

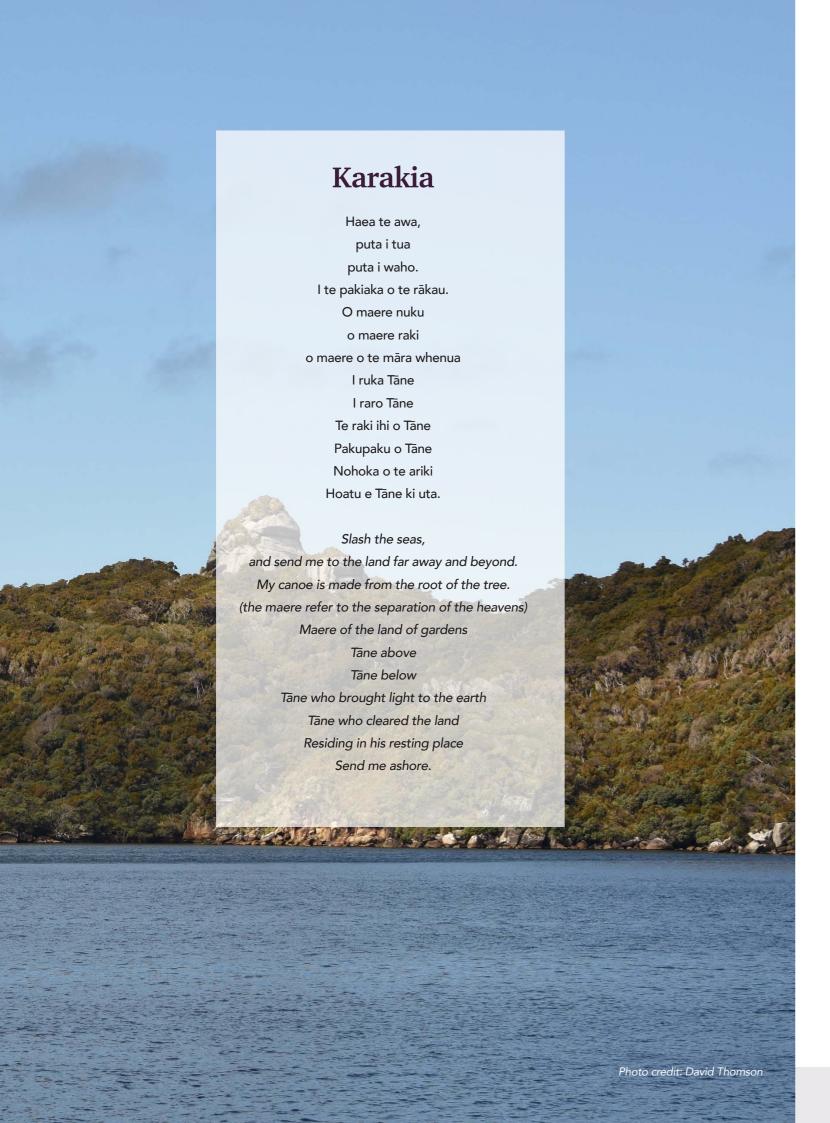


## COASTAL PEOPLE: SOUTHERN SKIES

Centre of Research Excellence

## **Contents**

Karakia	4
Ko wai mātou   Who are we?	5
Collaboration partners	6
Report from the Board Chair	7
Report from the Co-Directors	8
Tā mātou rautaki   Our Strategy	9
Ā Mātou Mahi   Our Mahi	10
Monitoring Tumu	12
Training Tumu	13
Connecting Theme	14
Understanding Theme	16
Restoring Theme	18
Highlighting the Kaipara Project	20
Highlighting the Aotearoa One Pae Tata Project	24
Highlighting the Connecting Coastal Communities Across Te Moana Nui a Kiwa Project	28
Highlighting our Outreach Programme:	32
Sally Carson profile	33
Tonga Curriculum	37
Kaikōura outreach	40
Building Capacity	42
Profiling Oka Saneviri	44
Our 2024 Scholarship Tauira	46
Ā mātou Tāngata   Our People	50
Strategic Advisory / Goverance Board	51
Our Directors	54
Goverance and Management Groups	55
Researchers	56
2024 Financial Report	61
Research Outputs aligned to CPSS Kaupapa	62
Acknowledgements	71



## Ko wai mātou? Who are we?

We are Coastal People: Southern Skies, a national Centre of Research Excellence funded by the Tertiary Education Commission. Our Centre brings together researchers from the tertiary sector and communities with a shared kaupapa. We provide a platform to enable inter-disciplinary connections between researchers and to facilitate the development of capability across all levels within a research programme that is relevant, world-leading and strategically focused. Our research programme is designed in a manner that enables knowledge transfer activities to occur at all levels including the education sector, government, communities, industry, and academia.

Our vision is flourishing wellness (mauri ora) of coastal communities.

Our mission is to connect, understand and restore coastal ecosystems of Aotearoa New Zealand and the South Pacific through transformative research, local action and by unlocking potential through utilising new pathways to learning.

## **Collaboration partners**

Coastal People : Southern Skies is hosted by the University of Otago – Ōtākou Whakaihu Waka and has nine Collaboration Partners.























## Report from the board chair

Coastal People: Southern Skies Centre of Research Excellence (CPSS) has continued to highlight the strengths of wayfinding leadership as it has navigated the first four years of establishment. Some of the strategic aims of the establishment phase "Preparing the gardens" include delivering all research to a high standard, a connected research network and growing Māori and Pacific researcher capacity and capability. The first tranche of funded projects of the research programme are starting to wrap up and are delivering fantastic outputs.

As we complete the 2024 reporting period for the funder (the Tertiary Education Commission), I am heartened to see that the traditional metrics are tracking well with 326 outputs that are aligned to the kaupapa of CPSS. It is also rewarding to see that the "Other" category which includes media, hui, reports, policy reviews as well as Policy and Community Publications has increased from 2 in 2021 to 64 in 2024. These additional measures showcase the public interest and need for accessibility to the research outputs.

The reporting data also highlights steadily increasing postgraduate student numbers from 30 to 97 students. Between 2021 and 2024, CPSS has tripled it's student membership. As we look towards the next four years we hope to see these students continuing to develop research, collaboration and leadership skills.

I would like to acknowledge my fellow Board members Mr Hoturoa Barclay-Kerr, Dr Paula Vivili, Professor Richard Blaikie, Dame Susan Devoy, Mr Tame Te Rangi, Dr Charlotte Severne and Professor Tracey McIntosh for their oversight and advice. Three Board members are finishing up in early 2025 Professor Richard Blaikie, Professor Tracey McIntosh and Hoturoa Barclay-Kerr, I thank you for your time and wish you well, we will miss your valuable contributions to the Board.

I would also like to thank the Theme Leaders who have guided the success of the first four years of Coastal People Southern Skies. As the leadership changes for the second half of the CoRE, CPSS will continue to grow from the learning and guidance provided you all. I acknowledge the Co-Directors Professor Anne-Marie Jackson, Professor Rose Richards, Professor Richard Walter, along with the Kaiurungi Programme Manager AJ Woodhouse for their work during the year. I wish to take this opportunity to thank AJ Woodhouse on behalf of the Board for her significant contributions to CPSS. She has developed an incredible foundation for CPSS to continue to build upon as we enact our vision of mauri ora for coastal communities. I thank you for your time and wish you well for your new role at Te Wānanga o Aotearoa.

2024 marks the end of the first half of CPSS. CPSS has already made a significant contribution to the research landscape and we look forward to continuing to provide research of benefit for coastal communities in the second half of CPSS.

Tā Mark Solomon Ngāi Tahu, Ngāti Kurī Chair

## **Directors' Report**

Tēnā koutou katoa,

E rere ana ngā mihi ki a rātou kua haere ki tua o te ārai. E te upoko o Kāti Huirapa ki Puketeraki David Ellison, moe mai rā e te rangatira.

Rātou te hunga wairua ki a rātou.

Tātou te hunga ora ki a tātou nei

The 2024 Pūrongo-ā-Tau Annual Report for 2024 highlights our collective kaupapa for the National Centre of Research Excellence Coastal People: Southern Skies.

The overarching strategic focus has been "preparing the gardens". The first pou (pillar) of the CPSS Strategic Goals is research excellence. Our Goal is research excellence that transforms the realities for coastal peoples and coastal environments. In 2024, there were a total of 326 research outputs: 231 journal publications, 1 book, 12 book chapters, 18 conference papers and presentations, 64 other category. There is a steady upward increase across the research outputs per year, and importantly since 2021. In this Pūrongo-ā-Tau we showcase some of our research projects across Aotearoa and the Pacific. We thank you outgoing members of the Theme Leaders Committee and the Theme Leaders for your contribution to CPSS. Many of our first projects across CPSS are coming to a conclusion and there are clear impacts that we have met such as: enable impact management; inform policy, legislation and decision making; model successful research practice and blue economy leader. There are impacts yet to be realised in CPSS, and these form part of the strategic approach for 2025-2028 in ensuring we continue the work programme already committed, and focus on health and well-being of coastal communities, te reo Māori and tikanga, and Māori and Pasifika educational achievement.

The second pou of the CPSS Strategic Goals is capability and capacity. Our Goal is a Te Tiriti led, equity based, well-being informed research workforce equipped to work with, alongside and behind coastal communities. In 2024 there were 97 students aligned to CPSS; 58 PhD, 27 Masters, 12 Other. There were 2 PhD, 7 Masters and 6 other research degree completions. In November 2024, we held a contestable call for graduate scholarships and Postdoctoral Fellowships. We awarded 3 honours, 5 Masters (2 Māori), 7 PhD (4 Māori, 1 Pacific), and 4 Postdoctoral Fellowships (1 Pacific). These included a wider range of projects and at a variety of tertiary education institutions including new partners such as Otago Polytechnic, University of Canterbury and AUT. As is evidenced in the Training Tumu, there were a number of excellent activities that were undertaken to grow research leadership capability and capacity, cultural competency, and opportunities for applied and practical training for members. The Outreach Programme is a particular highlight, emphasising the importance of the CPSS approach to outreach from project origin throughout the research to impact pathway.

The third pou of the CPSS Strategic Goals is sustainability. Our Goal is to balance profit, people, planet, ethics, equity, culture, well-being and Wayfinding Leadership. In November 2024, the foundational Kaiurungi Programme Manager AJ Woodhouse resigned from CPSS. We formally thank and acknowledge AJ for her tireless commitment to the goals of CPSS. We created an excellent operational foundation for CPSS, and will be building upon that foundation for 2025 and beyond. Over 2024, we welcomed 22 new members. Members are from academia, communities, industry and government. There are a growing number of tertiary wānanga members as well. We exposed a number of early career researchers to research leadership of a CoRE. This provided the seedbed for the proposed leadership changes in 2025. We wish to acknowledge the outgoing CPSS Board members Professor Richard Blaikie, Professor Tracey McIntosh and Hoturoa Barclay-Kerr. Thank you for your leadership, guidance and expertise.

#### He Körero Whakamutunga: Final Comments

As a new Centre of Research Excellence, over the past 3.5 years, CPSS has made a significant and new contribution to the research landscape, that is providing economic, environmental, societal and public policy, health and equity and capability building benefits for Aotearoa New Zealand.

Nō reira kua kati mātou i konei, nā,

Professor Anne-Marie Jackson (Ngāti Whātua, Ngāpuhi, Ngāti Wai, Ngāti Kahu o Whangaroa)

Professor Rosalina Richards

Professor Richard Walter

## Tā Mātou Rautaki | Our Strategy

The strategy of Coastal People: Southern Skies is outlined below.

#### Our vision is flourishing wellness (mauri ora) of coastal communities

Our mission is to connect, understand and restore coastal ecosystems of Aotearoa New Zealand and the Pacific through transformative research, local action and by unlocking potential through new pathways to learning.

#### **GOALS**

#### Research Excellence

Research excellence that transforms the realities for coastal peoples and coastal environments

## Capability and Capacity building

A Te Tiriti led, equity based, wellbeing informed research workforce equipped to work with, alongside and behind coastal communities

#### Sustainability

Profit, people, planet, ethics, equity, culture, wellbeing, Wayfinding Leadership.

