

SHORT COMMUNICATION



A short scan of Māori journeys to Antarctica

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ABSTRACT

The narratives of under-represented groups and their connection to Antarctica remain poorly documented and acknowledged in the research literature. This paper begins to fill this gap. Our exploration of Māori connections to Antarctica details first voyagers through to involvement in recent science projects, as well as representations of mātauranga in carving and weaving. This exploration begins to construct a richer and more inclusive picture of Antarctica's relationship with humanity. By detailing these historical and contemporary connections, we build a platform on which much wider conversations about New Zealand relationships with Antarctica can be furthered. More than this, however, we create space for other under-represented groups and peoples to articulate their narratives of connection to the southern land- and sea-scapes. In so doing, we provide significant first steps for uncovering the rich and varied ways in which Antarctica features in the lives and futures of indigenous and other under-represented communities.

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Introduction

Over the last 200 years, Antarctic narratives have contributed to conceptions of Imperial adventure, carried out by predominantly European male explorers. Increasingly, however, researchers and communities are re-examining the underlying paradigms that shape this thinking, including issues of racism and colonialism, and asking what an inclusive Antarctic future might look like (Van der Watt and Swart 2015; Dodds and Collis 2017; Wehi, van Uitregt, et al. 2021). To do this, one necessary first step is to collate and explore some of the contributions and perspectives of under-represented groups that are invisible or undervalued in current narratives. In this short piece, we scan the grey literature and integrate this with oral histories known to us through extended whānau sources to provide a compiled record of Māori presence in, and perspectives of, Antarctic narratives and exploration. We outline some of these human threads that connect Māori, the Indigenous people of New Zealand, to Antarctica, past and present. This brief overview of Māori connection to the Antarctic continent and the seascape that surrounds it begins with the explorer Hui Te Rangiora

and identifies gaps where further work can enrich our understanding of human connection to Antarctica.

Both humans and marine mammals have traversed the vast Pacific seascapes, from the Pacific Islands to Antarctica. Migratory cetaceans are embedded in Polynesian stories as well as other forms of oral tradition (Orbell 1985; Cawthorn 2000; Wehi et al. 2013; Rodgers 2017; Lythberg and Ngata 2019) as an explicit and charismatic representation of the interconnectedness of the peoples and islands of the Pacific. These rich stories of movement through vast seascapes act to guide and inspire Polynesian sea exploration. In the Waikato region of New Zealand, Paneiraira, generally accepted to be a whale, is renowned as the guide for the double-hulled voyaging vessel (waka) Tainui; similar stories link Humuhumu to the waka Māhuhu (Graham 1946). The ancestor, and humpback whale, known as Paieka features in other human-cetacean stories (Anon. 1962; Rodgers 2017; Lythberg and Ngata 2019). Ranging across the world's oceans during their natural life spans and passing information from one generation to the next (Owen et al. 2019), these cetaceans and their migrations connect the tropical and temperate ocean to Antarctica, a continent as far south as both cetaceans and humans can travel.

Early southern exploration

Polynesian narratives of voyaging between the islands include voyaging into Antarctic waters by Hui Te Rangiora (also known as Ūi Te Rangiora) and his crew on the vessel Te Ivi o Atea, likely in the early seventh century (Tara'Are 2000; but see Hiroa 1964, p. 118). These navigational accomplishments are widely acknowledged; Best (1923) described Māori navigators traversing the Pacific much as Western explorers might a lake. In some narratives, Hui Te Rangiora and his crew continued south. A long way south. In so doing, they were likely the first humans to set eyes on Antarctic waters and perhaps the continent. Supporting evidence lies in the name *Te tai-uka-a-pia* (Smith 1899; Tara'Are 2000; McFarlane 2008) which denotes the frozen ocean; *a-pia* means – *a*, as, like, after the manner of; *pia*, the arrowroot, which when scraped looks like snow (Smith 1899, p. 11; Tara'Are 2000). Smith suggests that these accounts refer to sub-Antarctic flora, fauna and physical geography:

... the rocks that grow out of the sea, in the space beyond Rapa; the monstrous seas; the female that dwells in those mountainous waves, whose tresses wave about in the water and on the surface of the sea; and the frozen sea of pia, with the deceitful animal of the sea who dives to great depths – a foggy, misty, and dark place not seen by the sun. Other things are like rocks, whose summits pierce the skies, they are completely bare and without vegetation on them. (Smith 1899, p. 10)

Here he suggests that Southern Ocean bull-kelp – the ‘tresses that float on the monstrous waves’ – marine mammals, and icebergs respectively are visualised, all of which would have been new to Polynesian explorers.

