



Raukawa

Tikanga
Tuna





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Karakia mō ngā mahi tuna

We have written a karakia specifically for times when one should interact with tuna, whether during harvesting, monitoring, or researching. The karakia is intended for whānau to acknowledge the respect with which they enter this space, reminding us of our mana and connection to our atua, and to safeguard us around our many awa.

Karakia

Whakairohia koe i te one tapu o Papa
Nā Tū, nā Rongo, nā Tāne
He mana heke hei tiaki i te whenua

I heke mai koe i whea
I heke mai koe i Te Ihorangi,
Ko te Puna-kau-ariki o tua whakarere
He mauri ora o Tangaroa

Tuia te mana atua, tuia te mana tangata
Ko Ranginui e tū iho nei,
ko Papatūānuku e takoto ake nei
Tūturu o whiti whakamaua kia tina,
Haumie, hui e,
Tāiki e!

Whakamārama

Ka whakamahia tēnei karakia i te tīmatanga o ōu mahi tuna. E kōrero ana tēnei mō te whakapapa o te tangata, me te whakapapa o te tuna ki ngā atua Māori, otirā ki a Rangi rāua ko Papa. He hononga ā whakapapa kei waenganui i a tātou. Nō reira he karakia tēnei hei whakamaumahara ki ērā kōrero tuku iho, hei mihi hoki ki ērā āhuatanga katoa, kia tau te wairua o te rangi, te wai, te tuna, otirā, kia tau hoki tō wairua.



He Mihi

Kei aku iti, kei aku rahi, kei aku pikikōtuku e hiakai ana ki te mātauranga, tēnei rā te mihi. Mā koutou tēnei rautaki, mā koutou ēnei kōrero, mā koutou anō e whakarei tēnei mātauranga o Raukawa ki te ao. Hei aha? Hei whakaora i ngā kōrero tuku iho. Hei whakaora i te whenua me te awa, otirā, hei whakaora i a tātou katoa nō reira tēnā koutou katoa.

This book is a collaboration with knowledge shared by kaitiaki who live and breathe kaitiakitanga and actively strive to restore, improve, and sustain all aspects of our taiao. It focuses specifically on mātauranga surrounding tuna and aims to bring together mātauranga Raukawa and western science as a source of knowledge for all to utilise.

E rere nei ngā mihi ki a rātou i takoha mai ngā whakaaro me ngā kōrero hei tūāpapa mō tēnei tāonga, kei aku rangatira, e kore te puna aroha e maroke.



Ngā Kupu Whakataki Introduction

This book explores the mātauranga surrounding tuna from both a Raukawa cultural viewpoint and a western scientific perspective. Its objective is to delve into kōrero tuku iho, traditional practices, contemporary challenges confronting tuna, and proactive measures to safeguard these taonga for future generations.

We examine tuna through its whakapapa, tracing their lineage from creation, through the times of our tūpuna, to the current challenges they face.

As kaitiaki we explore the ways in which our tūpuna utilised our awa and are revitalising the practices they used to better protect, restore, and monitor our awa.

This resource offers a rendition of the stories and traditions of Raukawa. It is essential to acknowledge that these narratives are part of a rich tapestry of oral histories and cultural heritage. Readers should recognise that there are multiple interpretations and versions of these stories within our people. These renditions represent one perspective and does not claim to encompass the entirety of Raukawa mātauranga.



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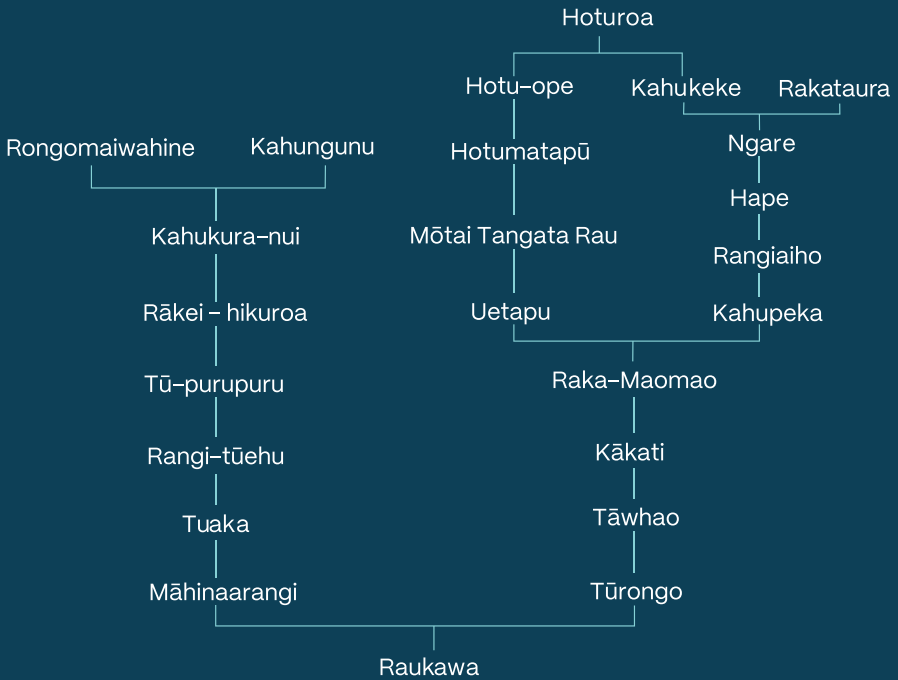


Whakapapa





Te Kāwai o Raukawa



“Look back to our tūpuna to guide our aspirations to restore our wai.”

