] As whānau adapted, kaitiakitaka and sustainability principles took a high priority, as balance with nature was recognised as a requirement to protect the wellbeing of future generations. Eventually, the food security provided by moa was replaced with more sustainable harvests based on natural cycles enabling species to be collected when plentiful, accessible, and in best condition. Tikaka and mātauraka guided these practices to protect from further ecological risks; monitoring practices enabled whānau to adapt economic activities in response to changes in the mauri of the environment.

The practice of mahika kai was guided by the maramataka based on a celestial and lunar calendar that provided a universal division of time that could be applied within a highly localised context.[58] Thus, the practice of mahika kai based on the maramataka is fundamentally local, with its practice being highly specific to people and place. Celestial and lunar markers were reinforced by seasonal and ecological changes in the local environment, for example, the fruiting of the mikimiki tree, which signalled the harvest of weka, when the sweet fruit would make the birds nice and fat for eating.[59] The seasonal pattern of activity is illustrated in the mahika kai calendar in Whakaahua 3 below.

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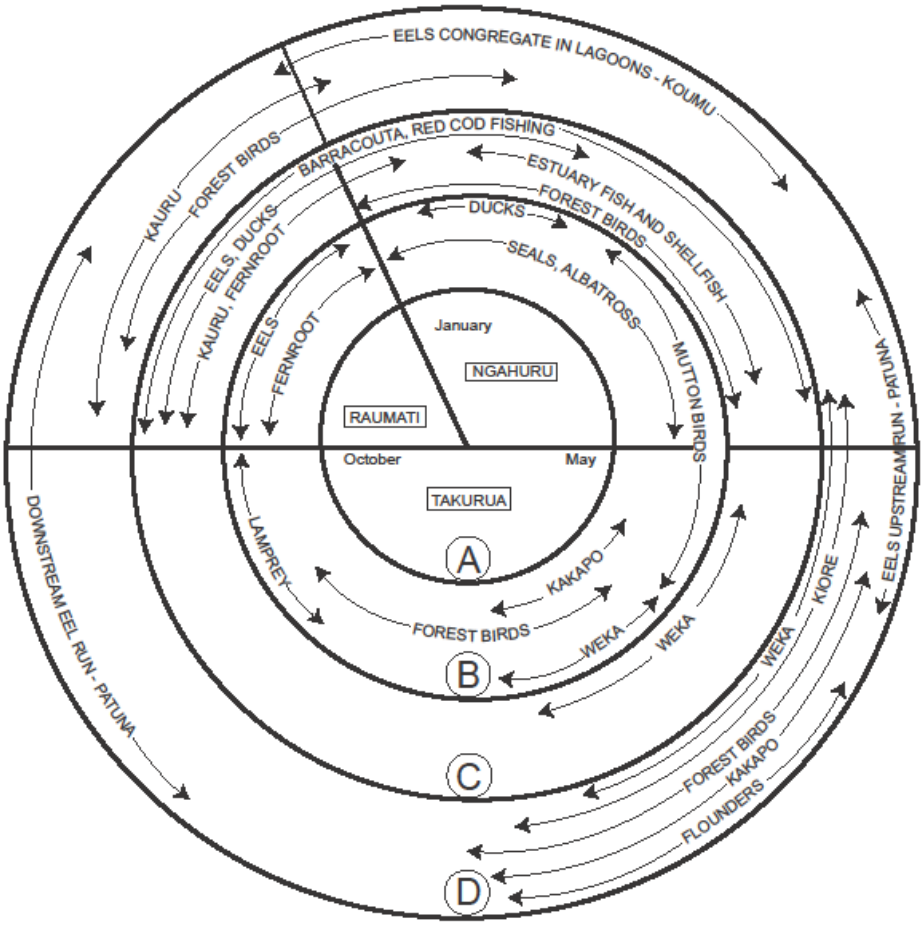
[54] Reid & Rout, 2016.
[55] Beck & Mason, 2010.
[56] Kienholz 2014; Reid & Rout, 2016.
[57] Wood, Wilmshurst, Richardson, & Cooper, 2013.
[58] Clarke & Harris, 2017; Skipper, 2018; Te Papa Tongarea, 2023.
[59] Tumai Cassidy, 2023, personal communication.

The water bodies of Otago were central to the practice of mahika kai, as sources of water, food and other materials and as transport routes. Economic activities are linked to the natural patterns of target mahika kai species, and as a result, involved regular and systematic movement from the coast inland and back again. Known as heke, these seasonal migrations were undertaken by following ara tawhito, ancient supply chains that led inland. Major rivers like the Waitaki, Waihemo, Waikouaiti, Taiari, and Mata-au provided important markers and routes, leading from the coastal kāika to the headwaters. Routes were chosen based on accessibility and availability of infrastructure to support the heke, including campsites and settlements, and reliable sources of food, water and resources, necessary attributes for economic advancement. The pattern of activity in relation to water bodies is illustrated in the heat maps (pages 31 -34).

Whakaahua 3: Seasonal mahika kai calendar



Source: Anderson, 1998.

As the various routes followed by whānau and hapū from their coastal takiwā move inland, they overlap, eventually converging at the headwaters of Whakatipu-waimāori, Wānaka and Hāwea. This converging of supply chains of various whānau and hapū provided a natural opportunity for economic and social interactions including treaties and agreements, whakapapa connections, and trade.

Preservation techniques and technologies developed to support mahika kai practice. It was crucial that whānau had adequate food for the cold, southern winters, which made preservation and storage a necessity, but had the added benefit of adding value to the resource, for example. in processes related to harvest of tītī from the remote Tītī Islands near Rakiura.[60]

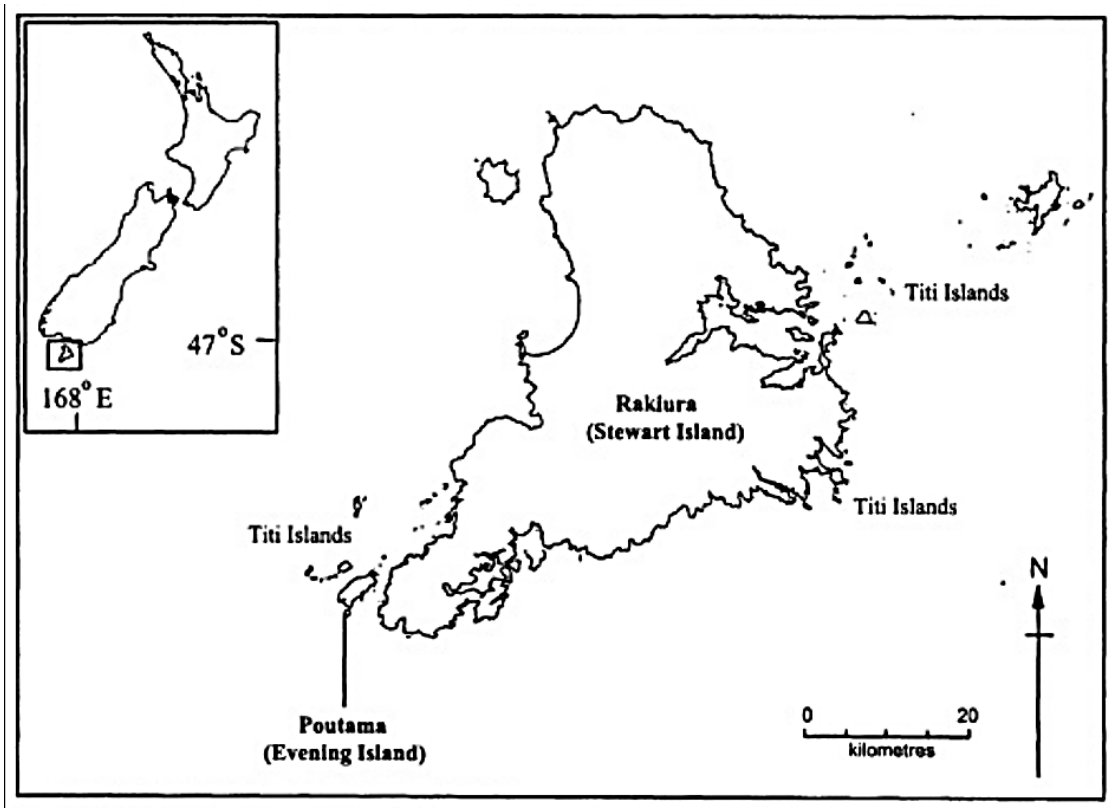
'Muttonbirding' is "a major social, economic, and cultural enterprise"[61] and "a defining cultural activity"[62] that reinforces kinship and ensures that mātauraka and rights to economic resources are retained. Practiced for generations, the tītī harvest involves undertaking an arduous and potentially dangerous journey to a remote and physically challenging location in the Southern Ocean, with access gained exclusively through whakapapa.

[60] While the practice of harvesting tītī itself is not related to freshwater, the transportation of processed tītī back to kāika and for trade purposes was often undertaken via waterways. Moreover, these practices provide excellent examples of the ways that local taoka can support economic and political outcomes. For further information about muttonbirding, see Lyver, Newman, & Rakiura Tītī Islands Administering Body, 2006; Reid & Rout, 2016; Rout, Reid, Te Aika, Davis, & Tau, 2017; Stevens, 2006.

[61] Wanhalla, 2009, p. 123.

[62] Kitson & Moller, 2008.

Whakaahua 4: Location of the Tītī Islands near Rakiura



Source: Livera, 2019.

Access to the harvest provided a myriad of benefits for whānau, including dietary benefits, suitability for long-term storage, and its value as a trade resource.[63] Culturally significant harvests like tītī gained renown as local delicacies, taking on status that further enhances their value for trade. The exclusivity of the resource contributes to its value as a luxury item.

Birds are still collected and preserved on the islands as they were in the past. The meat is cooked and stored in its rendered fat inside a pōhā; a bag made from rimurapa held together with slats of tōtara bark encased in harakeke basketry (see Whakaahua 5 below). The construction was designed to keep the contents air-tight, which kept them fresh for at least three years.[64] It also made them easy to transport, store, and trade.

[63] Stevens, 2006.
[64] Whaitiri, n.d.

Whakaahua 5: Pōhā tītī

Source: Revington, 2015.

Tītī provides a prime example of the way that mahika kai can encapsulate a people's identity, elevating the value to that of a luxury product. For Kāi Tahu, this process takes place through kai hau kai, the practice of sharing and exchanging traditional foods and resources as a statement of mana. Serving these foods for guests or giving them as koha shows respect for the recipient and expresses the identity, wealth and generosity of the gift givers. As the status of local foods became linked to identity, they were seen as delicacies, further raising their profile, value and renown, and that of the associated people.[65] In turn, this would influence demand for the product, thus increasing its economic value, while also acting as a powerful political tool, expressing rakatirataka and upholding whakawhanaukataka and manaakitaka duties.

In conclusion, the combined practices of mahika kai and heke provided opportunities that went far beyond food-gathering to fulfil wider social, economic, and political needs, including:

1. Highly localised area knowledge to support sustainable resource management practices informed by environmental and ecological monitoring
2. A means of testing and refining mātauraka and tikaka as a guide for kaitiakitaka duties and economic decision-making
3. Opportunities for knowledge transfer from one generation to the next
4. The regular and ongoing expression of mana through ahikāroa

[65] Kaan, Bull, Cowan, & Pohio, 2015; Te Papa Tongarewa, 2019.

5. Opportunities for trade, alliances, and relationships with other hapū, whānau and iwi.

Wai māori is crucial to the practice of the Kāi Tahu economy, not least as a requirement for health, but also as a means of travel and transportation. The requirement of wai māori for health extended beyond water to food, as freshwater ecosystems like wetlands and swamps were a significant source of kai and weaving fibres. A prerequisite for the success of this economy is a healthy mauri, evidenced by healthy and abundant natural resources that can support a sustainable harvest.[66] This approach recognises the intrinsic interconnectedness of all elements of our environment that relies on freshwater for health and survival, as expressed in the whakataukī:

Ko te wai te ora o kā mea katoa.[67]

Over generations, the practice of mahika kai and heke built the connection between Kāi Tahu whānui and wai māori, becoming part of their identity, connecting people to trade, innovation, and primary resources. Even more, relationships with wai māori advanced political aspirations and promoted intergenerational decision-making, by supporting economic and social development in balance with the natural environment. These relationships extend to trading relationships with other parties, facilitated by supply chains, primary resources and assets that relied on wai māori for sustenance, habitat, and transportation.

2.1.3 Trade and enterprise

Trade and enterprise have been significant drivers of the success of the Kāi Tahu economy. The values of whanaukataka and manaakitaka are highly relevant to these activities, as wider relationships and social norms influence the way that trade and exchange. Manufacturing of goods from natural assets is a feature of the Kāi Tahu economy, whether in the form of worked stone tools or processed kai like tītī stored in pōhā.

The first and most important of these relationships are with those linked by whakapapa, supplemented by relationships with groups from further north. As the three whakapapa lines of Waitaha, Kāti Māmoe, and Kāi Tahu combined over centuries of settlement, the evolution of Kāi Tahu whānui turbo-charged the economy of southern Te Waipounamu; with a generous and bountiful estate, a secure political structure, and control of the powerful pounamu trade, chiefs held significant power as a trading partner. These relationships provided a broad base for social, political, and economic security and development.

The exercise of mana through trade was supported by practical infrastructure that enabled distribution via supply chains and trading centres. This gave the dual benefit of

[66] Ministry for the Environment, 2022.
[67] Water is the life-giver of all things. Otago Regional Council, 2021, p. 59.

bringing resources from across the tribal rohe to whānau and kāika, and also moving goods to places where they could be traded with others.

Access to pounamu trade was a significant element of these activities, resulting in raw stone being transported to Te Tai-o-Araiteuru via waterways like the Mata-au. Mōkihi were constructed from raupō and korari, sourced from fibre plants found in wetlands and swamps.

These raw materials fuelled the manufacturing of stone tools like toki and whao, some for domestic use but many for trade. Some kāika became important trading hubs, enabling Kāi Tahu from the south to trade with wider whānau or those from further afield. Kaiapoi, for example, became a great centre of the pounamu trade from Te Tai Poutini, drawing people from the north.[68] The movement of pounamu into the North Island is one of the clearest indications of the strength of the Kāi Tahu economy.[69]

An example of this in southern Te Waipounamu is stone-tool manufacturing undertaken at Ōtākou and Pukekura, which produced goods for transportation north by waka along the "coastal highway" of Te Tai-o-Araiteuru. By working pounamu, hapū were able to increase the value and desirability of the resource, providing an asset base for their economic development and prosperity.[70]

The environment of Te Waipounamu provided fertile ground for the growth and proliferation of the Kāi Tahu economy. Building on the strong foundation of mātauraka and tikaka from Pacific ancestors, the local environment and resources enabled further economic development. Wai māori played a crucial role in this system as a vital component for all life; thus, it had to be protected to ensure the long-term health, wealth and wellbeing of Kāi Tahu whānui.

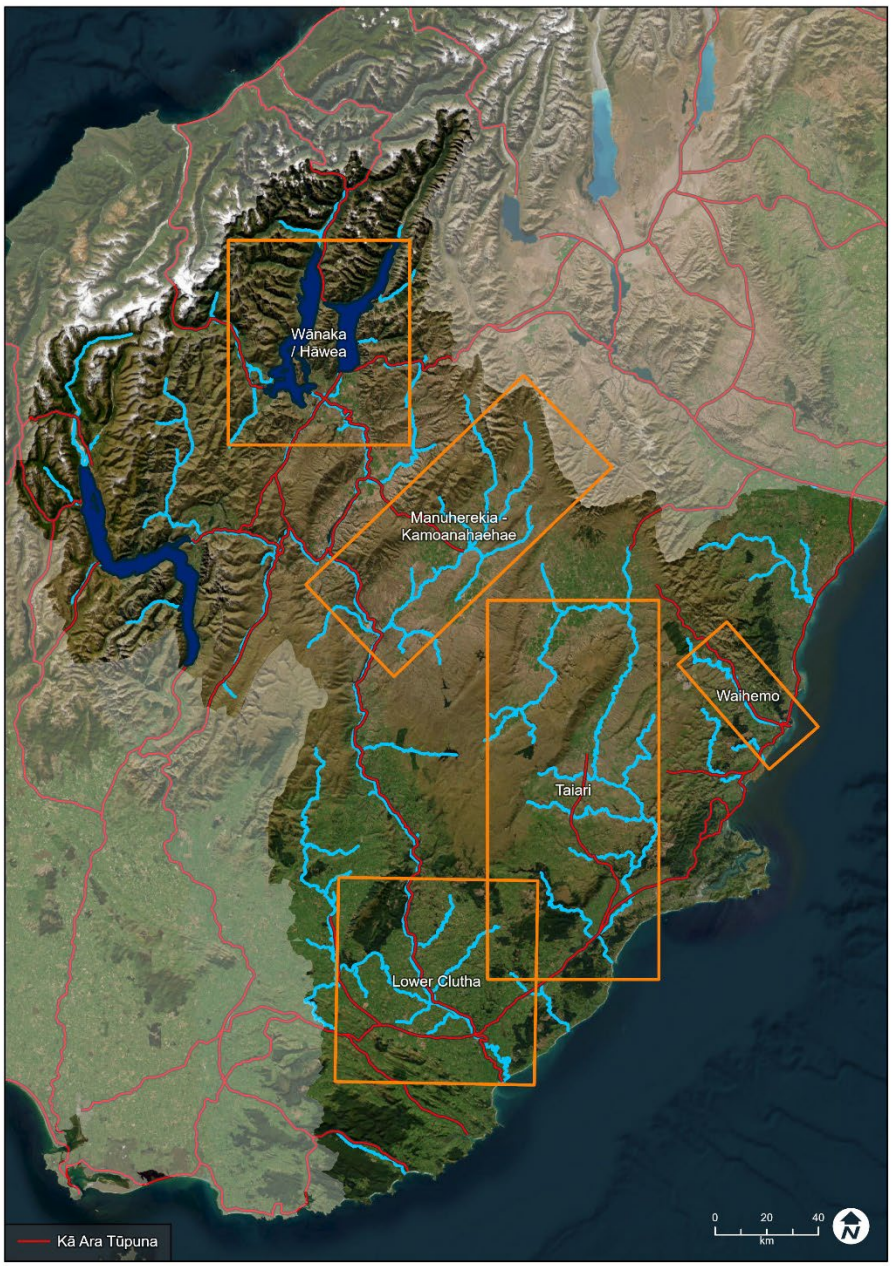
In this setting, the Māori economy can be viewed as a 'diverse economy,' in that it promotes a values-based approach to economic development. Political and social values like mana and whakapapa underpin these practices, with resources, technological innovation and trade further enhancing group status and the value of goods.

[68] Keane, 2006.
[69] Reid & Rout, 2016.
[70] Te Rūnanga o Ōtākou, 2024.

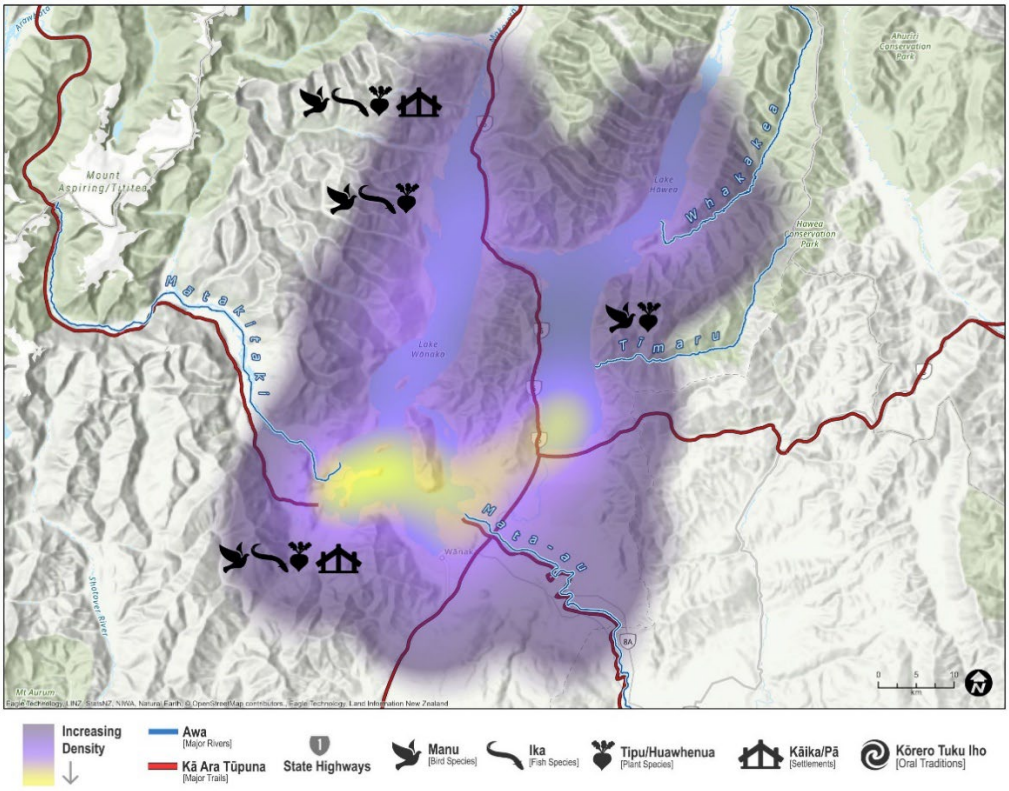
Mahika kai patterns – heat maps

The maps below illustrate the pattern of traditional mahika kai activity, using examples of selected Otago catchments. The maps have been produced from recorded information about historical mahika kai sites and are indicative rather than comprehensive. They show the types of mahika kai resources harvested from different parts of the catchments and also indicate where activity was most concentrated. The icons shown on the maps represent the type of activity recorded in the various locations.

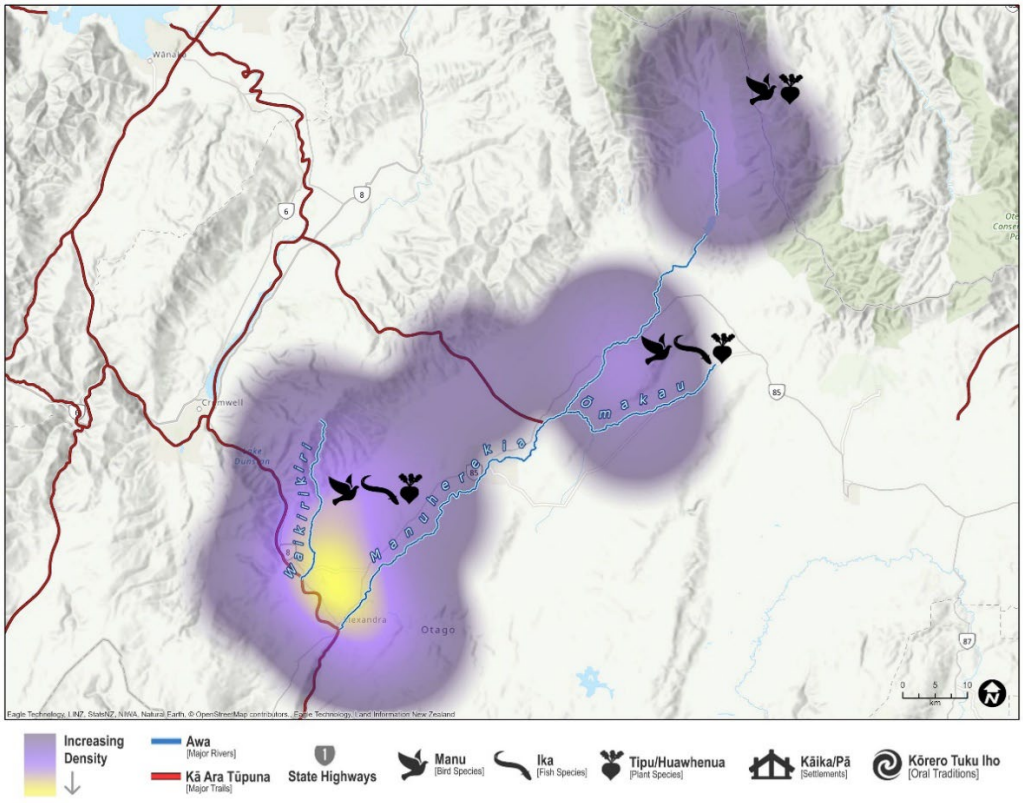
It is important to note that information has only been included for the specific listed catchments. The absence of colouring on areas outside the named catchments does not indicate that there was no activity in those areas.