Other Māori repositories of knowledge, including carvings, depict both voyagers and navigational and astronomical knowledge. These carvings act as repositories of knowledge in an oral culture (Harris et al. 2013; Wehi, Hetaraka, et al. 2021). Hui Te Rangiora's voyage and return are part of the history of the Ngāti Rārua people, and these stories

appear in a number of carvings (Hongi 1925). As well, a pou whakairo, or carved post, representing Tamarereti as protector of the southern oceans stands on the southernmost tip of the South Island of New Zealand at Bluff. Ngāi Tahu, the largest tribal group in the South Island, and other tribal groups or iwi also cherish other oral repositories of knowledge in relation to these early explorers and voyagers (see Wehi, van Uitregt, et al. 2021). Collaborative work led by researchers Sandy Morrison and Aimee Kaio will add depth and richness to these knowledge repositories (see, for example, <https://maoriantarctica.org/voyaging-south/>). Further evidence of Māori exploration is likely to enter the public domain in future as tribal researchers partner iwi to share these narratives, and Māori leadership in Antarctic research grows more visible, including that of the kāhui Māori in the Antarctic Science Platform.

Māori in the European ages of Antarctic exploration

Māori narratives of connection to Antarctica are not limited to these early voyages. Rather, Māori participation in Antarctic voyaging and expedition has continued to the present day but is rarely acknowledged or highlighted. For Māori on these voyages, seafaring skills were the critical currency. Te Atu (also recorded as Tuati, Tu Atu, Tuati and John Sac (McFarlane 2008; Mauriohooho 2012; Mita 2017)) the son of whaler and sealer Captain William Stewart and his Ngāpuhi wife (name unknown to the authors), is often described as the first Māori, as well as the first New Zealander, to view the coast of Antarctica in 1840 (NZ History 2014). Te Atu travelled on the *Vincennes*, a ship that mapped many miles of Antarctic coastline, as part of the United States Exploring Expedition, led by Lieutenant Charles Wilkes. After this event, Māori involvement in Antarctic voyaging appears to have been dormant until 1894, despite a number of international voyages staged from Germany, Russia and elsewhere (NZ History 2014), perhaps because the embarkation points were not in the vicinity of Māori seafaring expertise.

Māori were part of Antarctic expeditions in the ‘heroic era’ of exploration in the late 19th and early 20th centuries. Initiated as part of a growing European impetus to discover, explore, and name unexplored parts of the world, these expeditions were fuelled by nationalism, economic opportunism and political and scientific interests (Hemmings 2009; Dodds and Hemmings 2013; Hemmings et al. 2015). In 1894, the Norwegian whaling vessel ‘*Antarctic*’ stopped at Rakiura on its way south, adding four Stewart Islanders to the crew, including William Joss of Ngāi Tahu. One of these voyagers recorded the journey to the ice, noting on 29 November that ‘The new hands appear to be an acquisition, especially Mr. Joss, an old, experienced whaler, accustomed to harpooning, lancing and most important of all, very cheery’ (Bull 1896; Norris 1993). *Antarctic* crew members were first confirmed as stepping on Antarctic shores, at Cape Adare in January 1895. Seafaring expertise was also central to the experience of Māori whaler Buddy Willa in a Norwegian whaling expedition in the Ross Sea in the 1920s (Mauriohooho 2012).

Later Māori visitors to Antarctica demonstrated medical, construction and scientific expertise that contributed to the aims of later European expansion (Wood 2005), despite a backdrop of discrimination and racism (Mauriohooho 2012). In 1934–1935, Louis Hauiti Potaka (Ngāti Hauiti) from Utiku, near Whanganui, was ship’s doctor on

the BAE II expedition to Marie Byrd Land led by Rear Admiral Richard E. Byrd, after the original ship's doctor was unable to winter over in Antarctica because of health problems (Norris 1993). Telegrams referring to his appointment indicate the barriers faced by Māori of the time, recording that Byrd had 'no objections to his being one third Maori' after being asked whether Potaka's Māori ancestry would disqualify him from the position (Young 2005, p. 43). Potaka boarded the Royal Research Society's *Discovery II* in February 1934, which called into Port Chalmers to pick him up. The vessel made a rendezvous with the rest of the team on the *Bear of Oakland* in the Ross Sea before their four-day journey through pack ice to 'Little America', a series of exploration bases on the Ross Ice shelf south of the Bay of Whales. While in Antarctica Potaka performed an emergency appendectomy, extracted teeth, conducted health checks, and dealt with a broken arm and frostbite (Stone 2015). He returned to Dunedin via Byrd's supply ship Jacob Ruppert in February 1935. Potaka was the fifth Māori medical graduate to work in New Zealand, graduating in 1930.

