



TE AO TŪROA

Tūhonohono

Impact in Te Ao Tūroa

**SUSTAINABLE SEAS NATIONAL
SCIENCE CHALLENGE**

Te Ao Māori Synthesis Programme:
Tūhonohono



JUNE 2024



Tūhonohono

Impact in Te Ao Tūroa

SUSTAINABLE SEAS NATIONAL SCIENCE CHALLENGE

Te Ao Māori Synthesis Programme:
Tūhonohono

LEAD AUTHOR:

Kelly Ratana
Ngāti Tūwharetoa, Ngāti Rangiwewehi

CO-AUTHORS:

Waiaria Rameka
Ngāti Tūwharetoa, Ngāti Raukawa

Te Rerekohu Tuterangiwhiu
Ngā Puhi, Ngāruahine, Ngāti Porou, Ngāti Ranginui, Tainui

This work was supported in full by the Sustainable Seas National Science Challenge, established by the Ministry of Business, Innovation and Enterprise, New Zealand. Project no. C01X1901.

Acknowledgments

KAIĀRAHI - SYNTHESIS STRAND LEADER

Caine Taiapa - Ngāti Ranginui, Ngāi Te Rangi, Ngāti Pūkenga

MĀTĀPUNA - CULTURAL ADVISORY GROUP

Teina Boasa-Dean - Ngāi Tūhoe, Ātiuan

Karl Leonard - Ngāti Rangiwewehi, Te Pahipoto, Ngāti Huri

Ruiha Ruwhiu - Te Whānau a Apanui, Ngāti Awa, Ngā Puhi

Reon Tuanau - Ngāti Te Rangi, Ngāti Ranginui

TE PUNA KŌRERO - TE AO MĀORI COLLECTIVE

T1: Awhi mai awhi atu: Enacting a kaitiakitanga-based approach to EBM

T3: Ngā tohu o te ao: Maramataka and marine management

T4: Te tāhuhu matatau: Empowering kaitiaki of Tangaroa

2.3: Indigenising the blue economy in Aotearoa

2.14: Whakaika te moana

2.15: Thinking outside the can: engineering toheroa aquaculture

2.16: A novel approach to aquaculture in Aotearoa NZ

3.1: Perceptions of risk and uncertainty

3.2: Communicating risk and uncertainty

4.1: Tangaroa Ararau: Treaty relationships and EBM

4.4: Understanding and communicating the various implications of scale for EBM

S3: Synthesis of Tangaroa phase one research

S7: Ki uta ki tai: Estuaries thresholds and values

Tūhonohono: Impact in Te Ao Tūroa

Prepared and published by Kopare Solutions and Wheiao Whakaaro

ALL RIGHTS RESERVED

Any unauthorised copy, reprint or use of this material is prohibited. No part of this content may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without express written permission from Kōpare Solutions and Wheiao Whakaaro

Professional Disclosure Statement

This report was prepared and published by Kopare Solutions and Wheiao Whakaaro and funded by the National Science Challenge (Sustainable Seas). The findings of this report are based on the research and information available at the date of publication and has been obtained from and is based on sources believed to be reliable and up to date. No responsibility will be accepted for any error of fact or opinion based on such reliance.

PUBLISHER:

Kopare Solutions
Tauranga, New Zealand
June 2024

DESIGNED BY:

Dixie Yates-Francis -
Te Aitanga-a-Mahaaki, Rongowhakaata, Te Arawa, Ngāti Maniapoto
Matangireia Yates-Francis -
Te Aitanga-a-Mahaaki, Rongowhakaata, Te Arawa, Ngāti Maniapoto

CITATION:

Ratana, K., Rameka, W., Tuterangiwhiu, T. R., Taiapa, C., Mātāpuna, & Te Puna Kōrero. (2024). *Tūhonohono: Impact in Te Ao Tūroa*. Sustainable Seas National Science Challenge, Te Ao Māori Synthesis Programme, Tūhonohono Report 1. Kopare Solutions



