



Murihiku ki Te Tonga

Ross Sea Sector Research & Monitoring Programme

Programme overview

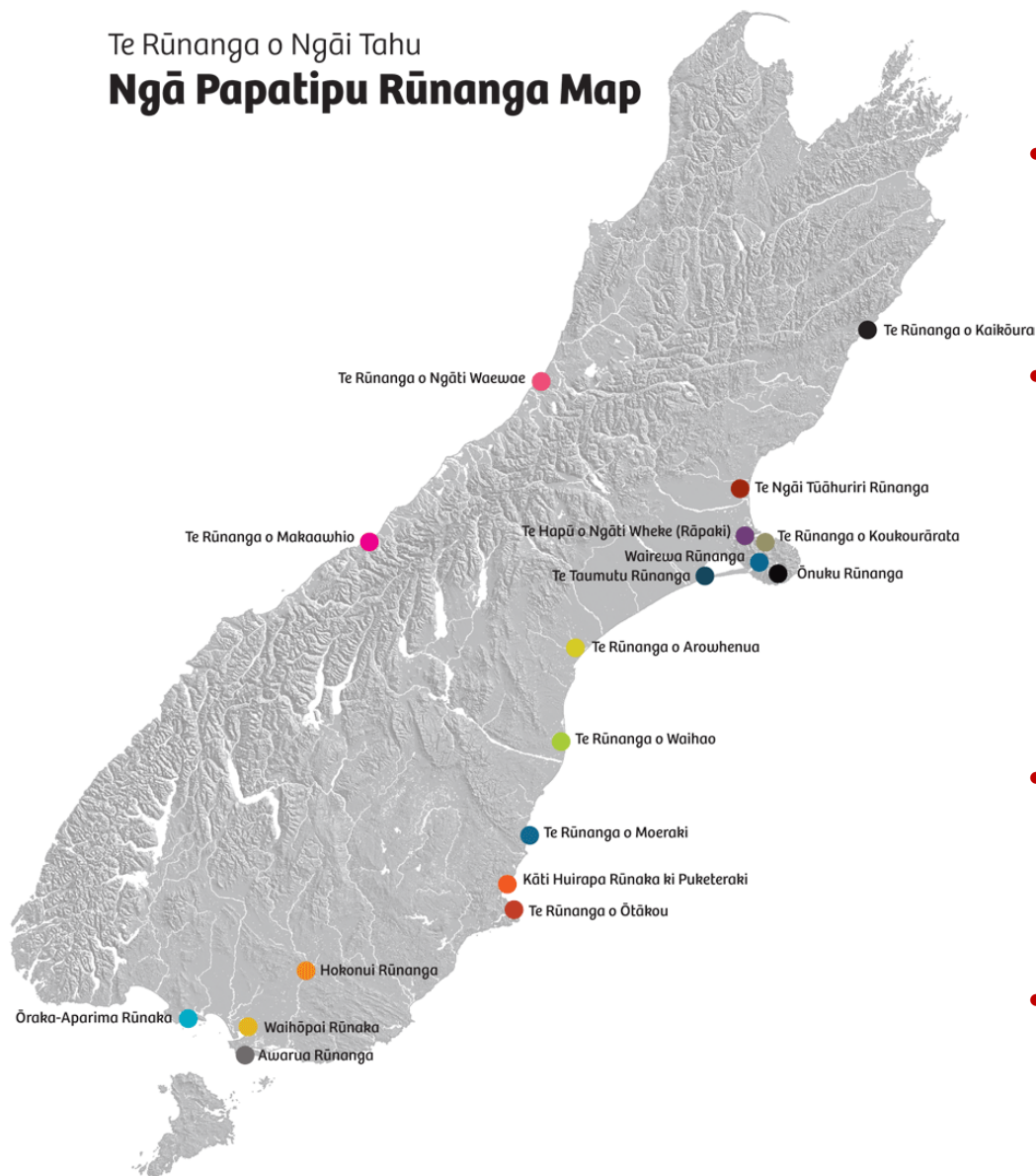
August 2023



Photo: C. Aitchison



Te Rūnanga o Ngāi Tahu
Ngā Papatipu Rūnanga Map



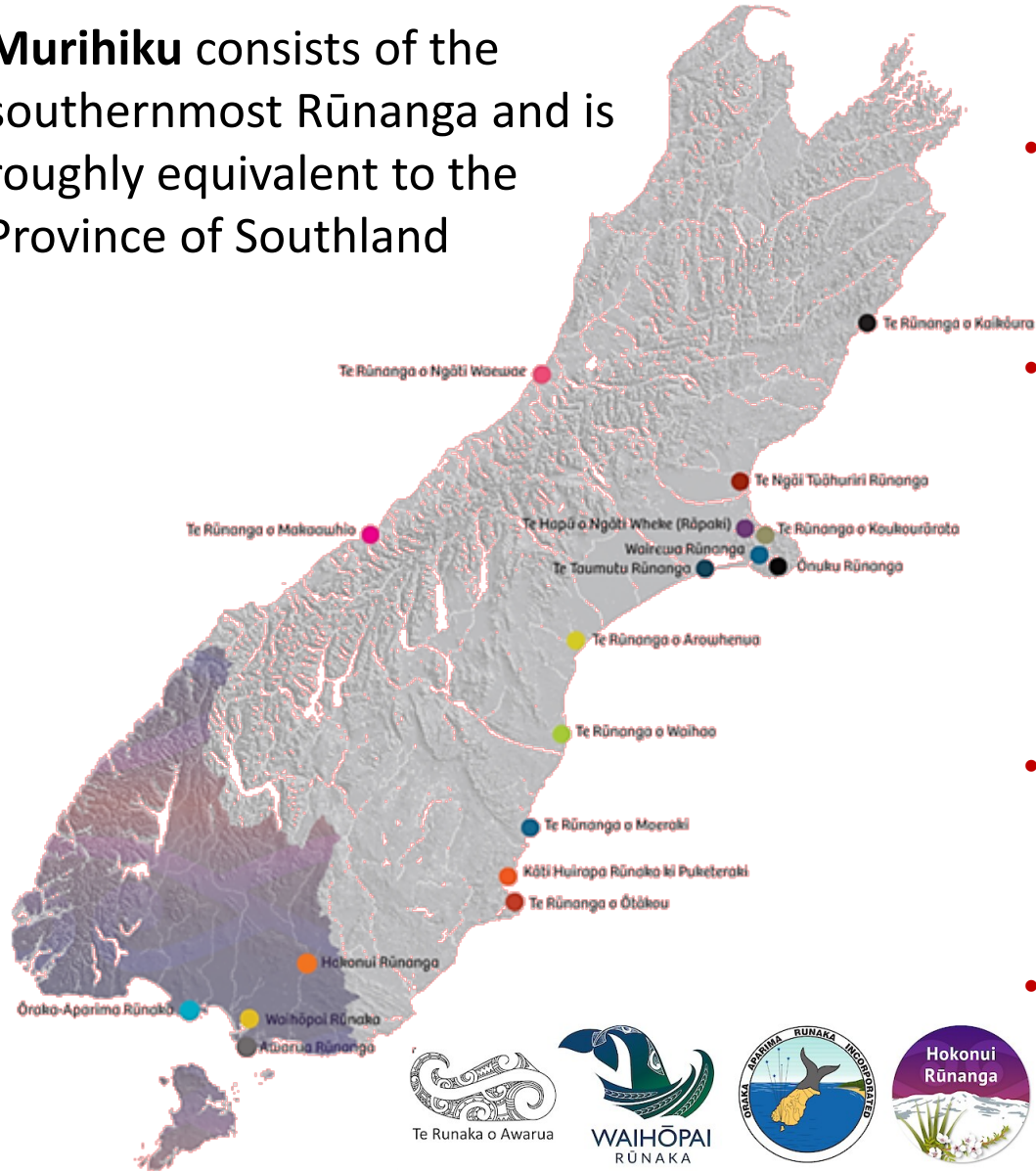
About Ngāi Tahu

- *Eighteen Papatipu Rūnanga in Te Waipounamou*
 - Different aspirations and priorities
 - Form views on regional policy
- *Te Rūnanga o Ngāi Tahu*
