

# A Preliminary Mauri Compass Assessment of the Mangawherawhera Catchment

Updated November 2023



## Authors

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Prepared by Āti hau Whanganui for Te Wai Māori Trust.

Ohakune, Aotearoa New Zealand.

2023





**AWHI MAGAZINE ISSUE 18 2023**

**Monitoring the  
mauri of the  
Mangawherawhera >>**

**Thomas Hawkins**

# AWHI MAGAZINE ISSUE 18 2023

A cultural monitoring tool that assesses the mauri of the Mangawherawhera catchment, which runs through Te Pā and Ohotu Stations, is drawing on local mātauranga and empowering long-term kaitiakitanga.

The Mauri Compass mātauranga Māori tool was introduced to mana whenua and staff of the two Ātīhau properties, Te Pā and Ohotu Stations, during an intensive four-day workshop in March.

Locals worked with Mauri Compass kaitiaki Ian Ruru and his two sons to understand the impact of current and historical land use on freshwater fisheries, taonga species and associated ecosystems.

The Mangawherawhera confluence with the Whangaehu River, which was in the study area and on Ātīhau

**"We were lucky to have Ngāti Rangi and Uenuku whānau come out and spend time on the land, connecting with some of our staff and sharing knowledge and aspirational views."**

Courtney Haywood

land, means the Mangawherawhera is a unique catchment with differing chemical properties. Because Te Wai ā-Moe (Ruapehu crater lake) is the source of the Whangaehu, there is a naturally lower pH level – meaning the water is more acidic and affects aquatic life.

Ātīhau Taiao manager Courtney Haywood said Ātīhau has demonstrated a significant commitment to te taiao. She said water quality and implementing a cultural water health assessment approach is a priority for the taiao programme.

There has been extensive work to enhance freshwater habitats in the area, including about 44km of retirement fencing to exclude livestock from the awa. Seven hectares of native vegetation has been planted along the main stem of the Mangawherawhera with 47ha scheduled for planting this winter. Additional fencing to protect other potential taonga species' habitat is planned for summer, along with continual on-farm changes reducing impacts on the taiao.

Courtney said Mauri Compass has added value by providing a long-term model that empowers mana whenua and staff to contribute their collective knowledge in a way that will help inform mauri-based water monitoring and management across Ātīhau land.

"We were lucky to have Ngāti Rangi and Uenuku whānau come out and spend time on the land, connecting with some of our staff and sharing knowledge and aspirational views.

*Previous page: Thomas Hawkins, General Hand at Waipuna Station, holding a delicate Mama Paraneptrops Planifrons (freshwater kōura) during a Mauri Compass wānanga in March 2023.*

*Left: Measuring tuna as part of the Mauri Compass awa monitoring at Mangawherawhera awa.*

*Right: The Mauri Compass awa monitoring team during our wānanga in March 2023.*

*Images supplied by Ian Ruru.*





# AWHI MAGAZINE ISSUE 18 2023

It was really cool to see staff members out there every day and see their passion for what they were doing and noticing in the environment,” she said.

She gave a big mihi to Ātīhau staff members Wesley Johnstone and Moko Hawkins, who are now accredited in the Mauri Compass field work.

“They were fantastic and I cannot rave about them enough. At the beginning we weren’t sure what freshwater species we would find. We set hīnaki and observed what we caught,” she said.

“If we caught tuna, we measured them, which gave us an indication of age, and noted their health and condition. We found a lot of koura. Tuna and koura are good indicators of freshwater quality, which was really empowering.”

Everything that was caught was returned back to the water.

Courtney said the final Mauri Compass report will give Ātīhau an overall understanding of the mauri of the environment and how on-farm management could potentially whakaora i te awa.

Ian said the Mauri Compass kaupapa is all about empowering whānau, hapū and iwi to do their mahi.

“Everyone brings in their own mātauranga and expertise and our job is to facilitate that – and it rocks. It’s valid and it’s powerful,” he said.

“The Ātīhau whānau was so hospitable and welcoming. And I take my hat off to those guys and their monitoring. They’ve demonstrated it is a tool for kaitiaki by kaitiaki.”

Mauri Compass has been going for about 20 years, developed at 300 noho marae delivering aquaculture and customary fishing qualifications workshops. It was inspired by Ian’s father, the late Bill Ruru, and Ian said having his sons with him during the Ātīhau workshop completed the intergenerational circle for him.

The next step for Ātīhau is to take taiao management, specifically in the study catchment and across the remainder of the estate, to the next level, to incorporate and revitalise mātauranga, tikanga and kawa and provide for many generations to come.

Riaki Ruru, Thomas Hawkins, Fred Clarke, Courtney Haywood, Manawa Ruru, Whaea Olive Hawira. Front; Wesley Johnstone and Joseph McLeod



# ATIHOU WHANGANUI ANNUAL REPORT 2023

"This year's discussions have identified other potential strategic partners, and growing these relationships may eventuate in further long term supply agreements."

## Taiao Workplan

A significant workstream this year has centred on the Mauri Compass framework, an environmental assessment tool for measuring the quality of our waterways. The Mauri Compass incorporates both mātauranga Māori and western science.

Mauri Compass co-designer Ian Ruru has been training our staff to apply the cultural monitoring tool to waterways at Waipuna and Te Pā Stations. The initial focus is learning how to use the Mauri Compass effectively before eventually rolling the programme out across other catchments.

At the same time, the team has started to use the Mauri Compass to gather baseline data that will present a picture of the current

state of the waterways. The measurements include a range of indicators such as water quality, tuna and kōura populations, other life in the stream and an assessment of cultural indicators. Capturing baseline data is expected to be a three-year project.

The work is being led by our Taiao Manager Courtney Haywood with designated staff at Waipuna and Te Pā Stations responsible for water quality monitoring at their properties, including counting and weighing tuna and kōura. Engaging our farm staff in this way is already leading to new thinking about how changes in practice could improve water quality and habitat.

The next 12 months will refine the use of the Mauri Compass on the



Waipuna and Te Pā Stations. The tool is expected to be rolled out to other catchments over four years.

## Efforts ramp up to reduce greenhouse gas emissions

We have been successful in our efforts over the past 12 months to accelerate the rate of cattle finishing to avoid wintering cattle for their third year. A concerted effort by our finishing farms means we will end the year in review with only 200 cattle wintering over for a third year compared to 800 the previous year. Getting this age group off our finishing farms earlier will reduce our

methane gas emissions by a very significant 5%.

This approach will also make parts of our finishing farms available for alternative uses. With funding from the Ministry of Primary Industries, a consultancy group was engaged to consider alternative land use. After an extensive search, two options recommended were wheat and barley cropping.

A small trial of barley will be planted next year. Although it provides lower return than wheat, barley grows faster and therefore carries less risk. Wheat may be trialed the following year. The cropping trial will focus on feed grain, potentially saving on the cost of grain we buy in for feeding on the dairy farm.





### Overview

Increasing legislation in the environmental space has continued to challenge farm system management and allocation of available budgets. Intensive winter grazing regulations now apply and mean significant efforts in planning for, recording and monitoring the management of crops for both farm staff and management.

We employed a summer student to help map intensive winter grazing areas on the stations, making management, consents, and the future Freshwater Farm Plans easier. Also in the compliance space, our emissions auditing has been completed for the 2021-2022 financial year and emissions monitoring for the 2022-2023 financial year is underway.

Healthy homes and general house inspections have been carried out on 98% of our houses, and the allocation of budget and resources for identified repairs and maintenance continues, with upgraded insulation and sufficient heat sources being priorities.

Efforts to retire more riparian and bush areas on all stations continue with 2.8 kilometres of new Ngā Whenua Rāhui bush retirement fencing completed on Te Pā Station, and 6.5 kilometres of riparian fencing completed on Te Pā, Te Paenga, Ohorea and Papahaua Stations with support from Horizons Regional Council.

A total of 150 poplar poles have been planted for soil conservation on Ohotū and Te Paenga Stations, and 48.2 hectares of mixed native species were planted

at Te Pā. Disappointingly, lower quality seedlings from outside the district and late season frosts have culminated in high mortality, which will need to be addressed.