#### 2021-2024 Preparing the gardens

- Deliver on all research in the annual plan in Aotearoa to a high standard
- A connected research network
- Lay the foundations for a Te Tiriti led, equity based, wellbeing informed research workforce focused on growing Māori and Pacific researcher capacity and capability
- Build a model of operating based on Wayfinding Leadership
- Operate within our budget constraints
- Build a model for carbon neutrality

#### 2025-2028 Balancing the waka

- Rebalance the waka in relation to wellbeing to deliver on all research in the annual plan in Agtearga
- A thriving research network
- Continue to build Māori and Pacific researcher capacity and capability
- Lay the foundations to build cultural competency for researchers new to working in Māori and Pacific research and communities
- Lay the foundations for rural focused capacity and capability building
- Grow co-funding for scholarships and postdocs
- Grow resarch funding opportunities for co-funding at a CPSS level

#### 2028-beyond Gifting the fine mat

Rebid with a focus on a stable waka (marine and wellbeing) with reach into the Pacific

- A co-led Māori and Pacific bid, with Māori and Pacific led research teams
- Increased capability and capacity of Māori and Pacific researchers
- Increased capability for communities and other researchers working in Māori and Pacific research projects
- A sustainable funding and operational model

2036 Living our dream By 2036 we will have built sustainable relationships and importantly contributed to Pacific workforce development to the level that we can support a Pacific-led bid

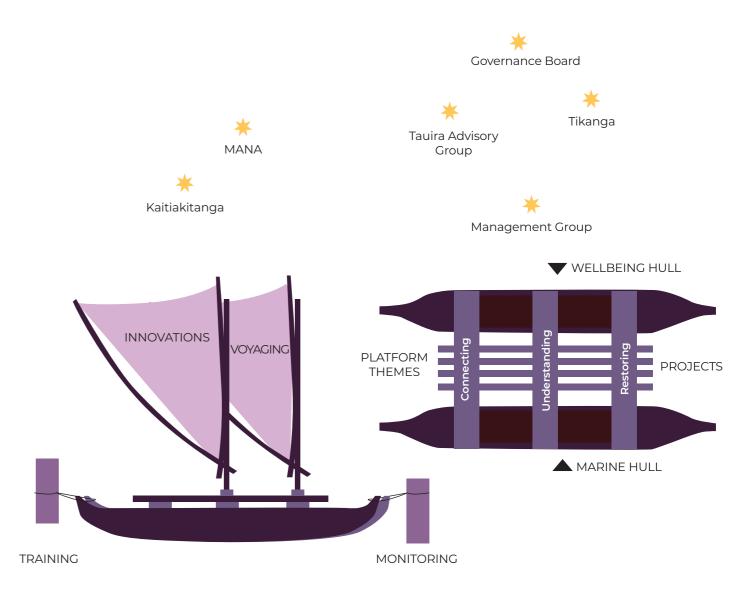
# Ā Mātou Mahi Our Work

## Ā Mātou Mahi | Our Work

The research, leadership and governance of Coastal People: Southern Skies (CPSS) is structured around the metaphor of a voyaging canoe with Te Pae Māhutonga (the Southern Cross Star Constellation) reflecting Tā (Sir) Mason Durie's model of wellbeing, and our governance and management structure.

Our metaphorical waka has a Marine hull and a Wellbeing hull and two tumu (moorings): Monitoring at the bow, and Training at the stern. Connections to the moorings are threaded throughout each of the platform themes: Connecting, Understanding and Restoring. Each theme is connected and braced by a series of inter-connected projects that draw on both hulls to apply cross-disciplinary and cross-cultural approaches to marine research. The two sails represent: Voyages that acknowledge the Pacific Ocean that connects us and renews the excitement of learning between people of our Island nations; and Innovations leading to a new journey and new destinations.

Te Pae Māhutonga reflects our location, shared history, and connections as coastal people of the South Pacific facing an uncertain, yet shared future. Our leadership, governance and management approach are based on the principles of wayfinding leadership, and it was selected because it meets the needs of our community partners, aligns with our research programme, and values our researchers, students, and community partners. In 2023, we revised the leadership structure, with the four central stars representing the governance (Strategic Advisory / Governance Board and tikanga) and management (Management Group and Youth Advisory Group) of the Centre; while the two pointer stars represent the values that underpin all that we do (Kaitiakitanga and MANA – Meaningful Authentic Natural Accountable).



## Monitoring Tumu

#### LEADERS: DR DANIEL PRITCHARD AND DR KIM CURRIE

The Monitoring Tumu develops and supports observation networks across Coastal People: Southern Skies that provide a holistic view of the status of social ecological systems, wellbeing of communities and the impacts of climate change around the marine environment.

Monitoring is fundamental to our understanding of the marine environment today and what will come in the future. To prepare for and predict what will be, we must know what is. To manage and restore, we must observe and record change. In Aotearoa New Zealand, there has been significant under-investment in high quality long-term marine monitoring, leaving coastal communities underprepared to confront the challenges of climate change.

In the metaphor of CPSS as a double-hulled waka, the Monitoring Tumu (mooring post) has a foundational and stabilising role, connecting back to fixed and permanent places. It spans the full 7.5-year term of CPSS, providing platforms and opportunities for monitoring and for the coordination, promotion, and support of high-quality data collection within CPSS. One of our key workstreams is to establish fixed-point, subtidal biogeochemical and environmental moorings within important habitats at anchor sites across the latitudinal gradient of Aotearoa New Zealand. The first anchor site is at Karitāne on the Otago coast. This project builds on a history of successful data collection, support for aligned research projects and community engagement and support. As well as implementing local monitoring, this first project will develop methods. approaches and resources that will be utilised within the Tumu and elsewhere within CPSS

Monitoring strengthens our understanding of coastal seas, of coastal people and connects our programme across the South Pacific and beyond. Building on established models of marine monitoring aligned with CPSS we are establishing methodologies, networks and platforms to deliver essential baseline monitoring with the development of excellent practice in data collection and management. Alongside this, CPSS will work with partner communities to develop models and measures of wellbeing that resonate with communities.

#### Project: Maintaining and expanding longitudinal monitoring: Southern Moorings

This project re-established two benthic subtidal (underwater on the seabed) moorings to continuously measure pH, oxygen, temperature, pressure (water depth), salinity and light. These measurements are supplemented with regular (monthly) measurements of inorganic carbon (DIC), alkalinity, nutrients, and chlorophyll concentrations. This monitoring will enable researchers to tease apart key drivers of change in coastal seas and establish a baseline against which to measure both future degradation and future success of mitigation strategies and actions.

## Project: Maintaining and expanding longitudinal monitoring: Central Moorings

This project extends the Southern Moorings project and will establish subtidal (underwater on the seabed) moorings in Te Tairāwhiti.

## Project: Developing and establishing new methods and programmes

This project enables new monitoring sites and partnerships to be established and new methods added to existing sites to respond to the needs of communities, researchers or industry. Our first new programme (Monitoring in the Akaroa Taiāpure) was established in 2023.

## Project: Supporting excellence in data collection and management

For observations to be of use in a variety of contexts, measurements need to be made comparable and collatable. This project ensures the development of processes to assist CPSS researchers and partners with consistent methods and management of data and metadata.

## Training Tumu

## LEADERS: DR CHANEL PHILLIPS AND DR PETER DILLINGHAM

Coastal People: Southern Skies (CPSS) celebrates and promotes mana-enhancing leadership and world class training opportunities that reflect and celebrate diversity. Training is interwoven through all of our work. Community and student-centred learning is at the heart of our approach. CPSS has a strong focus on growing the capability and capacity of students, researchers and communities and is intentionally creating a 'pipeline' of capacity development.

Our Goal is a Te Tiriti led, equity based, well-being informed research workforce equipped to work with, alongside and behind coastal communities. In 2024 there were 97 students aligned to CPSS; 58 PhD, 27 Masters and 12 other. There were two PhD, seven Masters and six other research degree completions, working across our research platforms.

In November 2024, we held a contestable call for graduate scholarships and Postdoctoral Fellowships. We awarded three honours, five Masters (two to Māori tauira), seven PhD (four Māori, one Pacific tauira), and four Postdoctoral Fellowships (one Pacific tauira). These included a wider range of projects and at a variety of tertiary education institutions including new partners such as Otago Polytechnic, University of Canterbury and AUT.

As is evidenced in the Training Tumu, there were a number of excellent activities that were undertaken to grow research leadership capability and capacity, cultural competency, and opportunities for applied and practical training for members. The Outreach Programme is a particular highlight, emphasising the importance of the CPSS approach to outreach from project origin throughout the research to impact pathway.

The Training Tumu builds on successful place-based and environmentally-informed learning programmes with a focus on research pathways, practical training opportunities, wānanga for end-users, professional development for industry and outreach.



## Connecting Theme

#### LEADERS: DR KAREN GREIG, DR NAOMI SIMMONDS AND ASSOCIATE PROFESSOR WILL RAYMENT

The aim of the Connecting Theme is to build understanding of the diverse ways in which coastal communities form enduring connections to the marine environment, and the connections between coastal peoples and marine ecosystems across Aotearoa New Zealand and the Pacific.

The Connecting Theme includes projects that investigate the changing cultural, economic, and spiritual relationships between coastal communities and their environments, and how these connections contribute to long-term wellbeing. This work recognises the diverse cultural traditions and practices that structure how communities interact with coastal ecosystems and landscapes in Aotearoa New Zealand and across the Pacific.

Connecting people, ecosystems, and climate change-related problems at multiple levels and across space and time, draws on different knowledge systems, research disciplines, academic and practical skills, and cultural traditions. We conduct research to understand ecosystems, and how people interact with coastal ecosystems in the past, presently and into the future. We trace past and present human and other migrations/dispersal, to predict and prepare for the social and ecological consequences of generations of climate refugees. Connectivity is more than collaboration – it is the space where radically different perspectives and worldviews interact to create a place of innovation, empowerment, and resilience.

#### Project: Connecting coastal communities across Te Moana Nui a Kiwa

Coastal communities in Aotearoa and the wider Pacific are facing increasing challenges around the management of, and access to, their traditional marine resources. This project builds on existing relationships with two villages in the Western Solomon Islands and is undertaking research and developing strategies to enhance wellbeing, explore economic opportunities, and respond to climate change risks.

#### Project: Parāoa of the South Pacific

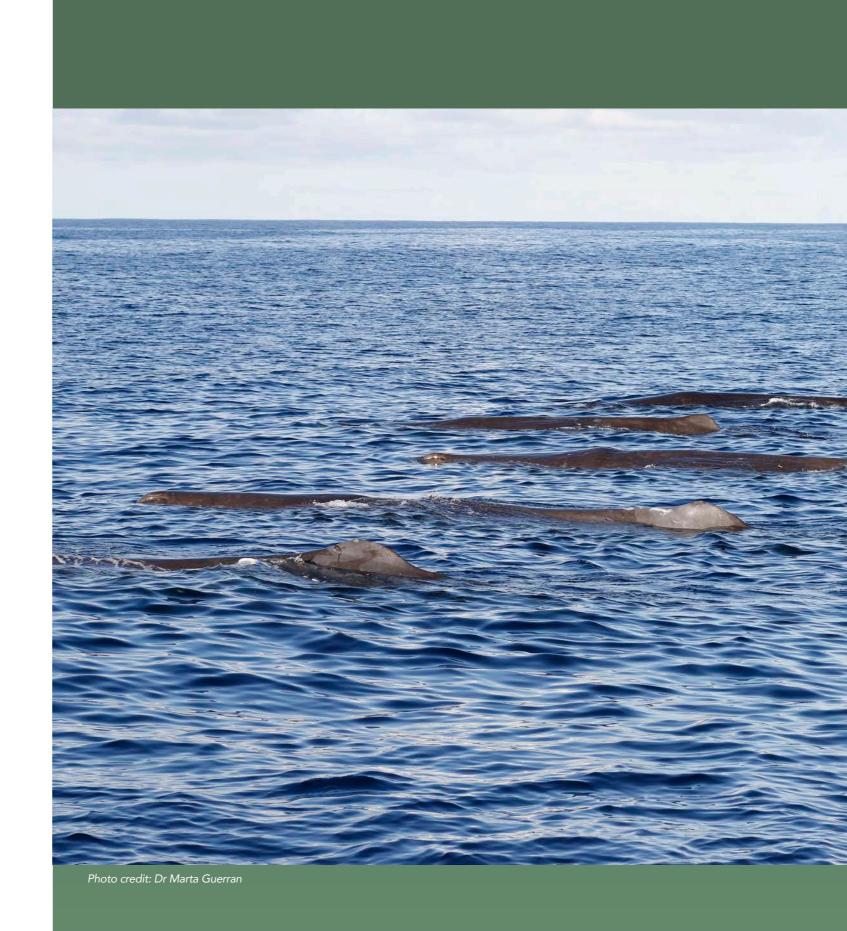
The aim of this project is to connect communities in Aotearoa New Zealand and the Pacific through shared learning from other communities that have important connections and relationships with sperm whales. Improving understanding of parāoa and the impacts they are facing will help traditionally important connections persist and thrive into the future.

## Project: Nau mai e ngā hua e hora nei – Exploring Economies

This project explores customary economic practices of food redistribution for coastal communities. Mahinga kai sites for wahine, pakeke, rangatahi and tamariki ensured the entire community maintained opportunities for economic contribution, while the fit and able were able to access greater abundance, and redistributed that abundance throughout the community according to the tikanga of manaaki, culminating in a powerful expression of mana moana.

#### Project: Connecting to our coastal heritage places

This project addresses the potential loss of coastal heritage places arising from sea-level rise and climate change, and the implications for wellbeing and community resilience in case study locations in three regions: the Kaipara Harbour and Awhitu Peninsula (West Auckland), Cape Kidnappers and Kairakau (Central Hawkes Bay) and Rakiura and the Catlins (Southland).



## Understanding Theme

#### LEADERS: DR CHRIS CORNWALL, DR EMMA RYAN AND ASSOCIATE PROFESSOR OCEAN MERCIER

Aotearoa New Zealand and Pacific Island nations have a deep connection to their marine ecosystems and a shared future in a changing ocean. The Understanding Theme allows us to apply multidisciplinary and cross-cultural approaches to build local understanding and context to the global change we are experiencing. It also enables capacity building and the collection and analysis of key data to support evidence-based decision making. Within this theme we use predictions of sensitivity and response of social-ecological systems to changing ocean climate at local and regional scales across latitudinal gradients.