Maramataka

The Maramataka held profound importance in the daily lives of our tūpuna, embodying a rich tapestry of meanings. 'Marama', representing the moon and 'Taka' representing the falling and repeated patterns of the moon, intertwined with 'Māra', the garden, linked lunar phases with agricultural activities. 'Rama', symbolising light, illuminated traditional tuna hunting methods such as 'Rama Tuna', where fires were lit to attract tuna.

Additionally, 'Mārama', signifying the 'understanding' of Maramataka with comprehension of lunar patterns, tuna behaviour, and horticulture. By attuning to the moons' rhythms, we were enlightened with mātauranga, which gave mauri into our practices of gathering kai, sustainability and māramatanga for the iwi, vital for planning sustenance and upholding tikanga.

Through karakia and respect for our divine connections, we ensure harmony and environmental balance in the taiao. Karakia like 'Rukutia' for Tangaroa, calming seas, and 'Rotu' for Tāwhirimātea, pacifying winds, reinforce these bonds. Understanding these relationships is paramount as we gather kai for our whānau.

Nā Turoa Tepana me Ned Te Wakaiti Wakarata Amopiu, Maramataka



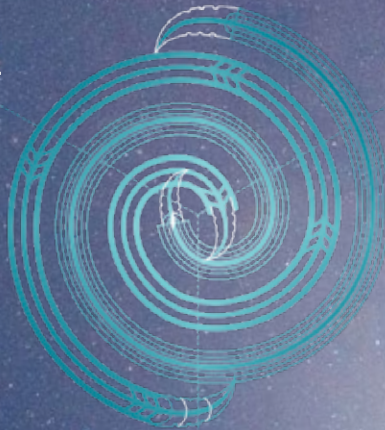
Waitī

Waitī is a star within the Matariki cluster. Every year, as Matariki rises, we look to Waitī, knowing she represents freshwater. When she shines brightly, it's a sign that our waterways will be teeming with life including tuna, kōkopu, kākahi, kēwai, and other species, promising nourishment and abundance for our people over the coming year.

Waitī ki runga, Waitī ki raro, e rere nei o wai. Hei manapou mō te whenua, hei oranga mō te tangata, hei kete kai mā te iwi e. He rīpo, rīpo tonu te ia o te awa Kōreporepo ana ngā roto Kōrengarenga te puna a Tane Te Waiora...ko...koirā.

Mana
Tangata

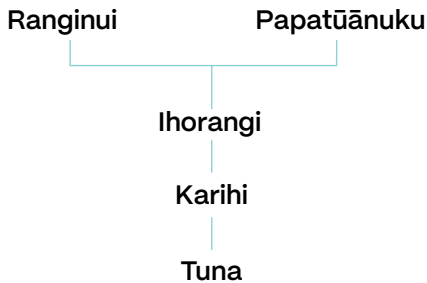
Mana
Atua



Mana
Whenua



He Kōrero mō te Tuna



I ahu mai te tuna i te rangi i te wāhi e kīa nei ko Puna-kau-ariki.

Nō te maroke haeretanga o ngā wai o te rangi ka heke mai te tuna ki runga i a Papatūānuku. Koia rā hoki te take e heke nei te tuna mai i te puna ki te pūaha, i tōna tupuranga.

Ko tōna tikanga, e noho wai-māori ana ngā tuna. Ko ētehi i heke ki te waitai, nō konā hoki i mākutungia ai e Māui ngā tuna, arā, a Ngoire, a Para, a Tūere.

Tikanga Hī Tuna (Tuna Catching Practices)

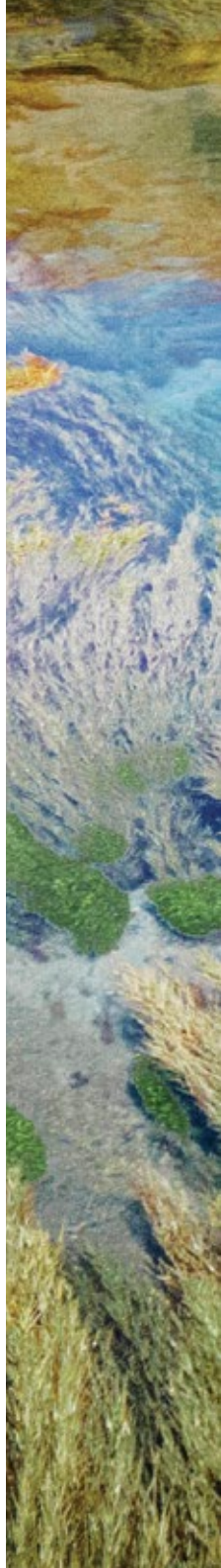
Hīnaki – a common practice still used today.

Muka-harakeke – a single harakeke whā (leaf) is used as a fishing line. The muka are then exposed and bait is entwined in between. As the tuna bites down into the muka its teeth are tangled, leaving it vulnerable to being snatched out onto shore with a quick pull.

He aho pīhuka.

Nanao Tuna.

Noke – A glowing worm that was thread into flax and dangled off a line. The best time to fish was at night so the illuminated worm would attract the tuna.



