

Dr Rangihurihia McDonald (Ngāti Maniapoto) completed her PhD in Māori and Indigenous Studies at Waikato University exploring the impacts of climate change on waka voyaging and how mātauranga whakatere waka can contribute to a climate change response.

As they travelled thousands of miles across the sea to get to Aotearoa, Māori are the original oceanographers of our country. Māori oceanographers have demonstrated how to adapt to a changing climate by migrating between the tropical and temperate regions of the Pacific Ocean.

Intimate mātauranga Māori of the ocean, the stars and the weather is kept alive in Aotearoa's traditional waka community of non-instrument navigators.

For her PhD, Rangihurihia conducted an extensive literature review and interviewed waka navigational experts, hearing their wisdom and views on climate change. The mātauranga of these experts is shared in her thesis. Ocean climate change is having an impact on waka voyaging, primarily increasing the risks associated with the practice. This can be seen as an increase in the

Table 1: Cyclone season — Avoid voyaging during this time

Specific description	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Source
March or April to September (Caroline Islands voyaging season)	Traditional cyclone season								Lewis (1994)
Cyclone season previously	Traditional cyclone season								Smith (2021)
Traditional storm period		Traditional cyclone season							Thatcher (2020)
Now [as a result of climate change]		Current cyclone season							Smith (2021)
Cyclone season		Current cyclone season							Barclay-Kerr (2023)
More recently [as a result of climate change]		Current cyclone season							Thatcher (2020)
Cyclone seasons are changing	Undisclosed time period								Kawe (2020)
Cyclone season		Current cyclone season							NZ MetService (2022)



Note: "Traditional" cyclone season in light blue. Current cyclone season in dark blue.



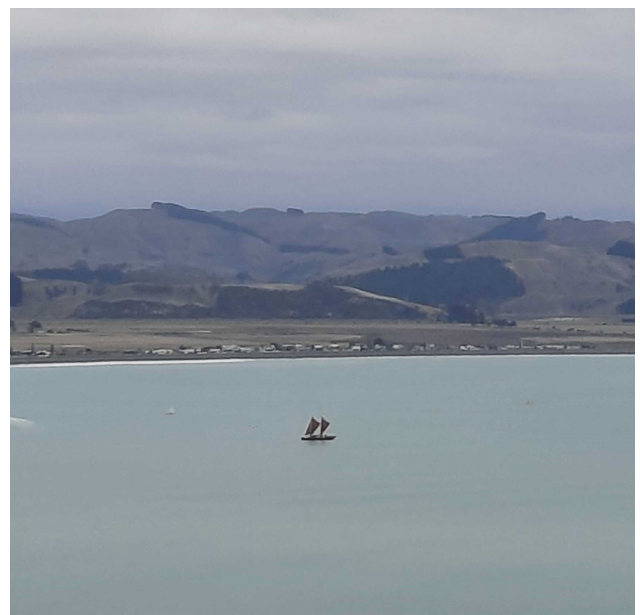
volatility of storms and changes to the cyclone seasons, in combination with increased scarcity in navigational indicator species while travelling.

Her broader findings centre around the pūrākau of Te Orokohanga, the creation narrative, which depicts our whanaungatanga (relationships) to the natural world. By viewing our environment as a relative rather than a resource, we have a better mindset for looking after it, exerting kaitiakitanga or guardianship.

In addition, her work demonstrates that connection to the ocean leads to protection, aligning with international literature on the subject, an important lesson for a coming climate change response. Adopting either a waka navigator or similar kaitiaki taiao approach to everyday life, demonstrates how to exercise this mentality.



The rudder from the waka hourua Mata a Māui carves through the water. Image: the Moana Project.



The waka hourua Mata a Māui sailing through Aotaroa's coastal waters.