Understanding the impacts of climate change on important processes in the coastal-marine environment and implications for the values, culture, and wellbeing that coastal and marine areas provide is a priority. We will determine how local stressors (that can be managed locally also) interact with globally driven stressors that cannot be managed locally. Coastal communities and researchers will co-create new knowledge and connections to enable preparation for a changed marine environment and focus management to maximise climate change resilience.

#### Project: Understanding interactions between local and global stressors: A pathway to local action

This project establishes experimental systems across Aotearoa to determine how global stressors (ocean acidification, ocean warming, hypoxia) and local stressors (sedimentation, nutrient addition, pollution, parasitism) interact to affect key New Zealand and Pacific Island marine taxa over ecologically relevant time scales and across environmental gradients.

#### Project: Understanding local and regional thermal regimes to prepare for climate change

This project is focussed on developing a framework for predicting the locations and processes that lead to local oceanographic resilience, as well as vulnerability, in a warming ocean.

Project: Understanding impacts of rising seas from global to local For localised adaption to sea-level rise to be successful, research is needed to understand how communities can be empowered to collect and exercise ownership of data and direct research and management relevant to their own coast. This project undertakes community lead research where the intellectual property of the collected data resides within the community, and where the results of the research lead to deeper understanding of coastal change that directly feeds into local adaptation korero.

#### Project: Aotearoa One Pae Tata

This project is focussed on the development of a plan for the redesign of one waka hourua into a research waka re-fitted for observation and data collection, creating a traditional and contemporary research vessel.

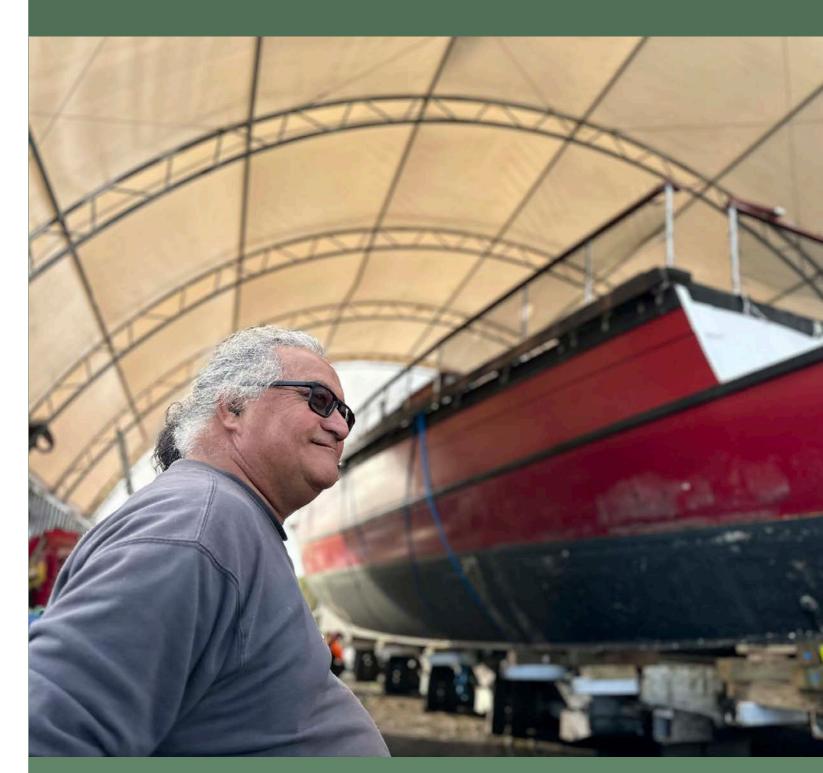


Photo credit: Te Toki Voyaging Trust

## Restoring Theme

## LEADERS: DR GAYA GNANALINGAM AND PROFESSOR ROSE

The Restoring Theme focuses on restoration that acknowledges the past and uses knowledge of the present and future to guide action that provides meaningful benefits today and for generations to come. The act of restoration brings benefits not just for the ecosystem but also for the people who actively engage in the restoration. Restoration is both the process and the outcome of this theme - restoring ecosystems to build resilience to climate change. We employ holistic approaches that integrate ecological / environmental restoration with the restoration and empowerment of communities. We are focusing on critical processes, habitats, and species (e.g. ecosystem engineers, cultural keystones). The broader effects of futurefocused ecosystem restoration on coastal communities (e.g. social cohesion, capacity) will also be examined.

With the inevitability of change, we will identify local initiatives to strengthen social-ecological systems and support coastal people as they prepare for change. The Centre provides the opportunity to have a research programme that will allow us to assess the effectiveness of restoration programmes on coastal ecosystems through long term monitoring.

#### Project: Falafolaloa: Spreading the mats of belonging and welcome

In dialogue with members of the Ōtepoti Pacific community, this project aims to explore connections between coastal environments and notions of well-being and to understand traditional Pacific concepts analogous to kaitiakitanga as a foundation for further research.

Project: Using cultural keystone species as a focus for restoration Building on 10+ years of research on pāua ecology and community led management in customary protection areas around southern Aotearoa New Zealand, this project has three components. Monitoring: assessing pāua demography and recovery relative to management; stock enhancement: reseeding and translocation to actively restore declining stocks, and; strategies for harvesting: identifying strategies for reopening closed fisheries for long term restoration success.

#### Project: Māra Moana: Restoring the foundations of flourishing coastal ecosystems

Kōauau (Macrocystis pyrifera) forests are globally declining due to rising ocean temperature, increased sedimentation and other anthropogenic stressors. This project seeks to understand the conditions that allow kōauau to thrive, to identify attributes that will be advantageous under future climate scenarios and to trial and optimise out-planting strategies.





Photo: Supplied by the project

## Building connection and capability in the Kaipara Moana

Spanning a catchment of over 600,000 hectares, the Kaipara Moana is Aotearoa's largest harbour system. With the watery expanse of the Kaipara Harbour as its centrepiece, this place of wai contains seven major river systems, and over 16,000 kms of river and stream banks.

Once abundant with native forests, wetlands and thick kōrari, today, due to decades of deforestation and land intensification, less than 10% of original native forest and 5% of wetlands remain.

As a place that holds deep environmental and cultural values, this is the home of the mahi of the Kaipara Moana Remediation programme. This catchment wide kaupapa is seeking to protect and restore the mauri of the Kaipara Moana by aiming to halve the sediment flowing into local waterways and the harbour.

From the headwaters of each river system and across the expanse of the catchment, that includes freshwater and estuarine wetland environments, Kaipara Moana Remediation is facilitating a large number of sediment reduction projects striving towards this vision.

Working as a partner with Te Runanga ō Ngāti Whātua, CPSS is supporting Kaipara Moana Remediation to achieve their goals by building capability and research excellence within uri (descendants) of the Kaipara. This support seeks to empower and engage local communities to contribute to the programme's vision of restoring Kaipara Moana and its ecosystems.

As a descendant of the Parore-Edmonds whānau of the Kaipara Moana, co-Director of CPSS Ahorangi Professor Anne-Marie Jackson (Ngāti Whātua, Ngāpuhi, Ngāti Wai, Ngāti Kahu o Whangaroa) says this project has been the culmination of whakapapa relationships and long-standing connections between Ngāti Whātua and Ngāi Tahu. CPSS can whakamana the aspirations of Kaipara Uri in a tangible way through this kaupapa.

Tame Te Rangi (Ngāti Whātua, Ngāpuhi) was born and bred on one of the river systems of the Kaipara catchment. As Chair of the Kaipara Moana Remediation Board, and iwi representative of the CPSS Board, he says the strength of the project sits with the people who call the Kaipara home.

"Irrespective of the type of activity being undertaken on the land, it's the connections between landowners and the conversations they have over fences that are the strength of the project," Tame Te Rangi says. "The real value lies in landowners sharing in the decision making connected with their land blocks. What this also recognises is it doesn't matter where the individual projects take place – a healthy and thriving Kaipara Moana will be shared by all."

The range of Kaipara Moana Remediation projects that have been undertaken catchment-wide take an interdisciplinary approach that's informed by expertise from a range of disciplines encompassing environmental to social sciences. Te Rūnanga ō Ngāti Whātua aspires to see Kaipara uri filling these specialist roles across a wide variety of fields.

Through the development of a scholarship and pathways programme, CPSS support will help to strengthen and fill gaps in expertise identified within Kaipara uri and rohe.

Led by Kaipara uri via Te Rūnanga ō Ngāti Whātua in collaboration with CPSS, Te Whetu Marama Thompson's mahi involves establishing the CPSS scholarship programme. With a background in tertiary education and governance, Thompson is working on a range of opportunities including scholarships for postgraduate research and summer internships to be offered in 2025.

"We would like to see these opportunities taken up by our Kaipara community so they become involved and can contribute to the aspirations of Kaipara Moana Remediation," Thompson says. "The local knowledge is always the bit that's missing. If you can connect research and local knowledge then there will be real value, and the community's skills will grow at the same time."

With a vision of building local capability and empowering community participation for the benefit of local solutions, the scholarship programme will also contribute to Kaipara Moana Remediation's transgenerational aims of strengthening Manaaki Tangata and Tatai Hononga (Human and Social Capital).

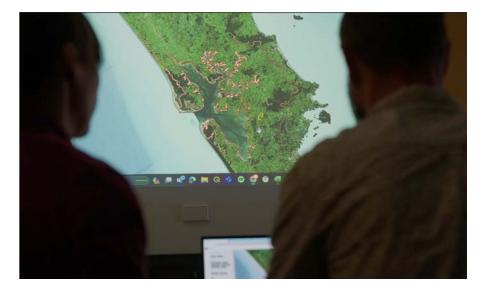
For Tame Te Rangi, the CPSS collaboration will also help to realign the balance of Kaipara Moana Remediation and provide opportunities to approach challenges with a fresh lens and new knowledge.

"It's a case of resetting the priorities and taking a more balanced approach that considers and connects the social, cultural, and environmental aspects of our challenges and solutions," Tame Te Rangi says.

"We must be smarter about working with nature and not control it. There are times to harvest, replenish and plant which was the approach taken by our tūpuna as they went about their lives."

Looking ahead, Thompson says the relationship with CPSS will have long term benefits. "The information that's been gleaned out of the Kaipara Moana Remediation to date is the result of research undertaken on a whole range of topics that's resulted in the generation of new knowledge," Thompson says.

"This information is hugely important to help make better decisions about how we manage natural resources, which will get better as our knowledge grows. It will also make a significant contribution to iwi knowledge and kaitiakitanga which is the ultimate vision for the Kaipara Moana."



Photos: supplied by the project







## Reimagining waka

Tūpuna voyaged to Aotearoa using their deep knowledge of te taiao - the environment including the ocean, the weather and the stars. They were scientists of the time. Revitalising this ancestral practice and knowledge on the verge of extinction, has been the focus of Waikato based Te Toki Voyaging Trust for today's and future generations.

Over the last 30 years, Te Toki Voyaging Trust have been breathing life back into the presence of waka on the Waikato river, Kāwhia Harbour and further afield. Using waka as a platform for growth, the Trust's mahi has involved developing education and leadership programmes for tamariki and whānau, including a range of science-based initiatives linking to voyaging and navigation, and taiao protection.

Visionary and founder of Te Toki Voyaging Trust, Hoturoa Barclay-Kerr (Tainui), says that while much of the work to date has supported reconnecting with ancestral practices, the horizon has now shifted to future-thinking and opportunities. "How can the waka become an advocate and ambassador for good ocean health?" Hoturoa asks. "By using waka as a platform for teaching and learning about maritime and ocean health, we can engage and empower the next generations as kaitiaki of the marine environment."

Hoturoa has whakapapa to Kāwhia as the ancient settlement of the Tainui Canoe. Previously a lecturer at Waikato University for over 19 years, and with research expertise on waka as a symbol of mana in the twenty-first century, Hoturoa's approach is deeply informed by the past and guided by future thinking.

As innovative practitioners, Te Toki Voyaging Trust are now preparing to bring to life a designated science research vessel. The vision for the voyaging double hulled waka hourua, named Aotearoa One, is to bring opportunities for rangatahi and communities to engage with science grounded in mātauranga Māori. In time, the research vessel will be accessible to communities across the motu bringing awareness to the fragility of te taiao and a message of living sustainably with it.

Photo credit: Te Toki Voyaging Trust

CPSS's growing relationship with Te Toki Voyaging Trust has involved contributing expertise to its range of marine science educational programmes. This has included providing resources supporting new learning opportunities, such as marine science kits for use on waka and helping to train crews responsible for teaching.

Building on this relationship, CPSS is supporting the planning process for Aotearoa One as a research vessel. As an innovative project that's voyaging in new waters, the strategic and planning process will set the direction of the waka hourua's future journey. A salient aspect of this planning phase is defining the rangahau that Aotearoa One will support.

"The rangahau philosophy is about being hands-on and action-based," Hoturua explains. "It's about showing rangatahi that all the traditional activities they do – for example with eels, pipi and mussels – can be related to research."

"If we can provide a platform that's more tangata whenua based, it may sow the seeds for future careers that could contribute to the health of the environment and communities. We want to provide rangatahi with opportunities that highlight that whatever you are doing in the world, you can be great at it, whether as a researcher or holder of mātauranga Māori."