TABLE OF CONTENTS

- 8 Te Ao Tūroa Framework**
- 9 Ngā Wao - Domains of Influence**
 - Wao Atua
 - Wao Tūpuna
 - Wao Tāngata
- 14 Ngā Whiri - Integrity Markers**
 - Mauri
 - Whakapapa
 - Mana
- 16 The realisation of Impact**
- 18 Te Anamata - Looking to the future**
- 18 Te Ao Māori Synthesis Resources**

Kupu Whakataki

Introduction

THE SUSTAINABLE SEAS NATIONAL SCIENCE CHALLENGE

The **Sustainable Seas National Science Challenge** (the Challenge) is a programme of research that has occurred across a decade from 2014 to 2024. Its focus is to “enhance utilisation of our marine resources within environmental and biological constraints”.

FOCUS OF THE TŪHONOHONO ACTIVITY

As part of that work, the **Te Ao Māori (TAM) Synthesis** programme focuses on pulling together the key insights and lessons from the research within the Challenge that were:

- completed within the Tangaroa theme
- were kaupapa Māori led
- worked specifically with whānau, hapū, iwi and Māori businesses.

This research and the researchers involved were collectively referred to as the Puna Kōrero.

Tūhonohono is one of the four activities that make up the TAM Synthesis programme, and is specifically focused on developing understanding of the impact of the Puna Kōrero research into Te Ao Tūroa. This included understanding the range of impacts and domains of influence of the Puna Kōrero research, as well as working towards ensuring impact endures after the endpoint of the challenge.

This report:

- outlines the domains of influence and where impact was observed across the Puna Kōrero research
- explores the key integrity markers of impact observed or generated within Te Ao Tūroa
- provides examples of impacts from the Puna Kōrero.

Te Ao Tūroa Framework

TE AO TŪROA – FOUNDATIONAL PRINCIPLE

Te Ao Tūroa refers to the longstanding natural world, and the regenerative potential of natural environmental systems.

As a descriptive, it speaks to the characteristic nature of the environment and the ability of a functioning balanced system to be inherently regenerative. It calls to mind the need for all its elements to be in balance and for mauri to be nurtured and nourished. It dictates that our actions must align with natural mauri flows to ensure the continuation of regenerative systems into the future.

The concept of Te Ao Tūroa is the foundational principle upon which the Te Ao Tūroa framework was developed. As such, this framework contains the principles and elements against which we can understand impacts in Te Ao Tūroa. This report explores some key ways that the Puna Kōrero has contributed to generating impacts in Te Ao Tūroa.



The Te Ao Tūroa Framework has two further layers:

Ngā Wao – which provide three domains of influence integral to meaningful research within Te Ao Tūroa.

Ngā Whiri – the core integrity markers of Te Ao Tūroa which highlight how all the components are interwoven and dependant on each other.

This report provides an overview of how the Puna Kōrero research generated and observed both impact and influence within Ngā Wao and Ngā Whiri.

Ngā Wao

DOMAINS OF INFLUENCE

The three different Wao (described in more detail in the **He Taura Here** report) refer to the domains of influence within the Te Ao Tūroa framework. As such, they describe the places, spaces and types of impact noted by the Puna Kōrero as resulting from their research.

Next is an overview of the scope of impact and influence from the research conducted by the Puna Kōrero.

WAO ATUA

This domain of the framework addresses the spaces influenced by atua and their distinct natural principles of energising and sustaining life.