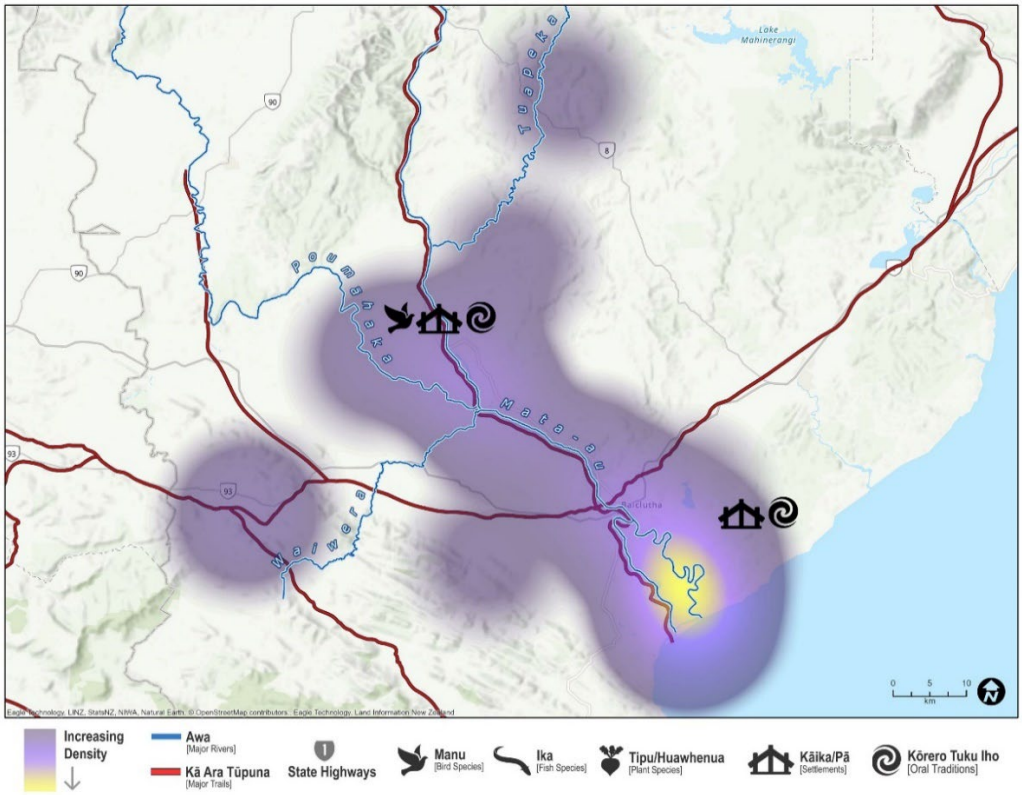
Overview showing location of mahika kai maps



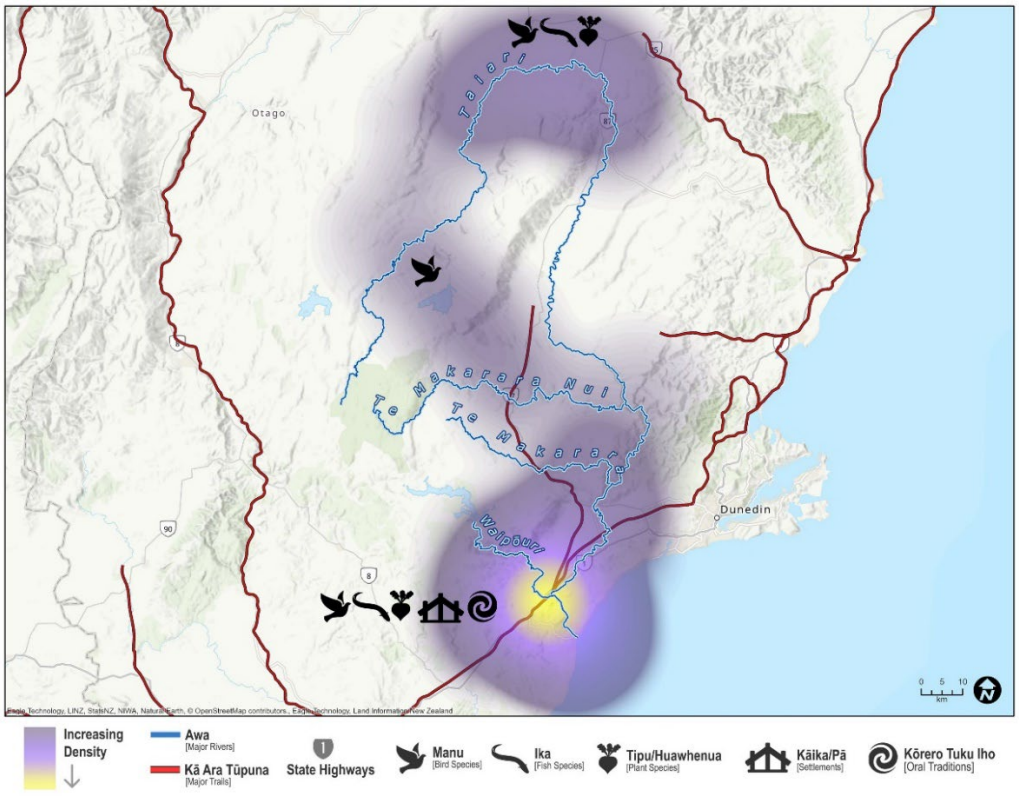
Mahika kai activity – Lakes Wanaka and Hawea



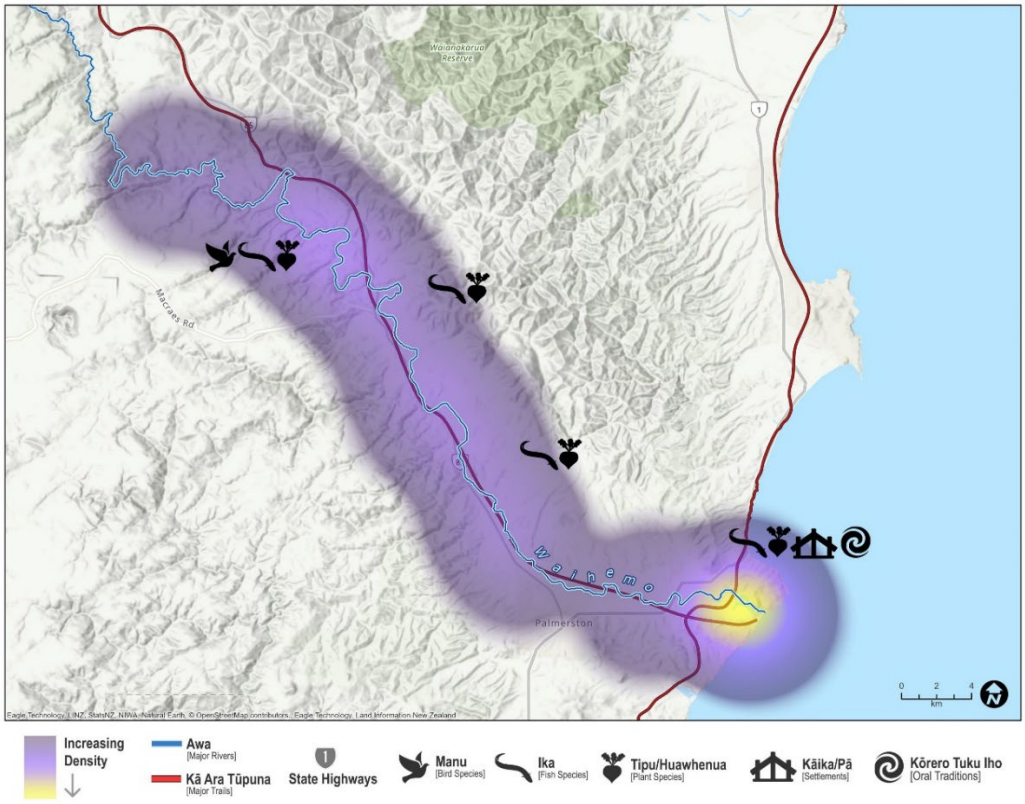
Mahika kai activity - Manuherekia River and Kamoanahaehae



Mahika kai activity - Lower Clutha/ Mata-au River



Mahika kai activity - Taiari River



Mahika kai activity - Waihemo River

This was the economy that Pākehā encountered when they made first contact with Kāi Tahu in the late eighteenth century. Prominent elements of this economy such as trade and technology created spaces for relationships to develop, bringing mutually beneficial opportunities, but also opening the door to political, social, and environmental changes that have had long-term impacts on the Māori economy.

2.2 Te taeka mai o te Pākehā: Key themes in the settlement period

The European 'discovery' of Te Waipounamu is linked to Abel Tasman's visit in 1642, from which he fled after failed interactions with Māori at Mohua, Golden Bay. However, it was Captain James Cook's visit in 1769 that brought widespread contact with Britain and Europe, ultimately leading to a transition of political power through the signing of Te Tiriti o Waitangi. The agreement led to fundamental changes to the political, economic and physical landscape, and far-reaching impacts on the mauri of the people, freshwater, and the wider natural environment. These changes were well beyond what was initially expected by Kāi Tahu at the signing of Te Tiriti, mainly due to mistranslations between the English and Māori texts.

Freshwater management policy and practice set a culture around water use that increasingly focused on the use of water as a commodity and prioritising economic outcomes over environmental impacts. This has had a direct bearing on the mauri of waterways in Otago, leading to degradation and causing serious damage to for indigenous biodiversity and mahika kai.

Meanwhile, Crown breaches of Te Tiriti o Waitangi and Kāi Tahu Deeds had catastrophic consequences, as the iwi becoming "impoverished and virtually landless," robbing whānau of opportunities to "participate in the land-based economy alongside the settlers."[71] The ensuing 150-year battle, while ultimately successful, occurred in parallel with widespread degradation of the water and cultural and economic depletion for the people.

Several key themes emerge in relation to the Kāi Tahu economy over the history of Pākehā contact and settlement in Otago. Initial contact saw Māori benefit significantly from trade with early settlers and the new technologies they brought changed many aspects of Kāi Tahu life. After the signing of Te Tiriti and the Deeds of Sale that followed, this boom became a bust, as whānau were alienated from their land and were restricted to paltry reserves. The economic impacts were catastrophic; without the land, whānau were shut out of the benefits of the emerging mainstream economy.

2.2.1 Early contact brought economic opportunities

Early contact with Pākehā provided opportunities for trade, and enabled access to new technologies. The rakatira retained their mana throughout this period, with new trading opportunities fitting into the existing Kāi Tahu economy. Settler numbers were much

[71] Te Rūnanga o Ngāi Tahu, 2024a.

lower than those of Māori, and initial settlement was transitory. Whaling stations were established along Te Tai-o-Araiteuru with agreement from the chiefs and became a basis for trade and wealth creation. At times, communities moved to be closer to the economic opportunities offered by whaling stations. Kāi Tahu offered local knowledge, safe passage through lands and waters, and access to food and resources for the new arrivals. Whānau adapted to the new opportunities, taking part in whaling activities. Ōtākou became a busy port during this period. Early economic activities for Kāi Tahu include sealing, whaling, and flax. Whānau also adopted new agricultural practices, growing potatoes and vegetables for new settlements, like Dunedin. Māori trade flourished, with goods being exported to Australia from the early 1800s, enabled by western shipping technologies. Māori travelled overseas, seeing the economic opportunities of cities like Sydney and London for themselves.[72]

2.2.2 Early contact also brought challenges and changes

Introduced diseases had a devastating effect on Māori communities. Diseases like measles, influenza, and dysentery were completely novel, so whānau had no immunity, leading to high rates of illness and mortality. Venereal diseases affected birth-rates, affecting fertility and infant mortality.[73]

The arrival of the musket brought further challenges, as their arrival shifted the balance of power and heavily encouraged trade with Pākehā. Initially, the guns were expensive, few, and tended towards poor quality, limiting their effectiveness. However, as supply increased, the value, number, and quality improved markedly.[74]

The resulting Musket Wars affected almost every corner of Aotearoa, making it "New Zealand's most geographically widespread conflict." Ngāti Toa, a relatively small iwi led by rakatira Te Rauparaha, were amongst the most mobile, moving south from Kawhia to Kāpiti, before sacking the Kāi Tahu pā at Kaikōura in 1827-28. This was followed in 1830 by a series of attacks on Kāi Tahu before being forced back by warriors from Te Umu Kaha and Ōtākou.[75]

2.2.3 Te Tiriti o Waitangi was signed from a position of rakatirataka

When Te Tiriti o Waitangi reached Otago in June 1840, the Kāi Tahu economy was still experiencing some negative impacts from recent outbreaks of disease and the arrival of refugees from Kaiapoi. However, with the provisions of article 2 specifically guaranteeing the authority of the chiefs via rakatirataka,[76] the economic opportunities of such an arrangement would have been very appealing. At the time, the settler

[72] Petrie, 2002; Reid & Rout, 2016.
[73] Lange, 2011.
[74] Keane, 2012.
[75] Ibid.
[76] Although this wording is restricted to the Māori text of Te Tiriti, this was the text from which Māori took the meaning of the agreement. Māori was the language that their chiefs were fluent in, and it was the lingua franca of the country at the time, with almost all interactions between Māori and Pākehā taking place through te reo until around the 1860. Orange, 1987; Timms, 2013.

community was still small, so the balance of power was in favour of Māori. The Treaty arrangement looked like a good opportunity for another economic boom, which would have been welcome at the time.

2.2.4 Settlers were guided inland by Kāi Tahu guides

Kāi Tahu guides played a major role in opening up Otago for settlers. In 1844, Te Huruhuru from the Waitaki gave Edward Shortland advice on how to reach Hāwea from the coast by following the Mata-au and drew him a map of Wānaka and Hāwea. Reko, who was originally from Kaiapoi, but lived near Tuturau, acted as a guide to Whakatipu-waimāori, Wānaka and Hāwea for the pastoralist Nathaniel Chalmers in 1853.[77]

Ultimately, these trails were overlaid with roads and settlements, as the supply lines that supported annual heke were converted to infrastructure that enabled the establishment, development, and growth of the settler economy, with accompanying vegetation clearance and modification of water bodies.

2.2.5 The Crown signed Deeds with Kāi Tahu that they then failed to honour

The Otago Deed of 1844 and Kemp's Deed of 1848 were the initial means by which land in Otago was alienated from Kāi Tahu. The prices paid were wholly inadequate, and many of the contractual promises within these agreements were not honoured by the Crown, which had dire consequences for the Kāi Tahu economy.

A major issue was the failure of the Crown to keep their promise to reserve a tenth of the land for Kāi Tahu. Reserves initially allocated under the Ōtākou Deed amounted to less than 2%, while those allocated across the entirety of Kemp's Deed in Otago and Canterbury amounted to only 6,359 acres of the 13.5 million acres alienated.[78]

As land was taken up by pastoralists who exerted property rights, Kāi Tahu lost access to many of their seasonal harvest grounds and became severed away from mahika kai places and practices. This led to socioeconomic devastation and poor health outcomes, which significantly undermined Kāi Tahu economic development.

2.2.6 Early settlement gave an initial boost to the Kāi Tahu economy

The arrival of the first families to settlements like Dunedin boosted demand for trade, initially bringing economic benefits for Kāi Tahu. Kāi Tahu established tauraka waka and relationships, enabling them to trade kaimoana, potatoes, flax, and at times water transport. The tauraka waka at the mouth of the Toitū near the harbour initially provided a lucrative trade industry. Māori quickly adopted European farming practices and

[77] Phillips, 2007.
[78] Te Rūnanga o Ngāi Tahu, 2017-2024.

products, producing large amounts of pork and potatoes to supply whalers and sealers.[79]

However, it didn't take long for settler industry to establish, and trade with Kāi Tahu tailed off as settlers preferred to trade with other settlers. Eventually, the Toitū was channelised and the foreshore was reclaimed for settlement, submerging the mooring site. This loss and that of the nearby Princes Street Reserve were a source of significant grievance for Ōtākou.[80]

2.2.7 As the settler economy boomed, ...

The Otago gold rush in the 1860s accelerated the growth of the settler economy, with the population of Otago doubling by the end of 1861.[81] Individual Kāi Tahu whānau members took part in the gold rush,[82] but there were significant impacts on waterways.

Alluvial gold mining required large quantities of water for sluicing, which led to significant modification of waterways, through damming, dredging and abstraction. [83] Sedimentation from mine tailings also altered riverbeds and degraded habitats for freshwater species. The influx of miners led to significant changes in land use beyond mining, as food production was ramped up, and roads, settlements, and commercial enterprises were built.

Once the rush was over, land use changes continued to increase as old miners took up new opportunities in primary industries. Consequently, waterways like the Waikouaiti, Taiari and Waiwhakaata experienced increased pastoralisation, agriculture, horticulture and orcharding, which slowly started to influence the health of wai māori.

In places like Central Otago, this transition was supported by the availability of mining infrastructure, which was adapted for domestic and other purposes, like irrigation and stock water. These activities heavily relied on the availability of water, but practices prioritised economic outcomes over environmental impacts.

The impact for the Kāi Tahu economy was severe, as these activities cut off access to crucial raw materials and food sources, severing supply chains and blocking trade with whakapapa-based markets. While environmental impacts on waterways and mahika kai species were often subtle, the degradation of wai māori today stems from these early changes in the environmental ethics of the economy in Otago.

2.2.8 ... the Kāi Tahu economy became isolated to the coast

At the same time as access to the inland areas became restricted, Kāi Tahu whānau were increasingly confined to their coastal reserves, which had significant impacts on

[79] Keane, 2010.
[80] Heritage New Zealand Pouhere Taonga, 2024.
[81] Walrond, 2006.
[82] For example, "Māori Jack" Tewa, a shearer, who discovered alluvial gold at Whakatipu-waimāori; Carpenter, 2013.
[83] Department of Geography, 2024.

the Kāi Tahu economy. The wealth derived from the seasonal migration inland was no longer available to whānau, restricting economic development. Coastal food gathering needed to be undertaken almost daily to be sustainable, which imposed risks if people were sick or injured, or conditions were unsuitable for harvest.

By 1870, the scale of economic activity was largely confined to coastal reserves, which were increasingly too small to sustain Kāi Tahu populations. Whānau were reduced to eking out a living. Some communities like Maitapapa in the lower Taiari were still relying on large wetland complexes. Coastal fisheries and kaimoana became staples of economic activity, providing food for whānau and trade with the local settlements; however, the economy of mahika kai increasingly needed to be supplemented by seasonal work like shearing or farming.

2.2.9 Native Land Acts and the Land Court undermined economic development

Starting in 1865, the Native Land Court introduced a new system of land tenure based on individual title, making it much easier for land to be alienated.[84] Title to land increasingly became shared by members of iwi, hapū and whānau, but in general, collective owners are not eligible for capital investment. Land held collectively became increasingly uneconomic, as the number of shareholders grew with each generation, and decision-making became more difficult as more people moved away from ancestral kāika.

Engagement in the Land Court process bore significant costs for whānau, leading to land being sold to cover debts. Thus, the Court became a major driver of Māori land alienation in the late eighteenth century.[85] Failure to engage, however, also had significant costs, as it meant that land assets were sure to be lost. The overall impact of the Courts was a 'sinking lid' on Māori land tenure, acting as "a veritable engine of destruction for any tribe's tenure of land, anywhere."[86] The loss of their land base fundamentally undermined the foundation of the Kāi Tahu economy as they lost access to the means of production, ultimately forcing whānau to engage in paid employment based around the economic activities of settlers. Between 1870 and 1892, 2 million hectares of Māori land across the country was transferred to Pākehā ownership.[87]

2.2.10 More reserves are allocated, but do not address Te Kerēme

During the 1850s and '60s, the Māori population continued to grow, augmented by marked intermarriage with Pākehā, putting more and more pressure on the land as holdings became increasingly uneconomic. Further reserves were allocated to Kāi Tahu,

[84] Ministry for Culture and Heritage, 2021a.
[85] Chapple, 2019; Keane, 2010.
[86] Kawharu, 1977, p. 15.
[87] Ministry for Culture and Heritage, 2021a.

as it became increasingly clear that those established under the Deeds were inadequate.

The 'half-caste' reserves were established to provide reserve land for the population that had arisen out of Māori-Pākehā intermarriage following Native Land Court hearings in the second half of the nineteenth century.[88] Half-caste reserves established in Otago included Moeraki, Taiari, Hawksbury, Brinns Point, and Aramoana.[89]

The Fenton allocations were fisheries easements established following a series of Native Land Court hearings. The reserves provided whānau the right to occupy land close to waterways for mahika kai activities.[90] Several fishing easements were established in Otago, including Tunaheketaka, Moeraki, Matainaka, Waikouaiti, Taiari, Hāwea, and Lake Tatawai, but many were later lost or degraded due to land use practices and waterway modification.

The South Island Landless Natives Act 1906 allocated approximately 57,000 hectares to around 4,000 Kāi Tahu individuals as whānau had insufficient land to support themselves.[91] The Act did little to overcome the issue. Allocated reserves were significantly less than the recommended allocation of 200,000 hectares. Moreover, these reserves comprised remote bush and forest in areas that were unsuitable for economic activity.[92]

Regardless. the reserve allocations did little to support the economic needs of Kāi Tahu whānau and undermined Kāi Tahu economic development.