As the New Zealand Antarctic Programme expanded from the 1950s, Māori worked in Antarctica in a variety of roles. Clerk of Works and foreman Ray Heke was part of the 1955–1958 Commonwealth Trans-Antarctic Expedition led by Sir Edmund Hillary, and guided construction of Scott Base while Hillary and his team journeyed to the South Pole. Heke received the New Zealand Antarctic Medal in 2018 in recognition of his work. Able Seaman Ray Tito (Te Tou) was part of the same Expedition, and in 1956 raised the flag at the official opening of Scott Base (Dodds and Yusoff 2005; McFarlane 2008). Diesel engineer and fitter mechanic Robert Sopp, from Kaingaroa Forest, Wairoa, was one of 12 men to overwinter in 1966–1967 as part of the tenth New Zealand Antarctic Research Expedition, and as part of the US Operation Deep Freeze. He took charge of the diesel generating plant that supplied power for the base (Mita 2017).

Overall, however, Māori men were likely a tiny proportion of those visiting Antarctica in the New Zealand Antarctic programme through much of the twentieth century, although quantitative data are lacking. Nonetheless, the contributions of Māori men have been recognised both in Antarctic place names, and the award of the New Zealand Antarctic medal. The US Advisory Committee on Antarctic Names named an inlet after Louis Hauiti on the north side of Thurston Island, and in 1993, the New Zealand Geographic Board named Tuati Peak, standing at 2595 m in Victoria Land, after Te Atu. Māori women, however, were not part of this phase of Antarctic exploration, with women unable to participate in the New Zealand Antarctic programme until more recently. Pamela Young was likely the first New Zealand woman to work in Antarctic science, acting as field assistant to her biologist husband at Cape Byrd in the austral summer of 1969–1970 (<https://nzhistory.govt.nz/media/photo/women-antarctica>), but records of women's participation are somewhat patchy.

Beyond these facts, there is much to discover. Māori have participated in commercial fishing in the southern oceans, including the Ross Sea, for many years. In addition, Māori have contributed to New Zealand's Antarctic Programme as part of the New Zealand Defence Force, and in service roles at Scott Base. The detail of Māori experiences in Antarctic and its waters remain largely unexplored and under-researched but have been critical to New Zealand's economic and scientific Antarctic aspirations in these activities.

Māori in Antarctic science programmes

The shift to scientific research as a dominant activity in the late 20th and early twenty-first century has expanded Māori experience of Antarctica. Scientists of Māori descent have had opportunities to contribute to a range of Antarctic science expeditions (Table 1), in the disciplines of physics (Mercier, Mita, Russell), biology (Beggs, Gibb, Lamare, Lyver, Timoti and Sutherland), and earth sciences (Hikuroa). Most were early in their research careers at the time of these expeditions, acting as research assistants for established scientists such as Paul Callaghan and Peter Wilson, before building on these and other experiences to reach prominence themselves. Some have contributed to substantial scientific advances, including Dan Hikuroa (Ngāti Maniapoto) who completed his PhD on the fossil record of the Antarctic Peninsula (see for example Eagle and Hikuroa 2003; Hikuroa and Kaim 2007; Arratia and Hikuroa 2010).

Two – Miles Lamare (Ngāti Rāhiri Tumutumu) and Phil Lyver (Ngāti Toarangatira) – have led Antarctic science programmes for a number of years from the 1990s and early 2000s, providing long-term mentoring and visibility for Māori in science. After his first Antarctic expedition in 1992, marine scientist Miles Lamare completed a PhD in 1997 at the University of Otago on sea urchin settlement and recruitment. Since then, he has created an extensive body of work on the reproductive biology and physiology of marine invertebrates, with a particular focus on the effects of climate and environmental change on developmental stages; this work has, for example, examined responses to ocean acidification and UV in Antarctic waters (Lamare et al. 2006; Karelitz et al. 2017; Houlihan et al. 2020). More recently, his leadership has been recognised in the

Table 1. Māori who have participated in New Zealand Antarctic science programmes in Antarctica.