 - Supports Papatipu Runanga
 - Manages and protects collective interests
 - Forms views on issues that are takiwā-wide issues or issues that affect Treaty settlements
 - Governed by Papatipu Rūnanga representatives
- *Ngāi Tahu Holdings Corporation Ltd*
 - Operationally separate commercial arm
 - Creating wealth for Ngāi Tahu whānui
- *Murihiku Regeneration*
 - Collaboration of southern Papatipu Rūnanga as a regional development entity

Key principles (Te Rūnanga): *Upholding Rangatiratanga Fulfilling Tiriti Partnership Providing Manaakitanga*
 (Including seeking joint decision making at all levels)



Murihiku consists of the southernmost Rūnanga and is roughly equivalent to the Province of Southland



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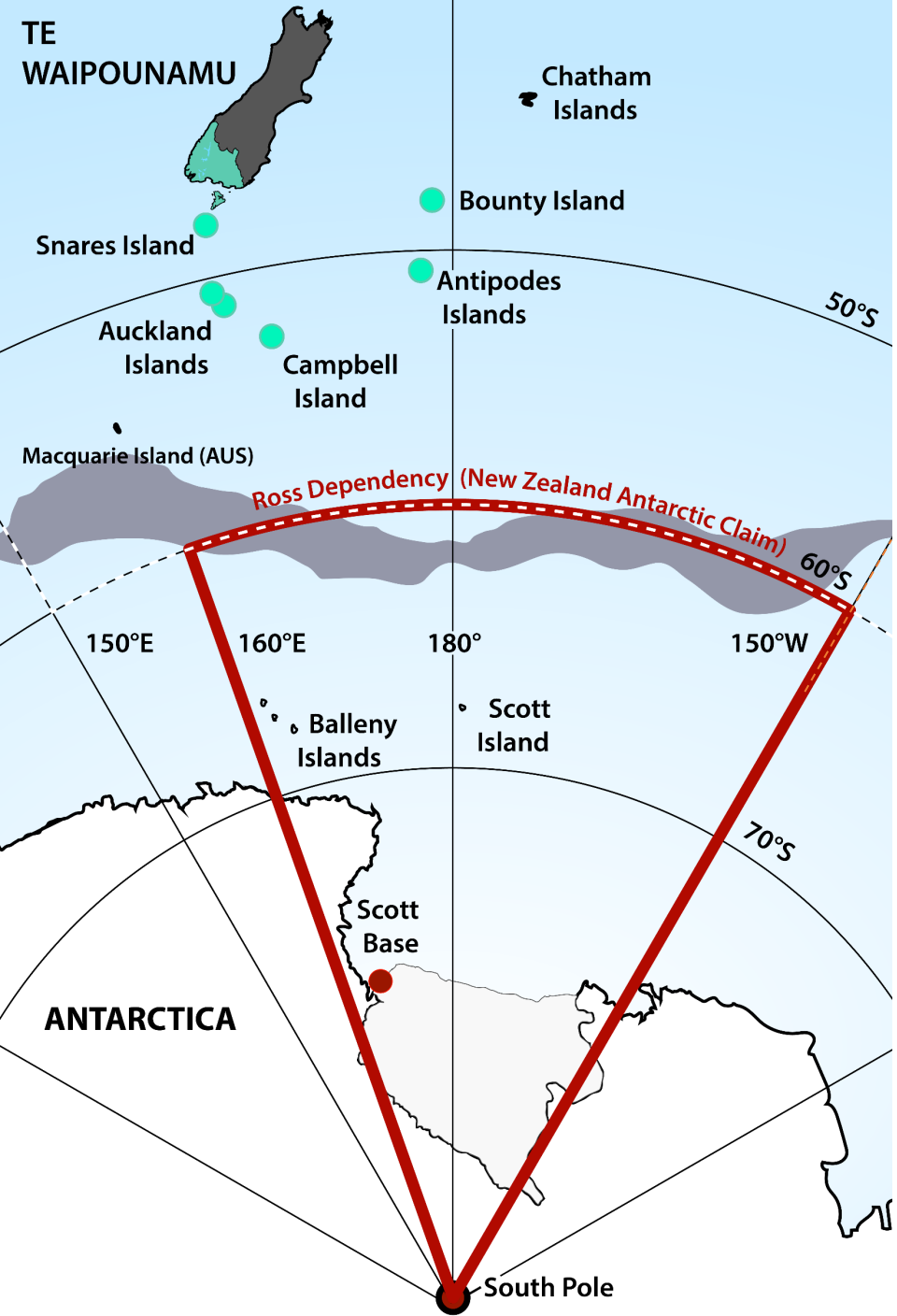
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Murihiku Regeneration