2.2.11 A significant decline in the Māori population by 1900

The Māori population declined for most of the nineteenth century, with the sharpest drop in the period from 1840 to 1860 when total numbers dropped by up 30% nationwide. The total Māori population reached its lowest levels in 1896 at 42,000, down from an estimated population of between 100,000 and 200,000 in 1769.[93]

By 1860, Pākehā and Māori populations reached parity, followed by significant increases in settlement through to the mid-1870s, which effectively swamped Māori. By 1874, Māori were less than a tenth of the national population, retaining this status for the next 100 years.[94] As the Pākehā population overtook that of Māori, social norms, language and protocols moved away from Māori practices, being replaced by English

[88] Wanhalla, 2009; Wanhalla & Stevens, 2019.
[89] Otago Regional Council, 2021.
[90] MacKay, 1876.
[91] Māori Land Court, 2024.
[92] In Otago, SILNA land known as Sticky Forest was allocated at Wānaka, despite whānau access to the area having been restricted since the 1860s. Māori Land Court, 2024; Ministry for Primary Industries, 2024; Reeves, n.d.
[93] Lack of immunity to introduced diseases was a key driver of Māori population decline until 1870. Pool & Jackson, 2011.
[94] Of the 270 Ngāi Tahu known to have enlisted in the 'Great War,' around 50 are known to have died. Te Rūnanga o Ngāi Tahu, 2017-2024; Webb, 2018.

and western norms, and the Treaty agreement was increasingly overlooked and forgotten.[95]

Prominent 'scientific' theories like eugenics and natural selection contributed to the rise of racist rhetoric that predicted the eventual extinction of the Māori people, In this context, it was seen as the duty of Pākehā to "smooth down… [the] pillow of a dying race,"[96] a natural result of being "supplanted by a superior race."[97] These attitudes were reflected in all spheres of life in Aotearoa, further undermining the Kāi Tahu and wider Māori economies through increasingly inequitable health, welfare, education, and justice outcomes for Māori.[98]

2.2.12 Global forces have economic impacts – the World Wars

Many Māori leaders saw World War I as "an opportunity to claim equality with Pākehā," with fighting prowess being seen as a means of forcing the government to "treat all Māori as full citizens [able] to participate fully in the nation's economic life."[99] While Māori soldiers earned a fearsome reputation as a fighting force, the cumulative impacts of high casualty rates,[100] legacy health issues,[101] and post-war policies for veterans[102] contributed to negative social and economic outcomes.[103]

The Māori 'Pioneer' Contingent was deployed to Egypt in 1914, then Gallipoli in 1915 and finally to France, taking part in several infamous battles, including Chunuk Bair and the Somme.[104] Renowned for their bravery in battle, the contingent suffered significant casualties. When New Zealand pulled out of Gallipoli in 1915, the Māori Contingent's casualty rate was at least 70%.[105] Of the 270 Ngāi Tahu known to have enlisted in the WWI, around 50 are known to have died.[106] In WWII, 3600 Māori soldiers served with the Māori Battalion, suffering a casualty rate 50% higher than the average New Zealand infantry battalion.[107]

Those who did return often suffered from physical and mental disabilities resulting from their experiences at war. These experiences were further exacerbated by policy and social events that severely affected Māori economic development. For example, Māori

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[95] Orange, 2012.
[96] Buck, 1924, p. 362.
[97] Newman, 1881, p. 477.
[98] Pool & Kukutai, 2018.
[99] Hearn, 2018, p. 84.
[100] Ministry for Culture and Heritage, 2020.
[101] High rates of typhoid, reactions to immunisations, and venereal diseases have been linked to health issues suffered by Māori WWI veterans. By the 1920s, gonorrhoea and syphilis were present in many Māori communities. Walker, 2023.
[102] Ibid.
[103] 'Shell shock' was a significant issue for Māori veterans, with the first cases identified amongst troops at Gallipoli in 1915. A Kāi Tahu soldier, Private Victor Manson Spencer, was the last New Zealander executed for desertion in 1918, "with no consideration for his physical or mental health." Walker, 2023, p. 118.
[104] Ministry for Culture and Heritage, 2020.
[105] Parahi, 2018; Soutar, 2019.
[106] Te Rūnanga o Ngāi Tahu, 2017-2024.
[107] Ministry for Culture and Heritage, 2020.

WWI veterans suffered discrimination and were excluded from the opportunities and provisions afforded other veterans.[108]

2.2.13 Commercial fishing

As the Kāi Tahu population became confined to the coast, sea fishing became an increasingly important economic base for the coastal communities. Establishment of Ōtākou Fisheries in the 1940s grew into a substantial co-operative, with fishing boats operating from Timaru to Milford Sound. A processing factory was established at Ōtākou, later moving to Dunedin.[109] Fishing has remained important for Kāi Tahu whānau in Otago, but the extent of fishing activity was significantly eroded by the additional costs of operation imposed by the introduction of the Quota Management System in 1986.[110]

2.2.14 Urbanisation in the 1950s

Māori urbanisation began during WWII, when young Māori unable to enlist were 'manpowered' into industries to support the war effort. After the war, the trend increased; the New Zealand economy was growing and there was strong demand for labour. The result has been a dramatic shift in the Māori population, from rural to urban areas.[111]

For Kāi Tahu in Otago the impacts of urbanisation were two-fold, with many whānau leaving their kāika for job opportunities further afield, whether locally, nationally or internationally. Moreover, urban drift brought other Māori, mātāwaka, south to take up opportunities, particularly in farming, meat works, and forestry. Today, roughly 70% of the Māori population of Otago are mātāwaka. These people brought their own tikaka and mātauraka, which placed further restrictions on the economic potential of Kāi Tahu.[112]

2.2.15 Broader economic pressures – economic recessions

Economic recessions in the twentieth century have had significant impacts on the Kāi Tahu economy, due to the interconnected nature of global markets, the structure of Māori-owned assets, and the broader socio-economic challenges faced by Māori communities. Kāi Tahu economic activities in primary industries and tourism are highly prone to global economic forces. Recent global events like the 2008 Global Financial Crisis and the Covid-19 pandemic have negatively affected Kāi Tahu economic

[108] Ministry for Culture and Heritage, 2024.
[109] Edward Ellison, Te Rūnanga o Ōtākou, personal communication.
[110] Higgins, 2021.
[111] Before WWII, 80% of Māori lived in rural areas, mainly in their own takiwā. In 2013, 84% of Māori lived in urban areas, and one in six Māori do not know their tribal affiliations. Reeves, 2015.
[112] Te Rūnanga o Ngāi Tahu, 2021; Statistics New Zealand, 2024.

development due to reduced international demand for products and reductions in global travel.[113]

Kāi Tahu hold significant assets in land and property, the values of which are affected by economic forces. During a recession, this can lead to lower return on investments, affecting economic growth. This can then impact social programmes and activities that are funded through these investments.[114]

Recessions also have significant impacts on employment rates and history shows us that Māori tend to disproportionately experience during these periods. Whānau are often employed in vulnerable sectors like manufacturing, hospitality, and service industries. During the 2008 GFC, for example, Māori unemployment rose significantly, exacerbating existing social and economic inequalities.[115]

These themes emerge across a history of events that spans the period from contact with Pākehā through to the end of the twentieth century. This was a period of economic contraction, during which rakatirataka was actively suppressed, and which ultimately became the basis of the Kāi Tahu Claim to the Waitangi Tribunal, which marked a turning point in "awakening the sleeping giant"[116] that is the Kāi Tahu economy.

The following timeline identifies key events during the history of contact between Māori and Pākehā and establishment of Crown kāwanataka. The time spans the period from 1769 to 1997; it is made up of legislation, policy, actions, and events that have influenced the Kāi Tahu economy and wai māori as a primary economic asset. These events ultimately formed the basis of Te Kerēme, the Kāi Tahu Claim to the Waitangi Tribunal. Moreover, elements of this timeline have had significant impacts for wai māori and freshwater ecosystems, which will be discussed in Chapter 3.

[113] Te Rūnanga o Ngāi Tahu, 2020.
[114] Radio New Zealand, 2020; Te Rūnanga o Ngāi Tahu, 2020.
[115] Ministry of Business, Innovation & Employment, 2021; Te Puni Kōkiri, 2009.
[116] Davis, 2006, p. 53.

1769-1773
Cook's voyages to Aotearoa

Whānau gained access to new technologies like metal tools.

Cook identified resources like timber, flax, whales, and seals for extraction.

1792
Sealers in Fiordland[1]

Māori traded with sealers.

Whānau gained access to new technologies like metal tools.

Decimation of fur seal populations.

1823
Flax trade[2]

Taiaroa partnered with Capt. Kent to trade dressed flax in New South Wales.

Whānau employed to produce dressed flax for trade.

Trade and employment brought wealth to the community.

Increased population at Ōtākou.

1830-1832
Invasion of Ngāti Toa[3]

Displaced whānau became reliant on work as whaling crew.

Major displacement of whānau from land.

Disconnection from places and practices, knowledge could not be practiced or passed down.

Whānau sold land at Preservation Inlet to purchase weapons to push back against Ngāti Toa.

1831
Whaling at Ōtākou[4]

Weller brothers acquired land at Ōtākou, likely from Tahatu and Karetai.

Whānau gained employment as crew and whaling boats allowed for mobility of Chiefs.

Whānau produced goods for trade.

Intermarriage, liaisons led to birth of 'mixed' children.

Decimation of Southern Right whale populations.

1835
Measles outbreak[5]

Lack of labour affected whaling operations.

Illness and death saw marked population decline at Ōtākou.

Whānau unable to undertake kaitiaki, mahika kai activities.

1840
Signing of Te Tiriti o Waitangi

Article 1 allowed the British Crown to establish a government in Aotearoa.

Article 2 recognised Māori authority over lands and taoka.

Article 2 of Te Tiriti banned public sale of Māori land.

Article 3 of Te Tiriti recognised Māori as citizens equal to other subjects.

1844-1848
The Otago and Kemp deeds[6]

Disruption of mahika kai activities crippled the Kāi Tahu economy.

Within one generation, Kāi Tahu became virtually landless and reserved land not sufficient to sustain whānau wellbeing.

Colonial influence hindered traditional access and seasonal movement around camp sites and places of mahika kai.

Whānau become dependent on seasonal employment (including shearing, harvesting, potato digging) which disrupted whanau/hapu network.

Purchased land used for agriculture, pastoral farming.

1852
New Zealand Constitution Act[7]

Kāi Tahu were unable to engage in political decision-making processes.

Voting rights were limited to males over 20 who owned freehold land.

Most whānau did not meet voting criteria.

Māori were disenfranchised, blocked from influencing public policy.

1853
Reko the Guide[8]

Reko, originally of Kaiapoi, guided Nathaniel Chalmers to the lakes of Whakatipu-waimāori, Wānaka and Hāwea.

Trails formed the basis for the modern roading network.

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1 Brown, 2020, Ngā tīpuna I Tamatea.
2 Oliver, 2018, Taiaroa, Te Mātenga.
3 Ellison, 2020, unpublished manuscript.
4 King, 2010. Further stations were established at Otago Harbour in 1833; at Moeraki, Waikōuaiti and Puketeraki in 1837; at Molyneux Bay in 1838; and at Taiari and Tautuku in 1839. Prickett, 2002.
5 Hanham, 2003, The impact of introduced diseases.
6 TRONT, 1997, Kemp's Deed, 1848; The Otago Deed, 1844.
7 Derby, 2012.
8 Petchey, 1995. Upper Clutha River prehistoric archaeological assessment [unpublished manuscript].

1853
Kōpūtai and Princes Street Reserves[9]

Promised reserves released to Otago Council, did not advise Ōtākou.

The sites became the Exchange and the foreshore of Port Chalmers.

Lengthy legal process culminated in 1877 settlement.[10]

Lost access to tauraka waka at Toitū mouth used for trade.

Mahika kai now largely unavailable in these places.

Foreshore reclamation, undergrounding of Toitū Stream.

1858
Native Districts Regulation Act[11]

Provisions enabled Councils to extinguish title, impose fines, and enforce action on Māori land.

Legislation restricted mahika kai activities on Māori land.

Land was alienated and land use practices changed.

Land use changes drove significant loss of indigenous vegetation and ecosystems.

Ability of Kāi Tahu to enact their kaitiaki role diminished.

1861-1864
Otago Gold Rush

Influx of 18,000 prospectors.

Dramatic landscape changes; water races, sluicing, dredging, tailings.

Filling of Lake Tunaheketaka with tailings from Kyeburn.

Constructed Idaburn water race.

First damming of Dismal Swamp to form Lake Onlsow.

Increased land alienation.

1861-1866
Animal Protection Acts[12]

Whānau are unable to gather many species in the abundance in which they were previously available, strengthening importance on tītī season and reliance on sea fishery for survival.

Trading opportunities based on mahika kai activities virtually disappeared.

Whānau became more reliant on paid employment as availability of mahika kai declined.

Non-native species like trout, deer, and Canadian goose have had significant impacts on indigenous biodiversity.

Introduced species have contributed to the decline of mahika kai species through predation and competition for habitat.

1862
Native Land Act[13]

Allowed public sale of Māori land.

Enabled alienation of 5% of Māori land for public works with little or no compensation.[14]

Māori required to attend Native Land Court to prove ownership of ancestral land.

Contributed to the continued fragmentation of Māori land ownership.

1865
Native Land Act[16]

Individualisation of Māori land title.

Land holdings to decline dramatically.

No more than 10 owners on any Māori land title. All other titles holders lost land rights.

Land sold more likely to be converted from indigenous habitat.

Traditional inland trails and mahika kai less available due to fences, 'property rights', stock and introduction of pests (rabbits).

Later effect of poisoning of rabbits to indigenous species (eg. Weka).

1864
Public Works Act and subsequent[15]

Enabled taking of land, including Māori land, for public works.

Targeted Māori land as owners could be paid less in compensation.

Later used to enable river and wetland drainage in the early 1900s.

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9 Ellison, 2020, unpublished manuscript.

10 The Native Affairs Committee accepted that Kāi Tahu be paid £5,000 for accrued rent, despite the collected funds totalling over £6,000. Kāi Tahu received £1,000 directly, but the process for accessing the remaining £4,000 meant that Kāi Tahu had to forego the full balance and accept £5,000 as full and final settlement. Waitangi Tribunal, 1991, Volume 3

11 The Act included a range of provisions relating to Māori including: provisions for extinguishment of native land title (s.IX); monitoring and enforcement powers regarding Māori use, occupation, and management of land holdings; recognition of Māori of mixed race and peoples of the Pacific as Māori under the Act (s.XI); the ability to force the cleaning of houses/buildings "in a dirty and unwholesome state" (s.II-10); and a policy that promoted cultural suppression and assimilation. General Assembly of New Zealand, 1859.

12 Walrond, 2008; West 2018.

13 Taonui, 2012.

14 OAG, 2011.

15 Clover, 2004; Taonui, 2012.

16 MCH, 2021; OAG, 2011.

1867
Municipal Corporations Act[18]

Established Councils responsible for local government.

Established system for electing Councils.

Conferred power to make bylaws, collect rates.

Must provide essential services (three waters, street maintenance).

Managed public health, building codes, and land use planning.

1867
Salmon and Trout Act[17]

Salmon and trout introduced to New Zealand waterways.

Protection of salmon and trout greater than that of native species.

Trout incursion into waterways led to localised extinction of native species.

1868
Manuhaea Decision[19]

Allocated 100-hectare fishing easement at Manuhaea, Lake Wānaka to Ngāi Tahu.

1868
Ngaitahu Reference Validation Act[20]

Blocked use of the Supreme Court for Ngāi Tahu claims under the Treaty.

1873
Native Land Act[21]

Must list all owners on Māori land title.

Land could no longer be awarded to iwi or hapū.

Owners entitled to sell land interests independently.

Increased land alienation.

1882
Native Lands Rating Act

Introduced rates on Māori land.

Māori land rated up to 300% of other land types.

Became increasingly difficult to collect rates from whānau.

Land alienated through sale or seizure for unpaid rates.

1893
Rating Act[22]

Introduced consolidated rating system based on property value.

Allowed for charging of fines and seizure of land for non-payment of rates.

Māori land levied at 50% if occupied by Māori and outside urban boundaries.

1897-1905
"Water conservation" projects in Central Otago[23]

Increased use of water rights from mining in public works projects for water storage and supply.

Construction of second higher dam at Dismal Swamp/Lake Onslow.

Construction of Ida Valley water races.

Construction of sludge channels at north end of the Manuherekia.

Construction of irrigation works at Clyde/ Dunstan Flat.

Construction of Eweburn dam.

Construction of Poolburn dam.

Construction of the Fraser/Earnscleugh River dam.

Construction of Idaburn dam.

1904
Native Land Rating Act[24]

Extended taxation of Māori land.

Revenue used to build local services, infrastructure.

Complex system placed undue burden on Māori landowners.

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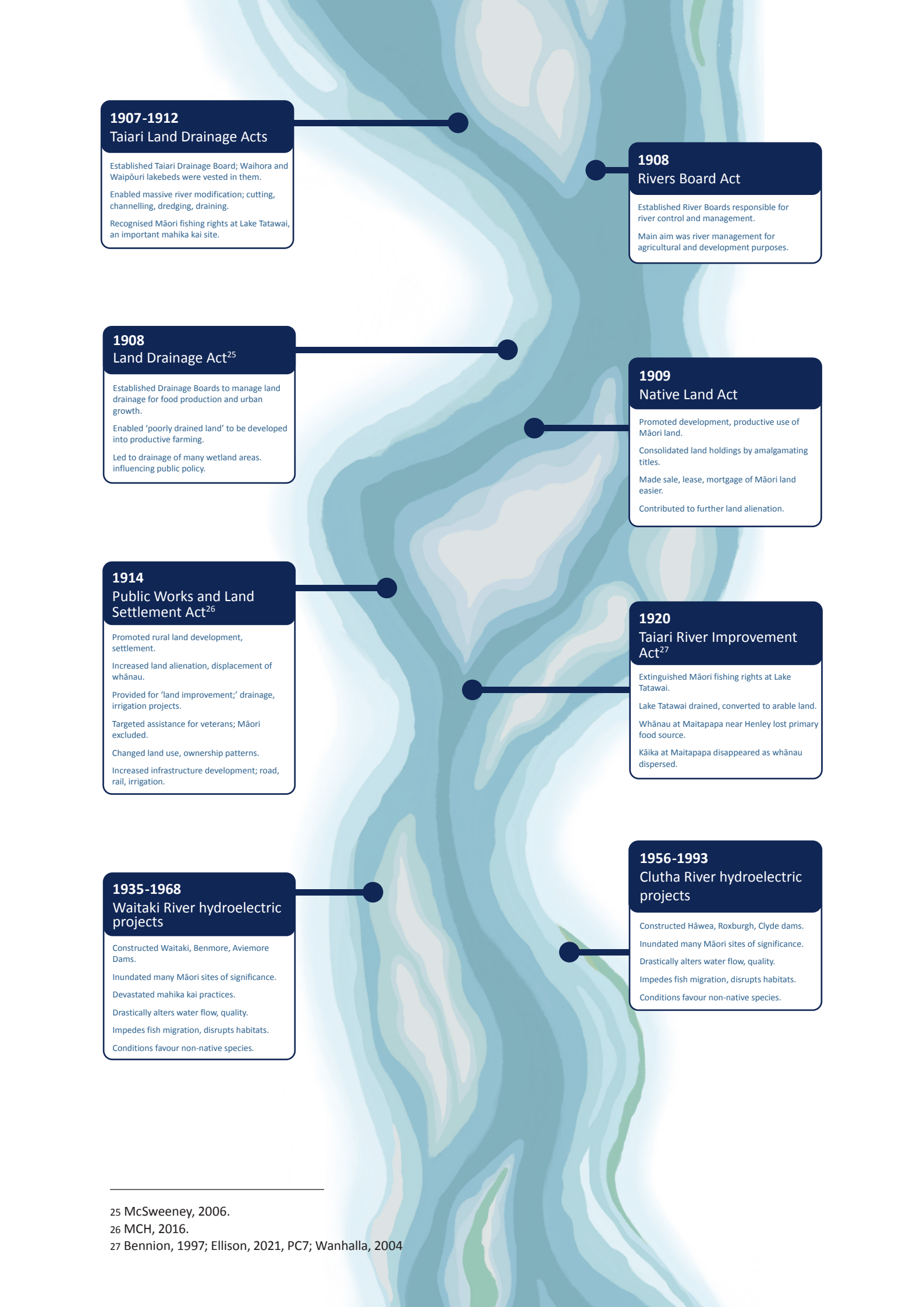
17 Silverstream Reserve, 2023; Townsend, 1996.
18 Cardow, 2007.
19 TRONT, 2016.
20 TRONT (1997), Te Whakataunga.
21 MCH (2016).
22 Bennion (1997).
23 Roger (2022).
24 Bennion (1997).



1907-1912
Taiari Land Drainage Acts

Established Taiari Drainage Board; Waihora and Waipōuri lakebeds were vested in them.

Enabled massive river modification; cutting, channelling, dredging, draining.

Recognised Māori fishing rights at Lake Tatawai, an important mahika kai site.

1908
Rivers Board Act

Established River Boards responsible for river control and management.

Main aim was river management for agricultural and development purposes.

1908
Land Drainage Act[25]

Established Drainage Boards to manage land drainage for food production and urban growth.

Enabled 'poorly drained land' to be developed into productive farming.

Led to drainage of many wetland areas. influencing public policy.

1909
Native Land Act

Promoted development, productive use of Māori land.

Consolidated land holdings by amalgamating titles.

Made sale, lease, mortgage of Māori land easier.

Contributed to further land alienation.

1914
Public Works and Land Settlement Act[26]

Promoted rural land development, settlement.

Increased land alienation, displacement of whānau.

Provided for 'land improvement;' drainage, irrigation projects.

Targeted assistance for veterans; Māori excluded.

Changed land use, ownership patterns.

Increased infrastructure development; road, rail, irrigation.

1920
Taiari River Improvement Act[27]

Extinguished Māori fishing rights at Lake Tatawai.

Lake Tatawai drained, converted to arable land.

Whānau at Maitapapa near Henley lost primary food source.

Kāika at Maitapapa disappeared as whānau dispersed.

1956-1993
Clutha River hydroelectric projects

Constructed Hāwea, Roxburgh, Clyde dams.

Inundated many Māori sites of significance.

Drastically alters water flow, quality.

Impedes fish migration, disrupts habitats.

Conditions favour non-native species.

1935-1968
Waitaki River hydroelectric projects

Constructed Waitaki, Benmore, Aviemore Dams.

Inundated many Māori sites of significance.

Devastated mahika kai practices.

Drastically alters water flow, quality.

Impedes fish migration, disrupts habitats.

Conditions favour non-native species.

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25 McSweeney, 2006.
26 MCH, 2016.
27 Bennion, 1997; Ellison, 2021, PC7; Wanhalla, 2004

Throughout the timeline of events from the arrival of Pākehā to the signing of the Ngāi Tahu Deed of Settlement, Kāi Tahu voices and perspectives have been either absent or outnumbered in the context of economic and political decision-making. The iwi spent 150 years fighting to have their grievances heard, recognised, and settled, which is covered in the next section.

2.3 Te Kerēme: the Waitangi Tribunal, and the Ngāi Tahu claim settlement

The historical backdrop of Māori urbanisation contributed to significant social and political changes. As Māori from different areas began to establish urban constructs to support Māori culture and identity, a growing awareness of the shared history of colonisation developed across the motu. The result was the rise of urban Māori protest movements like Ngā Tamatoa, which set the scene for the establishment of the Waitangi Tribunal in 1975.[117] The following timeline provides a historic overview of the Tribunal's establishment in relation to Te Kerēme.

2.3.1 Treaty of Waitangi Act 1975 and Amendment Act 1985

The Waitangi Tribunal was established as a permanent commission of enquiry into Crown breaches of Te Tiriti o Waitangi under the Treaty of Waitangi Act 1975. Initially, the Tribunal's scope was limited to contemporary claims, that is, claims relating to events that took place after the Act was passed in September 1975.[118]

As a result, the significant historic breaches of the Treaty were not addressed by the Tribunal. Consequently, Māori protest continued, including the 507-day occupation of Takaparawhau / Bastion Point in 1977-78 and ongoing protests at national Waitangi Day celebrations. Thus, in 1985, the Act was amended to give the Tribunal retrospective powers dating back to the signing of Te Tiriti on 6 February 1840.[119]

The role of the Waitangi Tribunal is to examine claims brought forward by Māori regarding the actions and inactions of the government in the past and today, and to make non-binding recommendations to the government on what should be done to settle the claim.[120]

2.3.2 The Ngāi Tahu Claim to the Waitangi Tribunal

In 1986, the Ngāi Tahu Lands Claim was lodged with the Waitangi Tribunal, building on the process of Te Kerēme that was started by Matiaha Tiramōrehu in 1849. This was the first large claim to the Tribunal under its newly acquired retrospective powers. The Claim was lodged by Rakiihia Tau on behalf of the Ngāi Tahu Māori Trust Board and was presented in nine parts known as 'The Nine Tall Trees of Ngāi Tahu.' The first eight trees represent the areas of land purchased by the Crown, with the ninth tree representing mahika kai.