Science personnel	Tribal affiliations	Antarctic experience	Field of study	Antarctic research contribution
Prof Miles Lamare	Ngāti Rāhiri Tumutumu	1993–	Marine invertebrate ecology and physiology	Effects of climate change (e.g. ocean acidification) on marine invertebrates including larval stages
Dr Gillian Gibb	Ngāti Mutunga	2001–2002	Molecular biology	Adélie penguin lineages and evolutionary rates ^a
Prof Jacqueline Beggs	Ngāti Awa	2001	Ecology	Adélie penguin population biology
Dr Daniel Hikuroa	Ngāti Maniapoto	2001–2002	Earth systems; and mātauranga	geological mapping with the British Antarctic Survey, Antarctic Peninsula ^b
Dr Ocean Mercier	Ngāti Porou	2002–2003	Condensed matter physics; and mātauranga	Sea ice diffusion ^c
Dr Phil Lyver	Ngāti Toarangatira ki Wairau	2004–	Population ecology and mātauranga	Adélie penguin population ecology and foraging
Puke Timoti	Ngāi Tūhoe	2014–2015	Ecology and mātauranga	Adélie penguin population ecology
Isaac Sutherland	Ngāti Kuri, Te Tai Tokerau	2009–2010	Ecology	Adélie penguin population ecology
Ngahuaia Mita	Te Tai Rāwhiti	2016–2017	mātauranga and voyaging	Ice sheet response to climate change

Note: Titles reflect current status as scientists.

^aGibb (2003); Ritchie et al. (2004); Millar et al. (2008).

^bHikuroa (2004).

^cMercier et al. (2005).

Table 2. Undergraduate and postgraduate Antarctic focused research projects of notable relevance to Māori aspirations and interests.

Author	Tribal affiliations	Year of publication	University	Research project or thesis
Tasman Gillies	Ngāi Tahu	2018	University of Canterbury	A guide to a CCAMLR – Ngāi Tahu partnership.
Penny Mauriohoooho	Tainui	2012	University of Canterbury	The relationship of the Māori with Antarctica – a critical review.
Turi McFarlane	Ngāi Tahu	2008	University of Canterbury	Māori associations with the Antarctic. Tiro o te moana ki te Tonga.
Ngahuaia Mita	Te Tai Rāwhiti	2017	University of Otago	Mātauranga Taiao. Finding the Way to Antarctica.
Rata Pryor Rodgers	Ngāi Tahu	2017	University of Canterbury	The Connection of Māori to Whales.
Nigel Scott	Ngāi Tahu	2010	University of Canterbury	Does the commercial fishing of Antarctic toothfish have a future?
Joe Snodgrass	Ngāi Tahu	2019	University of Canterbury	Basal melting and freezing of the Ross Sea iceshelf.
Toni Wi	Ngāti Maniapoto	2017	University of Canterbury	The ecosystem approach to fisheries management in CCAMLR.

Antarctic Science Platform (see <https://www.antarcticscienceplatform.org.nz/about/people/miles-lamare-phd>). Ecologist Phil Lyver built on long-term work initiated by researchers at Manaaki Whenua Landcare Research (which succeeded the now-defunct Department of Scientific and Industrial Research), following a PhD on tīti population ecology at the University of Otago. His Antarctic work focused on Adélie penguin foraging, population ecology, and their status as ecosystem indicators (see, for example, Dugger et al. 2010; Dugger et al. 2014; Pilcher et al. 2020). Phil Lyver has also contributed to the CCAMLR working group on ecosystem monitoring and management and other initiatives.

Māori scientists continue to build on this tradition of participation in Antarctic research, with Pete Russell (Ngāpuhi) scheduled to explore sea ice physics in the 2021/22 season. As well, participation in Antarctic studies programmes, such as that at the University of Canterbury, has resulted in a number of Māori student graduates (Table 2). Even so, Māori capability building in Antarctic science does not appear widespread. Indeed, although Rosemary Askin was the first New Zealand woman to conduct her own research programme in Victoria Land in 1970, Māori women have not yet (to our knowledge) led science programmes in Antarctica (Table 1).