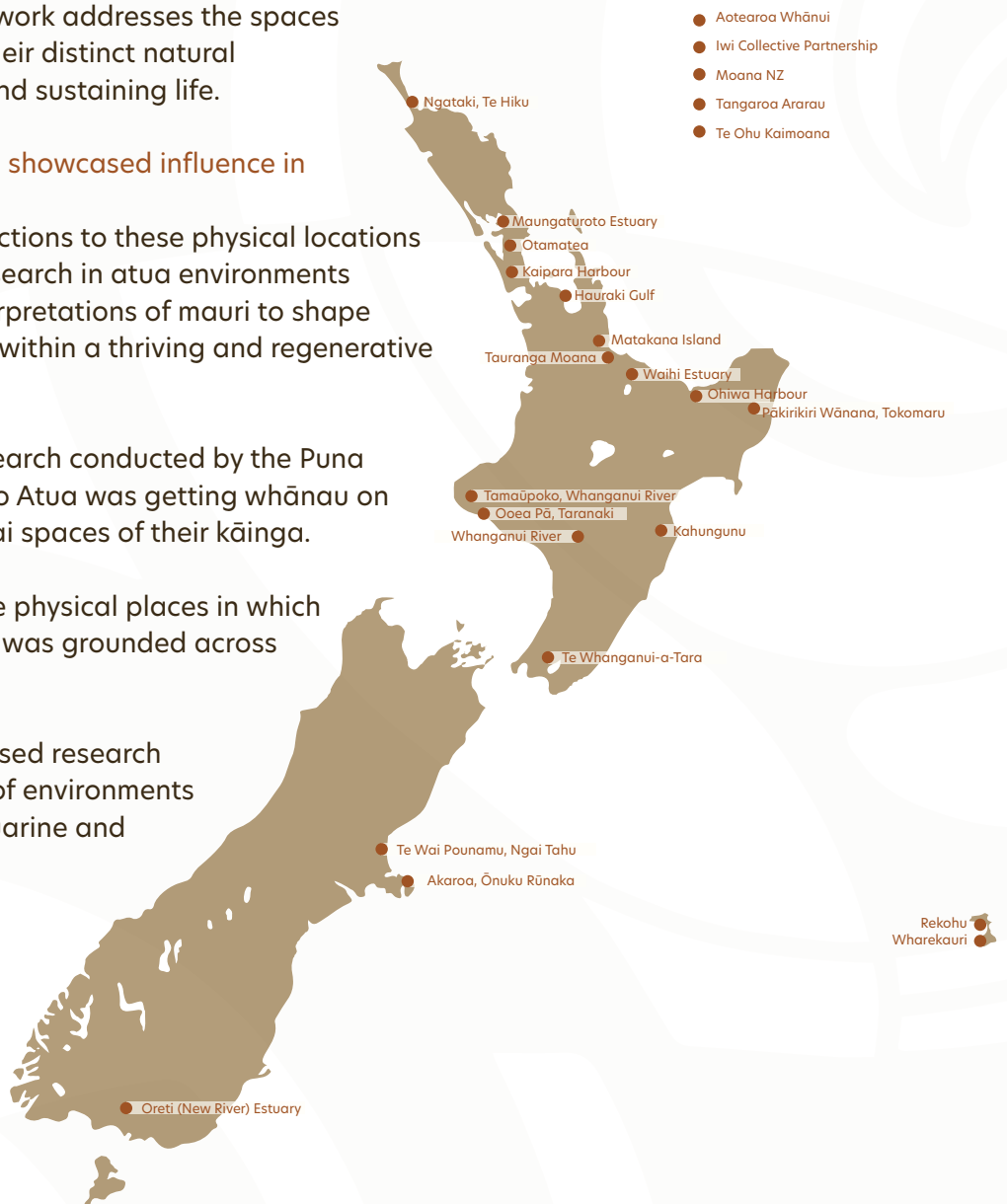
The Puna Kōrero research showcased influence in Wao Atua by:

- re-establishing connections to these physical locations and anchoring the research in atua environments
- exploring diverse interpretations of mauri to shape human engagements within a thriving and regenerative mauri system.

One key way that the research conducted by the Puna Kōrero impacted into Wao Atua was getting whānau on the whenua and in the wai spaces of their kāinga.