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[117] Royal, 2005.
[118] Waitangi Tribunal, 2024b.
[119] Brookfield, 1999; King, 1999; Waitangi Tribunal, 2024b.
[120] Waitangi Tribunal, 2024a.

Hearings were held over two years commencing in 1987 with the final three-volume report released in 1991. The core finding of the Tribunal was that "the Crown acted unconscionably and in repeated breach of the Treaty of Waitangi" in its dealings with the iwi. A substantial compensation package was recommended to settle the claim.[121]

2.3.3 Te Rūnanga o Ngāi Tahu Act 1996

The settlement of the Claim required the establishment of a body corporate to receive and manage the settlement package. This was enabled by the passing of the Te Rūnanga o Ngāi Tahu Act 1996 to act as "the tribal servant, advancing the collective interests of the iwi."[122]

2.3.4 The Deed of Settlement

The Deed of Settlement was signed between Kāi Tahu and the Crown on 21 November 1997,[123] signalling agreement between the parties on the parameters of the settlement package, which ultimately was enacted through the Ngāi Tahu Claim Settlement Act 1998. The settlement package provided compensation to the value of $170 million. In addition, the agreement confirmed Kāi Tahu ownership of pounamu, rights to sites of significance, and roles in the management of conservation estates in their takiwā.[124]

A formal Crown apology was an important component of the Settlement, in which "profound regret" was conveyed for the suffering and hardship experienced by whānau due the failure of the Crown to honour Te Tiriti. As an expression of partnership, the ancestral mauka Aoraki was returned to the iwi before being symbolically gifted back to the nation in a "gesture of mutual goodwill."[125]

Once that battle was over, however, Kāi Tahu were confronted with an economic, social, cultural, and environmental situation that was severely impacting the health, wellbeing, and economic opportunities of whānau. This has affected the shape and direction of the Kāi Tahu economy, forcing mana whenua to put aside aspirations for growth and development. Instead, much of the focus has been on lifting health and social status and exerting influence to promote environmental regeneration in order to re-develop the base resources and conditions required for Kāi Tahu economic growth. This period in the history of the Kāi Tahu economy is the focus of the next section, as this set the economic direction of the iwi following the delivery of the Settlement package.

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[121] Ministry for Culture and Heritage, 2021b.
[122] Te Rūnanga o Ngāi Tahu, 2024. Further discussion on the structure and role of Te Rūnanga o Ngāi Tahu is provided in Section 3.1 below.
[123] New Zealand Government, 1997.
[124] Ministry for Culture and Heritage, 2021b.
[125] Ministry for Culture and Heritage, 2021b.

3. Kā Puna Karikari: The post-Settlement Kāi Tahu economy

The focus of this chapter is to evaluate the current and future status of the Kāi Tahu economy starting from the period following the Kāi Tahu Settlement. While the settlement package provided some capital to drive economic regeneration, the full costs of the grievance were never met, and the natural, social, and human capital of Kāi Tahu was highly degraded. The structure will be in three parts as follows.

3.1 Te Ōhanga Māori and the Kāi Tahu Settlement

As stated by Ta Mark Solomon, former Kaiwhakahaere of Te Rūnanga o Ngāi Tahu in 2000, "The [Kāi Tahu] settlement [provides] the tools to rebuild the economic base of [the Kāi Tahu] people."[126] However, to achieve their economic aspirations, Kāi Tahu had to act strategically, balancing the different aspects of the environment across four economic inputs; physical capital, human capital, social capital, and natural capital.[127] These four capitals will be used as a framework to analyse the economic activities that Kāi Tahu has pursued since the Settlement was signed.

3.2 The impact on wai māori and mahika kai

The natural assets of Kāi Tahu and the primary natural resources that drove the Kāi Tahu economy in Otago are wai māori and mahika kai. This section highlights the consequences of rural and urban land development for mahika kai. By the late 1800s the effects of this development on water bodies had severely affected Kāi Tahu's economy and cultural practices, and water body modifications and the depletion of resources has continued to the present day. The section examines the broad outcomes for water quality and quantity and indigenous freshwater ecosystems related to the following land use activities:

1. Urban development
2. Mining
3. Agricultural and forestry development
4. Land drainage and flood protection
5. Hydro-electricity generation.

3.3 Kāi Tahu freshwater economies: Case Studies

Kāi Tahu economic development depends on the health and vitality of wai māori and mahika kai. Given the degradation that these systems currently face, mana whenua see restoration and regeneration of these environments as a significant priority. Recent opportunities have enabled accelerated development of the freshwater economy. Some of the impetus for this has come from the degraded quality and quantity of wai māori across waterways and catchments in Otago, but also due to the availability of funding, expertise, and human resourcing to support the activities. This section will

[126] Solomon, 2000, A4.
[127] BERL, 2018.

present three case studies of freshwater restoration that are being led by Kāi Tahu as mana whenua in Otago, being:

1. He Pātaka Wai Ora
2. Te Nukuroa o Matamata
3. The Waiwhakaata Restoration projects.

The three case studies indicate a step change in Kāi Tahu economic activity, focusing on opportunities that support and strengthen human, social, and natural capital, using physical capital derived from the Settlement and supported by contestable funding, partnerships and relationships.

3.4 Costs and benefits to the Kāi Tahu economy

The health of the environment is central to the health of the Kāi Tahu economy. This section identifies and analyses the impacts on the Kāi Tahu economy of freshwater management that does not ensure the health of water bodies and freshwater ecosystems and the benefits to be obtained from a shift of approach to focus on healthy water bodies and ecosystems.

3.1 Te Ōhanga Māori and the Kāi Tahu economy after the Settlement

The four capitals identified in Ōhanga Māori, relating to physical capital, natural or environmental capital, and human and cultural capital (see Whakaahua 6 below)[128] are derived from the Living Standards Framework. The framework can be used to measure and assess overall wellbeing, which is considered a prerequisite of economic development. This model was developed by BERL as a tool for evaluating and monitoring the state of the Māori economy.[129]

In the context of this report, the four pou or capitals of Te Ōhanga Māori will provide a framework to assess the Kāi Tahu economy after the Settlement. This setting has heavily influenced the economic strategies and directions taken by the iwi since that time.

3.1.1 Physical capital

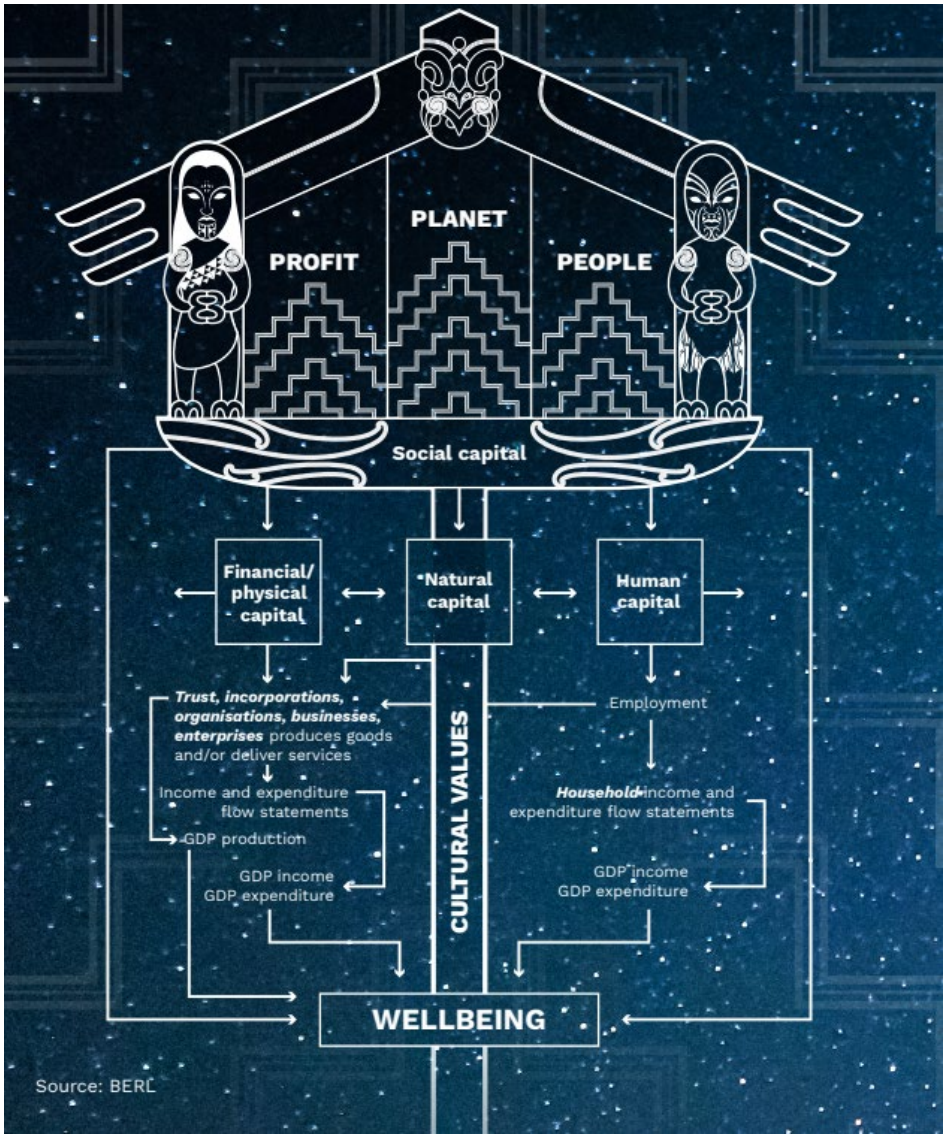
Physical capital refers to the physical and financial assets that directly support incomes and material living costs. The physical capital to support Kāi Tahu economic development was derived from the financial and commercial redress components of the settlement package. These redress packages were made up of the following items:

1. $170m cash settlement
2. First option to purchase all Crown-owned property in the Kāi Tahu takiwā
3. Opportunities to invest in state-owned enterprises and Crown assets in their takiwā

[128] BERL, 2018.
[129] The Treasury, 2018.

4. Right to purchase Crown lands and forestry assets
5. A relativity clause that ensured fiscal parity with future iwi settlements.[130]

Whakaahua 6: Te Ōhanga Māori



Source: BERL, 2018, p. 5.

Notwithstanding that the process of reaching a Settlement had cost Kāi Tahu $20m, and the apparent generosity of the financial redress package, it has to be noted that this amount in no way addresses the actual value of the Kāi Tahu Claim. Crown valuers estimated the value at between $12b and $20b; nevertheless, Kāi Tahu negotiators were realistic that the redress package would "only represent a fraction of the actual historic

[130] Te Rūnanga o Ngāi Tahu, 2024a.

loss."[131] The negotiators had to ensure that the settlement package was sufficient as a financial base from which to rebuild the economy, while being affordable for the nation. A settlement value of $170m was eventually agreed upon; about 1% of the true economic value of the Claim. [132]

The disparity between the physical capital lost and that offered by through the Settlement influenced the economic strategy employed by Kāi Tahu after the Settlement. Growing the economic base was a core focus of Te Rūnanga o Ngāi Tahu, as the iwi sought to grow the 1% Settlement to something more akin to the multi-billion-dollar economy that had been their birthright.

Ngāi Tahu Holdings Company was charged to emphasise economic growth, aiming to build up physical capital so that other the other capitals can be better supported to achieve positive economic outcomes for all levels of the iwi, from Te Rūnanga o Ngāi Tahu to papatipu rūnaka and whānau.

Today, with a more secure financial footing, Te Rūnanga o Ngāi Tahu reports against the four well-beings: financial, social, cultural and environmental.

Environmental reporting

As part of meeting their 2030 environmental goals, Ngāi Tahu Holdings Company businesses have undertaken the following:

- In Canterbury, begun one of New Zealand's largest regenerative farming trials to reduce water requirements, greenhouse gas emissions and nitrate leaching and to significantly increase soil carbon
- Created water management plans for Ngāi Tahu Farming operations and upgraded several Ngāi Tahu Farming sites to variable rate irrigation with soil sensors
- Reduced synthetic fertiliser use
- Surveyed aquatic biodiversity of waterways in forestry operations
- Developed guidelines to reduce environmental impacts of property construction projects.[133]

More recently, the iwi has deliberately started to devolve their economic activities out to papatipu rūnaka, with Te Rūnanga o Ngāi Tahu taking more of the role that was intended as a tribal servant to the rakatirataka of Rūnaka. Haea te Awa, the tribal regional investment fund, was established in 2016, with a primary of goal of enabling Rūnaka "to achieve economic self-determination to improve whānau outcomes." This investment in the social capital of the iwi is based around four core elements:

[131] Brankin, 2017.
[132] Te Rūnanga o Ngāi Tahu, 2024a.
[133] Te Rūnanga o Ngāi Tahu, 2023.

1. Focused on supporting the aspirations, capacity, and capability of Rūnaka
2. Providing investment capability and professional advice to support long-term planning and investment
3. Provision of a Rūnaka investment fund
4. Protect and grow the pūtea of the fund to drive economic growth for each Rūnaka.

A significant outcome of Haea te Awa has been the growth in Rūnaka net assets, which are now estimated at over $180 million. Nevertheless, the primary focused of this pūtea is the achievement of "intergenerational returns across the economic, social, cultural, environmental, and political spectrums for Ngāi Tahu whānui,"[134] reflecting the diverse economic approach of the iwi.

3.1.2 Social capital

Social capital refers to the norms and values that underscore a social group or society, including elements such as cultural identity and social cohesion, but extending to trust in the social order and adherence to the rule of law.[135]

The cultural identity of Kāi Tahu had been severely impacted during the Pākehā settlement of Te Waipounamu, as economic forces pushed and pulled whānau away from traditional homelands and social structures; increasingly, cultural knowledge of tikaka, whakapapa and reo was lost.

Megan Potiki, a scholar from Te Rūnanga o Ōtākou, describes the pressures on whānau during this period with reference to the following whakatauākī in her doctoral thesis about the loss of te reo Māori at Ōtākou:

> *E rite ana mātou ki te kauwau e noho ana i runga i te toka; ka pari te tai, ka ngaro te kōhatu, ka rere te moana.*[136]

As Pākehā settlement and economic expansion took hold, the dearth of the reserves and the loss of access to mahika kai and taoka as primary economic resources, whānau became increasingly squeezed off the land, like the shag deserting the rock subsumed by ocean. [137] The impact on the social capital of whānau in terms of culture and identity extended far beyond the loss of language, on which Potiki's writing focuses. As

[134] Te Rūnanga o Ngāi Tahu, 2024c.
[135] BERL, 2018.
[136] 'We are the same as the shag perched upon an ocean rock; the tide encroaches, the stone disappears, and the bird must fly away.' Translation by Tahu Potiki. Potiki, 2023, p. 55.
[137] "In the newspaper, Māori Messenger, "Address to the Governor," January 1860, 7-8. On the 6 January 1860 all of the Canterbury Kāi Tahu gathered to welcome Governor Gore Browne into the district at Port Cooper (Lyttleton). A speaker, Hoani Paratene, was nominated to deliver the people's message. He used this whakatauākī as a way to highlight that they had no land, no houses or no markets to participate in trade, or more importantly, to live sustainable lives. He referred to the imagery of a shag on a rock. When the tide hits the rock and the rock is compromised, the bird does not just sit there, it moves on to a safer place." In ibid, p. 55.

economic forces pushed whānau away from ancestral kāika, language loss contributed to the loss of tikaka, mātauraka, mahika kai and other practices, and connection to ancestral places.[138]

The language was all but lost; remnants were scattered across countless records and manuscripts from the early settlement period, with smatterings of reo surviving for use in ceremony and on the marae,[139] or related to remnant economic activities, like the tītī harvest. [140]

Beyond the language and culture, urbanisation affected the social cohesion and support systems of whānau. The flow-on effects of urbanisation from the 1950s led to changes in social structure that were not necessarily built around whānau, hapū or papakāika support systems.[141] Physical distance from tribal lands and resources often led to diminishing roles in communal economic activities, which contributed to the breakdown in social structures and a loss of cultural identity. This, in turn, affected the transmission of mātauraka.[142]

Thus, economic activities that promoted reconnection with Kāi Tahu culture and language has been a key focus for the iwi. Another significant economic activity has been the drive to increase education outcomes for whānau, through provision of funding and scholarships, tuition and educational support, and information and resources.[143]

3.1.3 Human capital

Human capital refers to the things that enable people to fully participate in work, study, leisure, and wider society. It includes elements like skills and knowledge, and physical and mental health.[144]

At the time of the Settlement's signing, there were significant inequalities of outcome for Māori compared to Pākehā in educational achievement and participation, and health status. This has contributed to significant investment in educational initiatives, as it was seen as a positive means of supporting several significant outcomes for whānau, including:

- Breaking cycles of unemployment and poverty
- Building leadership and expertise
- Workforce development
- Diversification of economic opportunities
- Revitalising te reo and tikaka

[138] Ibid.
[139] Ibid.
[140] Stevens, 2006, p. 288.
[141] Moeke-Pickering, 1996.
[142] Durie, 1998.
[143] Te Rūnanga o Ngāi Tahu, 2015.
[144] BERL, 2018.

- Whānau and community wellbeing.[145]

Provision for health and social services care for whānau has increasingly been a focus for rūnaka, aiming to provide social connection and support as a means to achieving well-being and success.

3.1.4 Natural capital

Natural capital relates to "all aspects of the natural environment needed to support life and human activity."[146] This includes natural assets like land, soil, water, plants, animals, minerals and energy resources. By the 1990s, Kāi Tahu land holdings had been reduced to less than 1% of their original estate of 13.7 million hectares.[147]

Under the Settlement, Kāi Tahu were given 'first right of refusal' to all state-owned assets in their takiwā. Furthermore, rights and duties in relation to te taiao were recognised by conferring rights under various Acts of Parliament as an expression of mana and kaitiakitaka.[148]

The influence over environmental decision-making was one thing; the state of the environment was another. By the 1990s, wai māori in Otago was facing considerable issues in terms of degrading water quality and quantity. In particular, nutrient loading, sedimentation, overallocation and depletion of aquifers were among the issues that Otago waterways were facing.[149]

These pressures and concerns amongst others influenced Kāi Tahu in the economic decision-making and development, reflecting the importance of whakapapa duties to act as kaitiaki within their takiwā.[150] This includes obligations to safeguard the mana and mauri of wai māori as a cornerstone of life; we need the water, but the water doesn't need us. The significance of wai as a natural asset is clearly identifiable in the iwi's first strategic plan, *Ngāi Tahu 2025*.[151]

Beyond natural capital, environmental outputs provide mechanisms to support the other forms of capital, for example, by supporting social and human capital providing opportunities for social connection, the sharing and growing of mātauraka, and the passing on of skills.

Although it is clear that not all of these goals have been achieved, the degradation of wai māori has posed a significant barrier to realising the freshwater priorities of Kāi Tahu. However, in more than 25 years since settlement, the identification of wai māori and mahika kai as significant tribal priorities has enabled Te Rūnanga o Ngāi Tahu and papatipu rūnaka to establish core partnerships and relationships to further these

[145] Te Rūnanga o Ngāi Tahu, 2015.
[146] BERL, 2018, p. 6.
[147] Waitangi Tribunal, 1991.
[148] Examples include the Resource Management Act 1991, the Reserves Act 1977, the Heritage New Zealand Pouhere Taonga Act 2014, the Conservation Act 1987, and the Wildlife Act 1953.
[149] Ministry for the Environment, 1997.
[150] Te Rūnanga o Ngāi Tahu, 2024b.
[151] Te Rūnanga o Ngāi Tahu, 2021.

priorities for the future generations. In some cases, the importance of the intergenerational thinking means that the economic advancement opportunities of today are being delayed so as to provide greater hope that these opportunities will be more sustainable in the future. In other cases, the alignment between the funding opportunities and the availability of whānau to undertake the mahi has been a barrier.

These themes will be explored in relation to three case studies of the contemporary Kāi Tahu freshwater economy and potentially hold the seeds for the future of this economy into the future.

3.2 The impact of development on wai māori and mahika kai

The expansion of settlement and land development across Otago had immediate impacts on the use of water bodies, through fencing, land drainage, vegetation clearance, abstraction and diversion of water and modification of channels. The effects of land development on mahika kai and consequently on the Kāi Tahu economy were evident by the late 1800s. Speaking to the Royal Commission set up in 1879 to investigate the Ōtākou, Kemps Block, Akaroa and Murihiku land purchases, Matiaha Tiramōrehu stated:

> *All that is left now are the big rivers where they run right up into the mountains, and all our mahika kai in regard to eels, īnaka and other fishes are all dried up. Stone buildings and houses are standing on what were mahika kai.*
>
> *The rivers are closed to us and reserves are insufficient to support us. The young men may be able to work at shearing and harvesting but for a large part of the year there is no work to do.*
>
> *They [Kāi Tahu] complained that, although they have a closed season for eels, the Europeans catch them all the year round. In olden times the natives had control of these matters, but the advent of the Europeans and the settlement of the country changed the state of affairs and destroyed the protection that formerly existed, consequently their mahika kai (food producing places) are rendered more worthless every year.* [152]

Change in catchments and water bodies has continued to occur and has contributed to ongoing diminishing of mahika kai over the last 150 years, devastating a fundamental cornerstone of Kāi Tahu wealth and consequently crippling the Māori economy of Otago.

The following sections examine the impacts of specific land-use activities on the mauri of wai māori and mahika kai, as cornerstones for the Māori economy in Otago.

3.2.1 Urban development

Development of urban areas in Otago has been accompanied by significant change to waterways. Initial vegetation clearance to provide sites for building and roads

[152] Māori Affairs Records Group, 1879-1880, MA 67/7.

contributed to increasing flood hazard and sedimentation of streams. Piping of streams and drainage or infilling of wetlands in some areas led to significant loss of habitat for mahika kai species.

Industrial and residential development and the need for disposal of stormwater, solid waste and effluent has had ongoing significant impacts on the quality and integrity of freshwater systems in and downstream of urban areas. Water supply demands have had impacts through reduction in river flows and damming of streams.

Examples

- *In Dunedin, the Kaituna stream that ran into the head of the Otago harbour from wetlands in South Dunedin took its name from the eels it provided. This stream and the wetlands feeding it were lost through reclamation. The significant mahika kai resource supported by the Kaikarae/Kaikorai Stream and estuary has been lost through the impacts of industrial discharges into the stream and the development of landfills in the estuary.*
- *In Waikouaiti, the original name of the Hawksbury Lagoon was Mataīnaka, reflecting its values as a source of īnaka (whitebait). It was also an important source of tuna (eels), kanakana (lampreys) and patiki (flounder) as well as waterfowl. Rights to mahika kai in Mataīnaka are legally recognised through the Ngāi Tahu Claims Settlement Act 1998. However, degradation of the lagoon through drainage, infilling and decline in water quality has meant that those rights are unable to be exercised.*[153]
- *Today, 15 of Otago's 34 municipal wastewater treatment systems still discharge into freshwater.*[154]

3.2.2 Mining

Alluvial gold mining required large quantities of water for sluicing, which led to significant modification of waterways, through damming, dredging and abstraction. [155] Many of the inland tributaries and major rivers across Otago have undergone modification associated with historic mining. A labyrinth of water races and water diversions, originally put in place to support gold sluicing, have altered the natural flow and ecosystems of rivers and streams in Central Otago and the Maniatoto. Sedimentation from mine tailings has altered the beds of some rivers and streams and degraded habitats for freshwater species. The operation of gold dredges can also have impacts on sensitive benthic ecosystems that support the food sources for mahika kai species.

Open cast mining has also been responsible for diversion and modification of water bodies and leachate from mine tailings includes contaminants that pose a risk to mahika kai species if not effectively contained.

[153] MacTavish & Mitchell, 2013.
[154] Taumata Arowai, 2024.
[155] Department of Geology, 2024.