During the summer, we were privileged to have Ian Ruru from Tairāwhiti facilitate a staff workshop on the Mauri Compass framework. This will help guide native freshwater species monitoring and protection across the whenua. We were grateful for funding support from Te Wai Māori Trust.

The Mauri Compass wānanga was hosted on Te Pā Station. It was empowering, focused on native species and water quality flowing through some of the more intensively used whenua. Staff from Waipuna and Te Pā Stations have become accredited in the Mauri Compass framework, helping to ensure we continue to adapt, and to care for natural resources as best we can while maintaining productive farm operations. Another outcome in this area has been the start of freshwater species monitoring on Te Pā.

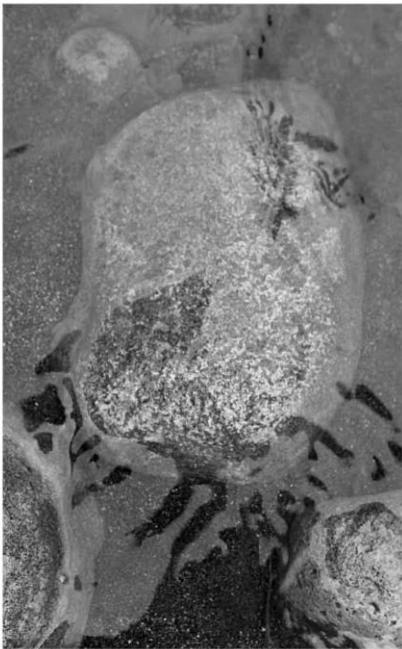
As well as the successful funding application from Te Wai Māori Trust, we secured a \$130,000 grant from Te Aka Whai Ora for next financial year 2023/2024. This will fund the compilation of wāhi tapu and wāhi tūpuna kōrero, enabling the capture of knowledge for generations to come. An application for funding from Whanganui River Enhancement Trust (WRET) to conduct eDNA testing on Waipuna Station waterways during the 2023-2024 summer was also successful.

1.1 Preface

TE WAIŪ-O-TE-IKA

We start with our alignment to Te Waiū-o-Te-Ika

It provides a framework to ensure we are acting as kaitiaki while operating a successful business for our people and of our lands. Although focused on water, it should apply broadly to all our activities on our whenua and so we have sought to apply it in all ways possible.



Wai

Atihau will ensure that taonga species thrive in the waterways that flow on and under our whenua. We will ensure that our whanau can play in, and our animals can drink safely from, our awa and our farming practices do not create enduring damage to the mauri of our wai.

Water Quality

We understand our wai, are attuned with its ebbs and flows and what is influencing its mauri. We commit to reducing our negative impacts to the waters.

Water Quantity

Water efficiency is essential to the operation of our farms. We will understand our water use, and monitor this effectively to ensure we do not take more than we need and what we take does not impact the wai around us.

Fencing

All waterways are fenced on our lands and have 5m riparian strips. We have defined these waterways as permanently flowing rivers, streams, drains and springs, more than a metre wide and 30cm.

Regeneration

Where the mauri has declined, we will actively regenerate the mauri of the wai.

## Measuring the Mauri of our Wai

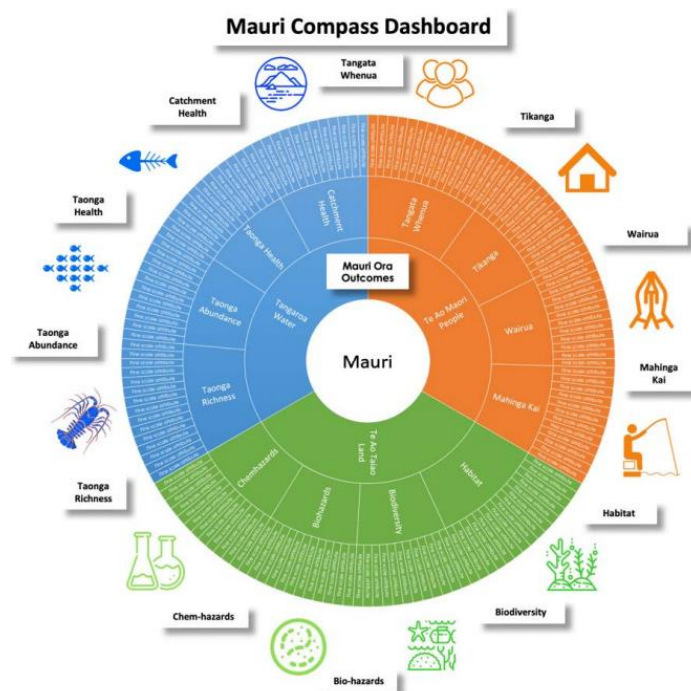
As we still have little data to inform our mahi, these will grow as we move into the project work. Each category for the mauri scale will have targets based on current state analysis to indicate what the characteristics of each category would equate to.

WAI	CURRENT STATE	MAURI ORA	MAURI PIKI	MAURI HEKE	MAURI MAUIUI
Cultural Health testing of the identified waterways; standard across our whenua.	N/A				
Total water consumption from all areas in cm/3.					
Total water allowed by consent for withdrawal from all areas in cm/3, and a breakdown of this total by the following sources, if applicable: i. Surface water ii. Groundwater iii Produced water					
Macroinvertebrate measures of biotic stream health indices.	N/A				

## The Mauri Compass

This Project begins to inform the **Te Waiū-O-Te-Ika Framework** by training staff to establish measurable baselines and long-term cultural health testing protocols.

The Mauri Compass is a comprehensive kaupapa-Māori mauri assessment tool where mātauranga Māori and non-indigenous sciences stand as complimentary bodies of knowledge in their own right.





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## 1.2 Acknowledgements

We would like to acknowledge the following Āti hau & Ngāti Rangi whānau who participated in the mahinga kai field work and shared their knowledge, expertise, and mātāuranga Māori.

Olive Hawira

Ngāti Rangi: Joseph McLeod, Fred Clarke, Deana Wilson

Jake Robinson

Goldie Akapita

Whatarangi Peehi-Murphy

Āti hau: Wesley Johnstone, Thomas Hawkins, Jim Doolan, Pare Pue, Whetu Moataane,

Andrew Beijemen

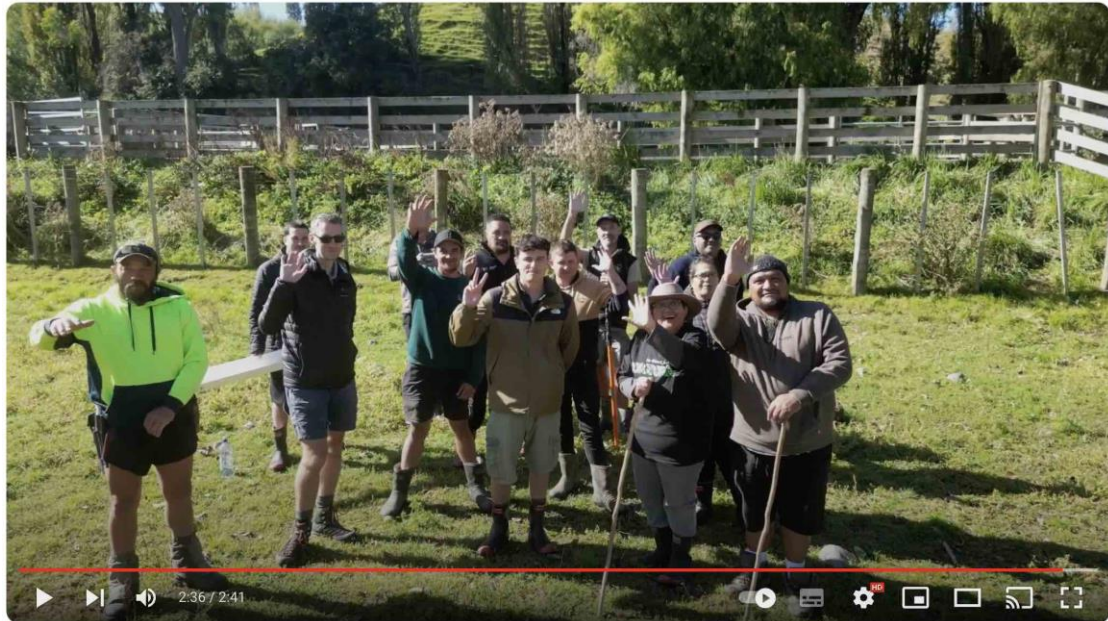
Special thanks to Te Wai Māori Trust for funding this Project.