Kupu

Ingoa Tuna

Kūwharu – the lower jaw sticks out

Matamoe – short-fin tuna

Paewai (silver belly) – migrating short-fin tuna

Piharau – Lamprey

Ngā Tuna Taniwha o Waikato whānui

Te Rangikākake – kaitiaki o te awa o Waikato mai i Mangakino ki Arapuni

Te Āniwaniwa (kāore nei he ingoa) – he tuna mā

Waiwaiā (kaitiaki o te awa mai Arapuni ki te pūaha – he riporipo)

He tuna koroua (kaitiaki) – ōpouaru

Kupu

pā tuna – eel entrapment

hīnaki – eel basket

muka – flax fibre used for eeling

tuna heke – migrating eels

pāwhara – dry tuna

hahohaho – slime

tuaki – gut the eel



Te Waihou



Importance of Tuna



Connection to Wai

Raukawa have been kaitiaki of the Waikato, Waihou and Pūniu awa for over 600 years. These awa and their tributaries are the veins carrying the lifeblood of Papatūānuku. Each awa carries the life force for Raukawa; that which affects the awa, affects us as a people. Our connection to these awa dates back to the arrival of the Tainui waka, when our tūpuna Rakataura and Kahukeke settled in the central North Island naming numerous significant landmarks, grounding our connection to the whenua. We have relied on the pristine wai of these rivers for sustenance and as a bountiful source of kai, particularly tuna, which was integral to our nutrition and cultural heritage. This deep, centuries-old connection, nurtured through kaitiakitanga, reflects the enduring relationship between Raukawa uri and our tūpuna awa, ensuring their health and abundance for future generations.

'Ko te awa ko au, Ko au ko te awa – I am the river and the river is me.'

Te Waihou

Te Waihou is considered a living ancestor with mana, mauri and wairua. Her journey begins at Te Mātāpuna o Waihou at the foot of the Pae Pae Whakarei Hills in the Hautere Ranges of Te Kaokaoroa o Pātetere and flows down to the Hauraki Gulf. Beyond Te Mātāpuna o Waihou, atop Pae Pae Whakarei hills is Hamaria, an old kāinga that served as a refuge during the Māori Land Wars. Tāwhiao occasionally visited Hamaria, and our people were there when Pōtatau was crowned King. The hapū of Te Kaokaoroa o Pātetere, including Tūkorehe, Tūwhakarara, Pani Waikato, and Tūrora, lived in nearby settlements, connected to the waters of Te Waihou. The name Waihou means fresh or new water, and its upper reaches, flowing pure from Papatūānuku, were sacred and had special tikanga practices, with no tuna harvesting. Occasionally tuna, white in colour, and blind have been sighted. These particular tuna rise from the depths of the underground puna and are considered kaitiaki of the Waihou. Hapū are privileged to see these tuna and they are considered a tohu for change in the taiao. The Ōraka, Waimakariri, Mangawhero, Waiomou, and Māhinaarangi, among others, flow into Te Waihou. Most of the tuna harvesting took place at various pā tuna in these tributaries and Te Waihou beyond Ōkoroire. In the past these areas were renowned for tuna yields and the varied tuna species. In Ngāti Hauā territory, a kaitiaki tuna is said to guard and protect the Waihou from Matamata to Paeroa and beyond.





Significance of Tuna to Raukawa

In the time of our tūpuna, tuna thrived and were abundant, their majestic presence gracing our waterways. Only the taller waterfalls and fastest flowing rapids acted as obstacles regulating their distribution across our takiwā. These cherished species have been integral to the nutritional, cultural, and economic prosperity of our people prior to the times of Tūrongo and Māhinaarangi.

Tuna served as a vital food source, sustaining our communities and facilitating trade with neighboring iwi/hapū. Traditional harvesting and preservation methods not only ensured a reliable food supply but also fostered cultural richness and maintained a profound connection to our awa.

Our tūpuna understood the vital importance and health benefits of tuna. They knew that if we care for and nurture the wai, it will always provide for our people. 'Ko te awa ko au, ko au ko te awa – I am the river, and the river is me.' Our awa created a sanctuary where tuna could live, grow, and thrive. By looking after the awa, we are able to benefit from its richness, including tuna, which are rich in the essential nutrients that kept our people healthy and thriving for centuries.

Throughout Raukawa history, we have upheld traditional practices such as hīnaki, pā tuna, and the utilisation of wetlands. These aspects of mahinga kai bestowed mana upon those who controlled them, providing a continuous bounty of kai for their people. Moreover, they promoted sustainable tuna harvesting practices, safeguarding the health and vitality of our awa for future generations.







Traditional Pā Tuna

Significance of Pā Tuna

Pā tuna, a traditional weir for tuna fishing, served as a vital tool in managing tuna populations. These structures, strategically placed within freshwater rivers and streams provided invaluable insights regarding tuna behaviour and regulated the downstream migration of tuna, ensuring a sustainable harvest for the iwi. During spawning seasons, our tūpuna would construct pā tuna to intercept migrating tuna, providing a reliable food source for the iwi. These weirs were highly valued by hapū and iwi, often sparking conflicts over ownership. Access to pā tuna guaranteed a steady supply of kai, making them prized assets essential for sustaining iwi livelihoods.

“The Waikato River and its tributaries were the most renowned and celebrated in New Zealand for its complex Pā tuna structures.”
– Elsdon Best.

Pā tuna, refined over generations, embody the mātauranga gained from observations, enduring practices, and interactions with the land, waters, and tuna. Embedded within pā tuna is mātauranga Raukawa, encompassing insights into freshwater currents, depths, fish resources, and water pathways. Constructed from durable materials such as mānuka, these structures were meticulously designed to withstand the force of rushing rivers while harmonising with natural stream dynamics.