Example

The area of Macraes Mine operations extends across headwaters and upper catchments of the Waihemo/Shag River and the Waikouaiti River, and also occupies part of the Taiari catchment. The mine area captures water which would otherwise be available to feed the Waikouaiti and Waihemo rivers and support the important mahika kai resources in these rivers and their estuaries. The risk of mine leachate escaping into the rivers and contaminating mahika kai species is also of concern to mana whenua.

3.2.3 Agricultural and forestry development

Development of land in Otago for agriculture had significant initial impacts on mahika kai as a result of vegetation clearance and loss of access due to fencing of land. Agriculture and exotic forestry also have ongoing impacts due to a range of effects on water bodies.

Example

Over recent years there has been a continuing trend of intensification in agriculture and expansion of forestry. The area of irrigated land in Otago increased by over 50% between 2002 and 2019, and numbers of cattle increased almost 140% over the period from 1991 to 2019. The area of exotic forestry in the region increased by 20% between 1996 and 2008 with expansion continuing but slowing since then.[156]

Conversion of tussockland and wetlands to pasture or plantation forestry removes the moderating effect of these ecosystems on water flow in rivers and streams, increasing the potential incidence of extreme high or low flows. Extended periods of low flows adversely put stress on mahika kai species through reduction in habitat and the impacts of reduced water quality.

In some rivers and streams in the drier areas of the region, water abstraction for stock use and for irrigation has increased the incidence of low flows and reduced the natural fluctuations in flow that support healthy freshwater and estuarine habitats. Damming of rivers and streams to provide water storage for irrigation and stock use has led to loss of wetland and riverine habitat and introduced barriers to the passage of mahika kai species.

Grazing of wetlands can result in degradation of water quality and habitat for mahika kai species. Incursion of pasture species and other exotic vegetation into wetlands can alter the hydrological function and contribute to reduction in the extent of habitat.

Nutrient enrichment of water bodies through leaching and runoff of fertilisers and animal effluent encourages growth of algae which impacts on habitat conditions and the ability to safely harvest and eat freshwater species. In Otago the impact of this has

[156] Ministry for the Environment & Statistics New Zealand, 2023.

been evident in a number of water bodies, particularly in the eastern and southern parts of the region.

3.2.4 Land drainage and flood protection

Wetlands provide particularly rich mahika kai habitats. Over the period of Otago's development, there has been substantial loss of wetlands – most notably in coastal areas and on the Taiari Plain. Land has been drained to make it available for urban development and agriculture and, once the land has been made available for development, to protect it from flooding. Although the biggest loss of wetlands occurred in the early decades of development, loss and reduction of wetland extent is still occurring. 404 ha of wetlands was lost in Otago between 1996 and 2018, with 80 ha of this loss occurring since 2012.[157]

Other flood protection measures that have had an impact on mahika kai include diversion of natural river channels, displacement of riparian habitat with flood protection structures and installation of structures such as flap-gates that introduce barriers to the ability of species such as tuna and īnaka to move between fresh water and the ocean.

Example

The Taiari Plains and its connected waterways, including Lakes Tatawai, Potaka, and Marama Te Taha, historically provided Kāi Tahu with abundant natural resources such as tuna, birds, and plants. These lakes were vital for sustenance and trade, easily accessible by waka or mokihi. However, as European settlement expanded, Kāi Tahu whānau were confined to small land reserves, such as the Taiari Reserve, with limited land for farming or subsistence. The land was deemed unsuitable for anything beyond pastoral use, leading to impoverishment among the local Māori.

In the late 19th century, Kāi Tahu petitioned the government for rights to the eel fishery and a landing reserve on Lake Tatawai. Though some land was set aside for them in 1902 for fishing purposes, the lake and its resources came under increasing threat from European-driven development projects. By 1912, the Taieri Land Drainage Bill proposed draining Lake Tatawai, threatening Kāi Tahu fishing rights. Despite resistance, including successful arguments by Tame Parata in Parliament, these rights were progressively undermined.

In 1920, the Taieri River Improvement Act led to the draining of Lake Tatawai, extinguishing Kāi Tahu fishing rights without consultation or compensation. The Act permitted Māori to claim compensation, but no claims were filed, and the community later found they were unaware of the legislation until the deadline had passed. The draining of the lake had a devastating impact on the Kāi Tahu community at Maitapapa near modern-day Henley, causing the dispersal of families and disconnection from their cultural roots.

During negotiations for the Ngāi Tahu Claims Settlement Act of 1998, the iwi regained some form of reparation with the purchase of the Sinclair Wetlands (Te Nohoaka o Tukiauau), a 315-hectare area within the Lake Waihola-Waipori wetland complex. This acquisition, divided into two trusts, aimed to settle long-standing grievances over the loss of Lake Tatawai. One portion of the land (56.5 hectares) was allocated to the beneficiaries of those with rights to Lake

[157] Ibid.

Tatawai, while the remaining area (259 hectares) was set aside for manawhenua with mahinga kai rights in the Taiari wetlands.

The loss and eventual reclamation of the wetlands symbolize Kāi Tahu's broader struggles and partial recovery in the face of historical land alienation and environmental degradation.[158]

3.2.5 Hydro-electricity generation

Development of hydro-electricity generation schemes has resulted in the loss or substantial depletion of mahika kai habitats in a number of rivers in Otago. The most obvious losses are the drowning of mahika kai habitats by damming and the loss of fish passage associated with dams. Other significant impacts from major schemes arise from changes in sediment transport and modification of downstream habitat through disruption in the natural flow patterns.

Example

The construction of the Roxburgh and Clyde Dams on the Clutha River/ Mata-au saw the inundation of many of the mahika kai used by whānau in the past. The dams also effectively blocked the migratory path of important species like tuna and kanakana. This means that juveniles are unable to travel upstream, and adult specimens are unable to complete their migration to the sea.

Contact Energy are required to undertake a tuna 'trap and transfer' programme under consent conditions for the operation of the dams. The programme involves two-way transfer of tuna. Elvers caught at the base of the Roxburgh dam are transported above the Clyde dam in the summer. For mature tuna ready to migrate back out to sea, around 800 nets are set in the headwater lakes and rivers to capture them from December to March each year. Any tuna weighing more than 4kg are released at several locations below the Roxburgh dam to continue their migration to the coast. Evidence suggests thousands of tuna were caught and preserved each season at Lake Hāwea in the past.[159] *However in 2020 Contact Energy reported catching just 500 mature tuna in the three lakes of Whakatipu-waimāori, Wānaka, and Hāwea in one season.*[160]

3.3 Kāi Tahu freshwater economies: Case studies[161]

Wai māori and mahika kai are, and will continue to be, priorities as fundamental natural assets that underpin the functioning of the Kāi Tahu economy in Otago. These case studies provide a glimpse of current challenges, and the opportunities offered by proposed changes to freshwater management in Otago.

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[158] Ellison, 2021b; MacKay, 1891; Te Nohoaka o Tukiauau Trust, 2024; Waitangi Tribunal, 1995; Wanhalla, 2004.
[159] Ngāi Tahu Claims Settlement Act 1998, Schedule 30.
[160] Waterworth, 2021.
[161] This section provides an overview of key aspects of each of the case studies; a fuller description of each is included in Appendix 2.

[Is the the Kāi Tahu economy disappearing?]

Between one and a hundred, with a hundred being 100%, I am not sure where it [the Kāi Tahu economy] would be – maybe a ten – but it is seriously diminished.

There is a huge effort tribally in our rūnanga to restore not only what we've been doing in these processes, but in terms of getting our young people back into the water, back doing these things. There's a considerable desire, effort and some resource going on across the tribe at different levels to restore these functions and processes. That won't stop, I think it is going to gain momentum. There's many, many more people involved than there were twenty years ago or forty years ago.

Edward Ellison, Te Rūnanga o Ōtākou, 12 Dec 2022.

3.3.1 Case study 1: He Pātaka Wai Ora

Context:

He Pātaka Wai Ora is a project developed in 2014 by Kāti Huirapa Rūnaka ki Puketeraki to monitor and restore the health of Waikouaiti River and its catchment. Its aim is to maintain the mana of the Waikouaiti and therefore the mana of whānau and hapū. It forms part of a broader long-term, 200-year programme of work established by Kāti Huirapa ki Puketeraki to care for and restore the mauri of the awa, its estuary and the connected coastal waters. The project is delivered by Kāti Huirapa ki Puketeraki in partnership with the Ōtākou Whakaihu Waka/University of Otago and Te Rūnanga o Ngāi Tahu.

Kāti Huirapa Rūnaka ki Puketeraki have a long history of expressing concern about the state of the Waikouaiti awa. The estuary was the initial focus for this, as this was the most accessible. Applications were made to establish and manage several customary fishing protected including the establishment of the East Otago Tāiapure in 1999, and an overlapping Waikouaiti 2016. The aim is to manage and protect Kāi Tahu fisheries resources and mahika kai in the lower reaches of the Waikouaiti River.

Establishing these areas took years of time and effort indicating the commitment of Kāti Huirapa ki Puketeraki to the Waikouaiti and to rakatiraktaka and kaitiakitaka - protecting and enhancing connection to the environment and honouring whakapapa for future generations.

He Pātaka Wai Ora speaks of Kāti Huirapa ki Puketeraki seeking to re-establish its relationship with the awa, physically, spiritually, and in terms of rebuilding knowledge.

Kāi Tahu has taken ownership of the issues rather than looking for someone else to blame. We realise that because of the lack of access, our backs were turned to the health of the awa. We took responsibility and leadership to change this.

Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 2023.

Vision:

- To increase availability of mahika kai
- To enable Kāti Huirapa to fulfill their role as kaitiaki of the Waikouaiti
- To strengthen and inspire the community to be active and involved
- To create a long-term dataset on the health of the Waikouaiti

Activities and Outcomes:

Activities	**Outcomes**
Biodiversity and water quality monitoring	Stocktake combining mātauraka- centred and science-based methods
	Ongoing monitoring and progress reports
Establishment of local nursery	Supplying plants for riparian revegetation
	Providing employment and economic outcomes
	Services organisations as a supplier
Riparian restoration	Achieving on-ground outcomes
	Providing opportunities for community connection through sharing kai, mahi, and mātauraka
	Raising awareness of mahika kai

Costs:

Costs to Rūnaka

- Operating costs and resourcing (plants and labour) for the project's first 15 years
- Continued vigilance to advocate for the awa and the project as rakatira and kaitiaki within a mainstream context that focuses on freshwater "management" and human-centred decision-making processes

Voluntary work undertaken by whānau

- Finding and applying for funding opportunities
- Building partnerships with external stakeholders
- Involvement in activities e.g., community planting days

Costs to whānau in terms of wellbeing and mātauraka

- Kāti Huirapa ki Puketeraki are delaying their ability to collect mahika kai today in order to regenerate these taoka for future generations

Opportunities for economic development:

Kāti Huirapa ki Puketeraki is actively pursuing the opportunity to develop mainstream economic opportunities that align with their kaitiakitaka obligations. Successful examples to date include development of the nursery as a commercial operation; and the taking over of the control programme for Undaria (an invasive introduced seaweed) in the Waikouaiti estuary and coastal waters, which the University has been running for a number of years. This involved training a team of Kāi Tahu divers and is providing ongoing employment for whānau as well as building technical capacity. Other business opportunities based on mātauraka are being actively explored by the Rūnaka – for example breeding of pāua.

> *Our backs were turned to the awa because of the loss of access. People could see the degradation increasing and felt impotent to do anything about it. He Pātaka Wai Ora understands the importance of the practice of mahika kai in terms of maintaining mātauraka – recognises that mātauraka is passed on by active practicing and the physical act of being there, rather than by learning via other methods.*
>
> ***Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 2023.***

3.3.2 Case study 2: Te Nukuroa o Matamata

Context:

Te Nukuroa o Matamata was initiated by Te Rūnaka o Ōtākou, on behalf of local hapū, Kāi Te Pahi, Kāi Te Ruahikihiki, Kāti Taoka, Kāti Moki, and in conjunction with whānau members involved in Te Nohoaka o Tukiauau.[162] The project aims to achieve positive cultural, social, environmental and economic outcomes for the lower Taiari Catchment, through development of a Kai Tahu Kaitiaki cadetship programme. This supports the restoration and transmission of mātauraka, and the succession of rakatahi into mahi kaitiaki, while restoring and protecting wetlands, river and riparian habitats and monitoring water quality in the catchment. It builds on the work undertaken to restore Te Nohoaka o Tukiauau, funded by Te Rūnanga o Ngāi Tahu over the last 22 years.

Mission:

- To connect whānau and rakatahi to the Waihora / Waipōuri wetlands and catchment through mahi for nature
- To enable capacity and capability building
- To provide employment and training opportunities
- To facilitate environmental protection and sustainable resource management
- To act as a platform for relationship-building and collaboration
- To action kaitiakitaka and rakatirataka in identifying and adapting sustainable and regenerative outcomes.

[162] Te Nohoaka o Takiauau is the Māori name for the Sinclair Wetlands Trust.

Activities and Outcomes:

Activities	Outcomes
Establish Kaitiaki Taiao cadetship programme	Development of core environmental skills
	Develop knowledge of Kāi Tahu tikaka
	Develop skills to support hapū self-determination and development aspirations for te taiao
	Provide a future workforce to support Te Nukuroa o Matamata and other local projects
Restore and protect Waihora/Waipōuri Wetlands	Planting indigenous species
	Weed control activities, e.g., invasive glyceria
	Removal of pest animals
	Promoting the use of mātauraka
Riparian and river habitat restoration	Working in partnership with landowners to support riparian and wetland restoration in priority areas
	Supporting weed eradication
	Liaising with other stakeholders in the catchment
Water quality monitoring	Use existing monitoring data and cultural health index framework to track water quality and identify degrading sites
	Gain better understanding of the impact of land use
	Identify where mitigation and restoration might be best applied
Support native fish management, research, and monitoring	Establish a robust native fish monitoring programme including the cultural health index methodology
	Collaborate with partners and researchers to develop restoration methods to improve the habitat of galaxiids and to improve knowledge of little-known species
	Seek upstream and downstream passage for tuna
	Assess potential migration barriers
	Identify landlocked populations of galaxiids

[The cadets have] been quite innovative in looking at using traditional plants and knowledge, such as making those harakeke baskets and using those to plant the sedges in amongst the pest species of glyceria. So, you know, things are still trial and error, but looking at our own traditional knowledge systems to find solutions.

Paulette Tamati-Elliffe, Te Rūnanga o Ōtākou, 24 Feb 2023.

Costs:

Jobs for Nature funding

- Funding from the Ministry for the Environment's Jobs for Nature programme, with $5m in funding over three years.

Costs to Rūnaka

- Work at the wetlands had been funded by Te Rūnanga o Ngāi Tahu for the previous 22 years, and is undertaken in partnership with Te Rūnanga o Ōtākou
- Advocacy and input into regulatory decision-making processes to protect the values and habitats of the wetlands.

Voluntary work undertaken by whānau

- Finding and applying for funding
- Volunteer restoration work at the wetlands
- Investment in building partnerships with Councils, Ministries, and other national bodies like Fish & Game.

Opportunities for economic development:

The project is seen as an opportunity to start addressing the contraction of the Kāi Tahu economy in the lower Taiari, taking an intergenerational approach to economic and ecological transition by creating sustainable economic activities for whānau that enable kaitiakitaka, while being linked to the mainstream economy.

Examples of future opportunities to develop robust business models and practices based on the mātauraka of Kāi Tahu that are being discussed include farming of elvers; and expanding the nursery used in the project and developing it as a business to produce indigenous plants. Both of these examples could provide opportunities for employment and capacity-building for whānau, but they are also businesses based on clean water and a healthy environment.

The business model envisaged by Te Rūnaka o Ōtākou is to put the intergenerational nature of kaitiakitaka, mana and whakapapa at the core of their work.

Success looks like healthy whānau, environment, new innovative ways of expressing our rakatirataka through participating in local and global economies, utilizing our traditional skills, knowledge and those things that make us uniquely who we are.

Our businesses are going to have much more of a conscience and a commitment to improving practices because our models are not just for profit of this generation. It's got to be a focus on us and our future generations after us.

Paulette Tamati-Elliffe, Te Rūnanga o Ōtākou, 24 Feb 2023.

3.3.3 Case Study 3: Waiwhakaata Restoration Projects

Context:

Recent efforts of Kā Rūnaka to restore the mauri and mana of Waiwhakaata (Lake Hayes) have encompassed a number of approaches. This has included engaging with Queenstown Lakes District Council in its Spatial Planning and with Otago Regional Council as part of Long-Term Planning, as well as undertaking a number of on-ground restoration programmes through other funding mechanisms including Jobs for Nature.

QLDC and ORC recognise the ongoing need to improve the water quality at Waiwhakaata and continue to address it through planning and strategy development. Rūnaka have partnered in plan and strategy development at both the District and regional level, which has meant the inclusion of mana whenua values in the District plan which provides the opportunity to influence future decisions about Waiwhakaata.

Mission:

- To establish a template for community restoration, leveraging the unique geographical location of the Queenstown Lakes District
- To showcase Te Mana o te Wai and mahika kai values
- To influence future decisions about Waiwhakaata as an expression of mana and kaitiakitaka.

Activities and Outcomes:

Activities	**Outcomes**
Queenstown Spatial Plan	Avoid further development in the Wakatipu Basin beyond Te Pūtahi – Ladies Mile
	Exclude Waiwhakaata / Lake Hayes from housing intensification areas
	Phase out wastewater and stormwater discharges to lakes and rivers

	Enhance and protect Blue-Green Networks[163]
Waiwhakaata Lake Hayes Management Strategy	Revise the Waiwhakaata Management Strategy and develop an Action Plan
	Restore the balance between what is taken and what is given back to the lake
	Establish sites to support mahika kai and contribute to mātauraka
	Educate and engage the broader community to support these objectives
Lake Hayes Vision project	Restore the health of the lake
	Undertake riparian planting and wetland restoration
	Install sediment traps
	Removal of non-native trees
	Fencing and pest control
	Establish employment opportunities and capability building for Kāi Tahu whānau and rūnaka
Private restoration projects	Planting 150,000 native trees and plants

"Our vision for success in the Waiwhakaata/Lake Hayes catchment is one that acknowledges the passage of time and the deep, enduring sense of place. This journey begins in our headwaters, with success flowing ki uta ki tai, from the mountains to the sea. Our tīpuna named this catchment Waiwhakaata, after the reflections in the water. This ikoa/namesake not only honours the physical reflections but also signifies how we see ourselves in the landscape—ko te tohu o tō tatou Waiwhakaata, the signs of our reflections.

"How do we build a strategy to heal a lake? We start by upholding the namesake gifted to us by our tīpuna. This builds on our identity and values in which our identity should flourish. The reflections in the water guide us to reflect on ourselves, reminding us that the health of the land and water are inseparable from our own actions and identity in an ever-growing modern world. Decisions made to not uphold the mauri of wai-māori will be to our own peril."

Jana Davis, Te Rūnanga o Ōraka-Aparima, 2022.

[163] Blue-Green Networks include natural areas, riparian borders, open spaces, and parks.

Costs:

Jobs for Nature funding

- One project was funded under the Ministry for the Environment's Jobs for Nature programme.

Voluntary work undertaken by whānau

- Finding and applying for funding
- Volunteer restoration work at the wetlands
- Investment in building partnerships with Councils, developers, and local community groups.

Opportunities for economic development:

The stewardship of Waiwhakaata is viewed as a foundation for economic development. It promotes opportunity for reciprocity with the local community and connection to people and place. Ideas of sustainability and balance are part of the business approach.

Opportunity is seen for the development of businesses, agriculture, forestry, tourism, and other ventures driven by tribal economy and treaty partnership. Regenerative tourism is a particular gap in the local economy that needs to be explored further. Other gaps in the investment strategy that would also provide opportunity for better leverage in te taiao include agri-investment and energy production.

To date the opportunities to resource the mahi at Waiwhakaata have focused on local and central government funding (Jobs for Nature). However, Te Tapu o Tāne are working towards seeking other opportunities for the future, based on a more commercial approach.

For example, there are business opportunities connected to the amount of green space work conducted in the catchment, such as development of more biodegradable, eco-friendly options than plastic for plant guards.

> *"The land and water cannot be healed until the people are healed and educated. Our strategy must be founded on this value: to empower our community to build relationships with the landscape. In order to connect with the land, we must see ourselves as part of it. This approach is crucial for our future—for making decisions our mokopuna (grandchildren) will be proud of, decisions that protect our most precious natural resources. My Taua, Jane Davis, was once asked, 'How clean should our waters be?' Her answer was simple: 'Clean enough that you can drink it.' Our position as the kaitiaki remains unchanged. These are the values that guide our tribal economy, underpinning decisions whose benefits we may not see in our lifetime, but which will ensure tino rakatirataka for the taiao, creating balance across the four pou that sustain us."*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

3.4 Costs and benefits of freshwater management approaches to the Kāi Tahu economy

The Kāi Tahu economy is underpinned by an ethical framework that guides decision-making and economic activity. This is founded in a belief system that sees people as an integral part of te taiao, and the health and the success of the people as being dependent on the health of te taiao.

3.4.1 Costs of a policy approach that does not ensure the health of water bodies and freshwater ecosystems

As highlighted in the case studies, the health of the environment is central to the health of the Kāi Tahu economy. In 2019, the Minister for the Environment described Otago's freshwater bodies as being at a "critical juncture" due to existing planning provisions for freshwater management being inadequate to manage freshwater in the face of challenges for the state of the freshwater resource.[164] The impacts on the Kāi Tahu economy of freshwater management that does not ensure the health of water bodies and freshwater ecosystems can be categorised under the following headings:

- Impacts on mahika kai
- Impacts associated with kaitiakitaka obligations
- Impacts on the ability to take part in the mainstream economy
- Broader socio-economic impacts.

3.4.1.1 Impacts on mahika kai

> *Even in my father's childhood, for example, tuna was a kai that would be eaten up to three or four times weekly for breakfast. The cost to individual whānau is that they are not accessing that kai, with all the benefits that go along with it, such as the physical work and the ability to share the kai – manaakitaka - has been impacted upon, simply because when you go through a period of restoration, you have to restrict your taking the resource/ taoka. The resource will not now sustain whānau –if even one whānau took eels for their breakfasts, we know that the population would be gone pretty soon, and that's just one species.*
>
> ***Interview, He Pātaka Wai Ora case study***

Mahika kai practices are a central part of the Kāi Tahu economy, providing food and other resources for sustenance and trade and also serving wider social, economic, and political needs including:

- development and transfer of knowledge
- opportunities for trade and for building alliances and relationships
- the ongoing expression of mana and connection to place, supporting cultural identity.

[164] Skelton, 2019, p. 4.

For Kāi Tahu, an environment with an intact mauri is a prerequisite of mahika kai; if a taoka is not healthy, sustainable and abundant, collection of the resource may be restricted or suspended until it recovers. Sustaining mahika kai requires more than just protecting habitat at harvest sites – it requires a holistic approach that recognises and takes account of the interconnections between different parts of the environment and the contribution of these to healthy habitat conditions.

Degradation and modification of water bodies has led to devastating loss of mahika kai resources across Otago. Contributors to loss of mahika kai are identified in Tūtohi 3 below.

Tūtohi 3: Costs associated with the loss of mahika kai include:

- Direct costs: loss of access to food sources for whānau, for manaakitaka[165] and for trade. Staple foods have become unavailable or only rarely available and must be substituted by purchase of other foods.
- Indirect costs:
    - The loss of healthy food sources and the reduction of physical activity through not being engaged in harvest activities are considered likely to contribute to overall impacts on the health of Kāi Tahu whānui, with associated health costs.[166]
    - Inability to carry out mahika kai activities leads to the loss of the knowledge base relating to these practices. The cost of this is lost opportunity for future generations to apply and develop this knowledge for economic benefit.
    - Socio-economic costs associated with loss of connection with place and with cultural practices are discussed below.