The map below shows the physical places in which the Puna Kōrero research was grounded across Aotearoa.

These projects encompassed research that focused on a range of environments including freshwater, estuarine and marine spaces.



WAO TŪPUNA

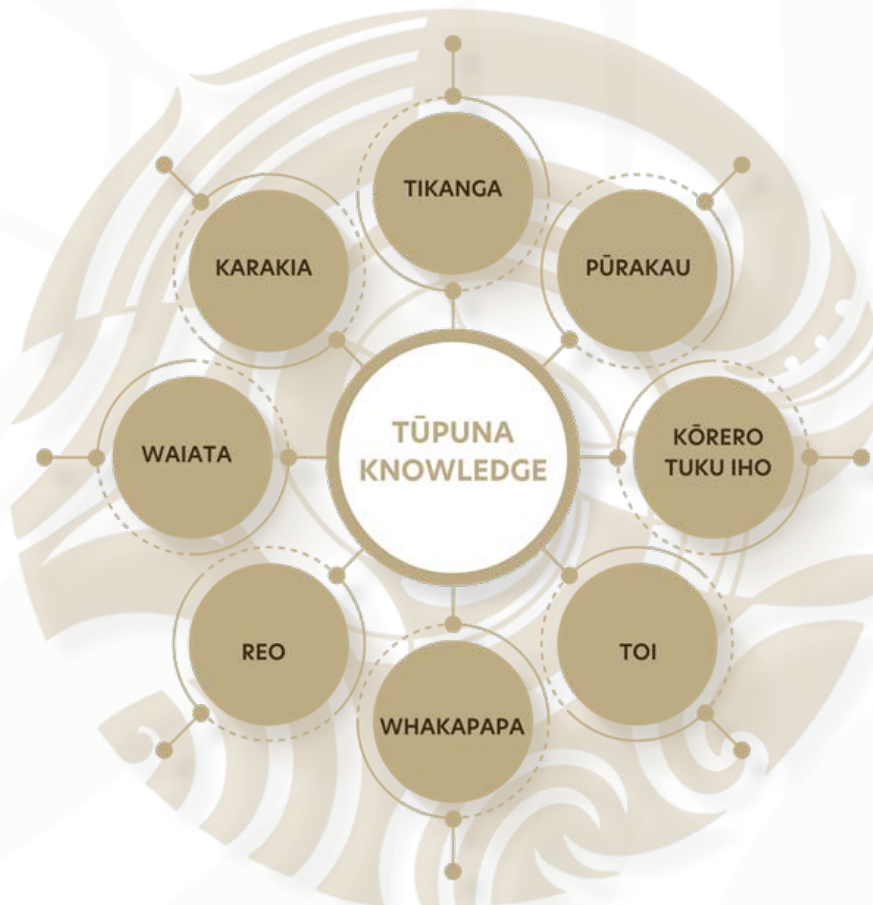
This domain of the framework addresses the intergenerational wisdom and knowledge of our tūpuna. This wisdom and knowledge guides and positions current understanding of activities as tāngata.

Research within Wao Tūpuna completed by the Puna Kōrero was influential and impactful in:

- reclaiming and reinvigorating tūpuna knowledge in many forms, including exploration of kōrero tuku iho, karakia, waiata, raranga and pūrākau
- rebuilding a comprehension of specific words and their significance within the environmental context that they sit
- re-establishing tūpuna wisdoms in practice.

Some examples of research reaching into the domain of Wao Tūpuna were the reclamation of waiata and karakia. Others included broadening understanding of pūrākau and tūpuna wisdom and their application in modern approaches to monitoring, scales, data systems, policy and legislation.

Many different forms of tūpuna knowledge were discussed as being important in different aspects of the Puna Kōrero research.



WAO TĀNGATA

This domain of the framework focuses on human interactions within the context of Wao Atua. It emphasises the application of cultural practices guided by Wao Tūpuna. This domain also includes contemporary tāngata management systems, and considers the direct and indirect effects they have on mauri systems.