‘The health and wellbeing of our rivers is innately connected to the health and wellbeing of us as an iwi.’

As a traditional resource management practice, pā tuna sites formed part of a broader network, strategically positioned across various feeding streams within the catchment. Rotation of these sites by tūpuna ensured the sustainable regeneration of tuna populations. The presence or absence of tuna served as a tohu of the health and mauri of the awa.





Raukawa Pā Tuna

Let the hīnaki of Raukawa be a vessel of hope for our tuna

Let the return of pā tuna in Te Kaokaoroa o Pātetere, te rohe o te tuna be a fence of allowance for our taonga

These baskets of piritā are not food baskets for the people to feast on

Nor are the fences of mānuka more restrictions for our tuna

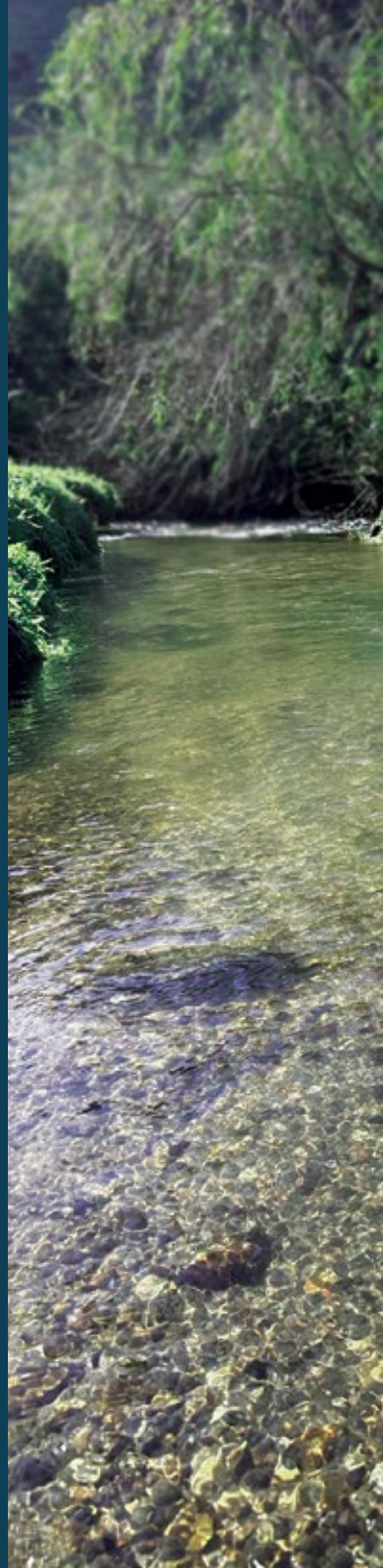
They are all but a promise to our tuna, a commitment of its people

That when white dams break river currents to their spawning seas

Raukawa will carry tuna on kaitiaki currents to Te Pūaha o Waikato

So that the tuna is an atua whakapapa that will never cease.

– K.Begbie



Waikato River Pā Tuna

Te Marino stands as a revered pā tuna site along the Pōkaiwhenua stream. Kaumātua of Mangakaretu Marae recall a 'fencing structure' and posts in the awa in the 1950s, which were potentially part of a pā tuna.

Te Marino was part of a network of pā tuna along the Pōkaiwhenua stream, connected to various feeding streams. Tūpuna would routinely rotate their harvests among these sites. According to records in the Native Land Court, other pā tuna and associated wāhi tapu along the Pōkaiwhenua and surrounding tributaries include;

- Te Pukepuke
- Momonui
- Te Tomoutumatangihau
- Tuarakirikini
- Waioraka
- Te Rotoparahi
- Mangatotoko
- Te Auroa
- Te Tukituki
- Huihuitaha

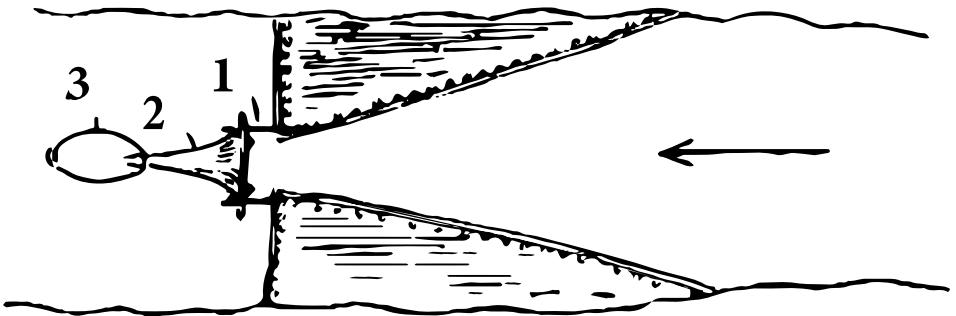


Traditional Pā Tuna Design

The pā tuna could take the form of a 'V', double 'V', or diagonal structure. Its key components included the takitaki, poha, and hīnaki. The fencing structures, known as takitaki, were lined with ferns to control tuna movement while permitting water flow. Tuna were guided along the fence towards a net (poha) and then a trap (hīnaki).