One critical issue yet to be addressed is how Antarctic science might engage with Māori research frameworks that centre mātauranga, or Māori knowledge systems (but see Wehi, van Uitregt, et al. 2021). Such frameworks have not been explicitly acknowledged as part of New Zealand's science and policy effort to date, although the relationship of mātauranga and ecology undertaken from a conventional science perspective is now part of a wide-ranging discussion around decolonisation in New Zealand ecology (Wehi et al. 2019).

Mātauranga and Antarctica

Māori cultural symbols that celebrate exploration stand in Antarctica. In the late 1960s, Robert Sopp carved a tekoteko or figurehead, presented to the Chief Petty Officers' mess



Figure 1. A, Te Kaiwhakaterere o te Raki, also known as the Navigator of the Heavens, looks skyward with Scott Base shown behind. **B,** The view of Te Kaiwhakaterere o te Raki looking outward across the Ross Ice Shelf.

at McMurdo Station by Scott Base, inscribed with the words ‘Rurea Taitea, kia Toitū, ko Taikaka’, meaning to strip away the sapwood and expose the heartwood. The tekoteko thus exhorts us to choose dependable and steadfast friends. It also highlights a journey of cultural restoration and understanding which reflects the working culture of Antarctica (Mita 2017). More than 40 years later, a carved post, or pouwhenua Te Kaiwhakaterere o te Raki (the Navigator of the Heavens) was erected at Scott Base in 2013 (Figure 1A,B). The 2 m tall pouwhenua was carved by Ngāi Tahu expert carver Fayne Robinson and Ngāi Tahu trainee carvers (Te Pānui Rūnaka 2013). Described by leader Sir Mark Solomon, as a tohu or symbol for all Māori, it acknowledges Māori voyaging histories and connection to Antarctica as well as others who travel to Antarctica (Te Pānui Rūnaka 2013):

The pouwhenua personifies exploration, adventure and discovery, which are defining characteristics of all people, past and present, who journey to Antarctica. The head of the Te Kaiwhakaterere o Te Raki looks straight up to the sky as a symbol of celestial navigation. It is decorated with stars, waves, water and animals depicting nature and representing the importance of the environment. (Te Pānui Rūnaka 2013)

Other traditional art forms at Scott Base are used to express important collective experiences in New Zealand history. Expert weaver Ranui Ngarimu led the construction of woven tukutuku panels, mounted on the Leaders Wall and the Memorial Wall inside the Base. The panels incorporate stories in time-honoured designs: the first panel, He Maumahara, shows many crosses or stars shining in the night sky, acknowledging those who have had a link to Scott Base and since died, including the 257 passengers and crew killed in the 1979 Mt Erebus plane crash (Figure 2A). The second panel, He Manukura, acknowledges both navigation and exploration, and the ongoing journey of learning and Antarctic research (Figure 2B). A team of Ngāti Waewae weavers wove much of the tukutuku (Te Pānui Rūnaka 2013), assisted by Scott Base staff (Mussen 2013).

More recently, in February 2019, whakairo or carvings to commemorate the Ross Sea Marine Protected Area (MPA) were unveiled. These carvings frame one of the main doorways into Scott Base (Wehi, Hetaraka, et al. 2021). The project was initially conceived within the Vision Mātauranga strand of the Ross Sea Research and Monitoring

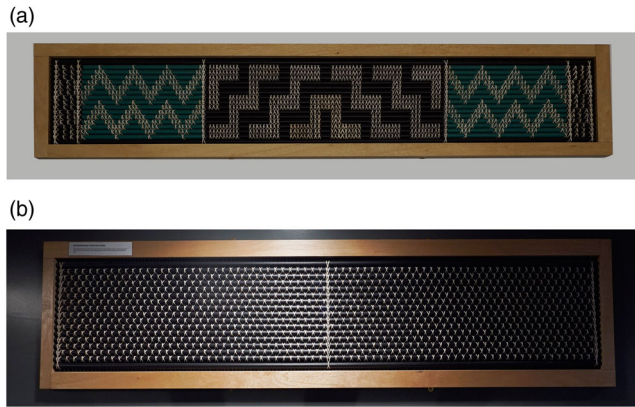


Figure 2. Woven tukutuku panels inside Scott Base **A**, He Maumahara. The pattern in this panel is purapurawhetū, representing the many stars in the night sky, and acknowledging those who have a link to Scott Base and have died. **B**, He Manukura incorporates three tukutuku patterns: aramoana, to represent the pathways voyaging across the ocean; roimata toroa, representing the albatross; and poutama, a pattern that refers to learning and seeking knowledge, thus representing researchers who visit Antarctica.