Mātakitaki mai:

[A YouTube video of our Mauri Compass journey](#)



<https://www.youtube.com/watch?v=cXLLGBX5z4E>

**Suggested citation:**

Haywood, C., Ruru, M., Ruru R., Ruru., I. (2023). A Preliminary [Mauri Compass](#) Assessment of Mangawherawhera Catchment. Prepared by [Āti hau Whanganui](#) for [Te Wai Māori Trust](#). Ohakune, Aotearoa New Zealand.

### 1.3 Executive Summary

This project aims to inform the Te Waiū-O-Te-Ika Framework and empower mana whenua and Ātihaū staff with the skills and knowledge to monitor the health and mauri of their waterways and lands over time. By using the Mauri Compass, we begin to establish a baseline for measuring the positive effects of farm improvement and riparian restoration projects on the mauri of their awa, using the best available data. Furthermore, we aim to investigate the influence of past and present land use on freshwater fish, taonga species and their ecosystems. Finally, the Project applies a tikanga Māori perspective to natural resource management, in alignment with Te Mana o te Wai, the National Objectives Framework, and Mahinga Kai as a compulsory value in the National Policy Statement for Freshwater Management (2020).



Significant findings and outcomes included:

- Creating a preliminary Mauri Compass baseline assessment showing the historic and cultural significance of the area and Ātihaū's aspirations and strong commitment to kaitiakitanga.
  - Discovering a surprising range of mahinga kai biodiversity.
    - At one site we caught large female longfins, a number of hapu/berried female freshwater koura and trout in the same net - meaning that they are living harmoniously and in balance.
    - This is a great tohu / sign for the mauri of that area and this site will be a regular monitoring area.
  - Completing Mauri Compass 101 training to enable staff to use the App for fieldwork for ongoing mauri monitoring and mahinga kai enhancement.
  - Planning next steps which involves specialised Mauri Compass Assessor training for staff to be able to run future assessments themselves.
-



## 1.4 Introduction

**Toitū te whenua, toitū te tangata, toitū te mana.**

**Looking after nature so nature looks after us.**

Āti hau Whanganui Incorporation (Āti hau) is owned by 9000+ shareholders and operate 40,000 ha of Māori land in the Ruapehu/Whanganui area. Āti hau comprises 8 sheep and beef farms, a dairy farm, a significant apiary operation and an [Awhiwhenua Cadet School](#).

The Mauri Compass cultural monitoring tool that assesses the mauri of the Mangawherawhera catchment, which runs through Te Pā and Ohotu Stations, is drawing on local mātauranga and empowering long-term kaitiakitanga.

With support from [Te Wai Māori Trust](#), Āti hau engaged the services of Manawa, Riaki, and Ian Ruru to apply the Mauri Compass tool. The mātauranga Māori tool was introduced to mana whenua and staff of the two Āti hau properties, Te Pā and Ohotu Stations, during an intensive four-day training workshop in March 2023. This was followed up with online wananga.



Figure 1: Courtney Haywood, Manawa Ruru, Riaki Ruru, Olive Hawira, Ian Ruru and Whetu Moataane.

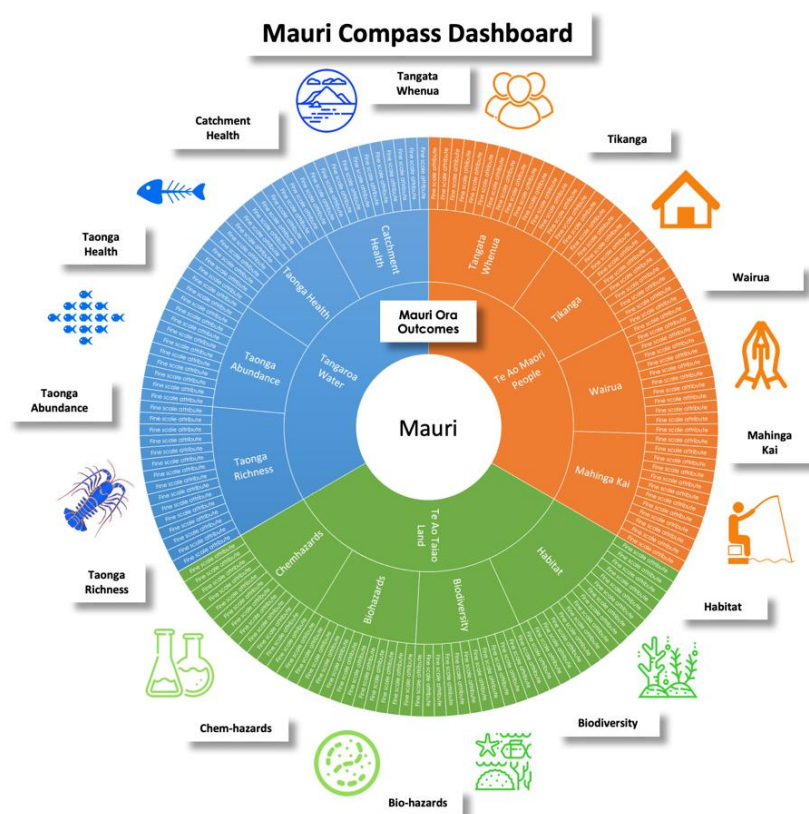
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## 1.5 Project Aim

The purpose of this project is to:

- Begin to inform the Te Waiū-O-Te-Ika Framework
- Train Āti hau staff to be able to carry out long term monitoring of their waterways and lands.
- Create a preliminary baseline to quantify improvements in the mauri of their awa from farm improvement projects, based on the best available information.
- Begin to quantify the improvements in the mauri of our waterways from our significant riparian restoration projects.
- Understand the impact of current and historical land use on freshwater fisheries, taonga species and their associated ecosystems.
- Apply a tikanga Māori approach to natural resource management to inform requirements of Te Mana o te Wai, the National Objectives Framework, and [Mahinga Kai as a compulsory value National Policy Statement for Freshwater Management \(2020\)](#).

## 1.6 The Mauri Compass



The Mauri Compass is a framework for assessing and restoring the mauri of our waterways and is a tool that brings together western science and mātauranga Māori measures to present a wider view. It is a framework for restoring the mauri of any ocean, river or lake.



Ian said the Mauri Compass kaupapa is all about empowering whānau, hapū and iwi to do their mahi.

"Everyone brings in their own mātauranga and expertise. Our [Manawa, Riaki and I] job is to facilitate that – and it rocks. It's valid and it's powerful," he said.