Anna Bertram, Project Manager Te Toki Voyaging Trust, has seen the eyes of rangatahi light up when they learn stories of tūpuna voyaging and navigating to Aotearoa. "To hear about their ancestors sailing here using knowledge that wasn't in textbooks or called physics or astronomy can be life-changing. Learning that their tūpuna were scientists can help sow the seed that they too can be scientists."

An aspiration for Aotearoa One is to assist communities around the motu with local research that's important to them. Te Toki Voyaging Trust kaiāwhina, Noenoe Barclay-Kerr, describes the various opportunities through which Aotearoa One will be able to help a community's local priorities.

"A community may require support to grow research they have underway or have a gap in research that needs addressing and require support with collecting data and knowledge." And she adds that while research around te taiao and ocean health is a priority, there's also a desire to capture the stories that surround and support the science. "We also want the ability to collect korero, tikanga and traditions as a record of the mahi that's supporting the rangahau taking place."

While the architectural and marine engineering work required to design Aotearoa One as a research vessel is currently progressing, when refitted, it will include wet and dry laboratories while providing support that aligns with the research needs of each community from a waka hourua model perspective.

Coastal communities around the motu that Te Toki Voyaging Trust has developed relationships with are open to welcome the science-equipped vessel to their kāinga. Over time, the Trust has grown as one of the largest waka ama clubs in Aotearoa and undertakes regular voyages by waka hourua connecting with communities. Following the 2024 Te Hau Kōmaru National Waka Hourua Festival, CPSS sponsored Te Toki Voyaging Trust's waka hourua Hinemoana to voyage to Te Wai Pounamu communities where CPSS projects are taking place.

Hoturoa explains that at the core of these relationships are meaningful activities with communities, whānau and tamariki. "It's a web that stretches widely and brings minds together that synchronises with what we do and can make things happen. That's what gets lots of cool things happening."

It's a web that radiates more widely across the Pacific region honouring the footsteps of his tūpuna. In 2011 as part of Te Mana o Te Moana voyage, Hoturoa as the kaihautū or leader of Haunui, sailed along with seven other waka hourua across the Pacific. The voyage raised awareness of the marine environment and taught a new generation about waka culture and knowledge.

As a tamahine of Hoturoa, Noenoe has participated in waka activities and learnings from a young age. She tells a story that speaks to her generation as a case study of the beneficial impacts of what kaupapa waka can do for rangatahi. Noenoe explains that her generation are privileged to access the knowledge in the way they can because of the efforts of Hoturoa and his peers that's helped to bring waka back to life.

"There's a common theme in the waka world of finding the new Hawaiki, and my generation has been given the opportunity to expand our horizons," Noenoe reflects. "What can we do to create change and a new future that takes direction from the leadership and learnings that waka instils in us? Our generation's wero or challenge is to take these learnings and mātauranga Māori for the benefit of our taiao and our communities."







Photos credits (this page and opposite): Te Toki Voyaging Trust





Vavanga village and the adjacent Kolombangara coral reef ecosystem on the island of Kolombangara. Photo credit: supplied by project

## Connecting Coastal Communities across Te Moana Nui a Kiwa

The low tropical mid-year tides signal the time of year when local communities of the Roviana Lagoon in the Western Province of Solomon Islands gather for the annual fish drive. Surrounding jungle fills with the noise of active children tasked with collecting vines that are woven together in preparation for the event.

Gathering on the reef in a wide circle of dugout canoes and using the vines and foliage to corral the fish, the villagers bring the circle in closer. It's a raucous activity, and when the circle is tight and the water is alive with fish, the harvesting begins.

It's a traditional event laced with culture and singing, and imbued with generations of knowledge of the local lagoon and marine environment. However, this intricate relationship and knowledge is also facing challenges including the impacts that sea level rise and warming oceans are having on the fragile marine ecosystem.

Professor Richard Walter has had a long association with the village of Kokorapa located on the edge of the Roviana Lagoon, a community that's interwoven with the daily rhythms of the lagoon. As an anthropologist and archaeologist based at the University of Otago, and a relationship with the village spanning three decades, Walter is leading a project supporting the community's long-term sustainability and relationship with their marine environment.

He says this CPSS project has provided a foundational opportunity to build a long-term research relationship around the immediate interests and concerns of the local communities. "The project has emerged from many years of conversation around the aspirations of the communities and has been inspired by their interests in engaging more widely with our research networks," Walter explains.

United by their strong relationship and identity linked to Moana Pacific, in 2026 Walter is bringing together representatives of the indigenous communities of Solomon Islands and Aotearoa New Zealand. Guided by the vision of connectivity, a delegation of community members from each country will visit each other's place and share their cultural knowledge, experience and skills. The New Zealand delegation will involve tangata whenua who Walter has worked closely with on coastal heritage projects.

Walter describes the spirit of this coming together as contributing to building a shared 'knowledge network'. And while the two indigenous cultures have a shared identity rooted in Moana Pacific, their transfer of knowledge will speak to their differing ways of engaging with the sea, including social, economic and technological dimensions.

"The two groups have very different relationships with their land and the environment," Walter says. "Solomon Island communities own their resources but access food principally to supply their own households. Māori communities don't have the same tenure over resources but balance cultural practices with commercial quotas and modern regulations." The sharing of knowledge will span diverse issues including the economic dimensions of food gathering, traditional ecological knowledge, marine tenure and management systems and community wellbeing.

Exchanging ideas and knowledge between the two connected yet different worlds will aim to support future sustainability and wellbeing in an era of change. It's this vision that Associate Professor Armagan Sabetian, a marine scientist based at Auckland University of Technology, is also applying with the community he's been working with on the island of Kolombangara.

Located a short boat ride from Kokorapa, the focus of Sabetian's work is the Kolombangara coral reef ecosystem which the adjacent Vavanga village community relies on for fishing. As its name suggests, Kolombangara (kolo=water and bangara=chief) Island has plentiful freshwater and about 80 rivers and streams that flow into the surrounding fringing reefs.

Using innovative technologies to study in detail the changing reef ecosystem, Sabetian leads a research team to provide the community with tools and information to make real-time decisions for ecological and conservation management practices.

Leaning on his long relationship with the community that started as a postgraduate student in 1998, working with Dr Walter, Sabetian's continuing support for the community has included establishing a research station in the village. He also includes community members who hold traditional knowledge as researchers in the project, describing the complementary nature of their contributions to the scientific observations of the project team.

"What the science is telling us about fish behaviour and patterns can often be explained by local knowledge," Sabetian says. "Local fishers can provide important information on such things as inter-annual, seasonal, lunar, tide- and habitat-related differences in species distributions and abundance, as well as foraging behaviour."

Of concern for the Vavanga community is the continuing

deforestation of the island's rainforest that results in sediment runoff entering the reef system, particularly during high rainfall events. The impacts of turbidity on the ecosystem can be significant including on photosynthetic organisms, fish behaviour, and the expansion of sea grass onto the reef flats.

The research, using technologies such as Artificial Intelligence (AI) and geospatial techniques, is assessing fish behaviour, patterns and energy use to model how fish are responding to turbidity changes on the reef. Master's student Dominic Bravenboer (Ngāi Tahu) is analysing how the feeding behaviours and energy budgets of two fish reef herbivore species are impacted by this turbidity.

He says working on this project has highlighted the significant impact of excessive turbidity on fragile coral reef ecosystems. "There is now unfortunately a growing body of evidence that the livelihoods of these communities are being threatened by degrading reefs and fish stocks," Bravenboer says. "The respect the Solomon Islands people have for the ocean and marine life aligns with my own values, so I feel a sense of kinship to be helping the community work towards shared goals."

Collaboration and connection sit at the heart of this community-driven project, from setting the aspirations, undertaking the research, interpreting data and observations, and in training and capacity building. While the research station has become a hub where scientific data and traditional knowledge weave together, Sabetian keeps the wider community informed of the project at weekly church meetings.

"I can help the community to better understand why fish are behaving differently in different parts of the reef, or how fish respond during a high turbidity event. The project is ultimately assisting the community to understand what is happening in real-time, so they can make better and informed decisions around harvesting, conservation, and marine management practices."

Sabetian says this work is his way of giving back to a community that's supported him considerably in his career. "If I can help them better understand their ecosystem and environment and provide new tools to deal with these growing challenges, I will be contributing to the future sustainability of a precious resource."

United by their relationship with the ocean, Walter is looking forward to bringing the indigenous peoples from Roviana Lagoon and Aotearoa together in 2026. "More than ever in the face of challenges brought on by globalisation, communities are seeking connection with the environment and with each other," Walter says. "This CPSS project seeks to build these connections and help maintain the life-giving relationship between people and the sea that has sustained them for generations."





Above: MSc student Emily Steele with Indigenous guide Woody Laufanua

Left: Research team lead by Associate Professor Armagan Sabetian at Vavanga village on the island of Kolombangara.

Photo credit: Associate Professor Armagan Sabetian



# Leading the CPSS Outreach Programme: Dr Sally Carson

Standing on the seashore – a place where ocean meets land - marine educator Dr Sally Carson is in her happy space. This is a place of science, and it's also a place of connection, learning and education. With over three decades of experience at the forefront of marine education, Carson leads the Outreach Programme for CPSS alongside her role as Director of the New Zealand Marine Studies Centre (NZMSC) at the University of Otago

Carson has led the development of NZMSC's programmes that engage school students and the wider community with marine science and conservation. As an expert in understanding the contribution of outreach for connection and engagement, Carson says that CPSS is a leader in creating an innovative model for outreach.

"What's new and important is that CPSS puts outreach at the front of all projects and activities," Carson says. "The value of having research and outreach activities take place together is they are complementary and can inform the other."

Canadian born, Carson's career path to marine science education was shaped by two defining experiences. First was learning to scuba dive, a skill that opened her mind to the wonders of the underwater world. Then during her postgraduate studies observing development of sea star larvae through a microscope, Carson found she was drawn to the wider marine environment outside the laboratory windows. "I realised I wanted to know a little bit about everything, not just one thing in fine detail," Carson explains. "Environmental education allowed me to follow many interests."

She became the educator at the Bamfield Marine Laboratory, and shortly after in 1991, moved to the southern hemisphere as education co-ordinator of the Portobello Marine Laboratory in Dunedin. Starting with a blank canvas, Carson developed an education programme for schools that led to the establishment of the NZMSC in 1997.

Specialising in marine education and outreach, the NZMSC has developed a suite of expertise and resources that make it easy for CPSS scientists to engage with communities and stakeholders. "Communicating science is a specific skill, and not something that all scientists have or know," Carson says.

Dr Sally Carson aboard Tairawhiti Waka Photo credit: Supplied by project



"There's a real skill in understanding why it's important to communicate, knowing how to communicate and what to communicate. Effective science communication also involves a two-way exchange of knowledge, not a one-way transfer of information."

Carson says that one of the joys of working with CPSS scientists and postgraduate students on projects has been supporting them to grow their communication skills. Thinking about how to share their research with the wider community at the beginning of the process can also help to shape and inform their research questions.

Prior to the formation of CPSS, Carson worked on a pilot project with Professor Anne-Marie Jackson and Brendan Flack to investigate how waka could be used as a platform for marine science. Specifically, the NZMSC developed science kits for marine monitoring by schools that include equipment to measure environmental parameters such as water temperature, salinity, turbidity, and survey intertidal, subtidal and planktonic populations.

Now a keystone outreach initiative of CPSS, that successful pilot project has since expanded across Aotearoa. In 2024, the outreach team have been working with schools, yacht clubs and waka hourua groups to implement the kits. A highlight of the year was attending the Te Hau Kōmaru Festival and building connections with rohe across the motu actively involved in reviving kaupapa waka hourua.

"Waka hourua have education programmes in place that these marine monitoring kits are providing a valuable addition to," Carson says. "The kits allow students to think about the environment and particularly the health of the environment surrounding the waka. Local communities hold a huge amount of knowledge and the kits provide a suite of tools to collect the scientific data which often reinforce what they already know."



In 2024 the CPSS team supported the outreach programme of the month-long voyage along Te Wai Pounamu's east coast by Te Toki Voyaging Trust's waka hourua Hinemoana. Visits to Karitane and Ötepoti were dedicated to outreach and public sessions about marine science in the context of voyaging and navigation. Hinemoana continued the voyage south to visit two other CPSS project locations - Rangatahi Tumeke in the Catlins and Rakiura Stewart Island. The outreach team also travelled north to share the monitoring kits with Te Matau a Māui and Tairawhiti Waka.

Carson says she's learned so much from working with the waka hourua community - "it's where I get my energy and I'm growing and getting new ideas all the time." She also describes working with a range of interdisciplinary CPSS projects as beneficial for extending her marine science background and continuing to fuel her growth.

The Outreach Programme has supported a wide variety of CPSS projects including species specific (such as Pāua and Parāoa), coastal archaeology, and community cultural heritage and social arts practices. The mahi has also extended to the Pacific where communities and land is connected culturally and by the Pacific Ocean. Working with Tongan schools, the CPSS outreach team have been highlighting the ocean as a place of science learning through a suite of marine science resources that link to the school curriculum.

'Making it relevant and fun' has become one of Carson's guiding mantras. She believes that everyone – including children – have valuable insights and creative thinking to contribute. Developing games have been part of the outreach toolbox, which to date has included a game on Pāua sustainable management, and another on whales that's recently been trialled in Kaikoura.