Programme (Ross RAMP) as a way of acknowledging the roles of mātauranga and western science in Antarctic research. Tohunga whakairo (expert carvers) Fayne Robinson (Ngāi Tahu) and Te Warihi Heteraka (Ngātiwai) led the overall vision for the whakairo, with Poutama Heteraka (Ngātiwai and Ngāi Tahu) and expert carver James York (Ngāi Tahu and Ngāpuhi) also contributing substantively to the design and carving the bulk of the whakairo (Wehi, Heteraka, et al. 2021). Others in the team included journalist Arielle Kauaeroa Monk, film maker Vanessa Wells and Vision Mātauranga team leader Priscilla Wehi from Ross-RAMP. The project was completed in February 2019 at Scott Base, and will be retained as part of a planned Scott Base redevelopment.

The whakairo articulates Māori perspectives of kaitiakitanga, encompassing notions of stewardship and customary practices found within Indigenous philosophies and practices (Marsden and Henare 1992; Kawharu 2002; Watene 2016). Drawing on the mara-mataka used to guide environmental activities and highlighting changes that have occurred as a result of climate change and environmental destruction, the carving lays down a challenge to the world's leaders to work toward solutions collectively. As such, it provides foundation from which to recognise the strengths that Indigenous Peoples and scientists together bring to address these challenges.

Where next?

Antarctica New Zealand has recognised that future New Zealand Antarctic policy will increasingly reflect the political realities of mainland New Zealand in a post-settlement Treaty of Waitangi context (Dodds and Yusoff 2005). Place-naming is one suggested area where future Māori contributions to Antarctica could be substantial (Haverkamp 2003; Dodds and Yusoff 2005). Nevertheless, it is unclear how these contributions would address Māori relational responsibilities, including intergenerational stewardship, that are implicit within conceptions of kaitiakitanga. Such approaches are not sufficient to address imbalances in Indigenous participation in Antarctic research and other activity, nor to address New Zealand's commitment to the 1840 Treaty of Waitangi.

Institutional and structural change are vital components of nation-building (Berg and Kearns 1996), and these kinds of changes are now under discussion within New Zealand governmental agencies such as the Ministry of Foreign Affairs and Trade, which has responsibility for New Zealand's strategic goal to protect Antarctica, and Antarctica New Zealand, which is responsible for carrying out New Zealand's activities in Antarctica, thus supporting both science and protection of the continent. Christchurch's status as one of five Antarctic Gateway cities globally has also led to an Antarctic Gateway Strategy where two of the three underpinning themes (Kaitiakitanga, Manaakitanga and Exploration) draw inspiration from Māori concepts (Christchurch's Antarctic Gateway Strategy 2018). Leveraging opportunities and benefits in relation to Christchurch's 'city story' is a recurring priority in the document, although relationships with Ngāi Tahu are not clearly addressed. Developing strong relationships with Indigenous communities in each of the gateway cities would add depth to gateway city strategies.

Conclusions

European narratives of Antarctic history, effort and policy remain dominant in the conceptualisation, communication, and science of Antarctica globally. However, Māori (and Polynesian) connection to Antarctica and its waters have been part of the Antarctic story since c. seventh century, from traditional voyaging to participation in European-led voyaging and exploration, contemporary scientific research, fishing and more. The work of Māori Antarctic students and researchers highlights current Māori interests across the spectrum of Antarctic science, policy, history and governance. Evidence of relational responsibilities and mātauranga frameworks is captured in the oral histories of those who have ventured south, and in cultural marks, such as carvings, that connect to the landscape, but are less visible in New Zealand policy and science. Taking account of responsibilities to under-represented groups, and particularly Māori as Treaty partners, is important for both contemporary and future programmes of Antarctic research. Similarly, exploration of New Zealand's obligations within the Antarctic Treaty System in relation to the post-settlement Treaty of Waitangi social and political milieu of governance in New Zealand is a critical area.

Mātauranga encapsulates an intergenerational obligation to ensure that human relationship with Antarctica is reciprocal and sustainable. Whakapapa, kaitiakitanga and the broader Māori concepts that these terms invoke provide a cultural lens through which to analyse human-environmental relationships with Antarctica and challenge the cultural biases and assumptions inherent in dominant western liberal ideologies that pervade the global Antarctic narrative (see Wehi, van Uitregt, et al. 2021). As yet, this strength is largely untapped in our attempts to imagine future relationships with Antarctica.

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