- A regional initiative established by *Hokonui Rūnanga*
- Represents the *whole* community
- For the regeneration of Murihiku-Southland to support *future generations*
- **Building enduring research capability in *Energy & Oceans***
- Supporting local *and* national interests
- Open to *partnering*— regionally, nationally, and internationally



The Ross Sea Sector

The Ngāi Tahu Takiwā includes

- Coastal waters off Murihiku-Southland, including Fiordland and Rakiura-Stewart Island
- three of the five New Zealand Subantarctic Islands:
 - *Tini Heke* - The Snares
 - *Maungahuka* – Auckland Islands
 - *Moutere Ihupuku* – Campbell Island

Murihiku and all of Te Waipounamou are linked to the Pacific & the Ross Sea region by ocean currents, climate, and the movements of taonga species

Living Links: Taonga Species

- Murihiku and the Subantarctic are ecologically linked to the northern Pacific and the Southern Ocean via migration of seabirds (*tītī, toroa*) and whales (*parāoa, paikea, kākahi, tohorā, upokohue*)
- Antarctic species visit seasonally (*popoiangore, ihu koropuku, kākahi*)
- Better understanding of these links is essential for appropriate management, as well as for the interpretation of climate signals transmitted via marine birds and mammals.
- E.g. *tītī harvest records appear to predict ENSO (Lyver et al. 1999)*

First Expedition to the Ross Sea Sector (Feb 2023)

- Awarua to Ross Island via the Subantarctic Islands and Victoria Land
- In partnership with Christchurch-based Heritage Expeditions
- Two drone pilots and four drones, plus ROV, multispectral cameras, hydrophones
- Trialled multispectral & multi-platform surveillance of whales (aerial, underwater)
- Foraging hotspots and behaviour and ID prey species
- Whale photo-ID and photogrammetry

The plan is for two trips to the Ross Sea annually for the next ten years, with additional voyages closer to home





Murihiku ki Te Tonga: Research Priorities

Spatiotemporal Mapping of Marine Resources in the Murihiku Takiwā (RAWA)

Effective conservation, sustainable use of marine resources, and planning for marine energy generation in Murihiku all require accurate and up-to-date spatiotemporal information that integrates care and protection of wāhi tapu (sacred sites), mahinga kai (food gathering sites), and taonga (iconic native) species.

Ecological Links between Te Waipounamou and Te Moana-tāpokopoko-a-Tāwhaki (LINKS)

- *Focus on birds and marine mammals that link the Pacific, New Zealand, and the Ross Sea region*
- *identification of critical foraging areas, prey resources, and migration corridors*
- *Relate this to oceanographic, atmospheric and climate processes (variability, cycles, shifts)*

Effective Methods for Monitoring Tohu Species in the Ross Sea Sector (TOHU)

- *Predators are key tohu in both kaitiakitanga systems and in ecosystem-based management (e.g., CCAMLR)*
- *Combine latest technology with mātauranga for effective monitoring of marine ecosystem status*
- *Builds on and expands the TPA Top Predator Antarctic programme for the Ross Sea region MPA*



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Tū tahi ki te Kei

Let's all stand together in the stern of
our waka

Murihiku Tītī a Kai, Tītī a Manawa

Murihiku, a land of resource,
a people steadfast

Tauarutia ka aho ratarata

Follow our Southern Lights