3.4.1.2 Impacts associated with kaitiakitaka obligations

Whai-rawa-a-Iwi, our tribal economy, extends beyond GDP; our taoka constitute our economy, and without them, our tribal economy cannot flourish.
Comment, Waiwhakaata case study

An integral part of the relationship of Kāi Tahu with te taiao is the kaitiakitaka obligation to ensure the environment is sustained for future generations. This obligation is deeply held, and there is an understanding that if something is taken from the natural

[165] As discussed in Chapter 1, in the Kāi Tahu economy, manaakitaka manifests itself through the sharing of kai and other taoka as an expression of one's mana as the host. Kai hau kai, the practice of sharing and exchanging traditional foods and resources is an important part of building relationships.

[166] In Te Wai Pounamu, average life expectancy for Māori is 2.5 years less than for non-Māori, and the largest contributor to the gap is coronary heart disease. Mental health outcomes are also poorer for Māori (at a national level) than for non-Māori. Te Whatu Ora (2024).

environment, there must also be something given back to ensure that the natural systems continue to function well. The implication of this is that the Kāi Tahu economy can only function without constraint if the environment is healthy.

If the environment is degraded and there is no management framework in place to address this, the burden of responding to the degradation falls on mana whenua. The effort expended in meeting kaitiakitaka obligations in these circumstances represents an opportunity cost of the policy approach, because the time and resources required for advocacy, education and catchment restoration is not available for other economic, social and cultural activities.

Case studies and other interviews with mana whenua emphasise the significant amounts of time and resources that have been spent to fulfil kaitiakitaka obligations with respect to freshwater over many years. Costs include:

- Catchment restoration costs:
    - These include costs of both time (project management and labour) and material (such as plant materials). Such costs are often unfunded – for example Kāti Huirapa ki Puketeraki carried out restoration work on the Waikouaiti River and estuary for 20 years before receiving any funding to assist. As well as time spent on restoration activities, costs included the establishment and management of a nursery to supply plants for revegetation.
    - Costs associated with not being able to practise mahika kai while the focus is on restoration.
- Advocacy and education costs: To address concerns about continuing degradation of water bodies and freshwater habitats, Kāi Tahu in Otago have spent substantial amounts of time and money over many years engaging in planning processes to advocate for greater priority to be given to the health of water bodies and better management of the effects of land and water use on freshwater environments. Because much of this work has been unfunded, it is not easily quantifiable, but costs include:
    - Time costs of mana whenua representatives in preparation of cultural evidence and attendance at meetings, hearings and mediation. Most of this involvement has been voluntary.
    - Time spent on educating landowners, councils and others.
    - Costs of obtaining planning, legal and other specialist assistance, including through the establishment and funding of Kāi Tahu ki Otago Ltd (now Aukaha).[167]

[167] While Aukaha is partially funded through providing professional services to councils, government agencies and other clients, involvement in formal RMA submission, hearing and appeal processes is funded by papatipu

- Opportunity costs: Time put into restoration, education and advocacy is time lost to other activities, including time with whānau and loss of opportunities to earn income or to pursue careers or economic development.

3.4.1.3 Impacts on involvement in the mainstream economy

> *Our businesses are going to have much more of a conscience and a commitment to improving practices because our models are not just for profit of this generation. It's got to be a focus on us and our future generations after us.*
>
> ***Interview, Te Nukuroa o Matamata case study***

Since the days of first contact with the Pākehā economy, Kāi Tahu have actively taken up opportunities for new economic enterprise. However, these opportunities have been constrained as a result of environmental degradation. In addition to the loss of mahika kai as an economic base, constraints have arisen because of the following:

- Economic activities are restricted by environmental constraints imposed by the obligation to sustain te taiao. The planning timeframe for Kāi Tahu is multi-generational – Kāi Tahu economic development models consider not only the opportunities for short term gain, but the need to ensure long term environmental sustainability as the basis for long term economic sustainability. If other resource users are not subject to the same restrictions in managing the effects of their activities on te taiao, the cost of doing business is greater for Kāi Tahu enterprises. An example of this is that Ngāi Tahu Holdings companies are accountable to mana whenua and are required to report against a quadruple bottom line – economic, environmental, social and cultural.[168]
- The need for a focus on advocacy through regulatory processes, as discussed above, has been a barrier to building economic partnerships with resource users.

3.4.1.4 Broader socio-economic impacts

As discussed above, the degradation of freshwater environments and ecosystems has had devastating impacts on mahika kai. The modification of rivers and wetlands has also contributed to a loss of connection with ancestral landscapes and associated traditions and practices. This has a range of socio-economic impacts, including:

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rūnaka with assistance from Te Rūnanga o Ngāi Tahu. Although this work is not limited to advocacy for freshwater environments, this has always been a significant focus.

[168] For example, as part of meeting 2030 environmental goals, Ngāi Tahu Holdings companies have:

- In Canterbury, begun one of New Zealand's largest regenerative farming trials to reduce water requirements, greenhouse gas emissions and nitrate leaching and to significantly increase soil carbon
- Created water management plans for Ngāi Tahu Farming operations and upgraded several Ngāi Tahu Farming sites to variable rate irrigation with soil sensors
- Reduced synthetic fertiliser use
- Surveyed aquatic biodiversity of waterways in forestry operations
- Developed guidelines to reduce environmental impacts of property construction projects; Te Rūnanga o Ngāi Tahu, 2023.

- The health impacts associated with loss of mahika kai.
- Loss of a knowledge base that could contribute to future economic development and innovation.
- The impacts associated with loss of an economic base. Loss of mahika kai has contributed to loss of industry, employment and income sources, and has contributed to outward migration.[169]
- The social costs associated with loss of connection with place and with cultural practices.

3.4.2 Benefits of a policy approach focusing on the health of water bodies and freshwater ecosystems

> *We do want to convert from … all of this work that we do to eventually having some benefit in the natural environment by being in it, functioning on it, working with it commercially in a way that sustains our involvement and builds that knowledge base that allows us to increase our influence by having that connection as well. … So kā rūnaka/papatipu rūnaka … when they look to be building opportunity, bringing their people home, building their own economy within the takiwā, their rohe, it would be good if it could have a strong base on activity around water, wai māori.*
> ***Interview, papatipu rūnaka representative***

Because a healthy environment is central to the health of the Kāi Tahu economy, a shift in policy approach to strengthen the focus on ensuring the health of water bodies and the ecosystems they support will benefit this economy.

The key benefits identified are as follows:

1. **More equitable sharing of costs:** A planning framework that requires all resource users to carry out their activities in a way that supports the health of water bodies and ecosystems will provide a level playing field, ensuring that businesses that already voluntarily do this are not put at a competitive disadvantage by having to bear higher costs.
2. **Lower costs of kaitiakitaka:** The costs incurred in fulfilling kaitiakitaka obligations (through both advocacy and environmental restoration activities) will be reduced. This will release resources and time for involvement in other economic, social and cultural activities.
3. **Enhancement of mahika kai:** Improvement in the health of water bodies and freshwater habitats will support enhancement of remaining mahika kai resources and in the longer term may also facilitate restoration of some mahika kai resources that have been lost. Improved ability to engage in mahika kai

[169] A vivid example of this is the consequence of the draining of Lake Tatawai as described in Section 3.2. Loss of this wetland led quickly to the break-up of the Kāi Tahu community at Henley as residents had to go elsewhere to seek income.

activities and to harvest food will provide benefits for the health and wellbeing of Kāi Tahu whānui.

It is anticipated that these benefits will unlock a range of opportunities for future development of the Kāi Tahu economy and strengthening of Kāi Tahu communities. The opportunities that have been identified by interviewees are discussed in Section 6, and include:

- Partnership with other economic enterprises
- Opportunities for innovation linked to kaitiakitaka and mātauraka
- Enterprises based on integration of Western science and mātauraka
- Opportunities to put time and resources into activities to foster rūnaka development.

As water bodies are returned to health, commercial opportunities from the use of water may also become available. For Kāi Tahu, these opportunities are precluded in degraded water bodies because of kaitiakitaka obligations.

Development of any of these opportunities would have important downstream benefits for Kāi Tahu whānui in terms of employment, greater economic security, community development and reconnection with place and with cultural practices.

Tūtohi 4: Activities/ effects contributing to costs to the Kāi Tahu economy

Area of cost	Cause	Examples of contributing activities/ effects
1. Costs associated with loss of mahika kai: • Loss of food source • Costs of health impacts • Loss of knowledge base • Socio-economic costs of loss of connection	(a) Loss of physical habitat for mahika kai species	• Wetland drainage • Modification of wetland vegetation • Abstraction resulting in extended periods of reduced river flows • Diversion of water bodies • Barriers to passage – dams and weirs • Physical modifications to spawning/ nesting or feeding habitat
	(b) Degradation in habitat for mahika kai species	• Discharges in flow resulting in water quality degradation • Bed disturbance that alters bed conditions (e.g. change from gravel to silt bed) • Abstraction resulting in extended periods of reduced river flows or loss of flushing flows • Obstacles to flow • Weed incursion • Loss of riparian vegetation
	(c) Reduction in macroinvertebrate food sources	• Discharges in flow resulting in water quality degradation • Bed disturbance that alters bed conditions • Abstraction resulting in slowing of flow • Obstacles to flow • Loss of riparian vegetation
	(d) Competition and predation	• Introduction/ prioritisation of exotic species
	(e) Loss of safe access to harvest	• Discharges resulting in water quality degradation - particularly bacterial and algal contamination • Sediment discharges resulting in deep sediment layer on bed • Structures impeding access along river
	(f) Contamination of mahika kai species	• Discharges of food contaminants (e.g. faecal matter, heavy metals, toxic substances)
	(g) Environmental conditions that discourage harvest	• Discharges of human or animal effluent • Discharges of unsightly or smelly substances • Discharges resulting in algal growth • Weed and pest incursion

		• Sediment discharges resulting in deep sediment layer on bed • Loss of riparian vegetation • Modification of channel resulting in loss of naturalness
2. Cost of exercising kaitiakitaka • Costs of restoration – time and materials • Advocacy costs • Opportunity costs - time and financial capital lost to other economic and social activities; foregoing harvest of mahika kai species	(a) Habitat degradation and loss	See 1(a), (b) and (c) above
	(b) Water quality degradation	• Discharges resulting in water quality degradation
	(c) Modification of wāhi tūpuna	• Wetland drainage • Modification of water bodies and introduction of structures that result in alteration of natural form and function • Discharges resulting in water quality degradation • Weed and pest incursion • Loss of riparian vegetation • Effects on populations of indigenous species as for 1(a), (b), (c) and (d) above
	(d) Poor understanding and recognition of mana whenua values in resource management decision-making	• Objectives, policies and rules that do not provide for mana whenua values or that lack clarity about these
	(e) Regulatory settings that do not require resource users to manage their effects on the health of water bodies and freshwater ecosystems	
3. Constraints on involvement in the mainstream economy • Higher relative costs associated with compliance with environmental goals • Barriers to building economic partnerships	(a) Regulatory settings that do not require resource users to manage their effects on the health of water bodies and freshwater ecosystems	
4. Broader socio-economic costs • Health costs • Loss of employment • Loss of social cohesion/ cultural identity and wellbeing	All matters above	

4 The future of the Kāi Tahu freshwater economy

We must remember to remember as we look to the horizon.[170]

Just as in 1998, the success today can only be assessed through the eyes of mokopuna. In this section, the seeds for the future of the Kāi Tahu economy are derived from the three case studies and other examples, in order to assess the influence of the Proposed LWRP for Otago on the Kāi Tahu economy in the final section of this report. The future outlook for the Kāi Tahu economy is starkly different depending on the approach taken to management of te taiao.

For many decades significant efforts and resources of mana whenua have been absorbed in fighting to prevent further loss of cultural heritage, contraction of the Kāi Tahu economy and disconnection of whānau from their whenua and culture. This has hampered the ability to progress a range of economic ambitions. If there is no change in the way freshwater is managed, mahika kai resources and activities that have survived will become increasingly marginal and there is perceived to be a serious risk that the remaining activities, and the mātauraka associated with these, could be lost to the coming generation. This would have consequential impacts on cultural identity and social wellbeing of Kāi Tahu whānui.

Conversely, if the trends of degradation in freshwater environments were reversed, a range of opportunities arise to build future businesses that are part of the mainstream economy but that are centred in kaitiakitaka and that draw from mātauraka. Interviewees have identified the following opportunities that they have aspirations to pursue:

- **Partnership with other economic enterprises:** Some papatipu rūnaka are actively pursuing economic partnerships with resource users. However, within the existing framework, opportunities for developing such partnerships are limited by conflicting goals and ways of doing business. Within a framework that ensures all players are working towards improving the health of water bodies, such conflicts will be reduced.

- **Opportunities for innovation:** The case studies have highlighted the strong focus of Kāi Tahu on innovation coupled with exercise of kaitiakitaka and use of mātauraka. Examples identified include potential commercial opportunities associated with breeding of pāua and elvers, and development of environmentally friendly products for use in environmental restoration projects. Currently, efforts are focused on reversing degradation in freshwater environments. A framework that prevents further degradation and promotes and supports improvement in these environments will free up time and resources for development of innovation.

- **Integration of science and mātauraka:** Papatipu rūnaka have a strong interest in the benefits that can be gained from harnessing mātauraka and Western science in combination to manage environmental problems, to enhance mahika kai and to develop associated commercial opportunities. As illustrated in the He Pātaka Wai Ora case study, some initiatives in this area are already underway.

- **Internally focused rūnaka development activities:** Freeing up time and resources from advocacy activities will allow attention to be given to opportunities for reconnection of

[170] O'Regan, 2018, personal communication. In Husband, 2018.

whānau, community development, employment and training of rakatahi and economic growth.

- **Commercial enterprises based on use of water:** The degraded state of water bodies has presented a barrier to mana whenua in respect to commercial uses of water, because the kaitiakitaka obligation dictates that the resource can only be taken if the wai is healthy. Improvement in water body health could make available potential opportunities to use water for irrigation, aquaculture and other commercial activities.

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Appendix 1: Glossary of Māori terms

Ahikāroa	The long-burning fires of occupation
Ara tawhito	Ancestral trails
Atua	Deity, early ancestor
Aute	Mulberry
Awa	River
Hara	Transgression
Heke	Migration, movements
Hue	Gourd
Īnaka	Eel
Kāi Tahu whānui	The collective hapū that make up the Kāi Tahu iwi
Kāika	Settlement
Kawa	Accepted protocol
Kāwanataka	Government
Korari	Flower stem of flax
Kūkūwai	Wetland, swampland, marshland, swampy land
Mahika kai food	Practices, knowledge and activities related to food gathering including gathering resources and species
Maka	Stream(s)
Mana	Status, prestige, honour
Manaakitaka	Support, give hospitality to
Maramataka	Celestial and lunar calendar
Mata-au	Clutha River
Mātauraka	Indigenous knowledge, wisdom, skill
Mauka	Mountain
Mauri	Life force/essence
Papa kāika	Homebase, village
Pōha	Bag made from bull kelp
Pūtea	Fund, sum of money
Roto	Lake
Rohe	Territory

Rangatira	Chief
Raupō	Bulrush
Rimurapa	Bull kelp
Takiwā	District, territory
Taoka	Treasure
Tapu	Spiritual restrictions
Te Taiao	The natural environment
Toki	Adze, adzes
Tīpuna	Ancestor
Utu	Reciprocity, redressing imbalances
Whakapapa	Genealogy
Whakatauki	Proverb
Whakawhanaukataka	The process of building relationships
Whao	Iron tool, chisel
Whenua	Land

Appendix 2: Kāi Tahu freshwater economies: Case studies

Case Study 1 - He Pātaka Wai Ora

Kāti Huirapa Rūnaka ki Puketeraki

Context:

"He Pātaka Wai Ora" is a project developed in 2014 by Kāti Huirapa Rūnaka ki Puketeraki to monitor and restore the health of Waikouaiti River and its catchment. Its aim is to maintain the mana of the Waikouaiti River and therefore the mana of whānau and hapū. It forms part of a broader long term (200-year) programme of work established by Kāti Huirapa Rūnaka ki Puketeraki to care for and restore the mauri of the awa, its estuary and the connected coastal waters.

The Waikouaiti River lies 25 km north of Dunedin, with the river mouth located at Karitāne. The area of its catchment is about 425km^2 and is made up of a larger northern branch (283km^2) originating near Macraes Flat, and a southern branch (87km^2), originating at Silver Peaks. The river and its estuary provide habitat and spawning grounds for a wide variety of species, including tuna, pātiki, īnaka, kanakana, pipi, tuaki, tuatua, wai kōura, kākahi, pūtakitaki, watercress, harakeke, fern, puha and ti and the estuary is also a valuable feeding area for wading birds. The Waikouaiti Estuary is considered a 'regionally significant wetland' under Schedule 9 of the Regional Plan: Water for Otago 2016.

The Waikouaiti and its catchment runs through the takiwā of Kāti Huirapa Rūnaka ki Puketeraki, ki uta ki tai. With its abundance of resources, including kai species and places for mahika kai, it is a critical resource for Kai Kāti Huirapa Rūnaka ki Puketeraki. The identity of Kāti Huirapa Rūnaka ki Puketeraki is also closely bound to the Waikouaiti awa: the relationship with the river is described as "hononga tangaengae" (a sacred umbilical cord)[171]. The name of the project - "He Pātaka Wai Ora" - means "the storehouse of flourishing wellbeing"[172]. This indicates the importance of the river, not only for mahika kai but also as a source of overall wellbeing for Kāti Huirapa Rūnaka ki Puketeraki.

He Pātaka Wai Ora

He Pātaka Wai Ora is a partnership between Kāti Huirapa Rūnaka ki Puketeraki, the University of Otago and Te Rūnanga o Ngāi Tahu. Its aim is to restore and maintain the mana of the Waikouaiti River and it has provided a unique opportunity to develop and solidify relationships and collaboration around a single project. As such it marks a significant milestone for the rūnaka, iwi, local community groups and University of Otago research partners and from it have spawned important individual long-term relationships.

Objectives:

The project brings together science, mātauraka and local knowledge, including an initial biodiversity stocktake undertaken in 2015-16 to develop a long-term monitoring and restoration

[171] Flack et al. (2018). He Pātaka Wai Ora 2017-2018 Environmental Monitoring: Waikouaiti Awa, p4.
[172] Ibid.

programme. The project aspires to increase mahika kai for everybody, enable Kāti Huirapa to fulfil their role as kaitiaki of the Waikouaiti River, strengthen community relationships and inspire everybody to contribute. Specific project objectives include:

- Developing a management plan to focus community-led restoration programmes
- Identifying areas for retirement of farmland
- Enhancing native fish habitat and creating maps of key habitat for eel and whitebait
- Creating a long term dataset on the health of the river.

Project activities and outcomes:

Biodiversity and water quality monitoring – developing a baseline for ongoing monitoring to build and re-build knowledge about the health of the awa.

- An initial biodiversity and water quality stocktake established a baseline for the long-term monitoring programme. A combination of science and mātauraka were integrated into the monitoring methodology, including development of an innovative Cultural Health Index, which has now been used elsewhere.
- The initial monitoring report[173] found that the Waikouaiti is in a "moderate" state of health, compared to other rivers in Aotearoa. However, it also reported that the awa is a long way from a state that would have been recognised by tūpuna, and found that the road ahead, to meet the needs of community now and support connection of future generations to their landscape, will be a long one. The report recommends ongoing regular monthly monitoring, continued relationship building, extension of monitoring to the estuary, and targeted riparian plantings as well as development of a catchment revegetation and habitat restoration plan.
- Monitoring has been ongoing with a progress report undertaken in 2018[174], which recognised the value of the improved understanding of the health of the awa provided by the monitoring programme and that He Pātaka Wai Ora is ongoing mahi.

Establishment of a local nursery as an ongoing business to support restoration planting and provide employment for whānau.

- An important economic activity of the project is the establishment of a native plant nursery to supply plants for riparian revegetation. This required investment in infrastructure, employment of staff, electricity, water storage etc. The nursery has expanded and is now producing 40,000 plants per year, supplying not only the project, but also Dunedin City Council and Karitane Māori Tours (who run planting programmes for schools, business groups, etc.).

[173] van Halderen et al. (2016). He Pātaka Wai Ora Project Report – Environmental Monitoring on the Waikouaiti River.
[174] Flack et al. (2018). He Pataka Wai Ora 2017-2018 Environmental Monitoring: Waikouaiti Awa

Riparian restoration integrated with engagement/knowledge sharing activities to build knowledge, relationships and trust.

Planting activities integrated with engagement activities continue to be a focus for the project. This integrated approach achieves on-ground outcomes, provides opportunity for sharing mahika kai and development of Mātauraka between whānau and is also an opportunity for connection with partners, schools, landholders, students and community in general. Examples include:

- A project hui at the end of the initial survey to discuss and share knowledge and the results of this report with project partners, community and key stakeholders.
- A series of four wānaka in 2017 on the Waikouaiti awa to do restoration work at four locations over four days, with a range of volunteers, community members, landowners, and Huirapa whānau. Whānau were able to learn and to teach, as they shared their taoka with manuhiri (guests).
- Ongoing planting days in conjunction with the Estuary-Rivercare group.
- Community and university programmes to raise awareness of mahika kai including planting activities ("flax-root programmes"). This includes a Science Wānanga programme for secondary students (with the University of Otago Division for Sciences); also programmes within the Marine Studies Centre – one for Pasifika and Māori, and one for Gifted and Talented school students.

Project resources:

Dedicated funding for the initial baseline survey came from the Te Wai Māori Trust's Wai Ora Fund in 2015. Three people were employed directly (two from the Rūnaka) to undertake the first survey and this was also supported by substantial in-kind contributions. Funding for ongoing monitoring is challenging, and for the first time in 2023 it was necessary to put it on hold due to lack of funding.

The other project activities such as riparian planting and relationship building are not so dependent on cash resources. Funding is either sourced opportunistically through support of partners such as the University or activities can be maintained on a voluntary basis by the Rūnaka, although this has real opportunity costs in terms of time with whānau. Establishment of the nursery to supply plants for these ongoing riparian planting activities has been an important outcome of the project.

Investment of resources in riparian planting and habitat restoration is not new for Kāti Huirapa Rūnaka ki Puketeraki. Prior to the He Pātaka Wai Ora, they were already investing in planting projects as part of the 200-year mauri restoration plan. The importance of He Pātaka Wai Ora, however, was the intent to establish a strategic catchment-based approach to restoration.

> *The 200-year restoration plan is into its 3rd decade now, and for the first 15 years, we footed the bill for the restoration almost entirely through supplying plants for free and supplying labour for free. We would be out gathering/ exercising mahika kai if we hadn't taken the approach of actually re-establishing the habitat for the species first. We have to take the time to do this so we can gather mahika kai in future.*
>
> ***Interview with Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 16 Feb 2023.***

Resources for additional projects have emerged from He Pātaka Wai Ora partnerships. For example, the Coastal People, Southern Skies – Centre for Research Excellence, based at the University of Otago[175], has established the Waikouaiti Estuary as a case study in a project looking at the effects of climate change.