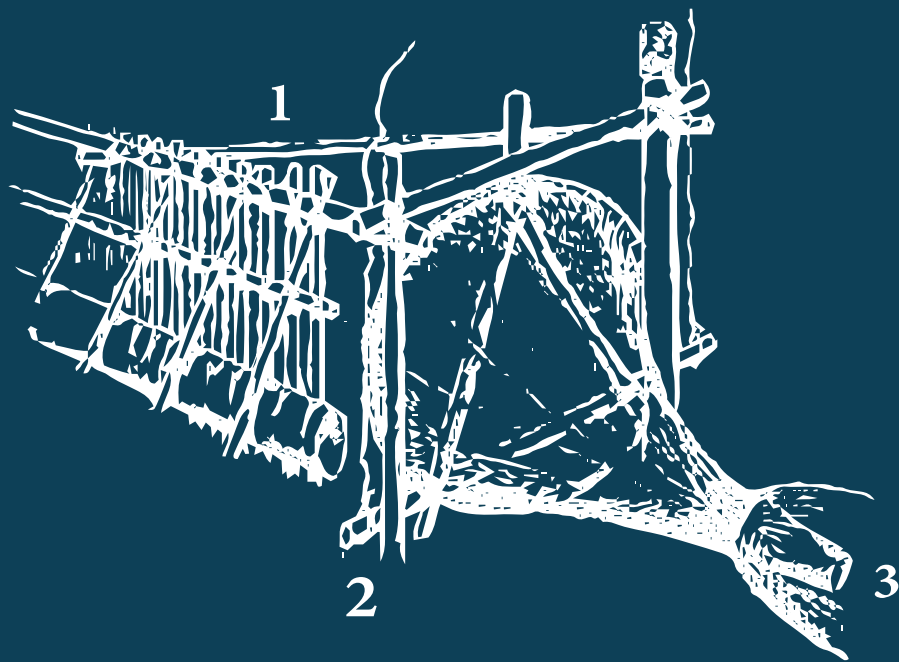
Takitaki

Traditionally, stakes measuring 9–10m in length, typically made of mānuka (also known as kōpuka) were prepared with tapered points. These stakes, along with tōtara logs stripped of sap, were trimmed and fashioned with heads at the heavy end facing downstream. They were then securely fastened with piritā (supplejack) in an 'X' formation. Rows of stakes, spaced approximately 4–5cm apart, were held together by firmly positioned horizontal beams. Bundles of bracken were tied and lashed to the stakes underwater, with additional stakes driven in to secure them. Above water level, mānuka brush replaced bracken due to its strength and ease of replacement. The entire fence was meticulously lashed to ensure stability.



Poha

To support the structure, two sturdy posts were firmly anchored downstream from the fence, securely braced against each other. The poha, serving as the primary net, had a shape resembling a large phonograph trumpet, with diamond-shaped meshes woven from harakeke into 2-inch openings. This net was affixed to a hoop crafted from akatea vine, which kept it open. The akatea vine was secured to a square formation of mānuka poles installed upstream of the braces. However, the poha proved fragile and lasted only a few nights, susceptible to damage from swift currents and driftwood.



Hīnaki

The narrowest section of the poha, about 22cm wide, was attached to the hīnaki using harakeke. Strips of harakeke, long and thin, were woven together to create a mesh with a diamond pattern, ensuring appropriate spacing for tuna trapping. Typically, the hīnaki featured a tapered shape, with the wider end serving as the entrance. Occasionally, additional vine or flexible branches were incorporated to reinforce the structure.





Constructing a Pā Tuna



Constructing a Pā Tuna

When constructing a pā tuna we suggest utilising the Te Ārohirohi o Raukawa Freshwater Assessment Tool. This framework integrates mātauranga Raukawa, with contemporary environmental practices to maintain the mauri of our tūpuna awa. During the construction of a pā tuna, the framework can help inform the placement and design to harmonise with natural water flows and tuna migration patterns. It emphasises the importance of using natural materials and techniques that have been passed down through generations, ensuring the structure supports sustainable fishing practices and ensures the health of our awa and tuna. By following the principles of Te Ārohirohi o Raukawa, the construction not only achieves functional and ecological goals but also honours and revitalises Raukawa mātauranga, reinforcing the relationship between Raukawa uri and their tūpuna awa.

The first step in constructing a pā tuna is to identify its purpose and select an appropriate site. The purpose may vary, whether it be monitoring an awa or harvesting tuna. For monitoring purposes, a downstream location is preferable, while for harvesting, a site where multiple streams converge is ideal. Considerations for site selection include narrow width, easy accessibility, rocky or solid riverbed, and calm current. The site should be shallow enough to walk across but deep enough for hīnaki to lay submerged.

Conducting a thorough site assessment and design phase is crucial for the success of the pā tuna. This involves multiple site visits during various weather conditions to understand water flow dynamics. Stake placement and height should be determined based on flow patterns and flood levels. Additionally, the shape and design of the pā tuna must be decided upon during this phase.

The next step involves gathering the necessary resources for constructing the pā tuna. Stakes are sourced from mānuka trees, spaced no more than half a meter apart to withstand the current. Piritā and additional mānuka branches are collected for constructing wing walls.





Construction of Wing Walls

Wing walls are constructed using piritā as natural wire to connect mānuka branches. Railings should be spaced no more than 30mm apart using beads from mānuka cut-offs, ensuring they sit above water level and are sturdy against heavy rain floods. Holes are drilled in railings and beads, with piritā threaded through the top and bottom portions for stability. Walls are constructed on both sides of the pā tuna and attached to mānuka stakes for support.

Installation of Hīnaki

Harakeke taura is used to tie the walls to the stakes, and the hīnaki is installed to complete the construction of the pā tuna.