For Carson, the best-practice outreach model encapsulates her two-way learning philosophy. "These initiatives aren't just about gathering scientific information," she says. "It's about working with communities who recognise the value of their local environment as places of learning, inspiration and connection. Our goal is to empower and reconnect communities, rangatahi and our next generations with their marine environment."

Carson says central to the success of the CPSS Outreach programme is collaborating with other organisations such as LiveOcean Charitable Trust that are empowering communities to restore the health of the ocean. "Working in partnership with LiveOcean for example, has allowed us to further our goal of having the best understood seashore in the world. Introduction of new digital tools are supporting school students to create interactive 3D models of their study site to investigate and track how their local seashore is changing over time."

Bringing together her working and academic career, Carson's expertise in marine science was recognised in 2024 in her own graduation with a PhD in Education. Her passion for the marine environment sat at the heart of her thesis and involved the creation of Marine Metre Squared, a citizen science project inspiring long-term monitoring of the seashore.

Now established as a New Zealand-wide initiative, the Marine Metre Squared project and resource encapsulates Carson's quest to engage others in the wonders of the marine environment. CPSS is now providing Carson with a platform to expand her successful place based and environmentally informed learning programmes to developing an 'ocean curriculum' at primary and secondary levels.

Carson's work continues to inspire the next generation as scientists and kaitiaki of the natural world. "I've learned so much, and my strength is in sharing my excitement," she says. "I'd love to see every child growing up believing they could be a scientist. Learning is not formula-driven - it's about being inquisitive, caring, and inspiring students and everyone else to see where they can add value to the world."





Photo credit (this page and opposite): supplied by project



## **Growing Pacific Scientists**

Dipping their toes in the warm waters of the Pacific Ocean, school students and teachers of Tonga's northern Vava'u Islands are interacting with the marine environment in new ways. Shifting their attention to the marine environment outside the classroom, the CPSS outreach team are working with locals and learning about the ocean as a place of science.

On the shoreline with sand-covered feet, students and teachers learn new skills and how to use equipment like thermometers, ph metres and transect lines. They also learn the reasons and applications for these activities that engage with contemporary scientific challenges such as sea-level rise, ocean warming and acidification.

When Project Lead Dr Losa Moata'ane, a Research Fellow based at the University of Otago, was growing up in Tonga, the sea was an important part of her daily world. It was a place of play and of food, and for connecting and dreaming. But it wasn't necessarily seen as a source of



Project Lead Dr Losa Moata'ane and her son Taiarahia Moata'ane-Mika wearing ta'ovala around their waists woven by Losā's mother.

science, which was instead reserved for the classroom and textbooks which taught about space and the periodic table of elements.

As a science graduate, Moata'ane felt a strong need to give back to the Tongan community both in Aotearoa and in the Pacific region. Sharing her study pathway and career journey was important to inspire students and contribute to their community's aspirations.

Supported by her association with Tonga's Ministry of Education, when Moata'ane and Dr Sally Carson, Director of the New Zealand Marine Studies Centre (NZMSC), visited Tonga in 2020 to meet with teachers, the message they heard was clear. With fewer secondary students choosing to study science and declining pass rates, they were seeking support to help reverse this trend.

Responding to this request and as experts in outreach activities, the NZMSC co-led the development of a suite of educational tools covering practical and creative activities. Designed to engage Pacific students in the science and story of climate change, the resources included hands-on activities and experiments, instructional videos, and equipment such as thermometers and pH meters needed to carry out the tasks.

The resources were trialled with Dunedin-based Year 9 and 10 Pacific students during a multiday programme at the NZMSC, during which they investigated local impacts and possible solutions of a range of climate change scenarios. Supported by science communication practitioner Dr Gianna Savoie, the students were also encouraged to engage in the science of storytelling through the lens of culture.

Viliami Naitoko was an Aquaculture and Fisheries student at Otago at the time the educational resources were in development. Providing instructions in the Tongan language on the accompanying instructional videos, Naitoko became an important ambassador for the outreach project. Returning to Tonga at the end of his studies to start work at the Ministry of Fisheries, Naitoko continued to support the roll-out of the resources with local schools.

The establishment of CPSS provided a framework for this initial work with teachers to continue. Carson, the CoRE's outreach programme lead, and Moata'ane as a Pacific researcher for CPSS, appreciated the collaborative opportunity to assist the schools and community in Tonga with their aspirations to improve science outcomes for their youth.

Seven schools through the Tongan Islands participated in the pilot programme to trial the educational resources. While the pandemic and Hunga Tonga and Hunga Ha'apai volcanic eruption delayed the initiative, Moata'ane and Carson returned to Tonga in 2022. Together with Naitoko, the team travelled north to Vava'u to support St Peter Chanel College with the delivery of the climate change component of the science curriculum using the new resources.

Working with approximately 60 Year 9 and 10 students, the CPSS team spent a week at the College, with Carson describing the value of working closely with the teachers. "It's impossible to create and distribute resources with instructions and expect schools to get on with it."

"Instructions can be interpreted differently, and simple practical challenges on the ground such as access to fresh water and fridges mean adjustments are needed. The time spent with the teachers and students was invaluable in understanding how the resources needed to be adapted for the local context and environment."

Emerging from the week was a deeper understanding of how science education needed to be reframed and applied locally. "Many teachers were teaching science out of textbooks that didn't have any relevance to their local environment," Carson says. "Yet right outside their windows is a natural laboratory that holds so many learning opportunities, and we saw the students really enjoy engaging in the practical hands-on and creative activities."

For Naitoko, it was observing the curiosity and enthusiasm of students engaging with the new resources that made him reflect on his own school experience in Tonga. "Having access to this kind of programme would have not only provided insights into the biodiversity around us but has also shown me how I could contribute to preserving it. This project has the potential to inspire a generation to care for our oceans and make informed choices for sustainable futures."

Science Teachers, Takuilau College Students and CEO for the Ministry of Education Dr Tangikina Moimoi Steen on the final day of presentation (credit Ministry of Education, Tonga)

Following the successful pilot programme, the Ministry of Education has requested the resource be included in the next Tongan school curriculum refresh. In addition to the educational benefits, for Moata'ane the project highlights a robust model for conducting research and education in the Pacific. Establishing sustainable and respectful relationships is an essential first step, that in the Tongan context is known as the 'va'. Recognition that it takes time and effort to maintain those relationships is important.

Responding to the needs of the community and co-designing solutions is also necessary to achieve research excellence. "The project team's diversity and skills combined with strong and trusted relationships have allowed an exchange of knowledge and opportunity to co-design an approach responding to local communities' needs and aspirations," Moata'ane says.

"If researchers or institutions want to engage meaningfully in the Pacific region, it needs to be led by indigenous communities which is what CPSS supports," Moata'ane says. "At its core is the building of connections and relationships that have been nurtured from the past but will persist into the future."

Now partly based at the Tongan National University, and as part of CPSS's commitment to the Pacific, Moata'ane is collaborating with teachers, lecturers and researchers exploring professional development opportunities. In addition, she's providing professional development for non-Tongan researchers in CPSS around effective ways to work with Pacific communities.

Following the success of the education resources programme, the CPSS outreach team is now working with the Parāoa whale research project on a set of modules that will become a valuable learning resource for Tongan students and schools. Recognising the presence and importance of whales in Tonga, the resources will cover topics such as the distribution and movement of whales and how scientists study them.

While the Pacific Ocean is home to these majestic creatures, it's also now an important hub of learning for the next generations of Pacific children and students. "Creating these types of meaningful relationships with science through outreach initiatives and opportunities will not only be positive for how Pacific students view themselves", Moata'ane says, "but also for how they look after themselves and the environment in the future."





Photo credits: supplied by project

## Sharing tales of taonga in Kaikōura

Centred over the deep marine canyons close to Kaikōura , the long-term research of parāoa (sperm whale) is recognised as one of the world's longest studies on cetaceans. Uniquely located close to human settlement, the story of these whales is also strongly entwined with the region's history and contemporary life.

Central to its vision to engage and empower communities, CPSS outreach activities seek to bridge the work of researchers with those communities in which science is taking place. In late 2024, CPSS supported a public event in Kaikōura where science mahi and local knowledge came together.

Titled Whale Tales and Dolphin Discoveries, the forum brought together a range of stakeholders including Whale Watch Kaikōura, tour operators, community organisations and residents, who engaged in conversation on the region's marine taonga.

Lead researcher of whales and dolphins at the University of Otago, Associate Professor Will Rayment, described the event as a valuable opportunity to share research findings and to hear directly from the community.

"What was new for the community was learning that we want to hear their knowledge and observations about the local marine environment," Rayment says. "Recognising that their knowledge is valuable for research is also empowering for the community as kaitiaki and custodians of their local taonga species."

For Tā (Sir) Mark Solomon (Ngāi Tahu, Ngāti Kurī), whose tūrangawaewae is the Kaikōura region, participating in the outreach day was one of learning. "All my life I've known about the whales, but I was amazed to learn that over 50% of the world's cetacean species have been seen in Aotearoa's waters and that Kaikōura is a particularly special habitat for many of them," Tā Mark Solomon says. "The whales make a significant contribution to the region's economy, but they're also deeply spiritual - no one can look at a whale and not be awed by the experience."

Tā Mark Solomon adds the day highlighted the willingness of the community to be involved and interested in what's happening in the sea. "All the speakers presented their material in accessible ways, so everyone understood what they were saying. Delivering information like this helps empower the community with knowledge they can use to actively manage their marine environment and taonga."

The forum, which included a panel session, captured the motivation of the community to recognise the value of the

marine life and coastal environment for their region. CPSS representatives credited the local council for providing the venue and Whale Watch Kaikōura for their role in facilitating community-wide engagement.

Complementing the public event, CPSS researchers and the Outreach Programme team also visited a kura to trial a suite of education resources aimed at learning about the science of whales. The outreach and science team were tasked with making the content relevant and interesting to high school students, and providing a taste of what whale research involves.

Developed over several months, the resources were developed using actual research data, sound recordings, and photographs. Students, for example, learned about the use of scientific techniques, such as how sounds can reveal a whale's size and how photo identification can help understand populations and movements.

The first trial took place at Kaikoura High School with 60 Year 9 and 10 students. The rangatahi engaged with aspects of marine research through activities including games and underwater exploration using Virtual Reality headsets. Dr Sally Carson, head of the CPSS Outreach programme, says this resource will become part of an Ocean Curriculum currently being developed for primary and secondary schools that draws on scientific and community knowledge. "We hope that providing learning experiences that are interactive, locally relevant and authentic will encourage students from coastal communities into further education and environmentally-focused careers."

Regarded as a successful trial of the resources, parāoa researcher Dr Marta Guerra says the team observed how well connected the school students are to their marine environment. "Most had a good understanding of their coastal systems, many had been out to sea and seen sperm whales, and they are aware of the contribution that whales play in their region," Guerra says.

It became apparent however, that the students weren't so aware of Kaikōura's status as a globally important location for whale research. Guerra describes a moment of realisation for the students when shown a map of global sperm whale distribution that highlighted Kaikōura as a hotspot. She adds that 'light-bulb' moments like this can help to seed ideas, curiosity and empower the next generation.

"We've always done some outreach as part of our research, but doing it like this at the forefront of the project and working along expert educators and the outreach team is incredibly valuable", Guerra says. "It's supported us to plan outreach activities right from the start of a project and is also developing our own

capabilities as researchers to share our mahi with the community".

Studying the conservation biology of parāoa for his PhD thesis, Will Carome also participated in the Kaikōura outreach day. He says the day was an amazing opportunity to connect with the community and share learnings from over three decades as a research group.

"These events present opportunities to sharpen our listening skills and I feel grateful to have been a sponge surrounded by local leaders and concerned community members," Carome says. "It was one of the first opportunities I've had to present on my upcoming research and a great experience to reflect on how sharing our research and building our collective understanding through conversation can help us to connect with the ocean and better coexist with the amazing species we study."

The connection between people and place, and the community's strong association with the whales, stands out as a key point from the outreach day. And it's an important message, as the strength of this connection is set against a backdrop of growing global challenges for the marine environment and coastal communities.

"What we heard was the degradation of environmental conditions is not eroding the community's connection with the whales," Rayment says. "If anything, there's a real sense of making these connections stronger."

"By raising awareness through outreach events like this we are trying to add extra layers to the community's knowledge and understanding. These events are helping to make these important connections even stronger."







Photo credits: supplied by project

Building our Capacity
Profiling Our Taiuira



## **Bringing the Villages Together**



History was made at the Samoan High Commission in Wellington by Oka Sanerivi, a doctorate candidate in physiotherapy. Accompanied by his professional and personal communities, Sanerivi became the first Pacific student to have his PhD examination conducted at the Commission. At the same time, he made history as the first Pacific student from the University of Otago - Ōtākou Whakaihu Waka to undertake their doctoral examination with their community.

The significance of the event in late 2024 for Sanerivi was the coming together of his academic, professional and personal worlds. "The beauty of it was gathering my network of communities who had gifted their knowledge that had contributed to my research," Sanerivi says. "The event was an opportunity to return the academic work back to those communities by presenting what I'd achieved with their valuable contributions."