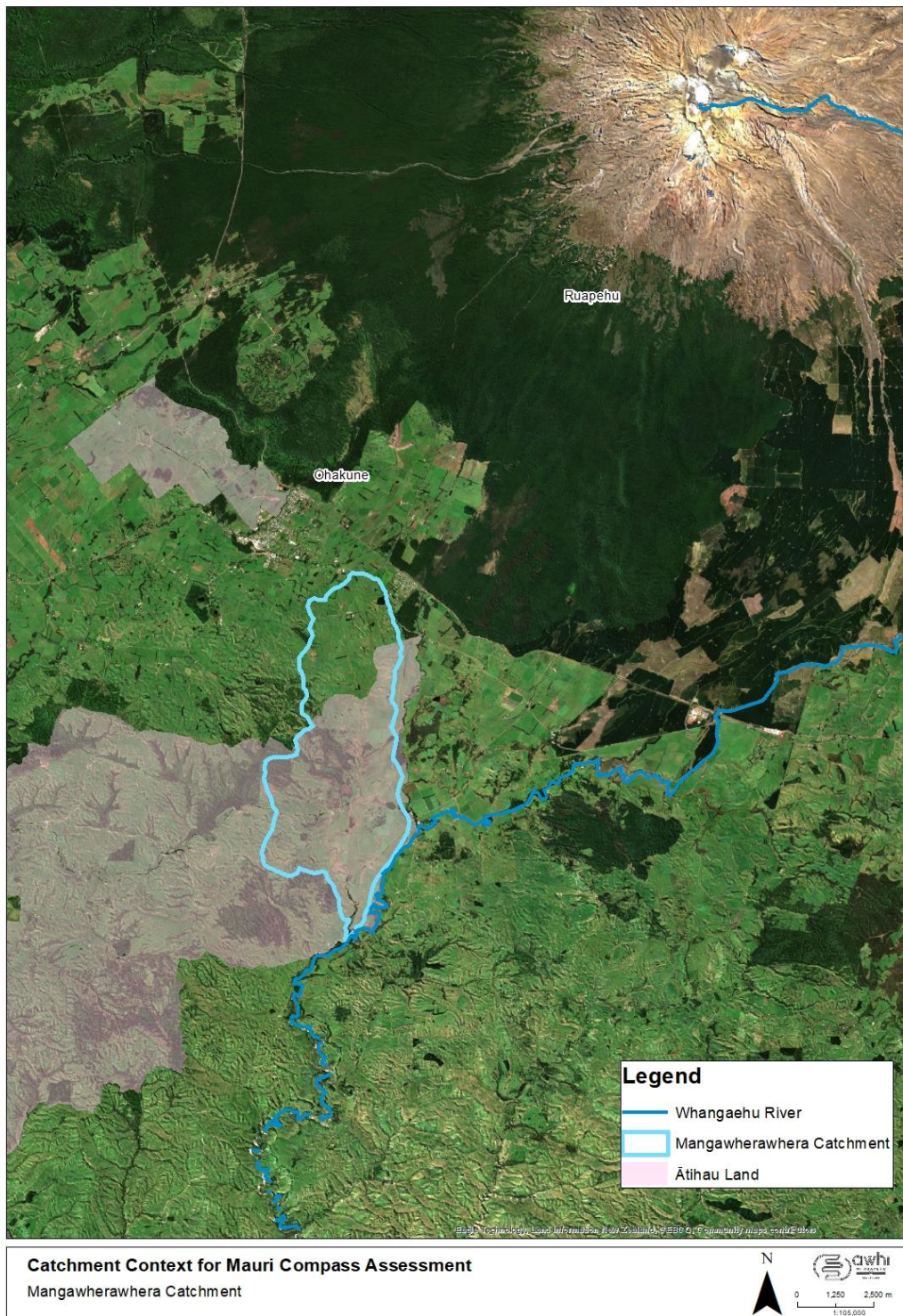
"The Ātihau whānau was so hospitable and welcoming. Manaakitanga plus! And I take my hat off to those guys and their monitoring. They've demonstrated that it is a tool for kaitiaki by kaitiaki."

The Mauri Compass has been going for about 20 years, developed while Ian and his late father Bill Ruru delivered aquaculture and customary fishing qualifications workshops at over 300 noho marae. Ian said having his sons with him during the Ātihau workshop completed the intergenerational cycle and would make their Parps/grandfather proud.



## 1.7 The Project Area

The Mangawherawhera confluence with the Whangaehu River, which was in the study area and on Āti hau land, means the Mangawherawhera is a unique catchment with differing chemical properties. Because Te-wai-ā-moe (Ruapehu crater lake) is the source of the Whangaehu, there is a naturally lower pH level – meaning the water is more acidic and affects aquatic life.





## 1.8 Methodology: Sample Sites

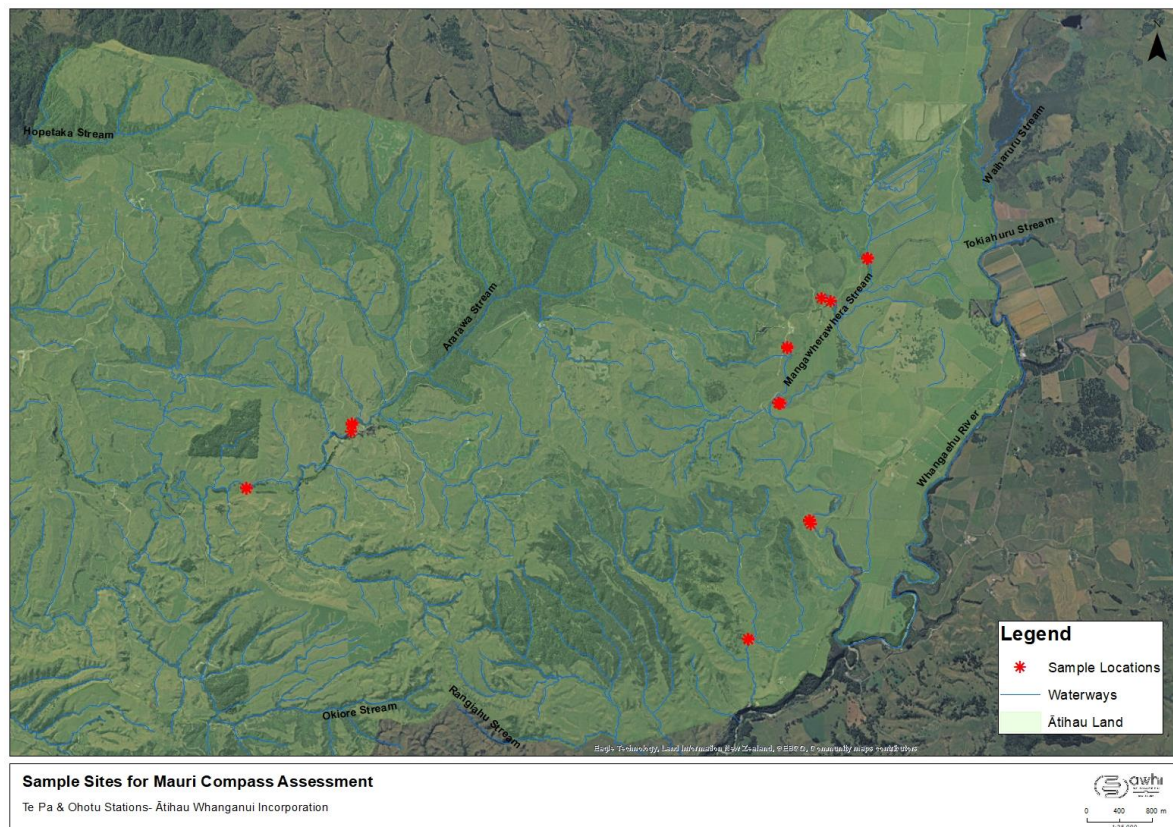


Figure 2: Mauri Compass sample sites. All data was recorded via a phone App by Āti hau staff and uploaded to a central repository.