Monitoring and Maintenance

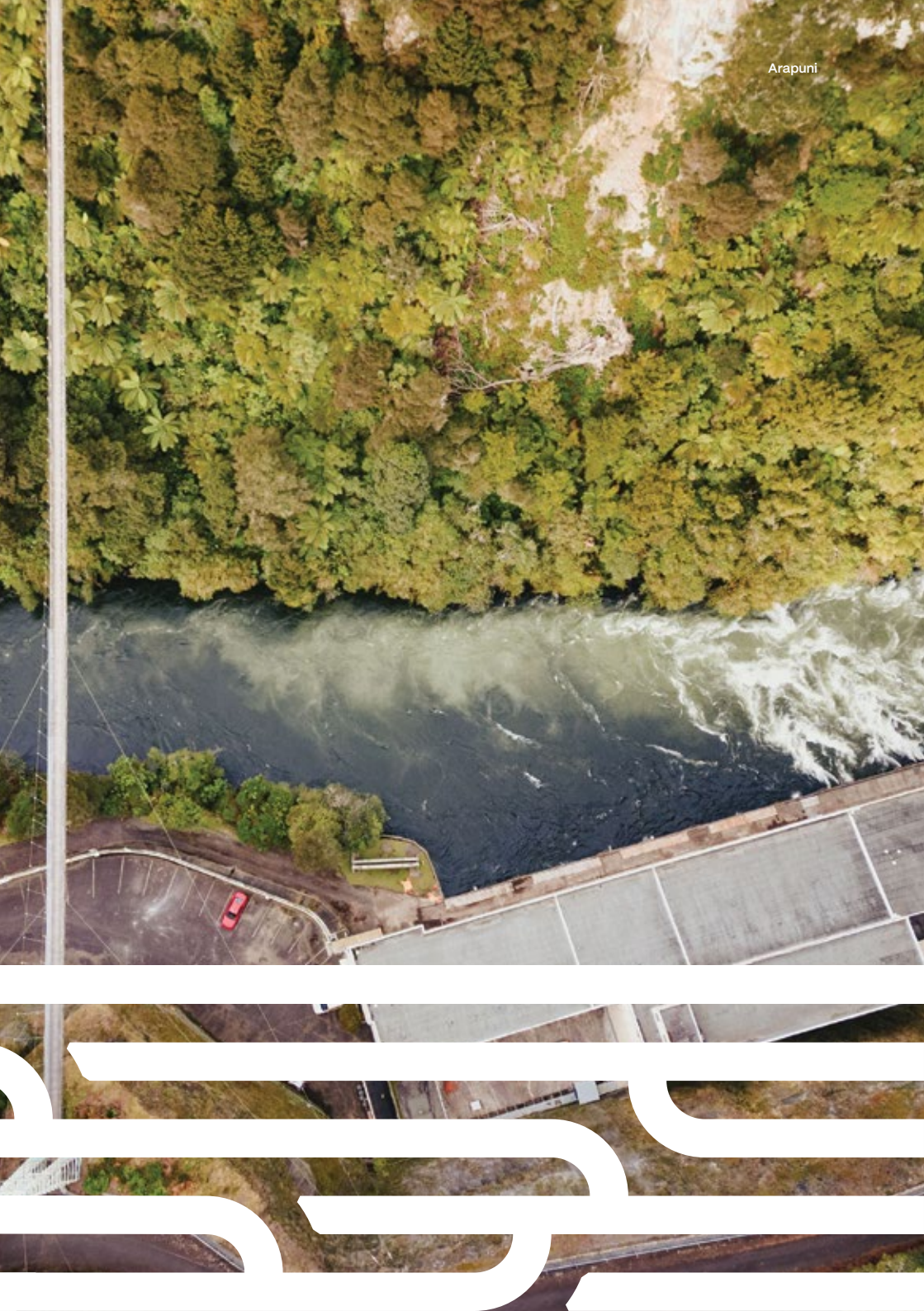
Regular monitoring of the pā tuna is essential for identifying repairs and improvements. Experimentation with different natural resources and construction methods should be conducted to enhance effectiveness. Embracing the learning process and adapting construction techniques based on observed outcomes ensures the continued success of the pā tuna.

Purpose of Constructing a Pā Tuna

Revitalising traditional pā tuna structures today allows for the close observation of tuna migration patterns and the current tuna population, providing an opportunity to instil kaitikaitanga and assist in the future survival of tuna. The pā tuna aids in the manual transfer of migratory tuna over barriers such as dams, ensuring their continued journey downstream.







Current Threats



Current Threats

The health of significant taonga species such as tuna, kōaro, kōkopu, and kēwai in the Raukawa rohe is under threat due to various barriers and environmental changes causing imbalance within our taiao and a decline in our taonga species. This imbalance in the ecosystem not only affects species at the bottom of the food chain but also disrupts the food supply for species higher up in the food chain.



Habitat Loss

The loss of natural wetlands within the Raukawa rohe has further intensified the situation by reducing available habitat for these species to thrive. Of particular concern is the long-fin tuna, which is a common and long-lived species in Raukawa. While it is still surviving, its future is threatened if habitat restoration and passage creation initiatives are not implemented. Efforts to restore habitat and improve water management practices include addressing barriers to migration, restoring wetlands and implementing sustainable water management practices to ensure long-term solutions for these taonga species and their habitats. Additionally, preserving traditional knowledge and practices related to tuna and other species is essential for maintaining cultural connections with tuna and understanding their ecological significance.