CPSS provided advocacy and funding to support Dr Sanerivi through a Pacific Scholarship Award. CPSS has goals to grow Pacific research capability and capacity and recognises Dr Sanerivi as a current and future research leader.

Sanerivi's upbringing in Lower Hutt was nurtured by the local Samoan community and included regular visits to his wider aiga (family) in Samoa. He explains that the Samoan concept of self is expansive and includes the 'relational space' an individual holds with others, the environment and the cosmos. Known as Va, in that paradigm an individual's efforts and achievements are regarded as the collective result of many.

Taking place at the Samoan High Commission on the invitation of His Excellency Afamasaga Fa'amatalaupu Toleafoa, Sanerivi says the presence of his network of 'villages' at his examination provided meaning to his thesis. "In displaying both indigenous cultural authenticity and academic excellence, the event felt like an even platform where both were meaningfully highlighted."

The examination was informed by Pacific cultural protocols and formal proceedings included lotu (thanksgiving prayers), ava o le feiloa'iga (kava ceremony) and taualaga (ceremonial dance). The dance also linked to Sanerivi's thesis which involved the development of a cultural health model titled the Fau'olo framework based on the taualaga.

"The Fau'olo framework is about reframing how we maintain relational spaces between people and families, and includes positioning health professionals as part of the wider health support network. That's why the dance metaphor is intentional – it's fluid, dynamic and nuanced, but still requires skill, expertise and connection."

The catalyst for Sanerivi pursuing postgraduate research was informed by his own experience in Samoa in 2020 leading a physiotherapy response to the measles epidemic. "I had a moment when I realised my skill for creating and setting relationships hadn't been taught in my studies, but instead by my elders. I looked back at the curriculum I'd studied and it wasn't there, so I saw a gap that would help my non-Pacific colleagues working in this space."

Founded on indigenous Samoan cultural philosophies and customs, Sanerivi completed his doctorate through the Centre for Health, Activity and Rehabilitation Research at the University of Otago. His research developed a model to help physiotherapists work with Samoan families in culturally appropriate ways, with the aim to incorporate it into the study curriculum and contribute to best practice across Pacific cultures.





Photo credits (this page and opposite): Dr Oka Sanerivi

An additional outcome of the research will be developing guidelines for the Physiotherapy Board of New Zealand, physiotherapy schools in Aotearoa and the wider Pacific, as well as with Māori and Pasifika health professionals. Sanerivi says the resources will provide clinicians and educators with guidance on best practice for working with Pasifika, driven by the aim to improve the quality of interactions with physiotherapists.

Speaking to his appreciation of the advocacy and support provided by CPSS, Saneviri says it enabled the historic event to take place and brought together leaders and communities in a unique way. He describes a personal highlight when dignitaries, including the Deputy High Commissioner of Samoa, Juliana Lafaialii, concluded the milestone event with a traditional song of thanksgiving, 'Ua fa'afetai'.

"It was an acknowledgement that I'd reached the starting line of my career, and like wind had been blown into my sail for the first leg of my academic folauga (voyage)." Sanerivi's academic voyage now starts as a Senior Research Fellow at the Va'a o Tautai Centre for Pacific Health. His role will include exploring how the Fau'olo framework may shape future research and academic directions for education of health professionals through the Centre.

"I've been steered by the values, learnings and knowledge of the past, and my community sees the potential for my work that now stretches into the future. I want Pasifika students to have the same opportunities I've had, and to take their work back to their communities to help them flourish.

## Our 2024 Scholarship Tauira



#### **ABBEY BROWNE**

Kia ora, my name is Abbey Browne, and I recently graduated from Waipapa Taumata Rau / The University of Auckland with a Master of Science in marine science. I was born and raised in Tāmaki Makaurau / Auckland; growing up my backyard was the beautiful Waitākere ranges and neighbouring wild West coast beaches. Given my surroundings, it's no wonder that I had a fascination for the natural world from a young age! When my family first took me snorkelling at Aotearoa's first marine reserve — Te Hāwere-a-Maki / Goat Island — I decided I wanted to be a marine biologist. Little did I know I'd get the privilege to research at that very same place all these years later!

My master's research investigated the thermal performance of an understudied amphipod species, Melita inaequistylis, to determine the potential ecological impacts of climate change on the primary consumers of Aotearoa's rocky reef ecosystems. Amphipods are a type of crustacean that exhibit a remarkable diversity in morphology, from slender caprellids only a few millimetres long (known as 'skeleton shrimp'), to massive animals bigger than your fist dwelling in deep Russian lakes and frigid Antarctic waters. Amphipods perform a vast array of functions, for example, they are significant mediators of energy transfer between trophic levels, and they can dominate the flow of energy and nutrients through ecosystems. In Aotearoa's Northern rocky reefs, amphipods are a significant food source among the juveniles and adults of many common fish species. Although little is understood about the ecology of

M. inaequistylis, it is thought that their wide distribution, diverse habitat selection, and relative abundance in samples means there is a high likelihood that M. inaequistylis is part of the amphipod community that collectively comprises a significant energy source for higher trophic levels on Aotearoa's rocky reefs. This highlights the need to understand how this species, and others like it, might cope with current and projected climate scenarios

During my research, I investigated the effect of temperature on M. inaequistylis' critical thermal limit, population viability, individual survival, growth rate, feeding rate, and thermal preference. I found that temperature affected all measures of performance at the individual and population levels, including growth, survival, feeding rate, critical thermal limits, and thermal preference. Most interestingly, I found that there were disparities between thermal optima, indicating that this species assimilates energy most effectively at high temperatures, but survives at and prefers substantially lower temperatures. Overall, when I contrasted my experimental results against long-term climate data, I found that Leigh populations of this species have experienced, and will continue to experience, temperatures that exceed their thermal preference and optima for several essential biological functions. It remains to be seen how multiple stressors and climate variability may further impact the performance of this amphipod in the field. Hopefully, M. inaequistylis' capacity for acclimation and adaptation will be potential sources of resilience in the years to come.

Coastal People: Southern Skies awarded me a generous postgraduate scholarship to pursue this research, without which none of this would have been possible. The scholarship not only facilitated the wide scope of variables I was able to investigate, but also granted me the opportunity to present my research at the joint conference between The Australian Marine Sciences Association (AMSA) and The New Zealand Marine Sciences Society (NZMSS) in 2024. There, I was awarded the top prize for the best student poster. Many thanks to Coastal People: Southern Skies for supporting my burgeoning scientific career and facilitating essential scientific research.



#### HANNA MARIA RAVN

Tēna koutou,

Ko Hanna Maria Ravn taku ikoa

I'm a Nordic science educator and ecologist who has spent the last 8 years living and learning in Aotearoa. Within the first few weeks of coming to the country, some amazing people took me under their flipper and showed me the incredible coastlines and taoka species living amongst us. I have been involved in pakake (New Zealand sea lion) conservation for several years, where it's been noticeable to everyone that while most residents appreciate how special sea lion pups returning to the mainland is, there are increasing conflicts as the species has returned to a highly urban setting. At numerous pakake hui, a dedicated education programme was called for over the years. That sparked the idea of piloting a programme that allowed for tough conversations while making pakake research more accessible and inclusive.

When I started this part-time thesis a year ago, not much was defined other than it had to: 1) involve an updated diet analysis on local females and their offspring (the last one was done 15 years ago), 2) be non-invasive to pakake, 3) be as easy for communities to be involved as possible, while still maintaining meaningful conversations.

Fast forward 12 months and we are well on our way! The diet

samples are poo and vomit left behind at pakake haul outs, and often reported by residents or rangers across Ōtepoti. I have lost count of how many "got a poo for you" photos and texts I have received so far... The great thing about these is that they are non-invasive. And during the last couple of months when females have been nursing their new pups, we have often waited for females to leave an area before collecting – so they never get to know we are there. A third of the 350+ samples collected can be linked directly to a known individual, which can shine light on whether the kaimoana they forage on depends on sex, age and whakapapa.

In the beginning of 2025, while mums and pups are gathering to crèche, an anonymous public survey will be rolled out to gather evidence of encounters and community perspectives on the increasing population. The plan is for the diet samples and results of the survey to be used in sessions with coastal community groups later in the year. In these sessions we will be investigating the prey remains and hoping to create a space where people feel free to discuss their own experiences with pakake, worries connected to the increasing population, and ideas from the survey on how to better co-exist in the future.

Coincidently, while we were working on the ins and outs of the project, the new Action Plan for pakake (aka DoC's conservation plan) is being released with a Tohu by talented Kate Stevens West – based on prey diet remains! Conversations have been started on how to preserve the samples from this project to aid in the Action Plan's future learning resources. And hopefully the community sessions hosted this year can help inform these resources too

I cannot stress this enough: though I'll be writing a thesis on it, this kaupapa only exists because of everyone who nurtures it. From supervisors with encouraging advice, to locals who keep an eye on mums and pups, and to conservation groups and rangers who help shape the mahi and kōrero. Aroha to you all – I look forward to another year on this project!

De kærligste hilsner fra Hanna Maria

46 COASTAL PEOPLE : SOUTHERN SKIES 47



#### MARINO WICHMAN

Thesis Title: Tei te Takaroa- in the pursuit of knowledge Marae Moana - review of the effectiveness of an indigenous framework to preserve, conserve and sustain the Cook Islands' Marine environment

Growing up in Rarotonga, I have been shaped by the values of respect, humility, and the importance of acknowledging diverse perspectives. These values have guided me throughout my career in fisheries science, where I have worked at the national level within the Cook Islands' tuna industry and contributed regionally through the Pacific Community and various Regional Fisheries Management Organisation scientific committees. My passion lies in ensuring that science is both meaningful and impactful and is rooted in Pacific traditions, informed by robust data, and driven by a commitment to sustainability.

I firmly believe in the role of scientists as stewards of integrity, recognising the Pacific's rich history and the need to integrate Kite Mārama (Cook Islands' Māori Knowledge) with scientific advancements to develop practical solutions for contemporary challenges. My research is centered on the intersection of Kite Mārama and modern marine governance, with a specific focus on the Marae Moana framework. By examining how marine spatial planning (MSP) can be effectively implemented to

balance conservation and development objectives, my work explores the role of Indigenous knowledge in governance, sustainability, and ocean policy.

The year 2024 proved to be a testing time, both personally and professionally. Civil unrest in New Caledonia led to my evacuation, forcing an unexpected shift in my research plans. However, thanks to the support of the Coastal People: Southern Skies scholarship, I was able to adapt and continue my work. This scholarship provided me with the opportunity to spend valuable time in Dunedin with my supervisors, refining my research approach and connecting with like-minded individuals who provided inspiration for my thesis journey. Additionally, I was able to return to Rarotonga for five months to re-settle while the situation stabilised in Noumea, it was a time of reflections and reconnecting with my community and reaffirming the importance of local knowledge in my work.

With Pacific Island nations managing vast ocean territories, many of which exceed 98% of their national jurisdictional area; ensuring sustainable resource management is critical. The Cook Islands have pioneered large-scale Marine Protected Areas (MPAs) to safeguard its marine resources, and my research investigates whether MSP can effectively mediate competing interests, particularly within the fisheries and deep-sea minerals sectors. I also examine the role of Kite Mārama in ensuring that policy frameworks are fit for purpose.

The support of the Coastal People: Southern Skies scholarship has been instrumental in my academic journey, allowing me to focus on research that has direct relevance to Pacific communities. Looking ahead, I aspire to contribute my expertise in fisheries science to enhance the sustainability of marine resources in New Zealand and the wider Pacific, ensuring that ocean governance remains deeply connected to the people who depend on it.



#### YUNA BARBENEL

Kia Ora! My name is Yuna and I am a recent Honours graduate from Ōtākou Whakaihu Waka University of Otago. Although I grew up in a small mountain village in France, I am lucky enough to have been calling Aotearoa and Ōtepoti Dunedin my home for the past 8 years. After completing a Bachelor of Science in physics, I realised I wanted to focus more on the natural world, how to understand it better, and how to protect it from challenges like climate change. After graduating I then enrolled in an Honours degree in marine science, and haven't looked back!

My research last year investigated the future exposure of giant kelp (Macrocystis pyrifera) to thermal stress in Aotearoa, more specifically in the Rakiura, East Otago, and Cook Strait regions. Giant kelp forests support many marine ecosystems, act as carbon sinks, and remove nitrogen from contaminated seawater. They play a key role in marine environments, but as the ocean warms, they are at risk of decline and even regional extinction. Using in-situ, remotely sensed, and numerical model temperature data, my work investigated how the exposure of giant kelp to thermal stress is likely to change in

the future along its latitudinal range in Aotearoa. This study also researched locations and potential oceanographic drivers that may provide thermal refuges for giant kelp. This research aimed to serve as a resource for coastal communities in their efforts to conserve and restore Aotearoa's giant kelp forests and the important taonga species they support, as ocean temperatures continue to rise.

I am incredibly grateful for the support of CPSS. Their financial aid meant I could fully dedicate myself to my research last year. It also affirmed the work to be relevant and meaningful to local communities, which was really fulfilling. Many thanks also to Dr. Robert Smith and Dr. Peter Russell, who took me on as a postgraduate student. This past year has opened up many opportunities in environmental science and made me more certain of the direction I want my future to take, which would not have been possible without CPSS and my supervisors' support. I hope this research increases our understanding of Aotearoa's giant kelp forests, so as to better protect them in a warming world.