## 1.9 Land use

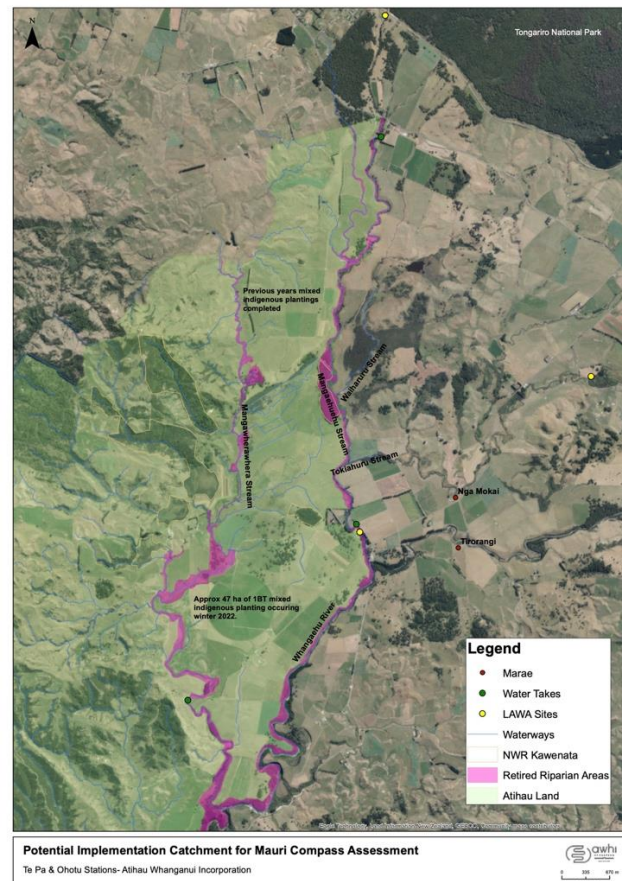
The land draining into the Mangawherawhera comprises a mosaic of land uses; ranging from highly productive areas to mature native vegetation.

Land use in the immediate catchment includes:

- Arable cropping in the form of market gardening (primarily potatoes) occurs on a rotational basis.
- Prime stock mobbed and grazed intensively until slaughter.
- Supplementary feed is regularly grown and cut (balage and hay etc).
- Certain areas are irrigated through both a pivot and rain gun in summer periods.
- Less intensive rotational grazing on some of the more rolling to steep areas.
- Certain areas of wetland and ngahere are under Ngā Whenua Rāhui Kawenata.
- The immediate stream and associated buffer is fenced to exclude all livestock.
- Associated dwellings and infrastructure (yards, woolsheds, and airstrip).
- With the range of land uses present, there are an array of pressures and impacts on water quality.

Primarily, there's potentially an elevated level of nutrient loading through both synthetic fertiliser application (to support the range of land uses) and the higher intensity of farmed livestock directly depositing excreta. With irrigation also occurring in certain areas there is an increased risk of faster leaching of nutrients and contaminants through the soil profile to groundwater.

There is potential that infrastructure such as dwellings, yards, woolsheds and airstrips could act as point sources of pollution if managed poorly and any runoff is not contained and dealt with appropriately. It is reasonable to expect with the long-standing pastoral use of the study area that historic dumps or sheep dips could also be present in the environment.



There are water takes occurring within the Mangawherawhera Catchment that could affect freshwater species and water availability. With the large percentage of pasture as the dominant vegetation within the study area, the hydrological regime is different (more mobile) in comparison to a forest type catchment.

The confluence with the Whangaehu is a significant climb for any aquatic species and could be a barrier to migration. Similarly, with ongoing development around these landuses occurring within the study area, continual activities like drainage, damming and culvert placement, there is an associated potential for impediment to species passage and loss of habitat.

There are a variety of different pests within the catchment, including deer, possums, goats, rabbits and hares. These can all impact habitat or attempts to establish or remediate habitat through browsing damage. Rats and mustelids can also have a negative impact on freshwater species.



1.10 Te Pā Station Overview [Project Area]

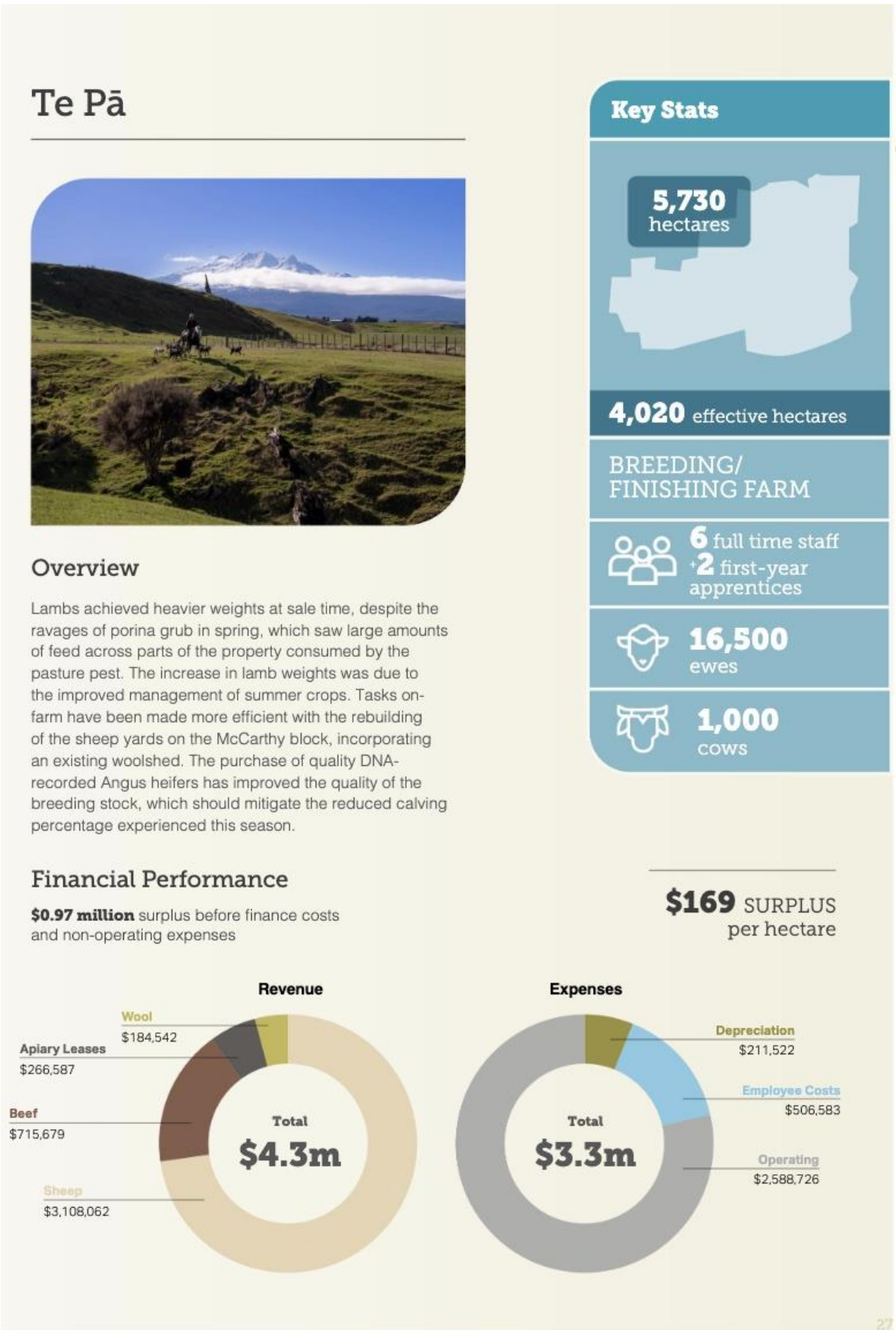


Figure 3: Te Pā Station Farming Overview from Annual Report 2022.