***'Our land has been turned like a corrugated iron roof everything just flows on.
We must retain that water.'***

Commercial Fishing

The impacts of commercial fishing and the selling of tuna have been profound and detrimental to tuna populations. Overfishing has significantly reduced the numbers of tuna, disrupting the delicate balance of our awa. This decline not only threatens tuna survival but also deeply affects the whānau who have traditionally relied on the awa for their sustenance. The reduced tuna numbers mean that Raukawa uri who have lived along the awa for generations and depend on its resources now face hardships. Our traditional ways of life are being compromised, and our ability to gather sufficient food from the awa is diminished. The commercialisation of this precious taonga has led to an urgent need for sustainable practices to ensure that future generations can continue to benefit from the rich resources of the awa.

Paewai, or migrating short-fin tuna, are essential to the tuna life cycle as they journey to Tonga to spawn. Harvesting them disrupts this process, leading to population declines. By allowing paewai to complete their migration, we support the sustainability and resilience of tuna populations, ensuring they thrive for generations to come.



Hydroelectric Dams

The installation of eight hydroelectric dams over approximately 40 years in the middle of the 20th century altered the Waikato river and its tributaries permanently. What were once swiftly flowing narrow rapids have been transformed into vast, tranquil lakes. This transformation has had a profound effect on our precious tuna species, requiring them to adapt to their modified habitat. The once arduous journey to Tonga for spawning has become nearly impossible without intervention from kaitiaki.

The dams present an obstacle for juvenile tuna, known as elvers, as they attempt to migrate upstream. Upon reaching the Karāpiro dam, they endeavour to ascend the spillway. However, when the spillway gates are opened, the force of the rushing water becomes overwhelming for the elvers, causing them to be swept back downstream to the base of the dam. There, they become vulnerable to predation by freshwater shrimp and koi carp, which lurk at the bottom, awaiting their next meal.

Hydroelectric dams also pose significant threats to tuna during their downstream migration. As tuna attempt to navigate through the dams, most are unable to survive the journey. The powerful turbines usually prove fatal, killing numerous tuna as they pass through. Those that manage to survive the treacherous passage are frequently left mutilated, suffering from severe injuries that impair their ability to swim.

'Tuna can't swim pass the dams, they get caught in the turbines, 99.92% chance they are killed. The remaining 0.08% are mangled...it's pretty sad to have to go through all that before the journey to Tonga...'







Tuna Restoration



Tuna Heke

Adult tuna typically migrate downstream back to the sea from February to April. However, in the Waikato River these migrating tuna are unable to get through the hydroelectric turbines safely. These migrations face threats from dams, which can result in the tuna being harmed or most likely killed in the dams' turbines.

Recognising the strong homing instinct and sense of smell of tuna, efforts are made to facilitate their migration and settlement. Overcoming obstacles that prevent tuna movement is crucial, and in cases where natural access is hindered, manual transfer may be necessary. The Tuna Heke programme focuses on rescuing adult tuna located upstream of dams and transferring them downstream to Te Pūaha o Waikato.

To monitor the movement of migrants, many streams and catchments are equipped with large hīnaki with wing walls, similar to the shape of pā tuna. Observers can identify migrating tuna by their bullet-shaped heads, in contrast to the typical large round-shaped heads of adult tuna. It is believed that migrants utilise strong currents during floods to descend efficiently, conserving their energy. Upon reaching Te Moana nui a Kiwa, it is speculated that the tuna migrate to waters near Tonga, where they spawn and eventually die. Their cycle of life repeats as elvers swim back to Aotearoa, replenishing our many awa.

Trap and Transfer

Purpose

With the installation of hydroelectric dams in the Waikato River, the natural survival of tuna was compromised. Our taonga tuna declined as elvers struggled to climb the dams and adult tuna were unable to safely navigate the turbines as they attempted to return to the sea to breed.

The Waikato River Iwi Collective, consisting of Raukawa, Waikato-Tainui, Ngāti Koroki Kahukura, Te Arawa, and Tūwharetoa, united to prioritise the protection of tuna through an initiative called the Trap and Transfer Programme.

Operations of the programme

The kaitiaki involved play a crucial role in rescuing elvers trapped at the base of the Karāpiro Dam and relocating them to various lakes and streams along the Waikato River. They operate during the summer months, from approximately December to March, when the elvers are migrating upstream.

In the first year, over 2 million elvers were successfully transferred, but this dropped to 500,000 in 2022–2023 due to the severe impacts of Cyclone Gabriel. However, by the third year, elver numbers rebounded, with over 2 million successfully relocated, accompanied by an increase in long-fin tuna sightings.





Restoration Strategies

Riparian Restoration

One crucial aspect of restoration involves replanting vegetation along the banks of streams and rivers. This restoration not only stabilises banks but also enhances water quality and provides habitat for manu. Recognising the essential relationship between rākau and tuna, establishing riparian planting ensures both shelter and a sustainable food source for tuna as they ultimately rely upon nutrients falling from overhanging vegetation.

Wetland Restoration

More than 90% of the wetlands in the takiwā have been drained and converted to pasture. Restoring wetlands diversifies and expands the natural habitat available for tuna as well as for a wide range of other species that would once have made the wetlands of the takiwā their home. Despite potential concerns from farmers about losing land, wetlands can benefit them by providing them with a method of meeting their requirements to manage sediment and nutrient runoff from their farms.