Waikouaiti awa - the Kāi Tahu Economy pre-colonisation

Prior to colonisation, the Waikouaiti and its resources were a critical part of the Kāi Tahu economy for tūpuna. Archaeological evidence, as well as the presence of many significant cultural sites (pā, nohoaka, urupā and mahika kai sites and habitat of taoka species) indicate an abundance of kai - fish, birds, and shellfish – encouraging tūpuna to establish there and remain settled, although they also travelled seasonally to the mountains. Stories passed down over generations of Kāti Huirapa Rūnaka ki Puketeraki describe the strong association with the land and water and the tikaka that have developed. The extensive resources of the awa and its catchment pre-colonisation and the physical and spiritual connections of Kāti Huirapa Rūnaka ki Puketeraki within the takiwā are documented and described in Rūnaka applications for customary fishing areas. In effect they are descriptions of the operation of the extensive Kāi Tahu economy pre-colonisation- including the practice of kaitiaki and rakatirataka, as well as mahika kai practices and places and the development and sharing of mātauraka.

Implications of colonisation for the Waikouaiti and the Kāi Tahu economy

As a result of colonisation, the Waikouaiti River catchment has been substantially modified by agriculture, forestry, mining and residential development. Indigenous tussock and native forests have been cleared and replaced with pasture and exotic trees. Land alienation and establishment of farms meant progressive loss of access to mahika kai sites as they became "land-locked"[176]. Agricultural and forestry practices have meant an increase in the level of nutrients resulting from fertilizer use, while progressive residential development has meant sewerage discharges flowing into the river and algal blooms in the estuary. Development of Macrae's mine has also had an impact through diversion of water that would have otherwise fed into the awa, and further presents an ongoing risk of chemical contamination should mine effluent containment fail. There have also been significant impacts on the estuary from increasing deposition of sediments from soil erosion and logging, which has reduced boat accessibility and impacted shellfish populations. It was estimated that by the 1980s, the estuary had been reduced in size by 40 per cent.

These issues have been exacerbated by the progressive loss of riparian vegetation along the river which would have previously provided some protection, and increasing abstraction of water, which has progressively reduced flows and thus the frequency of "flushing flows". Reductions in riparian vegetation due to livestock grazing is also impacting spawning habitats for īnaka.

Colonists were aware of the importance of the Waikouaiti for Kāti Huirapa Rūnaka ki Puketeraki: early colony historians also documented the resources of the area and its importance for mahika kai. This was acknowledged by the Waitangi Tribunal in their report on the Ngai Tahu Claim in 1991. While some attempts were made to provide local hapū members with ongoing access to

[175] University of Otago, 2024.
[176] Flack et al. (2018). He Pataka Waiora 2017-2018 Environmental Monitoring: Waikouaiti Awa, p6.

the mahika kai of the surrounding fisheries through the establishment of fishing easements, this was not successful or sufficient. For example, a "fishing easement" which was established at the Forks Reserve in 1868 was one which became "land-locked" and inaccessible. It was associated with the "Kemps Deed" land purchase granted by the Native Land Court in 1868 and was in response to claims relating to unfulfilled promises in that purchase. Another fishing easement, the Hawksbury fishing easement at Mataīnaka/ Hawksbury Lagoon was granted at the same time. However, the mahika kai resource there was significantly affected by drainage of the upper part of the lagoon by the Otago Provincial Council in the 1870s, and the fishing easement became completely useless when the lagoon was gazetted as a Wildlife Refuge in 1973, prohibiting fishing[177].

The pressures of the changes associated with colonisation meant contraction in the economy for Kāti Huirapa Rūnaka ki Puketeraki. The clearing, declining water quality and decline in the extent and populations of mahika kai species and their habitats mean that mahika kai does not now sustain whānau as they did in the past, and harvesting has had to be restricted (through, for example, a rāhui (e.g. pāua rāhui).

> *Even in my father's childhood, for example, tuna was a kai that would be eaten up to three or four times weekly for breakfast. The cost to individual whānau is that they are not accessing that kai, with all the benefits that go along with it, such as the physical work and the ability to share the kai – manaakitaka - has been impacted upon, simply because when you go through a period of restoration, you have to restrict your taking the resource/ taoka. The resource will not now sustain whānau –if even one whānau took eels for their breakfasts, we know that the population would be gone pretty soon, and that's just one species.*
>
> ***Interview with Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 16 Feb 2023.***

Colonisation also meant reduction of access to mahika kai sites, reducing the ability for whanau to practice mahika kai and develop and pass on mātauraka. Over time this would have also contributed to progressive disconnection of whānau from the river, a further source of contraction for the knowledge-based Kai Tahu economy.

> *"Our backs were turned to the awa because of the loss of access. People could see the degradation increasing and felt impotent to do anything about it. He Pātaka Wai Ora understands the importance of the practice of mahika kai in terms of maintaining mātauraka – recognises that mātauraka is passed on by active practicing and the physical act of being there, rather than by learning via other methods."*
>
> ***Interview with Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 16 Feb 2023.***

Reflecting the importance of the Waikouaiti awa, Kāti Huirapa Rūnaka ki Puketeraki have a long history of expressing concern about the state of the Waikouaiti awa. The estuary was the initial focus for this, as this was the most accessible. For example, applications were made to establish and manage several customary fishing protected areas under the *Fisheries Act 1996*. This included the establishment of the East Otago Taiāpure in 1999, and an overlapping Waikouaiti Mātaitai (the Mātaitai), which was applied for in 2014 and granted in March 2016. It aimed to ensure the customary management and protection of fisheries resources and mahika kai for Kāi

[177] Evidence of Matapura Ellison for the Otago Proposed Regional Policy Statement; MacTavish, D. & Mitchell, R., 2013; Brendan Flack personal communication.

Tahu whānui on the lower reaches of the Waikouaiti River. Establishing these areas took years of time and effort indicating the commitment of Kāti Huirapa ki Puketeraki to the Waikouaiti and to rakatirataka and kaitiakitaka - protecting and enhancing connection to the environment and honouring whakapapa for future generations.

He Pātaka Wai Ora speaks of Kāti Huirapa ki Puketeraki seeking to re-establish its relationship with the awa, physically, spiritually, and in terms of rebuilding knowledge.

> *Kāi Tahu has taken ownership of the issues rather than looking for someone else to blame. We realise that because of the lack of access, our backs were turned to the health of the awa. We took responsibility and leadership to change this.*
>
> ***Interview with Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 16 Feb 2023.***

Future challenges and opportunities

The activities of He Pātaka Wai Ora can be viewed as an opportunity to address the decline of the Kāi Tahu economy in the Waikouaiti: improving whānau knowledge of water quality and trends in the health of the river; facilitating access to mahika kai sites previously lost; working directly towards the improvement of the mauri of the awa through riparian restoration and other activities which over time will improve habitat and water quality. All of these activities and their intended outcomes can support the Kāi Tahu economy: improving the flow of benefits in terms of mahika kai for whānau, for manaakitaka and for future generations. The resourcing of the mahi to maintain the monitoring, however, is an ongoing challenge for the future, without external funding.

While there has been some direct financial benefit for the Kāi Tahu economy of the project through rūnaka employment and cash investment in supporting activities, there are also opportunity costs for the Runaka and for whānau who provide volunteer support when needed for implementation. Resources invested in He Pātaka Wai Ora could also be usefully invested in other economic and social outcomes for the benefit of whānau.

This encompasses applying for and running the project, as well as the long history of kaitiakitaka leading up to it, which include participation in planning and proceedings as part of the RMA to protect habitat, the application for the Mātaitai to protect river spawning habitat for freshwater fish, the development of the East Otago Taiāpure management plan, including having to "demonstrate competency" in management, and ongoing activities to engage with landholders and the broader community.

A key challenge for Kāti Huirapa Rūnaka ki Puketeraki is that many of the project activities, although essential, do not achieve immediate improvement to the mauri of the awa. It is not surprising in this context that the opportunity to develop mainstream economic opportunities as part of kaitiaki is also attractive (e.g. businesses and paid employment). Successful examples to date include development of the nursery as a commercial operation; and the taking over of the Undaria control programme (an introduced seaweed) in the Waikouaiti estuary, which the University has been running for a number of years. This involved the training of a team of Kāi Tahu divers and is providing ongoing employment for whānau as well as building technical capacity. Other business opportunities, including some based on mātauraka are being actively explored by the Rūnaka to supplement mahika kai (e.g. breeding of pāua). One of the challenges for

whānau in this mahi has been lack of technical knowledge and the opportunities for training which have occurred as part of He Pātaka Wai Ora, have been regarded as particularly important.

The improvement in access to undertake mahika kai and develop and share mātauraka as part of He Pātaka Wai Ora through developing relationships to landowners and communities also means opportunity to restore and share knowledge. The opportunity to develop relationships with landowners is also an opportunity to educate about Te mana o te Wai.

Finally, an ongoing challenge for Rūnaka is the pakeha "management mindset", which can be a barrier for engagement of whanau in activities/projects:

> *it's not about managing. It's about allowing the river to be natural. I think management is something that doesn't fit. The awa is not something that should be managed by us. We don't consider that that is how... that it is consistent with kaitiakitanga.*
>
> ***Interview with Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 16 Feb 2023.***

Sources:

The material for this case study is sourced from the following sources, including documents referred to in those documents. To prevent repetition these are not specifically referenced, except where there is a direct quotation.

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Case Study 2 - Te Nohoaka o Takiauau

Te Rūnaka o Ōtākou

Context:

Te Nukuroa o Matamata is a project initiated by Te Rūnaka o Ōtākou in 2020 focussing on restoration of the lower Taiari catchment. The project is currently funded by the Jobs for Nature programme based at Te Nohoaka o Takiauau, a wetland complex at the northwest edge of Waihora.

Te Nohoaka o Takiauau is the remnant of an immense wetland complex that once stretched from Waihora and Waipōuri through to modern-day Mosgiel. This area was utilised by Waitaha, Kāti Mamoe and Kāi Tahu over many generations as a significant mahika kai resource and which is identified as being of utmost cultural importance to local hapū today. The lower Taiari has also been substantially impacted by changes associated with European settlement – wetland drainage, clearing, invasive species and water quality degradation in the remaining rivers and lakes.

The lower Taiari is nationally and internationally recognised as a precious refuge for many threatened and endangered species of plants, fish and birds. The Waihora/Waipōuri[178] Wetland complex is one of the three largest lowland wetland ecosystems in New Zealand covering over 2000 hectares of the lower Taiari Plains and encompassing both the Taiari and Waipōuri rivers and lakes. It includes two large shallow lakes, Waihora (640 ha) and Waipōuri (220 ha) and an extensive system of lagoons, ponds, vegetated islands, channels and swamps.

Te Nukuroa o Matamata

Te Nukuroa o Matamata was initiated by Te Rūnaka o Ōtākou, on behalf of local hapū, Kāi Te Pahi, Kāi Te Ruahikihiki, Kāti Taoka, Kāti Moki, and in conjunction with whānau members involved in Te Nohoaka o Tukiauau.[179] The project aims to achieve positive cultural, social, environmental and economic outcomes for the lower Taiari Catchment, through development of a Kai Tahu Kaitiaki cadetship programme. This supports the restoration and transmission of mātauraka, and the succession of rakatahi into mahi kaitiaki, while restoring and protecting wetlands, river and riparian habitats and monitoring water quality in the catchment. It builds on the work undertaken to restore Te Nohoaka o Tukiauau, funded by Te Rūnanga o Ngāi Tahu over the last 22 years.

The name Te Nukuroa o Matamata identifies the ‘extent or range of Matamata’ as the landscape of the lower Taiari catchment, where a series of traditional placenames and features record the movements of Matamata, a kaitiaki taniwhā known to the hapū of Ōtākou. Matamata gave protection and guidance to an ancestor named Te Rakitauneke, a Kāti Māmoe chief who lived for a time at Ōtākou and then within the lower Taiari area, before settling further South. The name signifies that the project extends beyond Te Nohoaka o Takiauau and the Waihora/Waipōuri wetland complex to incorporate the wider Waipōuri Falls catchment, encompassing both the Taiari and Waipōuri rivers, Lake Waihora, and other inflowing waterways such as the Meggatburn and Boundary Creek within the context of the surrounding landscape.

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[178] Waihora is the traditional name for Waihola, Waipōuri is the traditional name for Waipori.
[179] Te Nohoaka o Takiauau is the Māori name for the Sinclair Wetlands Trust.

Objectives:

The mission of Te Nukuroa o Matamata is to connect whānau and rakatahi to the Waihora / Waipōuri wetlands and catchment through mahi for nature. This mission unlocks several opportunities to fulfil other aspirations and intentions for Rūnaka and whānau across capacity and capability building, employment and training, environmental protection and resource management, relationship-building and collaboration, and actioning kaitiakitaka and rakatirataka in identifying and adopting sustainable and regenerative outcomes.

The specific objectives are to:

- Create training and jobs for a team of people led by a Programme Manager over 5 years that are focused on biodiversity enhancement through a range of wetland, river and riparian habitat restoration and protection works.
- Reverse the negative effects of drainage, development, and adverse land use practices, the incursion of introduced species that have contributed to the degradation of water quality and the loss of wetlands and riparian vegetation and biodiversity in this catchment.
- Empower kaitiakitaka - connect whanau to traditional waterways and resources, and be a pathway of learning, skills development and mahi that creates opportunities into the future.
- Improve water quality through the restoration of native vegetation condition and healthy habitat; reduce introduced pest plant and invasive weeds, and animal pest populations.
- Draw upon mātauraka Kāi Tahu to enhance the mahika kai values in this takiwā, restoring and ensuring the intergenerational connection to this traditional food store and tapuwae of our tipuna.

Project activities and outcomes:

Establish Kaitiaki Taiao cadetship programme to train young Kāi Tahu as Kaitiaki to work across the takiwā on restoration and protection of te taiao.

- A Kaitiaki Taiao cadetship programme has been established. This approach recognizes that there may be future employment opportunities for whānau in this type of work, considering the likely increasing need for nature-based jobs over the next 20 years. The programme builds on the Department of Conservation Kaitiaki Whenua training, ensuring that trainees are not only prepared with core environmental skills but also equipped with knowledge of Kāi Tahu tikaka and the skills to support hapū self-determination and development aspirations for te taiao, within tikaka management frameworks. The kaitiaki cadetships support not only Te Nukuroa o Matamata but can contribute to several existing local projects, including the Taiari Ngā Awa project, Wai Wānaka and Maniatoto Tiaki – Preservation Maniatoto.

Restore and protect Waihora-Waipōuri Wetlands, including weed control and predator control, to address threats to biodiversity and water quality decline

- Restoration of the Waihora-Waipōuri wetlands complex requires not only planting of indigenous species but control of weeds. Previous aerial application of herbicide has killed large tracts of mature willows and alder in the wetland complex, but it has commenced regeneration and without further control infestation will re-establish over a broad area. Aquatic weed control is also needed: Glyceria is a major problem across the Taiari, infilling spaces, reducing open water, encouraging sediment retention, transforming wetland to dryland and ultimately reducing spawning habitat for īnaka.

- Removal of pest animals through establishment of trapping networks will reduce predation of native birds.

- An important aspect of the project is to promote the use of mātauraka:

  And it's one thing I've really loved about Te Nukuroa o Matamata is that they've been quite innovative in looking at using traditional plants and knowledge, such as making those harakeke baskets and using those to plant the sedges in amongst the pest species of glyceria. So, you know, things are still trial and error, but looking at our own traditional knowledge systems to find solutions.

  Interview with Paulette Tamati-Elliffe 24 Feb 2023

Develop and implement riparian and river habitat restoration programmes to address threats to biodiversity and water quality decline

- Working in partnership with interested landowners to support riparian or wetland restoration opportunities in priority areas, e.g., weed removal, fencing and planting of trees. Supporting weed eradication efforts with planting of endemic native species to enhance regeneration and avoid reinvasion of weeds.

- Working with partners and landowners to identify current and planned river riparian restoration works and identifying opportunities for collaboration. This includes seeking opportunities not only the Waihola and Waipōuri but in the wider catchment.

- Liaising with Department of Conservation's Mountains to Sea Ngā Awa programme and aligning Te Nukuroa o Matamata mahi with the Taiari Ngā Awa programme.

Undertake water quality monitoring to improve knowledge of the state and trends

- Working with partners to use existing water quality monitoring systems and information and utilise a cultural health index framework to track water quality and identify degrading sites. This is intended to better understand the impact of land use and identify where mitigation / restoration mahi might best be applied.

Support native fish management, research and monitoring to improve species sustainability

- Working with Te Rūnaka o Ōtākou and Aukaha to engage partners and land users to ensure a robust survey and monitoring regime of the native fishery and habitat is maintained and promoting inclusion of the Cultural Health Index methodology.

- Collaborating with partners and researchers to develop restoration methods to improve habitat of galaxiids e.g., Dusky and Eldon's Galaxias (in the Waipōuri catchment.), and improve knowledge of poorly known species, particularly, lamprey, yellow-eye mullet, black flounder and common smelt, as well as the distribution and status of lamprey, redfin and upland bully in the system.
- Seeking upstream and downstream passage for tuna / assess potential migration barriers and identify landlocked populations of Galaxiids. Research includes the role of Lakes Waipouri and Waihola and Taiari River estuary for larval and juvenile growth and recruitment.

Resources:

Te Nukuroa o Matamata is funded under the Ministry for the Environment's Jobs for Nature programme; the project was allocated $5m over three years, covering employment of 21.3 FTE per annum and including the Kaitiaki Taiao, as well as funding for on-ground works and capital investment in upgrade of nursery facilities. Programmes involving landholders require investment to be shared 70 per cent by the project, 30 per cent by the landholder (noting landholders cannot use the project to subsidise regulatory requirements for fencing).

The aims of Te Nukuroa o Matamata are consistent with those of Te Nohoaka o Tukiauau and the associated Tatawai Ahuwhenua Trust, which are a part of the Ngāi Tahu Claims Settlement Act 1998 (NTCS Act) and it builds on work funded by those trusts over the last 22 years. As part of this there has also been a significant investment of volunteer efforts by whānau over years. The project also has other partners, including the Department of Conservation, Otago Regional Council, Dunedin City Council, Clutha District Council, Central Otago District Council and Otago Fish and Game.

Te Nukuroa o Matamata– the Kāi Tahu economy pre-colonisation

Prior to colonization the Taiari catchment supported diverse flora and fauna: parts were heavily forested, including podocarp forest in the lower Waipori River Valley and Silver Beech predominating inland, with tussock in the Upper and Strath Taiari areas. Much of the lower Taiari, the location of Te Nukuroa o Matamata, was either marshy with rushes, raupō, and harakeke, or waterways. The variety of topography and ground cover of the Taiari catchment provided habitats for a wide range of animal and plant species, which were important for mana whenua as sources of food and materials for toolmaking and textiles.

The wetlands were much larger in water area and deeper than at present, connected by a labyrinth of waterways and having a gravel bed which has now been overlaid by silt and mud. Lake Waipori was central in a line of lakes, with Waihola to the south, Tatawai adjoining immediately north, and Marama Te Taha further north again. These lakes connected with the Taiari River and were the main access to the sea through the coastal range lining the eastern side of the Taiari lowlands.

Traditionally, the Waihola/Waipori wetland complex was utilised by Waitaha, Kāti Mamoe and Kāi Tahu as a significant mahika kai resource. An abundance of tuna, īnaka, pātiki and other indigenous fish were available. Waterfowl and fibre resources such as harakeke and raupō were gathered from the wetlands. Spearing, setting hīnaki and nets, and bobbing for eel were regular activities on the wetlands. The gathering of young ducks in the moult, and the catching of herons,

pūkeko and other birds supplemented the broad range of kai available. The wetlands were once one of the most significant food baskets in the Otago region and featured in the seasonal activity of coastal Kāi Tahu settlements as far away as the Otago Peninsula and harbour area, Purakaunui and Puketeraki. As an important place for mahika kai gathering the wetlands were also important for whanau in connecting with te taiao, and with atua and tūpuna, and were a critical part of sharing and transmitting mātauraka (knowledge) from one generation to the next.

Because of the long history of use of the lower Taiari for mahika kai, supporting permanent and temporary settlements, there are numerous urupā and wāhi tapu associated with the streams, rivers, and wetlands. Māori archaeological sites found there include pā, nohoaka, umu, rock-shelters, and find spots. The attractiveness of the lower Taiari for mahika kai was enhanced by its accessibility to traditional trails, both on land and water. The vast network of lakes, rivers, and streams provided the easiest movement around the wetlands and through to the coast via the tidal Taiari River. Waka and paddles feature amongst the considerable number of important taoka unearthed around the Taiari plains in modern times. Landings were also strategically located amongst the network of tracks through the region.

Implications of colonisation for Te Nukuroa o Matamata and the Kai Tahu economy

Colonisation meant significant modification of the lower Taiari including the Waihola/Waipori wetlands complex. As land was surveyed and sold to incoming settlers the natural habitat was cleared and wetlands were drained from the 1850's. Access to places associated with mahika kai activities was restricted by landowners and eventually many of these connections were lost. The loss of access to mahika kai had far-reaching effects, including a loss of connection, an inability to exercise kaitiakitaka with a reductive effect on te taiao, and consequent economic impacts on the people of kā rūnaka.

For example, Lake Tatawai and Waihoropuka, were part of a traditional fishery used by whānau for mahika kai, providing an abundant supply of eels and water birds for generations. Local hapū made a series of petitions to Parliament, urging the Crown to protect this fishery, and a four-acre landing reserve at the lake was granted in 1891, with the lake itself reserved for Kāi Tahu fishing purposes in 1902. However, due to pressure and opposition from the increasing numbers of settlers, the following years saw the interests of settlement increasingly placed above the Treaty of Waitangi rights of Kāi Tahu and the commitments made in Kemps Deed in 1848. The Taiari Land Drainage Acts between 1907 and 1912 established the Taiari Drainage Board in which the Lake beds of Waihora and Waipōuri were vested. The Board enabled massive river modification, cutting, channeling, dredging and draining. The 1920 Taiari River Improvement Act finally extinguished Māori fishing rights at Lake Tatawai and enabled its draining and conversion to arable land. Consequently, whānau at Maitapapa lost their primary food source, the kāika at Maitapapa disappeared and whānau dispersed. This is an example of the contraction of the Kāi Tahu economy.

As farming continued to develop in the Taiari, increasing allocation of water for farming reduced river flows altered the hydrodynamics of the wetlands; increasing nutrients from fertilisers and sediment from erosion and historical mining affected water quality and caused siltation; and residential development impacts included wastewater discharges into the Lakes. Farm development also meant further clearing of wetlands and riparian vegetation and introduction of weeds and predators. For Kāi Tahu there was significant loss and/or alteration of kai and/or its

habitat and a critical loss of access to mahika kai sites. Ara Tawhito (Traditional trails) also became lost, as they were "overwritten" by colonial road networks.

Future challenges and opportunities

The Taiari and the Waihora-Waipōuri wetlands has been significantly impacted by the history of land development, drainage and water quality degradation over the last century and a half. Despite this it has remained highly valued and is identified as being of utmost importance to local hapū today. Mana whenua retain a vision for the restoration of the waterways and habitats to ensure the intergenerational connection to this traditional food store and tapuwae of tūpuna is sustained.

The delivery of Te Nukuroa o Matamata as a Jobs for Nature project is a significant step forward for mana whenua in working towards realising this vision. The aspiration is for the project to not only restore the mauri of te taiao, but to restore the connection of whānau to mātauraka through kaitiakitaka and mahika kai, and to develop a workforce with the capabilities to continue the work more widely. In other words, the project is an opportunity to start addressing the contraction of the Kāi Tahu economy in the lower Taiari, taking an intergenerational approach to economic and ecological transition.

> *So, it's about reconnecting whanau. We lost our baseline measure when we were denied access to our environments and to our practices.*
>
> ***Interview with Paulette Tamati-Elliffe 24 Feb 2023***

A key challenge in the immediate future will be sourcing on-going funding for Te Nukuroa o Matamata, to keep up the environmental maintenance and restoration work and to employ the Kaitiaki which have been trained.