1.11 Ohotu Station Overview [Project Area]

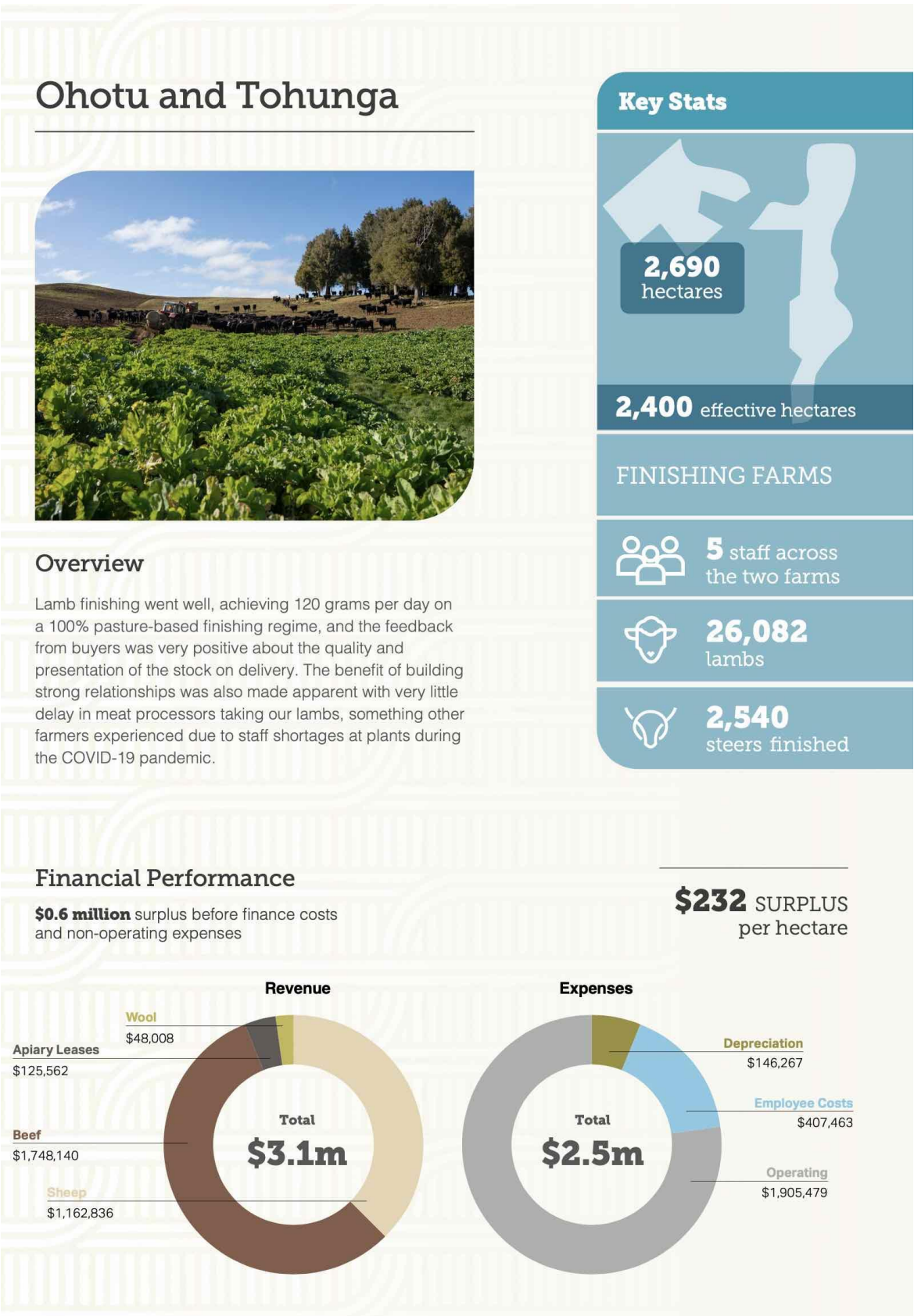


Figure 4: Ohotu Station Farming Overview from Annual Report 2022.



## 1.12 Preliminary Findings



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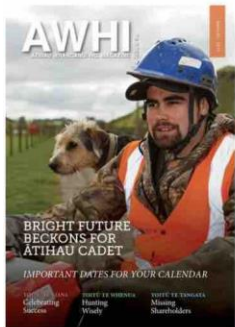
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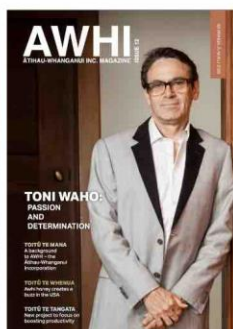
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AWHI Magazine - Issue 9



AWHI Magazine - Issue 10



## 1.13 Commitment To Te Taiao

Āti hau Taiao manager Courtney Haywood said Āti hau has demonstrated a significant commitment to te taiao. She said water quality and implementing a cultural water health assessment approach is a priority for the taiao programme.

## 1.14 The Atihau-Whanganui Connection



Figure 5: Annual Report 2022.



### 1.15 Significant Investment Into Te Taiao

There has been extensive work to enhance freshwater habitats in the area, including about 44km of retirement fencing to exclude livestock from the awa. Seven hectares of native vegetation has been planted along the main stem of the Mangawherawhera with 47ha scheduled for planting this winter. Additional fencing to protect other potential taonga species' habitat is planned for summer, along with continual on-farm changes reducing impacts on the taiao.

### 1.16 Habitat Assessments



Figure 6: 360-degree drone panoramas were created at each site. Links below:

[360 Degree Drone Panorama 1](#)

[360 Degree Drone Panarama 2](#)

[360 Degree Drone Panorama 3](#)



Figure 7: Data Collection: Staff uploaded these images of the maramataka, lunar phase, weather conditions, flora, and fauna by phone from each Mauri Compass site. The phone does not need to be in cell phone coverage to be able to record the data.



## 1.17 Mauri Compass App Fieldwork Results:

**Atihau Whanganui Mauri Compass Monitoring**

Enter your name

Enter a date and time  
 yyyy-mm-dd  hh:mm

Record your current location

latitude (x,y °)

longitude (x,y °)

altitude (m)

accuracy (m)

search for place or address

Point and shoot! Use the camera to take a photo of the site

Point and shoot! Use the camera to take a photo of your catch [fish]

Point and shoot! Use the camera to take a photo of interest

Point and shoot! Use the camera to take a photo of interest

Point and shoot! Use the camera to take a photo of interest

Comment on any aspects of the Maramataka

Comment on any aspects of Mahinga Kai

What is the water temp?

What is the water clarity?

What is the conductivity?

What is the pH?

1. Does the terrestrial habitat look like the equivalent native habitat?

Not at all the same   Very different   Not sure   Very similar   Exactly the same

Add any comments

Figure 8: Screenshot from phone.

1. Of **all the tuna** caught during our mahinga kai survey:

- **No bait** was used in the eel fyke nets
- 100% were the longfin species ***Anguilla dieffenbachii***
- **100% were in a healthy and lively condition**
- They **all showed a good length and size range**
- They showed **no external signs of abnormal health**
- All tuna were released unharmed
- The water temperature ranged fom 10-14 C

2. Mahinga kai biodiversity

- At one site we also caught large female longfins, a number of hapu/berried freshwater koura and trout in the same net – meaning that they are living harmoniously and in balance.
- **This is a great tohu / indicator for the mauri of that area.**



3. We had a lot of **fun!**

### 1.18 Collaboration Is Key

Courtney said that Mauri Compass has added value by providing a long-term model that empowers mana whenua and staff to contribute their collective knowledge in a way that will help inform mauri-based water monitoring and management across Ātihaū land.

“We were lucky to have Ngāti Rangi and Uenuku whānau come out and spend time on the land, connecting with some of our staff and sharing knowledge and aspirational views. It was really cool to see staff members out there every day and see their passion for what they were doing and noticing in the environment,” she said.



Figure 9: Tikanga and Technology. Te taiao research team with freshwater koura catch. Mauri Compass App to record aspects of mahinga kai and environmental data. The App is part of the mauri-based water monitoring programme that Ātihaū Whanganui is using to quantify improvements to their whenua from taiao enhancement projects.



### [Ngāti Rangi Iwi Taiao Management Plan](#)

Based on the structure of a whare, the Ngāti Rangi Taiao Management Plan is a document that outlines the vision, values, goals, and actions of Ngāti Rangi iwi in relation to their taiao, and their relationship with their ancestral maunga, Koro Ruapehu.

The plan expresses the vision, values, goals, and actions of the iwi in relation to their taiao, or natural and cultural resources.

“Matua te Mana is our ancestral maunga and the source of our identity. Koro Ruapehu is the anchor for us to our whenua, and he exists as the stronghold of our people. From Te Wai-a-Moe and from Koro's slopes spring forth our waterways, which carry mouri and mana directly from Koro Ruapehu and through to our people.”