## Ā Mātou Tāngata Our People

## Strategic Advisory / Governance Board

## **Board bios**



### BOARD CHAIR TĀ MARK SOLOMON

Tā Mark Solomon is committed to the betterment of his iwi, kotahitanga for Māori and the wider well-being of people and the environment. He is a strong advocate for the Māori economy and was instrumental in setting up the lwi Chairs Forum (2005). He was the elected Kaiwhakahaere (Chair) of Te Rūnanga o Ngāi Tahu from 1998 to December 2016 and represented his local Papatipu Rūnanga, Te Rūnanga o Kaikōura from 1995 to December 2016.

Of Ngāi Tahu and Ngāti Kurī descent, Tā Mark's contribution to his community has been diverse and significant, ranging from roles as a school board trustee, to a past board member of the Museum of New Zealand (Te Papa Tongarewa). Tā Mark attributes his wider whānau (family) for early guidance and it is this experience that has driven his passion for encouraging educational opportunities for young Māori. He is a patron of He Toki Ki Te Rika, a Christchurch-based Māori pre-trade training programme, and the related He Toki Ki Te Mahi, an apprenticeship initiative both born from the Christchurch earthquake rebuild. He believes young Māori should strive for formal training to maximize their talents and to be the best they can be.

In 2013 he was awarded Knight Companion of the New Zealand Order of Merit for services to Māori and Business. In April 2015 he received an Honorary Doctorate from Lincoln University as Doctor of Natural Resources, recognising his enduring interest and concern for our natural environment. Tā Mark was recently appointed to the National Science Challenge Governance Boards for Sustainable Seas and Deep South which relate to both ensuring our marine environment is understood and cared for and understanding the role of the Antarctic in determining our climate and future environment.

Tā Mark believes a true rangatira is a servant of the people, a fact underpinned by his core philosophy of 'strength with humility'. Whilst the commercial success of Ngāi Tahu is acknowledged, Tā Mark is especially proud of the tribe's achievements in education and the development of the lwi's savings scheme Whai Rawa. Tā Mark is a committed advocate for the sanctity of whānau and takes a strong stance against whānau violence. He is passionate about his people and is determined to facilitate both iwi and wider Māori success by unlocking the potential of the Māori economy for the good of all.



#### DAME SUSAN DEVOY

Dame Susan Devoy is one of New Zealand's most celebrated sportswomen, as well as being a recognised volunteer and advocate. Awarded a CBE and MBE she was made a Dame in 1998 for her services to sport in New Zealand. These honours recognise her achievements as a world champion for four years, her work as chair of the Halberg Foundation for 12 years, and the leadership she showed as a patron of the Muscular Dystrophy Association when she walked the length of New Zealand in 1988 raising over \$500,000 for research and support networks.

Dame Susan was the Race Relations Commissioner for five years and throughout her tenure she was known for her empathy with people and her ability to relate to all people, respecting and learning their rituals, beliefs, challenges, and issues. This human-centred focus adds value to scientific and environmental strategies. Known for her practical and common-sense approach, Dame Susan brings an outside view, in a manner that is direct and questioning; informed by her experiences as a CEO and chairperson alongside her many other achievements.



DR CHARLOTTE SEVERNE (NGĀTI TŪWHARETOA, NGĀI TŪHOE)

Dr Charlotte Severne (Ngāti Tūwharetoa, Ngāi Tūhoe) is the current Māori Trustee of Te Tumu Paeroa – the Office of the Māori Trustee.

Charlotte holds a PhD in Geology from the University of Auckland. In 2016, she was made an Officer of the New Zealand Order of Merit, in recognition of her contribution as an advocate and mentor for Māori Development and Science.

Charlotte also has a wealth of experience in working with Māori business as a science advisor and in governance roles in energy, fisheries and farming entities. She has held various governance leadership roles within the primary and energy sector.



#### DR PAULA VIVILI

Dr Paula Vivili is the Deputy Director-General Science and Capability at the Pacific Community (SPC) – an inter-government organisation with 27 members: 22 Pacific Island Countries and Territories and five metropolitan members – Australia, France, New Zealand, UK, and USA. He oversees SPC's technical programmes including its Geoscience, Energy and Maritime Division. Prior to this role, he was the Director of SPC's Public Health Division for six years. Dr Vivili has an intimate knowledge of SPC, its people, and partners. He is from Tonga where he worked for 15 years before joining SPC.

Dr Vivili holds undergraduate degrees in Human Nutrition (University of Otago) and Medicine (University of the South Pacific) as well as a Masters degree in International Public Health (University of Sydney). He has undertaken a World Health Organisation Fellowship at the University of Auckland and Auckland Hospital in Ophthalmology.



#### HOTUROA BARCLAY-KERR (Tainui)

Hoturoa Barclay-Kerr (Tainui) is the captain of the oceangoing waka Haunui. Hotu has been sailing around the Pacific for more than thirty-five years. He paddles waka, sails waka, teaches waka. In 2020 he was awarded Companion of the New Zealand Order of Merit for services to Māori and heritage commemoration.

Hoturoa grew up with his numerous elders who nurtured and cared for him on the many marae of Waikato. He is a native Māori speaker and spent the first six years of his life with the Tuhoe people in Rūātoki, where his parents taught at the Rūātoki District High School. Mr Barclay-Kerr lectured at Waikato University for almost 20 years and has more recently specialised in education and leadership programmes that use waka as a platform for learning and development, including working with former youth offenders to help them transform their lives through waka education. He co-authored the book 'Wayfinding Leadership: Ground-breaking Wisdom for Developing Leaders'. He was a director of 'A Waka Odyssey', the major voyaging event that opened the New Zealand Festival in 2018. He was co-Chair of the National Coordinating Committee for 'Tuia 250 - Encounters', the national commemoration in 2019 marking the first meetings between Māori and Pākehā during the arrival of HMS Endeavour in 1769, as well as celebrating more than 1,000 years of Pacific voyaging, migration and settlement of Aotearoa. His vision, leadership and mana were critical to the success of Tuia 250 and ensuring a comprehensive national programme, amidst controversy about the framing of the commemoration. He was instrumental in ensuring the waka and tall ships of the voyaging flotilla reflected the dual heritage of the commemoration and those involved had the appropriate cultural capabilities.

Hoturoa is an orator on his marae at Kāwhia, the home of Haunui, and the ancient landing and settlement place of his ancestral waka, Tainui and his ancestor Hoturoa. He is a trustee on a number of trust boards and is currently the chairman of Te Toki Voyaging Trust.



#### PROFESSOR BLAIKIE (FRSNZ)

Professor Blaikie (FRSNZ) is the Deputy Vice-Chancellor, Research and Enterprise, and Professor in Physics, at the University of Otago. He received the B.Sc. (Hons) degree from the University of Otago, New Zealand, in 1988 and the Ph.D. degree in physics from the University of Cambridge, U.K., in 1992. For one year, he was a visiting scientist at the Hitachi Cambridge Laboratory, investigating single-electron transport effects in semiconductor nanostructures. He returned to New Zealand in 1993, taking up a position in the Department of Electrical and Computer Engineering at the University of Canterbury prior to moving to his current role at Otago. As Deputy Vice-Chancellor, Professor Blaikie oversees all the research and commercialisation activities of the University.



#### TRACEY MCINTOSH (MNZM) (Ngãi Tūhoe)

Tracey McIntosh (MNZM) (Ngāi Tūhoe) is Professor of Indigenous Studies at Wānanga o Waipapa (School of Māori Studies and Pacific Studies) at the University of Auckland. She is the Chief Science Advisor for the Ministry of Social Development and a Commissioner of Te Kāhui Tātari Ture: Criminal Cases Review Commission. She was the former Co-Director of Ngā Pae o te Māramatanga New Zealand's Māori Centre of Research Excellence.

She previously taught in the sociology and criminology programme at the University of Auckland. In 2012 Tracey served as the co-chair of the Children's Commissioner's Expert Advisory Group on Solutions to Child Poverty. In 2018-2019 she was a member of the Welfare Expert Advisory Group (WEAG) which released the report 'Whakmana Tangata: Restoring Dignity to Social Security in New Zealand' (2019). She was also a member of Te Uepū Hapai i te Ora – The Safe and Effective Justice Advisory Group which released the report 'He Waka Roimata: Transforming our Criminal Justice System' (2019) and 'Turuki! Turuki!' (2019). She sits on a range of advisory groups and boards for government and community organisations. She is currently contributing to the Royal Commission of Abuse in care in an advisory capacity and is a Board member of He Whenua Taurikura.

Her recent research focused on incarceration (particularly of Māori and Indigenous peoples) and issues pertaining to poverty, inequality and social justice. She recognises the significance of working with those that have lived expertise of incarceration and marginalisation and acknowledges them as experts of their own condition. She has a strong interest in the interface between research and policy.



#### TAME TE RANGI (Ngāti Whātua, Ngāpuhi)

Tame Te Rangi (Ngāti Whātua, Ngāpuhi) is a representative of Te Rūnanga o Ngāti Whātua, one of two signed iwi partners of Coastal People : Southern Skies.

Tame Te Rangi is the current chair of the Kaipara Moana Remediation Joint Committee. Tame provides tangata whenua advice to local government as well as Council Controlled organisations, including Auckland Council and Te Kārearea Strategic Partnership Standing Committee for Whangārei District Council. He chaired the selection panel for Auckland Council's Independent Māori Statutory Board for the initial three appointment cycles.

He is also a Co-Chair of Whakaruruhau Matua, the national forum of the Māori standards-setting body for the New Zealand Qualifications Authority. He currently lives in Mangākahia with his whānau spread across the marae and hapū based activities of those homelands.

## **Our Directors**



## PROFESSOR ANNE-MARIE JACKSON (Ngāti Whātua, Ngāti Kahu o Whangaroa, Ngāpuhi, Ngātiwai)

As a Co-Director of Coastal People: Southern Skies, Anne-Marie leads the strategy of the Centre. Anne-Marie is an independent director for CPSS and she provides a direct voice for coastal communities and non-tertiary research partners. She is Kaihautū Managing Director of Rehutai Consulting Ltd.

Her mahi focuses on mauri ora (flourishing wellness), namely through the application of te ao Māori, te Tiriti o Waitangi and kaupapa Māori.



### PROFESSOR ROSALINA (ROSE) RICHARDS

Rose is Co-Director of Coastal People: Southern Skies and a co-leader of the Restoring Platform. Rose is also Deputy Director of the Va'a o Tautai – Centre for Pacific Health in the Division of Health Sciences, where her research focuses on Pacific wellbeing across a variety of health professions and community led visions of ola manuia (living in Wellbeing). From Samoan and English ancestry, she was born and raised in Te Wai Pounamu, the South Island of Aotearoa. Her academic background is in psychology, public health and Pacific health.



#### PROFESSOR RICHARD WALTER

Richard stepped into the role of Co-Director following Chris's resignation from his Co-Director role in November 2023.

Richard is a field archaeologist who works in Aotearoa and the Pacific islands with ongoing projects in the Solomon Islands, Cook Islands and Aotearoa. Alongside his CPSS Co-Director role, Richard is leading the Connecting Coastal Communities across Moana Nui a Kiwa project within the Connecting Theme of CPSS. He is also a founder and co-director of Southern Pacific Archaeological Research (SPAR) which is a research unit within the Division of Humanities at the University of Otago. Richard, and his SPAR team, work on archaeological research, and on community focussed heritage projects throughout Aotearoa and the tropical Pacific.