> *For resourcing, the challenge will be to get the continual resourcing of this kaupapa and to continue building on what we've gained. You don't just put trees in the ground, and everything is hunky dory, it's all the maintenance and the ongoing work to make this happen.*
>
> ***Interview with Paulette Tamati-Elliffe 24 Feb 2023***

In the longer term the challenge is about creating sustainable economic activities for whānau that enable kaitiakitaka, while being linked to the mainstream economy, and which are dependent on keeping the water healthy and aligned to Te Mana o Te Wai. This is key to not only improving the environment but overcoming the significant opportunity costs that have been experienced by whānau over many years as they have spent significant time and resources as volunteers on rakatirataka and kaitiaki mahi with significant social and economic impacts.

Examples of future opportunities to develop robust business models and practices based on the mātauraka of Kāi Tahu that are being discussed include farming of elvers; and expanding the nursery used in the project and developing it as a business to produce indigenous plants. Both of these examples could provide opportunities for employment and capacity-building for whānau, but they are also businesses based on clean water and a healthy environment.

> *Success looks like healthy whānau, environment, new innovative ways of expressing our rakatirataka through participating in local and global economies, utilizing our traditional skills, knowledge and those things make us uniquely who we are.*
>
> ***Interview with Paulette Tamati-Elliffe 24 Feb 2023***

Te Nukuroa o Matamata is a platform for building environmental capacity and capability through the development of Kaitiaki Taiao. By placing mātauraka and tikaka at the centre of this mahi, the project could position the Rūnaka to lead restoration mahi in their takiwā, and become a preferred provider for this mahi.

The business model envisaged by Te Rūnaka o Ōtākou is to put the intergenerational nature of kaitiakitaka, mana and whakapapa at the core of their work:

> *Our businesses are going to have much more of a conscience and a commitment to improving practices because our models are not just for profit of this generation. It's got to be a focus on us and our future generations after us.*
>
> ***Interview with Paulette Tamati-Elliffe 24 Feb 2023***

Sources:

The material for this case study was taken from the following sources (including any documents referred to in those sources). To limit repetition these are not specifically referenced, except where there is a direct quotation:

- Tamati-Elliffe, P (2023). Interview 24 Feb 2023.
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Case Study 3 - Waiwhakaata

Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou, Hokonui Rūnanga, Te Rūnaka o Waihōpai, Te Rūnanga o Awarua, and Te Rūnanga o Ōraka Aparima

Context:

Wai Whakaata (Lake Hayes) is a small glacial lake in the Whakatipu basin of the Upper Lakes Rohe, in close proximity to the urban area of Queenstown. Wai Whakaata, the name for the lake given by tīpuna, describes it as a place of reflection, a mirror lake, indicating a mauri of clean, clear waters of such clarity and quality that they reflected the surrounding landscape. Water flows into the lake from springs, overland flows and from Mill Creek to the north. It then exits the lake via a wetland area to the south, feeding Hayes Creek before entering the Kawarau River, converging with the Mata-au at Cromwell.

Wai Whakaata is within the takiwā of seven papatipu rūnaka, which have shared authority in the lake and catchment surrounding it, including Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou and Hokonui Rūnanga, Te Rūnaka o Waihōpai, Te Rūnanga o Awarua, and Te Rūnanga o Ōraka Aparima. The authority comes from the rakatirataka and kaitiaki responsibilities of Kāi Tahu in their takiwā which are recognised under the Ngāi Tahu settlement with the Crown, the RMA 1991 and the NPSFM 2020.

Wai Whakaata is now no longer clear, and its water quality is degraded, associated with nutrients such as phosphorus. Around 70 per cent of the nutrient loading is attributed to overland flows from its altered catchment and the ongoing impact of both rural and urban activities. The degraded state of Wai Whakaata has been recognised by Queenstown Lakes District Council (QLDC) and Otago Regional Council (ORC) for over 50 years. Despite this, and with several attempts to plan for improvements (e.g. 1995 Lake Hayes Management Strategy) very little has changed. Rūnaka maintain serious concerns about the degraded state of the lake today and are seeking to restore the mauri and mana of Wai Whakaata so that mokopuna might experience it as their ancestors did.

Kaitiaki for Wai Whakaata has been continually expressed in district and regional planning processes by Aukaha and Te Ao Mārama Inc. on behalf of Ka Rūnaka. However, since COVID 19 and the Jobs for Nature programme, on-ground delivery organisations interested in both creating employment and delivering environmental outcomes at Wai Whakaata have also emerged. These include Mana Tāhuna, a Kaupapa Māori Charitable Trust; and Te Tapu o Tane, a charitable company in the land restoration business (owned by Papatipu Rūnaka of Murihiku). Another organisation, the “Friends of Lake Hayes”, an association of landowners at Wai Whakaata, is also an active advocate for water quality improvements. The additional importance of Wai Whakaata today, as part of a high-profile tourist destination, is as a prominent flagship for recognition of and education about Māori and mana whenua values and the benefits to the whole community of acting on them.

Strategic Importance:

Te Mana Whenua Kaitiaki emphasizes the strategic significance of this small catchment in our efforts toward climate resilience and environmental conservation. Despite Aotearoa's size, we question its broader impact on climate change. We aim to establish a template for community

restoration, leveraging the unique geographical location of the Queenstown Lakes District and its global connections to showcase Te Mana o te Wai aspirations and Mahika kai values.

The degradation of the lakes' health is well acknowledged. Both Mana Whenua and the community express concerns, recognizing the potential similarity in the fate of our great lakes if proactive measures are not taken to safeguard and maintain their wellbeing.

Wai Whakaata Restoration Projects:

Recent Kā Rūnaka efforts to restore the mauri and mana of Wai Whakaata have encompassed a number of approaches. This has included engaging with Queenstown Lakes District Council (QLDC) in its Spatial Planning and with Otago Regional Council (ORC) as part of Long-Term Planning, as well as undertaking a number of on-ground restoration programmes.

QLDC and ORC recognise the ongoing need to improve the water quality at Wai Whakaata and continue to address it through planning and strategy development. Rūnaka have partnered in plan and strategy development at both the district and regional level, which has meant the inclusion of mana whenua values in the District Plan which provides the opportunity to influence future decisions about Wai Whakaata.

Queenstown Lakes Spatial Plan

Kāi Tahu collaborated with QLDC on the *Queenstown Lakes Spatial Plan*, adopted in 2021, resulting in the inclusion of a mana whenua values framework and identification of mana whenua outcomes. For Waiwhakaata this includes:

- Avoiding further urban development in the Wakatipu Basin beyond Te Pūtahi – Ladies Mile,
- Excluding Wai Whakaata from housing intensification areas,
- Phasing out of wastewater and stormwater discharges to lakes and rivers, and
- Enhancing and protecting the Blue-Green Network (QLDC's natural/riparian areas/open space network).

The achievement of these outcomes, however, will ultimately depend on whether and how the plan is implemented and the decisions that are made.

Waiwhakaata Lake Hayes Management Strategy

ORC identified the rehabilitation of Wai Whakaata as a priority work programme under its Long-term Plan 2021-2031. A Wai Whakaata Lake Hayes Strategy Group has been set up and is revising the 1995 management strategy and developing an action plan. The cultural values assessments/statements of environmental expectations for Wai Whakaata on which much of this case study was based, were developed by the Papatipu Rūnaka from Otago and Murihiku to inform this strategy.

The Strategy Group includes representatives from ORC, mana whenua, QLDC, the Department of Conservation and Friends of Lake Hayes. The revised strategy will need to recognise that any decision impacting on Wai Whakaata must first give priority to Te Mana o Te Wai and the health

and wellbeing of the lake. Rūnaka see many opportunities which might arise from the Wai Whakaata/Lake Hayes management strategy group:

- To restore the balance between what is taken from Wai Whakaata, and what is given back;
- To re-establish sites to support mahika kai and contribute to mātauraka; and
- To educate and engage the broader community to support that objective.

Ka Rūnaka are also seeking that the project be used to advance the capacity and capability of Kāi Tahu whānau and rūnaka, including through co-delivery, direct contracting and employment, and internships, secondments, and apprenticeships.

Lake Hayes Vision Programme

Mana Tāhuna and the Friends of Lake Hayes, in collaboration with community, were successful in 2021 in securing funding for a *Lake Hayes Vision Programme*, aiming to restore the health of the lake. The programme, which is currently underway, attracted significant funding, including from the Jobs for Nature programme and $5.6 M from private sources. This funding is supporting riparian planting, wetland restoration, sediment traps, removal of non-native trees, fencing and pest control. It is also providing significant employment opportunities and capacity building for Kāi Tahu whānau and Rūnaka.

Private restoration projects

Another wetlands restoration project at Wai Whakaata is also underway on private land, being undertaken by Te Tapu o Tane[180], involving the planting of 15000 native trees and plants.

Wai Whakaata - the Kāi Tahu economy pre-colonisation

Archaeological evidence shows that tūpuna had strong associations with Wai Whakaata going back more than 500 years. Whānau came from coastal settlements as part of the Kāi Tahu economy to practice mahika kai and mātauraka. Wai Whakaata is wāhi tīpuna and taoka for Kā Rūnaka to continue tikaka and practices of mahika kai and mātauraka.

Tūpuna would have experienced the Wai Whakaata catchment as most likely forested with kahikatea and an extensive wetland across the western reaches of Mill Creek. Small wetlands were also scattered to the west and north of the lake, with extensive riverine marshes located along the banks of Mill Creek and smaller streams. Wai Whakaata and its catchment supported diverse, healthy ecosystems which were an important source of kai such as tuna, koura and weka, and were a place to practice mahika kai. Coastal villages shared access to it and its resources were an important part of seasonal food security for many whanau, with preservation for winter months being an important activity. Mahika kai practices encompassed a broad range of activities, including, food and resource gathering, food preservation, storage, and

[180]Te Tapu o Tāne, 2024.

transportation, tool-making activities, trading and commerce, knowledge transfer and the sharing of mātauraka.

Kaitiaki, as part of the economy, was also a part of tikaka in the catchment around Wai Whakaata. Wetlands were particularly important and much of the focus was on ensuring the waterway could maintain its natural character and mauri. Each season, waterway and ecosystem attributes were assessed by observing water quality and quantity, and the abundance and health of taoka species, for example. If deemed necessary, steps were put in place to allow the mauri to recover and regenerate. For example, a rāhui could be placed over an area of the catchment or a resource restricting access until the mauri had been restored.

Sustainable harvesting was also part of the economy – sometimes, for example, tī kōuka were cut for use and to promote the vigorous regrowth which happens after felling. Sections of tī kōuka were clear-felled annually for processing in umu tī; the following year, whānau would move to another location, leaving the tract from the previous year to regenerate. This provided whānau with a sustainable harvest within the matrix of native forest, bush, and wetland, and protected mahika kai values for birding, fishing, and toolmaking.

Implications of colonisation for Wai Whakaata and the Kai Tahu economy

By the gold rush in the 1860s, the Wai Whakaata catchment had been deforested and comprised mostly of native tussock grassland in the highlands, and lowland areas scattered with swamps and wetlands. Progressive layers of land use: farming and growing, commercial and industrial activities, and recreation and housing development - meant wetland and riparian vegetation removal, waterway modification, nutrient pollution and sedimentation and led to the degradation of water quality over time. It also influenced, altered, and damaged, the natural processes of lake filling and flushing, which had kept the lake clear.

Much of the catchment today is no longer indigenous vegetation, and urban and recreation development has replaced land initially cleared for farmland. The current degraded state of Wai Whakaata arises from the ongoing impact of both rural and urban activities. Examples of rural activities include clearance of forestry plantations, and discharges of nutrient rich sediment from rural parts of the catchment, while examples of urban activities include the discharge of sediment from development earthworks and stormwater. Apart from the water quality being degraded due to the sediment and nutrient discharges, there are reduced eel numbers and bird counts, episodic fish kills and continuation of regular algal blooms.

European settlement, clearing and land use activities at Wai Whakaata diminished and fragmented the Kāi Tahu economy. As a direct result of the clearing and environmental degradation there was a decline in kai and taoka species, which were essential resources and food security for whānau. At the same time land alienation was underway elsewhere in Otago and, while Māori reserves were being established, these were small and on the coast. This meant that access to Wai Whakaata, both for its tangible resources, and for the opportunity to maintain the connection to Wai Whakaata progressively became more difficult. Barriers that prevent following kā ara tawhito between the coast and the inland lakes also started to appear as settlement progressed. Over generations, the loss of connection to the inland lakes also had significant repercussions for the cultural identity of Kāi Tahu whānui.

Future challenges and opportunities

> *Our vision for success in the Wai Whakaata / Lake Hayes catchment, which I consider is also relevant to other catchments across Otago, requires all parties to be working together for the good of the catchment. This stems from the principle of manaaki – give and take - and means all stakeholders must understand how to sustain the catchment and help the catchment thrive. Absolutely this is a Te Mana o Te Wai approach to integrated catchment management.*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 2022.***

Rūnaka aspirations and intentions for Wai Whakaata today reflect the values that were held by tīpuna in the past and that have been handed down as kawa, mātauraka, and tikaka. This confers an obligation to actively seek restoration of the mauri of the lake. However, for the mana and mauri of Wai Whakaata to be restored, there are both challenges and opportunities.

Challenges:

While things have improved in terms of opportunities to work with treaty partners in planning and as part of the strategy group, one of the challenges is that the kōrero about Wai Whakaata has not significantly changed since the 1995 Strategy. There is recognition of a need to focus on not just plans and strategies but on turning them in to action.

> *20, 30 years ago we weren't through the gate, you know, we were not formally recognised. Now we are on farm, working with farmers, working with stakeholders, we still have a long way to go, but there is progress and that is something to be celebrated. Mana Whenua are on strategy and catchment groups with working in partnership for the betterment of te taiao. There's been a lot of positive movement that we need to recognise, but the kōrero has not changed, we sing the same song as our tīpuna.*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

It is also critical that the activities and practices in the surrounding catchment by rural and urban users and the community, also need to support the protection of Wai Whakaata. This means that education needs to be integrated into future strategy.

> *The land and the water will not be healed until the people are healed, educated. The strategy must underpin this value, this function in order cumulative effects in people's everyday lives to be understood.*
>
> *This is the type of strategy that we will build. A' strategy that underpins intergenerational investment, and that is education, takata whenua, takata Tiriti, takata katoa.*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

This is reflected in the current activities of the Lake Hayes Vision programme, which have integrated community engagement and education with work on environmental outcomes. Much of the education effort is voluntary, however, and this creates social and economic opportunity costs for whānau involved, exacerbated by the fact that the time and effort is continual, as people turn over.

While the Strategy group has largely been successful in bringing together different groups with interests and activities in Wai Whakaata and its catchment, if efforts to improve the lake are to be successful then these groups need to work together, communicate and ensure that the work is aligned.

> *I think that's probably the biggest challenge, helping all stakeholders and treaty partners to realise the mutual benefits that come from supporting one another.*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

In addition, there is always also some risk of duplication, and, with the participation of NGOs there may even be competition for funding at times. With a range of parties involved, collection of monitoring data needs to be coordinated to ensure both that the right data is collected, and the best use is made of the data.

Another key challenge is the ongoing pressure for urban development. And while mana whenua values are now part of the District Plan, the plan still needs to be operationalised and implemented, emphasising the importance of education of decision makers. It also means that plans need to proceed to costing so that they can be better integrated into development planning and delivered.

> *As a strategy group, we need to be five steps ahead of these big plans when they're coming out. And when district plan revisions are being reviewed, we as a strategy group need to be investing in our future and being ready to go around improving our own situation.*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

The role of the strategy group to date has essentially operational and there is a question about whether a more strategic approach may be needed: perhaps a group which focuses on all the Great Lakes, which has the knowledge and experience to raise the capital needed to succeed and have the capacity hold funds.

Opportunities:

> *Wai Whakaata is the opportunity. What story are we going to tell around this regeneration?*
>
> ***Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023.***

The Waiwhakaata Strategy Group has presented a significant opportunity for acknowledging the Treaty partnership, overseeing the strategic implementation of over $7 million in work over the past 3 years, with a planned total of over $20 million between 2021-2030. During this period, the focus is on comprehending shared success and future prospects while identifying and addressing existing gaps.

> *Whai-rawa-a-Iwi, our tribal economy, extends beyond GDP; our taonga constitute our economy, and without them, our tribal economy cannot flourish. This critical insight is the pursuit of a different metric to define and realize success. It is this understanding and mindset change that we work to adopt in our community and Waiwhakaata is one of the beings to make that happen.*
>
> *Waiwhakaata is deserving of all the collective rights and interests of our tīpuna me mokopuna having served as a safe place for tangata whenua me tangata Tiriti to frequent and enjoy.*

Therefore, as we attain success and rangatiratanga in the catchment, it is imperative to comprehend this singular point – Te Rangatiratanga o Waiwhakaata. Achieving this entails striking a balance, ensuring clean water, promoting regeneration, enhancing mahinga kai and biodiversity values, fostering increased awareness and connection within the community and with our Treaty partners. The goal is to make the catchment self-sustaining. To realize Te Rangatiratanga o Waiwhakaata, we must embrace an intergenerational perspective and acknowledge the contemporary challenges affecting tribal economy due to the impacts of colonisation.

Jana Davis, Te Rūnanga o Ōraka-Aparima

Tikanga and wairua connection:

- Waiwhakaata holds deep cultural and spiritual significance for ngā Papatipu Rūnanga o Murihiku. It is intricately connected to our identity, traditions, and ancestral heritage.
- There is no mana whenua without the whenua or wai-māori. We must increase our cultural footprint to provide safe places for rangatahi to fulfill their potential and engage in their cultural rights and interests. Upholding te mana o te whenua me wai-māori means upholding the identity of Kāi Tahu. Anything but the absolute health of this precious catchment is to the detriment of our identity as Kaitiaki.
- Mahinga kai and whenua connections are fundamental values that must be supported and not eroded by our Treaty partners. The strategy group provides an opportunity for upholding Partnership.
- To aspire to deliver on our Partnership and our principles to connect more community to our whenua.

Whakapapa and ancestral ties:

- Ancestral lands are a physical manifestation of our connections to our whakapapa. Owning whenua helps maintain and strengthen these ties. Ownership enables greater control, and thus, supports our ability to meaningfully care for the whenua in a way our tupuna would be proud of.
- Land ownership is linked to the overall well-being and resilience of our communities. It provides a sense of stability, security, and a connection to our roots, contributing to the physical and mental health of the community. Connection helps to drive local economy through health, wellbeing and relationships.

Resource management and sustainable practices:

- For generations, we have embraced mahinga kai practices to sustainably source kai from the land. Upholding Mahika kai values enables us to continue our environmental stewardship, preserving natural resources and biodiversity in accordance with our cultural values.

Economic development:

- The stewardship of Waiwhakaata is a foundation for economic development within our communities. It promotes opportunity for reciprocity with our community and connection to people and place. It allows for the development of businesses, agriculture, forestry, tourism, and other ventures that contribute to the fostering of tribal economic multipliers for the benefit of the Iwi as a whole.
- Regenerative tourism – this is a gap in our local economy that needs to be explored further.
- Long term planning is required to create an investment machine driven by tribal economy and treaty partnership in order for these projects to continue to deliver.
- There are present gaps in the investment strategy surrounding regenerative tourism, agri-investment, energy production, all providing opportunity for better leverage in te taiaio.

Jana Davis, Te Rūnanga o Ōraka-Aparima

The Wai Whakaata Strategy Group has provided an important opportunity for recognition of the Treaty partnership. This involvement as Treaty partner at the decision-making table is crucial to uphold rakatirataka in respect to resource allocation, incorporation of mātauraka and provision for mahika kai and other Kāi Tahu rights and interests. The Cultural Values Statement prepared on behalf of Kāi Tahu ki Otago and the Ngāi Tahu ki Murihiku Environmental Statement of Expectations for Wai Whakaata have been key foundational documents to enable the Kāi Tahu representatives on the Strategy Group to uphold rakatirataka and to ensure Kāi Tahu values guide decision-making.

Wai Whakaata is of strategic importance because it can reconnect whānau across Otago, build a picture of what collective success and implementation of Kāi tahu values looks like in a highly visible location, and be used to engage with the general public and build understanding. The mahi also supports Te Mana o Te Wai and could provide the start of a takiwā wide approach to supporting restoration and regeneration.

To date the opportunities to resource the mahi at Wai Whakaata have focused on local and central government funding (Jobs for Nature). However, Te Tapu o Tāne are working towards seeking other opportunities for the future, based on a more commercial approach.

> *Well, I can speak for Te Tapu o Tane and that is that our goal since day one has been to not use jobs for nature as a finite resource. And it's been to use it with a vision the whole time on year four. And so we've really looked deeply into our process management and commercial opportunity, once commercial success is realised our shareholders Ngāi Tahu kī Murihiku can decide strategically where they should be investing. We are big on circular economy especially when taxpayers and ratepayers funds are in the hat.*
>
> ***Interview with Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023***

Wai Whakaata importantly had Māori organisations Mana Tāhuna and Te Tapu o Tane involved in the mahi, which is creating opportunities to expand the Kāi tahu economy through social and economic development. While each has a different business model (Mana Tāhuna is a charity and Te Tapu o Tane is a business), they are both involved in on-ground delivery of kaitiaki at Wai Whakaata while providing employment, social and economic development as part of projects. Each has a different business model (Mana Tāhuna is a charity and Te Tapu o Tane is a business), but they are both involved in on-ground delivery of kaitiaki at Wai Whakaata while providing employment, and resources which support capacity building and social support in different ways. Ideas of sustainability and balance are part of the Kāi tahu business approach to Wai Whakaata.

> *Everything that we do in the short term needs to be underpinned with stability and sustainability. That'll bring in and drive investment. We need, the strategy needs, to start building a business plan of the problems and the investment opportunities*
>
> *And that is the ultimate understanding, is that the GDP and the money will come if we have everything else in balance. And that is what we're trying and rallying very hard to do is create that balance through restoration. Because with balance and putting your hands in the whenua, we bring people together.*
>
> ***Interview with Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023***

Business opportunities associated with the Wai Whakaata are actively being explored by Te Tapu o Tane, for example:

> *So all of those little offshoots that are now starting to be explored, that's another part of tribal economy, is that the momentum brings opportunity. Some other things just to think about is the amount of green space work that's conducted in the catchment, there's a lot of opportunities for improvement, you know, like plant guards, plastic, working towards more biodegradable, eco-friendly options.*
>
> ***Interview with Jana Davis, Te Rūnanga o Ōraka-Aparima, 19 October 2023***

Finally, there are the “ripple effects” of reconnection and identity which go with this Kāi tahu business approach which provide an opportunity to improve wellbeing and productivity across both the Kāi tahu economy and the mainstream economy.

Sources

The material for this case study is sourced from the following sources, including documents referred to in those documents. To prevent repetition these are not specifically referenced, except where there is a direct quotation.

Aukaha (2023). Confidential Cultural Values Statement: Waiwhakaata

Davis, Jana (2022). Statement of Evidence in the matter of the Omnibus Plan Change - Plan Change 8 referred to the Environment Court under section 142(2)(b) of the RMA.

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Schallenberg,M, and Schallenberg, L (2017). Lake Hayes Restoration and Monitoring Plan. https://www.savelakehayes.org.nz/publications

Davis, Jana (2023), Te Rūnanga o Ōraka-Aparima, Chief Executive Te Tapu O Tane and member of Wai Whakaata/Lake Hayes Strategy Group, Interview 19 October 2023.

Te Tapu o Tane Wai Whakaata Project https://tetapuotane.org/project/queenstown-wetlands-restoration/

Appendix 3: Tables and Figures