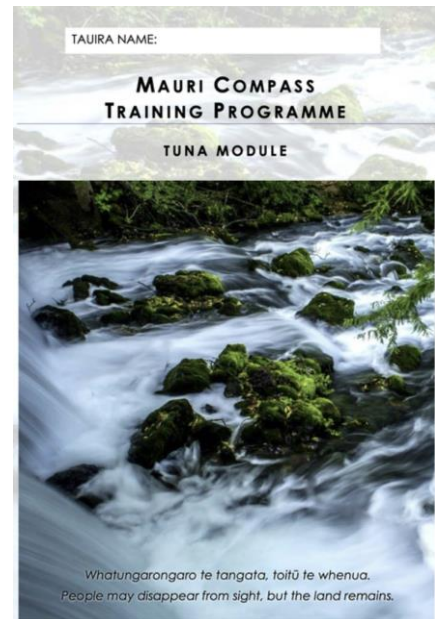


### 1.19 Accredited Mauri Compass 101 Graduates

Courtney gave a big mihi to Ātīhau staff Wesley Johnstone and Moko Hawkins, who are now accredited in the Mauri Compass field work, saying: "They were fantastic and I cannot rave about them enough."

The Training Programme focussed on the Tuna Module Assessment which included wananga, fieldwork and theoretical components.

"Mean day in the office today doing a bit of a tuna survey. I started this journey on a course with Mauri compass. It's been an honour to be out there exploring on our whenua in our waterways and don't worry whanau it is catch n release 🐟🐟 Mean Māori" - Thomas Hawkins.



This hapū freshwater Kōura will have to protect her 200 fertilised eggs for a year until they hatch. They then cling to their Mum until they are big enough to defend themselves - taking another 4 years until they become adults and are able to complete their lifecycle. She is living harmoniously amongst huge female longfins too. I think they are running defence for her.

Photos of Wesley and Thomas holding a delicate Mama *Paranephrops planifrons*.



## 1.20 Mahinga kai

Mahinga kai is elevated to a compulsory value under the [National Policy Statement – Freshwater Management 2020](#) and is required to be implemented in the National Objectives Framework by regional councils by 2024. This gives greater recognition to values that Māori hold for freshwater and provides for mana whenua to meaningfully exercise their freshwater interests and obligations.

Mahinga kai is a broad and multi-faceted indicator, which will ensure that a wide variety of quantitative and qualitative Māori measures of health are incorporated into regional freshwater planning. This requires regional councils to work collaboratively to identify mahinga kai values and to actively involve mana whenua in decision-making processes.

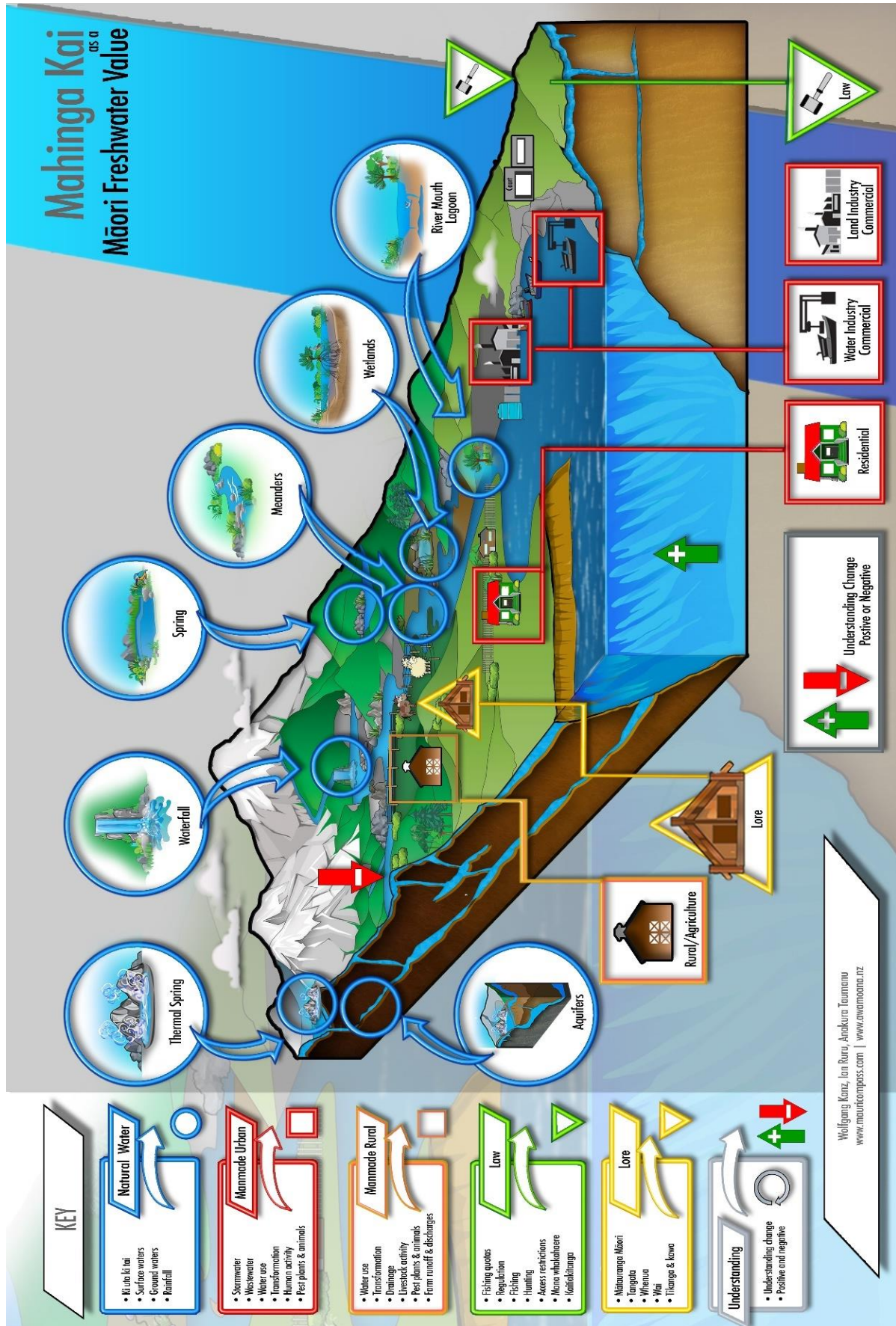
In 2022, Ian Ruru led a team to develop [guidance for mana whenua and regional councils to implement mahinga kai as a compulsory value](#).

The [Guidance Document](#) firstly introduces the reader to mahinga kai, then go on to place mahinga kai into the context of the NPS-FM 2020 and Te Mana o te Wai. Secondly, guidance for engagement is provided to help tangata whenua and councils work together. Thirdly, existing and new tools that may be applicable within the NPS-FM 2020 context are offered and further insights into the role of mātauranga Māori, data sovereignty, monitoring, and cultural mapping are given. Fourthly, the critical issues of capability, capacity, and resourcing are considered. The final section of the guidance document provides links to particularly relevant and insightful audio-visual, infographic, and fact sheet content.



The work for land owners, mana whenua, regional councils, and communities to implement mahinga kai will be significant. This kete provides tools for both technical and practical aspects for implementing mahinga kai, as well as timely guidance to assist tangata whenua and councils in a successful collaboration.

This project demonstrates the commitment of Ātihaū Whanganui to meeting the obligations of the [NPS-FM 2020](#) and [Te Mana o te Wai](#)".









## 1.21 Whakaora I Te Awa

“At the beginning we weren't sure what freshwater species we would find. We set hīnaki and observed what we caught,” said Courtney.

“If we caught tuna, we measured them, which gave us an indication of age, and noted their health and condition. We found a lot of koura. Tuna and koura are good indicators of freshwater quality, which was really empowering.”

Everything that was caught was returned back to the water.

Courtney said the final Mauri Compass report will give Āti hau an overall understanding of the mauri of the environment and how on-farm management could potentially whakaora i te awa.



Figure 10: Manawa Ruru, Riaki Ruru, Thomas Hawkins and Whetu Moataane.