## **Governance & Management Groups**

#### Governance Board

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Secretary/Kaiwhakahaere Tari

University of Otago

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Professor Wendy Nelson (Chair)

Professor Emeritus Terry Chapin

Professor Catriona Hurd

Dr Ana Koloto

Professor Chellie Spiller

Professor Richard Walter

NIWA / University of Auckland

University of Alaska Fairbanks

University of Tasmania

Ministry for Pacific Peoples

University of Waikato

University of Otago

#### Co-Directors

Professor Anne-Marie Jackson Rehutai Consulting
Professor Rose Richards University of Otago
Professor Richard Walter University of Otago

### Theme Leaders

Dr Sally Carson Outreach University of Otago Dr Chris Cornwall Understanding Platform Victoria University of Wellington Dr Kim Currie National Institute of Water and Atmospheric Monitoring Tumu Research (NIWA) Dr Peter Dillingham Training Tumu University of Otago Dr Gaya Gnanalingam Restoring Platorm University of Otago

Dr Gaya Gnanalingam
Restoring Platorm
University of Otago
Dr Karen Greig
Connecting Platform
University of Otago
University of Otago
Associate Professor Ocean Mercier
Understanding Platform
Victoria University of Wellington
Dr Chanel Phillips
Training Tumu
University of Otago

Dr Daniel Pritchard Monitoring Tumu University of Otago / TMK Research Ltd

Associate Professor Will Rayment Connecting Platform University of Otago
Professor Rose Richards Restoring Platform University of Otago
Dr Emma Ryan Understanding Platform The University of Auckland
Professor Richard Walter Connecting Platform University of Otago

Dr Naomi Simmonds Connecting Platform Community-based researcher

## Kairangahau / Researchers

## Kairangahau / Researchers

Anne-Marie Jackson (Co-Director) Rosalina (Rose) Richards (Co-Director)

Richard Walter (Co-Director)

Katerina Achilleos Clare Adams Alana Alexander

Amber Aranui Marc Bailie

Bridie Allan

Hoturoa Barclay-Kerr

Georgia Bell James Bell

Anna Bertram
Caitlin Blain
Steph Blair

Stevie-Rae Blair Clare Bradley Tane Bradley

Daniel Breen
Justine Camp
Sean Connell

Christopher (Chris) Cornwall Matthew (Matt) Desmond

Mark Dickson
Peter Dillingham
Hinemoa Elder
Brendan Flack
Murray Ford

Ceridwen (Crid) Fraser Roseanna Gamlen-Greene Jemma Geoghegan Gaya Gnanalingam Karen Greig

Marta Guerra Hauiti Hakopa Richard Hamilton Palatasa Havea

Jan Haviernik
Heather Hendrickson
Chris Hepburn
Rob Hewitt
Graham Hinchlife
Linn Hoffmann

Māia-te-oho Holmon Wharekoa

Samantha Jackson Moira Jackson Jennifer Jamieson Sheri Johnson

Brendan Hokowhitu

### Home Institution

Rehutai Consulting University of Otago University of Otago University of Otago Ministry for Primary Industries

University of Otago
University of Otago

Museum of New Zealand Te Papa Tongarewa

University of Otago Te Toki Voyaging Trust

Institute of Environmental and Scientific Research (ESR)

Victoria University of Wellington Te Toki Voyaging Trust The University of Auckland Community-based researcher Community-based researcher

AgriSea AgriSea

Auckland University of Technology

University of Otago University of Adelaide

Victoria University of Wellington

University of Otago
The University of Auckland
University of Otago
The University of Auckland
Community-based researcher
The University of Auckland
University of Otago

True North Research & Mapping Limited

The Nature Conservancy Massey University University of Canterbury University of Canterbury University of Otago LIVEIT Enterprise LTD

Auckland University of Technology

University of Otago University of Queensland

Ahumai Ltd

Southern District Health Board Moira Jackson & Associates Ltd Community-based researcher

University of Otago

## Kairangahau / Researchers

## Kairangahau / Researchers

Mawera Karetai

Te Whare Wananaga o Awanuiarangi

Home Institution

Nathan Kenny University of Otago
Rebecca Kiddle Te Wānanga o Aotearoa
Anna Kluibenschedl University of Otago
Michael Knapp University of Otago

Henry Lane National Institute of Water and Atmospheric Research (NIWA)

Cliff Law National Institute of Water and Atmospheric Research (NIWA)

Duong Le University of Otago
Gianna Leoni Te Reo Irirangi o Te Hiku o te Ika

Julian Lilkendey

Auckland University of Technology

Sarah Lockwood

Telai Manusua

Liniversity of Otago

Talai Mapusua University of Otago
Bridgette Masters-Awatere University of Waikato
Christina McGraw University of Otago
Ocean Mercier Victoria University of V

Ocean Mercier Victoria University of Wellington
Aubery Miller University of Otago
Ngahuia Mita University of Otago
Losa Moata'ane University of Otago

Mark Morrison National Institute of Water and Atmospheric Research (NIWA)

Judith Murdoch University of Otago

Wendy Nelson The University of Auckland / NIWA /Auckland Museum

Elizabeth (Eliz) Ngarimu Community-based researcher

Tina Ngata Manaaki Matakaoa
Ohad Peleg Victoria University of Wellington

Chanel Phillips University of Otago
John Pirker University of Canterbury

Margherita Poto Centre for the Law of the Sea (Norway)

Robert Poulin University of Otago
Daniel Pritchard TWK Research
Charles Radclyffe University of Otago

Lee Rauhina-August

National Institute of Water and Atmospheric Research (NIWA)

Terina Raureti
University of Otago
Will Rayment
University of Otago
Poia Rewi
Tangiwai Rewi
Waikato University
Christina Riesselman
University of Otago
Jenny Rock
University of Otago

Alice Rogers Victoria University of Wellington

Phillip Ross
University of Waikato
University of Otago
Jacinta Ruru
University of Otago
Peter (Pete) Russell
University of Otago
University of Otago
University of Otago
University of Otago
The University of Auckland
Armagan Sabetian
Auckland University of Technology

Armagan Sabetian

Oka Sanerivi

University of Otago

Katja Schweikert

University of Otago

Nigel Scott

Te Rūnanga o Ngāi Tahu

Nicholas Shears

The University of Auckland

Naomi Simmonds

Taku Tapuwae Ltd.

## Kairangahau / Researchers

## Kairangahau / Researchers

Pascal Sirguey Zane Smith

Robert Smith Wayne Stephenson Janet Stephenson Jane Taafaki

Kenneth (Ken) Taiapa Richard Taylor Tame Te Rangi Tim Thomas

Hone Tipuna Tibble Emily Tidey Monica Tromp Jordan Waiti

Jonathan (Jon) Waters Rachel Wesley Nicola Wheen Lindsey White Megan Wiilson

## Home Institution

University of Otago

Community-based researcher

University of Otago University of Otago University of Otago University of Otago Massey University

The University of Auckland Community-based researcher University of Otago

Community-based researcher

University of Otago

University of Otago
University of Waikato
University of Otago
University of Otago
University of Otago
University of Otago

Auckland University of Technology

University of Otago

## Tauira / Students

Key: Italised = CPSS Scholarship, Bold=Qualification completed 2024

Tauira / Students	Institute	Qualification level
Sebastian Alvarez Costes	University of Otago	PhD
Unai Arrieta Armendariz	Auckland University of Technology	PhD
Zoe Battershill	University of Otago	PhD
Jacinta Beckwith	University of Otago	PhD
Denisa Berbece	Victoria University of Wellington	PhD
Manon Broadribb	Victoria University of Wellington	PhD
Imogen Bunting	Victoria University of Wellington	PhD
Katherine Buschang	University of Otago	PhD
Namrata Chand	University of Otago	PhD
Alex Charlton	University of Otago	PhD
Mino Cleverley	University of Otago	PhD
Lucy Coyle	University of Otago	PhD
Caitlin Daley	University of Otago	PhD
Bridget Fellows	University of Otago	PhD
Katie Fenton	Victoria University of Wellington	PhD
Katherine Fenton	Victoria University of Wellington	PhD
Devon Gamble	University of Otago	PhD
Milly Grant-Mackie	The University of Auckland	PhD
Lily Hasshaw	The University of Auckland	PhD
Mary Hawkes	University of Otago	PhD
Michelle Hester	Auckland University of Technology	PhD
Graham Hinchliffe	Auckland University of Technology	PhD
Jordan Housiaux	Massey University	PhD
Julia Imo	The University of Auckland	PhD
Ashtyn Isaak	Victoria University of Wellington	PhD
Leina Isno	University of Otago	PhD
Jessica Kennedy	The University of Auckland	PhD
Holly Koch	Victoria University of Wellington	PhD
Dallas Lafont	The University of Auckland	PhD
Xiaoyue (Pluto) Liu	University of Otago	PhD
Talai Mapusua	University of Otago	PhD
Ashton Matthee	The University of Auckland	PhD
Edward Moody	University of Otago	PhD
Brenda Muga	University of Otago	PhD
Te Amohaere (Amo) Ngata-Aerengamate	Victoria University of Wellington	PhD
Arianna Nisa-Waller	University of Otago	PhD
Miriam Perotti	Victoria University of Wellington	PhD
Michaela Peters	University of Otago	PhD
Jessica Roach	Auckland University of Technology	PhD
Naif Rushdie	Auckland University of Technology	PhD
Sam Simmonds	The University of Auckland	PhD
Mere Takoko	Victoria University of Wellington	PhD
Peter Tremain	The University of Auckland	PhD
Brooke Tucker	University of Otago	PhD
Lisa van Halderen	University of Otago	PhD
Anne-Fleur van Leeuwen	The University of Auckland	PhD
Meriam Van Os	University of Otago	PhD
INICHALIT VALLEDS	orniversity of Otago	עוו ו

58 COASTAL PEOPLE : SOUTHERN SKIES 59

## Tauira / Students

PhD Rachel Wesley University of Otago Sophie White University of Otago PhD Ben Williams University of Otago PhD Quinta Wilson University of Otago PhD Gabriela Wood PhD Victoria University of Wellington Teagan Baker Auckland University of Technology Masters' Sabre Baker-Anderson University of Otago Masters' University of Otago Masters' Kate Bonne Auckland University of Technology Dominic Bravenboer Masters' Abbey Browne The University of Auckland Masters' University of Otago Isa de Vries Masters' Ella Dewar University of Otago Masters' Justine Gapuz University of Otago Masters' Helen Hoang Auckland University of Technology Masters' Ruby Hudson University of Otago Masters' Auckland University of Technology Georgia-Rae Jones Masters' Raedon Kane Auckland University of Technology Masters' Rosie Marchant University of Otago Masters' Talia Mather The University of Auckland Masters' William McCov University of Otago Masters' Lisa Miller University of Otago Masters' Hanna Ravn University of Otago Masters' University of Otago Breana Riordan Masters' The University of Auckland Jessie Scarrott Masters' University of Otago Bridgit Smerdon Masters' Jordan Sparrow University of Otago Masters' Auckland University of Technology Emily Steele Masters' Whitney Steidl University of Otago Masters' Aidan Stockley Auckland University of Technology Masters' Toiroa Whaanga-Davies University of Otago Masters' Marino Wichman University of Otago Masters' Yuhan Zhou University of Otago Masters' Victoria University of Wellington Other Joanne Annanth Yuna Barbanel University of Otago Other Victoria University of Wellington Laura Bomemann Other Aleisha Chalmers Other University of Otago **Emily Grigg** Victoria University of Wellington Other Ben Heaps University of Otago Other Alexandra Northmore Victoria University of Wellington Other Kaitlin Olsen University of Otago Other Monica Vallendar University of Otago Other Samantha van Iersel Auckland University of Technology Other Mia Warman University of Otago Other

## 2024 Financial Report

The finances for the 2024year (1 January 2024 to 31 December 2024) are reported below. All figures are GST exclusive.

		Actual '000s	Budget '000s			
CORE FUNDE	D INCOME					
	nment Funding					
Cover	CoRE funding	4,300	4,300			
	Surplus/deficit carried forward	4,396	4,500			
	Total CoRE funding	4,370				
CODE ELINIDIA						
CORE FUNDIN	CORE FUNDING EXPENDITURE					
Salarie	es					
	Salaries and salary-related costs (funded by the CoRE)	778	1,187			
	Total salaries and salary-related costs	778	1,187			
Other Costs						
	Indirect costs:					
	Overheads	789	1,168			
	Direct costs:					
	Project costs	596	998			
	Travel costs					
	Postgraduate students	206	288			
	Equipment depreciation/rental					
	Subcontractor(s)	1,316	1,064			
	Extraordinary expenditure					
	Total other costs	2,907	3,517			
TOTAL CORE EXPENDITURE						
	Total expenses:	3,685	4,705			
	Net surplus/(deficit)	5,011	(405)			
CO-FUNDING						
Other	government funding					
	Total other government funding					
Non-government funding						
	Total non-government funding					
TOTAL INCOM		8,695	4,300			

## Research Outputs aligned to CPSS kaupapa

Bennion, M., Brough, T., Leunissen, E., Morrison, M., Hillman, J.R., Rowden, A.A., Gordon, D.P., Kelly, M., Nelson, W., Tracey, D.M., Macpherson, D., Neill, K., Lohrer, A.M., Lundquist, C.J. Modelling spatial distributions of biogenic habitat-forming taxa to inform marine spatial planning. Aquatic Conservation: Marine and Freshwater Ecosystems 34 (2024)

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Miller, K.I., Balemi, C.A., Blain, C.O., Spyksma, A.J.P., Shears, N.T. Sea urchin roe quality within urchin barrens and improvement through kelp restoration. Ecosphere 15 e4911 (2024)

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Pajusalu, L., Albert, G., Fachon, E., Hepburn, C.D., Kotta, J., Kõivupuu, A., Paalme, T., Pritchard, D.W., Põllumäe, A., Torn, K., Martin, G. Species-specific responses of macrophyte production to the increasing CO2 environment with potential ecosystem implications involved in the Baltic Sea. Journal of Applied Phycology 36 983-994 (2024)

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## Acknowledgements

This annual report was prepared by Coastal People : Southern Skies whānau whānui.

The feature stories were written by Guy Frederick. It was overseen by Co-Director Professor Anne-Marie Jackson and Kaiurungi Programme Manager, Dr Amarni Thomas, and produced by Senior Administrator, Rowan Simmons and Kaiwhakahaere Tari Jaime Christian Crosby with graphic design by Shelley Darren. Printing by Otago UniPrint.

If you have any enquires or would like a copy of this report, please contact cpss@otago.ac.nz

ISSN ISSN 3021-1611 (Print) | ISSN ISSN 3021-162X (Online)

For hard copies of this report, please contact cpss@otago.ac.nz

cpss@otago.ac.nz | cpss.org.nz PO Box 56, University of Otago Ōtepoti 9054 Aotearoa New Zealand

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#### Contact information

Coastal People : Southern Skies

cpss@otago.ac.nz | cpss.org.nz | www.facebook.com/coastalpeoplesouthernskies PO Box 56, Ōtepoti 9054 | Aotearoa New Zealand