The Puna Kōrero research demonstrated impact and influence in Wao Tāngata by:

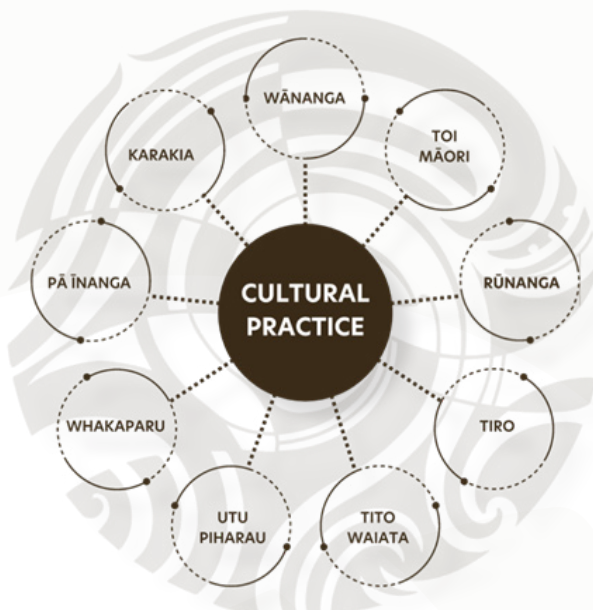
- reviving and implementing a range of human activities that supported the regeneration of mauri systems
- investigating methods to shape tāngata management systems that empower and engage whānau, hapū, and iwi in their roles.

The Puna Kōrero shared many examples of practical and tāngata-focused impacts, including the implementation of forms of traditional practice, influencing tāngata management and governance systems, or guiding and shaping business. Some specific impacts the Puna Kōrero highlighted were:

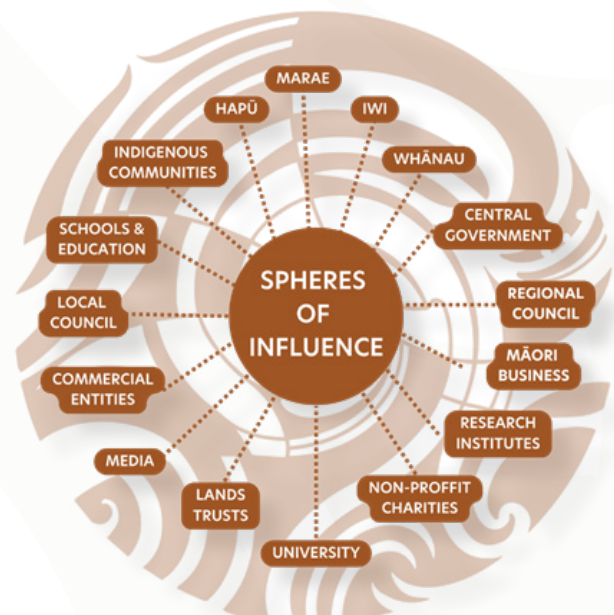
- re-establishment of traditional aquatic cultivation practices that operate within limits of mauri systems
- exploration of improvements to fishing and aquaculture business practice that support hapū based 'blue economies'
- implementation of tiro and observational practice in indicator development
- advancement of aligning policy as well as legislative changes more with tikanga, to better support practice happening in places where the real work is done.

The next two diagrams highlight the scope of:

1. The cultural practices that were engaged



2. The spheres of tāngata systems that the Puna Kōrero research directly influenced.





Ngā Whiri

INTEGRITY MARKERS

Mauri, whakapapa and mana are the three whiri (binding threads) that tie the Wao Atua, Wao Tūpuna and Wao Tāngata together and form the basis of the integrity markers of Te Ao Tūroa.

These three components of the framework indicate the interdependent and interconnected nature of everything within Te Ao Tūroa. Each is described below in the context of the Te Ao Tūroa Framework and the way that the challenge research has explored them.

