

COMMENTARY

NAVIGATING THE CONTOURS OF CHANGE

What we can learn from mātauranga Māori

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Abstract

Mātauranga Māori and mātauranga whakaterere waka are fundamental to revitalising Indigenous communities, strengthening planning for climate change and resilience to climate change impacts. Despite concerns about the risks of climate change to contemporary voyaging, navigators are motivated by their responsibility to maintain and pass on their knowledge of voyaging practices, to raise environmental awareness and to advocate for the environment. Adaptation to climate change is already taking place, and navigators discuss their practice as a way of life. Climate change impacts who they are, and they act on their intrinsic motivation and responsibility to kaitiakitanga to maintain voyaging traditions. Voyaging is a core element of their identity, and through this deep connectedness with the environment they act in pro-environmental ways.

Keywords

non-instrument navigation, Aotearoa, climate change, mātauranga, kaitiakitanga

Introduction

Prehistoric voyaging in the Pacific was highly sensitive to changes in weather and climate (McDonald, 2022). Major climatic events,

including mega-droughts and El Niño events, contributed to the departure of Polynesian ancestors from Eastern Polynesia to Aotearoa New Zealand. Migrations aligned with the

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“Little Climatic Optimum” (850–1300 AD), which was characterised by peaks of global warmth, persistent trade winds, clear skies, limited storminess and other favourable conditions for voyaging (Bridgman, 1983). Once Polynesian settlement had taken place in Aotearoa, geographical, environmental and climatic change, alongside the social and cultural changes forced by colonisation, contributed to an erosion of the voyaging cultures throughout the Pacific.

Drawing on mātauranga to respond to human-induced climate change

Waka voyaging and its related knowledge—mātauranga whakaterere waka—forms a part of the wider body of mātauranga Māori (including traditional environmental, ecological, navigational, meteorological, astronomical, marine and other forms of knowledge). Mātauranga Māori and mātauranga whakaterere waka are fundamental to Māori culture, identity and livelihoods. Revitalising and continuing this mātauranga brings Indigenous communities together to strengthen their own self-determined planning for climate change, self-reliance and resilience to climate change impacts (Intergovernmental Panel on Climate Change, 2022; Whyte, 2017).

The project described here was the first to consider the impact of modern human-induced climate change on Pacific voyaging through the perspectives of contemporary Māori navigators trained in traditional non-instrument navigation.

Seven navigators identified the key impacts of anthropogenic climate change, particularly the increased frequency and intensity of storms due to ocean warming. Cyclones are also more frequent outside of the traditional cyclone season, reducing the window of opportunity for safely voyaging (see Figure 1).

Additional climate change impacts discussed by the navigators included a decline of ocean species which are critical to navigation. Navigators recognised that this was not due solely to climate change but to a range of human activities. Birds and marine mammals, in particular, are key navigational tohu, and fish are used as a source of food; however, declines in populations are already being experienced by the voyaging community. Navigators did not think that celestial observation, which is at the centre of non-instrument navigation, would be affected by human-induced climate change, except to say that light pollution in some areas of Aotearoa negatively affects the teaching and learning of navigation on land.

Key findings

Mātauranga helps to maintain vital human relationships with the ocean and environment. The navigators suggest a global shift in thinking, grounded in two key concepts: (1) Relatives vs Resources, based on whanaungatanga; and (2) Connection = Protection, based on kaitiakitanga. These concepts address the underlying mindset and behaviour continuing to drive climate and environmental degradation (see Figure 2).

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

FIGURE 1 Changes in the cyclone season due to climate change (light blue = traditional; dark blue = recent)



FIGURE 2 Key concepts derived from the findings, demonstrating how mātauranga can contribute to a climate change response

Relatives vs Resources

Relatives vs Resources is based on whanaungatanga with everything in the natural world, both living and non-living, and both human and more-than-human. Māori creation narratives outline the Māori worldview and the whakapapa of humankind within the rest of the natural order and our responsibilities to our more-than-human relatives. These responsibilities are evident in the conduct of the navigator as a steward of food, water, people and the canoe, both on and off the water. The responsibility of the navigator as a medium between the natural and meta-physical realms and their ability to communicate with more-than-human relatives also speaks to the belief of human relatedness to everything in creation and responsibilities to protect them. Relatives vs Resources is the underlying theory and belief that drives behaviour, which leads to the second key concept, Connection = Protection.

Connection = Protection

Connection = Protection operates on the assumption that the greater one's sense of connection to the environment, the more likely one is to act in pro-environmental ways. This theory is underpinned by the Māori understanding of kaitiakitanga—that is, reciprocal responsibilities of guardianship with the rest of the natural world. Our conservation traditions are underpinned by kaitiakitanga and our responsibility to ensure the protection and conservation of natural materials for the future. In the case of the navigators, the waka has literally been a vehicle that has facilitated a deep connection, understanding and appreciation of the environment. The recognition of

whakapapa with the environment, alongside the navigators' voyaging knowledge and experiences, have motivated personal acts of kaitiakitanga. These included writing submissions, beach clean-ups, being educated in environmental matters, household recycling, working alongside councils around wastewater, thinking critically about how their actions affect the ocean and leading by example. The underlying beliefs navigators have about the environment dictated not only the way they acted on the waka but also the actions they took to protect the environment in their everyday lives.

Changing climate, changing practices

While concern has been expressed about the risks of climate change to voyaging in the future, navigators demonstrated a commitment to ensuring voyaging traditions are never lost again. Motivated by their responsibility to maintain and pass on the knowledge, they work tirelessly to maintain voyaging practices, educate others, raise environmental awareness and advocate for the environment, among other actions. In this sense, adaptation to climate change is already taking place.

For example, during the national lockdowns in response to the COVID-19 pandemic, the voyaging community adjusted their approach by maintaining wānanga through online platforms, and voyaging connections through celestial observation, published materials, teaching tamariki, and other activities on the ocean, such as stand-up paddle boarding and waka ama, until voyaging was possible again.

The voyaging community is already adjusting their sailing in response to human-induced climate

change. For example, they are adjusting their voyaging times to the shifting cyclone season, and some are sailing locally rather than long distance. The navigators discussed their practice as a way of life; climate change, therefore, impacts who they are. In this sense, they do not need policy or national plans to drive them when their work is so personal to them. Instead, they act on their intrinsic motivation and responsibility to kaitiakitanga and maintaining voyaging traditions as a core element of their identity. Through this deep connectedness with the environment, they act in pro-environmental ways, and this is something we can all learn from.

Glossary

kaitiakitanga	reciprocal responsibilities of guardianship
mātauranga Māori	Māori knowledge
mātauranga	knowledge related to waka
whakatere waka	voyaging
tamariki	children
tohu	indicators
waka	ocean-going canoe
waka ama	outrigger canoe racing
wānanga	meetings
whakapapa	genealogy
whanaungatanga	relationality

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