## 1.22 Potential Ways To Quantify Mauri Improvements

The next / steps project will determine which Attribute Band the Mangawherawhera catchment sits in.

Mauri Compass Attribute		Tangata Whenua Connection
Freshwater body type		Mangawherawhera Catchment
Attribute description		Access and protection of mahinga kai sites
Attribute band and description		Attribute state
A	All sites are accessible and protected	100% of mahinga kai freshwater sites <sup>a</sup> , areas, and routes, can be safely accessed and are protected <sup>b</sup> against unauthorised use
B	Most sites are accessible and protected	> 75% of mahinga kai freshwater sites, areas, and routes, can be safely accessed and are protected against unauthorised use
C	Several are accessible and protected	> 50% of mahinga kai freshwater sites, areas, and routes, can be safely accessed and are protected against unauthorised use
D	Very few sites are accessible and protected	< 50% of mahinga kai freshwater sites, areas, and routes, can be safely accessed by and are protected against unauthorised use
No bottom line applies; target attribute state is Band A. Percentage of sites and land area accessible and protected – mapping analyses.		

<sup>a</sup> Still need to be developed during next steps.

<sup>b</sup> This achieved through land-legal, planning, and other mechanisms; includes mapping of sites, areas, and routes, with mātauranga protected as determined by Āti hau/Ngāti Rangi.



The next / steps project will determine which Attribute Band the Mangawherawhera catchment sits in.

<b>Mauri Compass Attribute</b>		
		Wairua
<b>Freshwater body type</b>		Mangawherawhera Catchment
<b>Attribute description</b>		Wai tapu & noa
<b>Attribute band and description</b>		<b>Attribute state</b>
A	Tapu has been restored to noa	There are no sensitive wastes that hinder Āti hau from undertaking customary mahinga kai practices at any time of the year
B	Tapu in place some of the time	Sensitive wastes prevent <sup>a</sup> Āti hau from undertaking their customary mahinga kai practices at less than 1 month of the year
C	Tapu in place most of the time	Sensitive wastes prevent Āti hau from undertaking their customary mahinga kai practices more than 1 month of the year
D	Tapu in place all of the time	Sensitive wastes prevent Āti hau from undertaking their customary mahinga kai practices at all times of the year
<p>No bottom line applies; target attribute state is Band A.</p> <p>Tapu restrictions on mahinga kai are mapped per waterbody with attribute bands relevant to each waterbody that is subject to tapu restrictions.</p>		

<sup>a</sup> Rāhui or other customary controls or restrictions used as management tools.

The next / steps project will determine which Attribute Band the Mangawherawhera catchment sits in.

Mauri Compass Attribute		Mahinga kai
Freshwater body type		Mangawherawhera Catchment
Attribute description		Abundance of suitably sized tuna/eels that can be harvested at mahinga kai sites
Attribute band and description		Attribute state
A	Tuna can be harvested sustainably at chosen cultural level of customary fishing.	High numbers of tuna of suitable size available for customary fishing <sup>b</sup> . Catch per unit effort <sup>c</sup> > 60 tuna that are between 0.5kg and 2kg <sup>d</sup>
B	Tuna can be harvested sustainably at 50% to 100% cultural levels of customary fishing	Moderate numbers of tuna of suitable size available for customary fishing. Catch per unit effort > 40 tuna that are between 0.5kg and 2kg <sup>d</sup>
C	Tuna can be harvested sustainably at 25% to 50% cultural levels of customary fishing	Low numbers of tuna of suitable size available for customary fishing Catch per unit effort > 20 tuna that are between 0.5kg and 2kg <sup>d</sup>
D	Tuna can be harvested sustainably at <25% cultural levels of customary fishing	Poor numbers of tuna of suitable size available for customary fishing Catch per unit effort < 20 tuna that are between 0.5kg and 2kg <sup>d</sup>
No bottom line applies; target attribute state is Band A Catch per unit effort would be monitored relative to waterbodies.		
<sup>a</sup> Catch per unit effort is relative to the size, location, etc. of waterbodies, and whether it is an awa or repo; this attribute table is therefore relevant to a certain class of waterbodies, and the catch per unit effort has been informed by discussion with Āti hau/Ngāti Rangi on current, past, and desired states. <sup>b</sup> This might be controlled through customary fishing regulations. <sup>c</sup> Placing of two mahinga kai hinaki at a mahinga kai site. <sup>d</sup> A 2kg maximum tuna size to provide for mature tuna to migrate, reproduce, and complete their life cycle. Record results using the Mauri Compass App.		



### 1.23 Recommendations and next steps

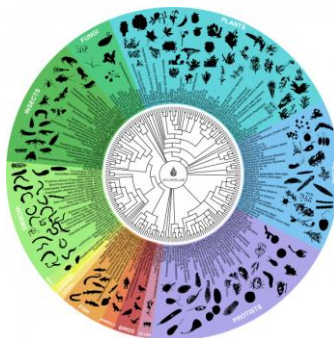
The next steps for Ātīhau are to take taiao management, specifically in the study catchment and across the remainder of the estate to the next level by operationalising and informing the Te Waiū-O-Te-Ika Framework.

#### **Recommendations:**

- 1. Mauri Compass Assessors Course training for a staff member which includes completing;**
  - a. And calibrating the Mauri Compass xl spreadsheet to the Ātīhau taiao so that Ātīhau staff will be able to run future assessments themselves.**
  - b. A comprehensive list of taonga species using the [eDNA method](#).**
  - c. A map of key mahinga kai species**
  - d. The Attribute Band levels for the Mangawherawhera catchment**
- 2. Connecting and building strong relationships with mana whenua in this mahi**
- 3. Seeking opportunities to facilitate shareholder access to not only these awa/sites but also the whenua in general.**

Critically, this project informs and builds technical capability and knowledge around taonga species and the Taiao in ways that compliments existing farm management systems.

Ultimately, this project will inform mauri-based water monitoring/management across Ātīhau land to measure and quantify improvements from past, current, and future Taiao enhancement projects. Being able to look across the wider estate and implement our learnings from the study catchment in other locations will enable us to advocate for a mātauranga based approach to freshwater management.



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**Synopsis:**

- **A Mauri Compass Assessment:** A project that aims to inform the Te Waiū-O-Te-Ika Framework and empower mana whenua and Āti hau staff to monitor the health and mauri of their waterways and lands using the Mauri Compass tool, a kaupapa-Māori mauri assessment tool that integrates mātauranga Māori and non-indigenous sciences.
  
- **The Project Area:** The Mangawherawhera catchment, which runs through Te Pā and Ohotu Stations, two of the eight sheep and beef farms owned by Āti hau Whanganui Incorporation. The catchment is influenced by the Whangaehu River, which has a naturally lower pH level due to its source from Te-wai-ā-moe (Ruapehu crater lake).
  
- **The Methodology:** A four-day training workshop followed by online wananga, where Āti hau staff and Ngāti Rangi whānau learned how to use the Mauri Compass App to record data on the maramataka, lunar phase, weather conditions, flora, fauna, habitat assessments, and mahinga kai at four sample sites. The data was uploaded to a central repository and analysed using a Mauri Compass xl spreadsheet.
  
- **The Preliminary Findings:** The project created a preliminary Mauri Compass baseline assessment showing the historic and cultural significance of the area and Āti hau's aspirations and strong commitment to kaitiakitanga. It also discovered a surprising range of mahinga kai biodiversity, including large female longfins, freshwater koura, and trout living harmoniously in the same net. Two Āti hau staff became accredited in the Mauri Compass field work and can carry out future assessments themselves.
  
- **The Recommendations and Next Steps:** The project recommends that Āti hau staff receive further training to become Mauri Compass Assessors and complete the calibration of the Mauri Compass xl spreadsheet to their taiao. It also suggests connecting and building strong relationships with mana whenua, facilitating shareholder access to the whenua, and seeking opportunities to implement mahinga kai as a compulsory value under the National Policy Statement for Freshwater Management 2020. The project aims to inform mauri-based water monitoring/management across Āti hau land and measure the improvements from taiao enhancement projects.





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