MAURI

Mauri is the life-giving capacity of all things. It flows with and within water. When mauri is flowing, energy ignites and activates life. Therefore mauri connects all things, past, present and future. It is an essential integrity marker in understanding Te Ao Tūroa.

Mauri is positioned in the framework connecting Wao Atua and Wao Tāngata. This positioning highlights that Wao Atua is the source point of mauri, and that we, as tāngata, are the recipients of that life. It also emphasises that, while we cannot generate mauri, we are able to give back and support the flow of mauri through our actions.

WHAKAPAPA

Whakapapa is a fundamental integrity marker of Te Ao Tūroa, providing essential insight and descriptions of how all things are connected to, and dependant on, each other. It provides ancestral narratives and natural logic describing what must be in place for Te Ao Tūroa to thrive.

Whakapapa is positioned in the framework connecting Wao Atua and Wao Tūpuna. This recognises that whakapapa describes ancestral wisdoms held in the many forms of tūpuna knowledge. Whakapapa in the context of Te Ao Tūroa demonstrates the connections of all things, the lines of flow of mauri and the functioning components of the system.

MANA

Mana is intricately connected to mauri. When mauri is vibrant, and the vitality of life within Te Ao Tūroa is being realised, mana becomes evident. Mana is the visible expression of flourishing mauri, and is observable in the natural environment as well as in individuals.

Mana emphasises that if Wao Atua thrives, then:

- Wao Tūpuna is actively engaged
- actions in Wao Tāngata are harmonised.

The outcome is enhanced mana.

Absence of mana, or its inability to be perceived in the environment and in people, indicates a dysfunction in Te Ao Tūroa.



Whakatinana

THE REALISATION OF IMPACT

Knowing how impacts have been observed or flowed through mauri, whakapapa and mana is important to understanding impacts generated in Te Ao Tūroa.

Listed below are some ways that the research of the Puna Kōrero was realised or observed across the three Whiri of Te Ao Tūroa. The impacts are grouped under:

- support and understanding of mauri
- use and implementation of whakapapa
- expressions and observations of mana.

Support and understanding of mauri

- Recognition that mauri is present across whole systems, for example from the mountains to the sea, and that understanding and managing for degradation of ecosystems is fundamentally a conversation about mauri.
- Centring mauri in the understanding of aquaculture, where cultivation requires thriving mauri in spaces to generate thriving populations within them.
- Observation of the degraded state of natural estuarine shellfish beds, and the active restoration of balance where a species is recognised as the an indicator of that imbalance.
- Replanting of native pīngao to support the mauri of beach dune systems.
- Understanding mauri and its intimate and interdependent connections with wai systems and maramataka.
- Re-establishment of traditional aquatic cultivation practices that operate within limits of mauri systems.