Future Restoration

At the heart of our restoration efforts is the continuous monitoring of ecological changes, sharing of our mātauranga, and ensuring the mauri and health of the awa and tuna are preserved through our existing and future strategies. We will continue to combine scientific research with traditional knowledge to guide our decisions, ensuring our conservation efforts remain effective despite changing environmental conditions. By doing this, we aim to restore ecological balance, support our cultural practices, and protect the future of taonga species like tuna in the Raukawa rohe.







Tuna Ponds

In the days of our tūpuna, wetlands were abundant, serving as vital feeding grounds for our precious tuna. However, over the past century, significant changes in land use along our awa have led to the disappearance of these wetlands and replaced by grasslands. To safeguard the survival of tuna, it is imperative to restore wetlands and create tuna ponds, mirroring the natural environments that existed along our awa centuries ago.

These ponds play a crucial role in providing sanctuary for tuna, especially during times of heavy flooding when they seek refuge from fast-flowing waters. Additionally, they offer a secure space for tuna to grow and thrive throughout their lives. Moreover, these ponds serve as valuable fishing grounds for our communities, particularly during winter months when adverse weather conditions make it challenging to catch tuna in the open awa.



Construction Process (Tips and Tricks)

Procedure for Constructing a Tuna Pond

Pre-construction planning

Secure Land

Identify a parcel of land adjacent to an awa with a sufficient catchment area.

Tuna Pond Design

Utilise GIS mapping, including LiDAR, water flow modelling, slope modelling, and hydrology modelling.

Design layout considering surrounding land-use and water flow patterns.

Creating a tuna pond requires access and landowner permission, facilitating not only the presence of tuna but also fostering a diverse ecosystem with manu and other wildlife. Proper construction minimises maintenance needs, with occasional attention required to prevent oxygen to control the spread of exotic water plants and prevent oxygen being stripped from the water due to the overproduction, death and subsequent rotting of aquatic vegetation.

Periodic cleaning may be necessary to remove silt accumulation, ensuring the pond remains around 1m deep for ideal conditions. Access for maintenance, such as using a long-reach digger, is essential, and periodic weed sampling every five years helps maintain the pond's health. Continual learning from experience is vital for successful pond management, particularly when introducing and managing tuna populations.



Advice on Waikato River Authority Funding

Initiate conversation with community, potential landowners, and farming communities.

Conduct Te Ārohirohi o Raukawa Freshwater Assessment on existing tuna pond projects and engage with successful applicants of Waikato River Authority funding.

Reach out to iwi, marae, and councils for further project refinement and guidance on project scope, timeline, constraints, and budgeting.

Contact Waikato River Authority for assistance and resources.

Persistently follow up with stakeholders and funders if necessary.

Allow ample lead-in time, approximately 6 months, to accommodate project needs and seasonal considerations.

Collaborate with stakeholders and seek co-funding opportunities.

Document the project journey for future reference and celebration of achievements.



Summary



He Kupu Āwhina

Did you know...?

Paewai (silver belly) are migrating short-fin tuna.

Large tuna are usually upwards of 50 years old.

Tuna migrate during the months of February to April.

Battles were started and fought over the rights for pā tuna.

Tuna swim along the currents to Tonga to spawn.

The health of the awa during the lifespan of a tuna, determines whether its a tāne or wāhine.

Blind white tuna come from the depths of the underground Waihou puna and are considered kaitiaki.

What should you do...?

Have a look at the catch limit on the Ministry for Primary Industries website before setting your hīnaki.

If you catch a migrating tuna think twice before killing it, instead help transfer it over the dams.

Look for funding to fulfill your tuna aspirations.

Create awareness for tuna.

Protect, enhance, and preserve our awa and tuna.

Ensure sustainable fishing is put into practice.

Contact Pūtake Taiao at environment@raukawa.org.nz to request a permit for large event catches.

Large tuna heading downstream should be checked to see if they are carrying eggs to spawn and left to continue.





Ngā Kupu Whakakapi Summary

We, as Raukawa, deeply value our bond with wai Māori and our taonga within. We believe human activities have caused harm to our awa, endangering the survival of our taonga species. Without the intervention of kaitiaki, and without the help of the many, our precious tuna will be lost, leading to a significant impact on our hapori and taiao. It's crucial for us to unite and work tirelessly to ensure the survival of these taonga, which are integral to our identity and wellbeing for our tamariki mokopuna.

Raukawa strive to protect our precious taonga and rekindle our connection to mātauranga Raukawa. By reviving the wisdom and practices of our tūpuna, we empower Raukawa uri to embrace their role as kaitiaki of the whenua and its taonga.



'We whakapapa to the taiao, we identify who we are through our maunga, awa, and ngā ātua katoa, because of this whakapapa we have an obligation to care and nurture it like our tūpuna before us for our tamariki mokopuna.'



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Turoa Tepana, Ned Te Wakaiti Wakarata Amopiu, K'lee Begbie, Shannon Te Huia, Zane Eramiha, Jacques Boubee, Takarihi Temarama, Cliff Kelly, Emerson Rikiriki, Haki Thompson, Hori Deane, Steven O'Brien, Grant Thompson, Raungaiti Marae Kaumātua.

Video resources

For more information about Wānanga Mahinga Kai, scan the code below or visit raukawa.info/mahingakai



For more information about Te Ārohirohi o Raukawa Freshwater Assessment Tool, scan the code below or visit raukawa.info/herawhatiwhatiko



For more information about Waipapa ki Arapuni Wāhi Ahurei, Cultural Landscape Mapping, scan the code below or visit raukawa.info/landscapemapping







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