Use and implementation of whakapapa

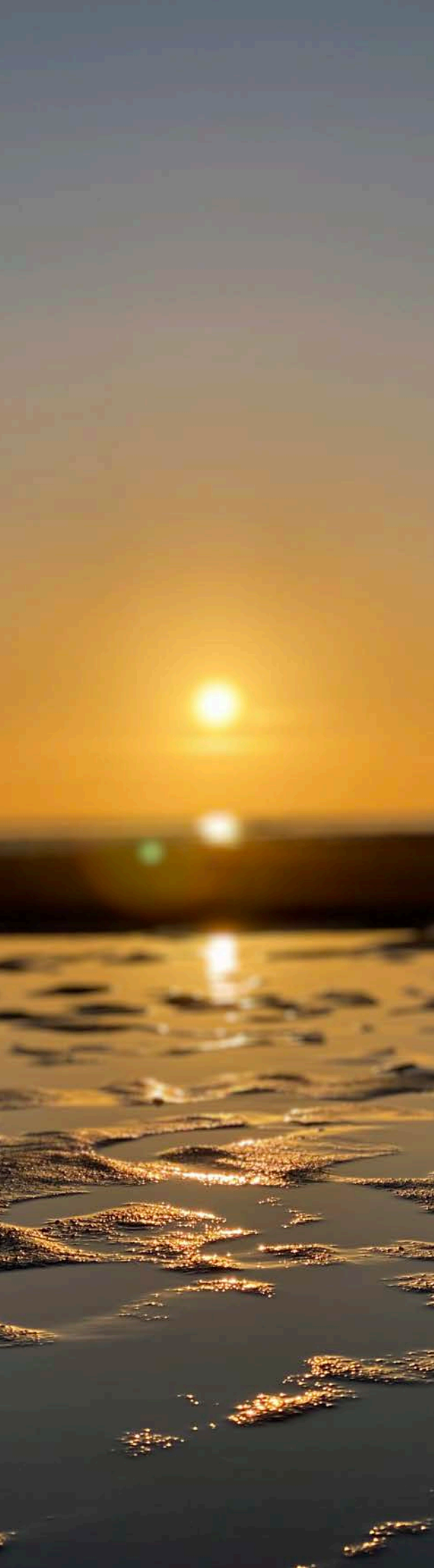
- Use of the whakapapa of wai to guide inquiry and understanding around indicators of marine and freshwater environments, and the flow of mauri.
- Exploration of different names of atua Māori and the ways those names speak to different components of their whakapapa in the taiao (such as Tāne te waiora, and Tāne-māhuta).
- Recognition that all things in wao tāngata are interdependent and rely on the natural logic of Te Ao Tūroa being in place. For instance, human-centred practice (traditional or contemporary) is impossible without the species, and therefore atua spaces that generate those species.



Expression and observations of mana

- Observed improvement in shellfish beds after removal of a species that is noted for causing an imbalance, as well as active restoration efforts that used the traditional practice of raranga.
- An increase of pūkenga (expertise) among whānau working to understand and develop their ability to recognise tohu (indicators) in the wai, whenua and rangi.
- Reinvigoration of traditional food cultivation techniques and the associated increase in feelings of vitality among hapū members.
- Positive relationships and personal growth felt by each person who was in the Puna Kōrero and part of the challenge research.





Te Anamata

LOOKING TO THE FUTURE

The Te Ao Tūroa framework was developed during the later part of the challenge. Even so, we have uncovered evidence that shows the impacts observed within the Puna Kōrero research and how they align with the core components of the Te Ao Tūroa framework.

The strength in the framework is its ability to focus attention on elements that make up Te Ao Tūroa. These elements can provide a clear pathway to the beneficial impacts worth aspiring for in future research. The more intentional that future research is about aligning to the components of Te Ao Tūroa, the greater the impact into Te Ao Tūroa.

Working towards a flourishing Te Ao Tūroa requires incorporating it into research from the start, and then actively seeking to deliver those impacts throughout the research.

Ngā Hua – Resources

The TAM Synthesis programme generated a range of outputs and outcomes. Each output and outcome was targeted and tailored to reach a range of audiences, including whānau, hapū, iwi, Māori business, agencies and researchers. The outputs and outcomes ranged from wānanga, to collections of stories, infographic reports and video podcasts.

These resources are publicly available on the **Tohorā website**. <https://tohora.org.nz/>



TE AO TŪROA

TŪHONOHONO

Impact in Te Ao Tūroa

SUSTAINABLE SEAS NATIONAL SCIENCE CHALLENGE

Te Ao Māori Synthesis Programme:
Waka Taurua

CITATION:

Ratana, K., Rameka, W., Tuterangiwhiu, T. R., Taiapa, C., Mātāpuna, & Te Puna Kōrero. (2024). Tūhonohono: Impact in Te Ao Tūroa. Sustainable Seas National Science Challenge, Te Ao Māori Synthesis Programme, Tūhonohono Report 1. Kopare Solutions