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Te Kōmata o Te Tonga

Beyond the Southern Angle of the Polynesian Triangle:
Māori associations with the Southern Ocean and Antarctica

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Dr Michael Stevens *Ngāi Tahu*

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AUTHOR	**Michael Stevens, Ngāi Tahu**

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Deep South Challenge
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KUPU ARATAKI | Overview and methodology

This report outlines historical and contemporary Māori associations with the Southern Ocean and Antarctica. It does so in a way that affirms the mana whenua and mana moana of Ngāi Tahu, "the closest iwi to Antarctica."[1] Ngāi Tahu Whānui have a range of longstanding cultural and commercial interests in the Southern Ocean and these are at the heart of this report. Connections with Antarctica, while not as deep, are also many and varied, and of increasing importance to both Ngāi Tahu and the New Zealand Government.

This cultural narrative draws on both myth and history connected with the Southern Ocean and Antarctica but intentionally holds them apart. In so doing, it approaches the Māori past according to the four-stage spectrum developed by Ngāi Tahu historian Te Maire Tau. This runs from myth, to mytho-history, to historical events originally recorded orally, to history based on written sources.[2] Tau observes that mythical Māori figures, usually supernatural, explain natural phenomena or impart moral instruction. Mytho-historical figures on the other hand, are based on Māori people, but these people are so distant in time that their stories are encoded in mythic templates and substantially overlaid with symbols. For Tau, the historical realm begins with Māori who existed immediately prior to the sustained presence of Pākehā. While recollections of these people contain smaller mythic or symbolic elements, he notes that details of them can be light because they were first encoded orally.[3] The historical realm based on written sources, which this report draws heavily on, makes the Māori past more fully accessible and understandable.

TE WHAKATAKOTORANGA | Structure

This body of this report is organised into four main parts. The first part, Te Ao Neherā, outlines Māori myths and archaeological evidence connected with the Southern Ocean, Subantarctic islands, and Antarctica. The second component, Te Moana Tāpokopoko a Tāwhaki, outlines Māori associations with the Southern Ocean and Subantarctic islands from c.1800 up to the present-day. This makes it clear that Ngāi Tahu are a maritime people and the Ngāi Tahu relationship with the Southern Ocean needs to be understood in maritime terms. The third section, Te Manu Tītī, takes Ngāi Tahu interests into the Southern Ocean by way of tītī (sooty shearwaters; "muttonbirds"). This part of the report specifically outlines how an increasingly unstable climate in this part of the world is having a negative impact on this seabird and thus the vibrant cultural activity of muttonbirding that is central to Ngāi Tahu culture. The report's final section, Te Tiri o Te Moana, outlines Māori associations with Antarctica also from c.1800 up to the present day. This marks a clear transition of Ngāi Tahu interests from substantially commercial to substantially scientific, and charts Ngāi Tahu involvement at Antarctic-bound departure points: from the seaports of Bluff, Ōtākou and Lyttelton in the nineteenth and early twentieth centuries, to Christchurch Airport today. It also shows how mātauranga Māori is shaping New Zealand's presence at Antarctica.

[1] Te Rūnanga o Ngāi Tahu, "Ngāi Tahu unveil a pouwhenua, carved sign and tukutuku panels in Antarctica," 16 January 2013, Te Rūnanga o Ngāi Tahu website, http://ngaitahu.iwi.nz/ngai-tahu-unveil-a-pouwhenua-carved-sign-and-tukutuku-panels-in-antarctica/.

[2] Rawiri Te Maire Tau, *Ngā Pikitūroa o Ngāi Tahu: The Oral Traditions of Ngāi Tahu*, (Dunedin, N.Z.: Otago University Press, 2003), 18-20.

[3] Ibid.

TE AO NEHERĀ | In ancient times

Ngāi Tahu know the Southern Ocean as Te Moana Tāpokopoko a Tāwhaki, the engulfing ocean of Tāwhaki. A supernatural figure of considerable note, a large number of Tāwhaki-centred narratives are found all over New Zealand.[4] In 1896, the ethnologist Percy Smith described the Tāwhaki traditions as especially rich and detailed among Māori compared with other parts of Polynesia, and speculated that they had a close connection with the initial discovery and settlement of the New Zealand archipelago.[5] Regardless, his name and stories of his deeds are found across Polynesia and he is often associated with thunder.

Several of the Tāwhaki narratives, which often focus on family dynamics and the pursuit of knowledge, parallel and sometimes even borrow from well-known myths that centre on Maui and Tāne-Mahuta.[6] The particular name Te Moana Tāpokopoko a Tāwhaki relates to his wife, variously known as Hapai and Tangotango. In one version of the narrative, the couple disregard a warning to not make love outside of their house and as punishment, Hapai is abducted by "The-bird-in-the-sun" and taken up into the sky. Realising she has been taken, Tāwhaki stands near the edge of the sea and utters karakia before proceeding over it in search for her. As Smith notes, this "is a very strange fragment, and is doubtless the remains of some more complete story."[7] Nonetheless, Te Moana Tāpokopoko a Tāwhaki is a well-known and commonly used Māori name for the Southern Ocean.

Another mythical figure associated with the Southern Ocean and Antarctica is Tama Rereti and his waka *Te Rua o Maahu*. Their story, which explains a number of star constellations, features prominently in the boldly decorated whare-kai at Bluff's Te Rau Aroha Marae complex.[8] Tama Rereti was captivated by the Aurora Australis and set out to discover where it came from. Along with 70 young chiefs and two tohunga, he sailed his waka deep into the Southern Ocean until it reached giant cliffs of ice. It was here that Tama Rereti choked on a shrimp and died; a powerful leader reduced by something small. This gave rise to the following whakatauki:

> He meroiti te ika i rāoa ai a Tamarereti
>
> It was a small fish that choked Tamarereti.[9]

His crew headed home with their captain's body but as they approached it, weakened by a long and taxing journey, their waka was cast on the rocks in a huge storm. Everybody except the tohunga drowned. When the storm subsided, the shattered remains of the waka were burnt and embers drifted up to the night sky. Remains of the bow piece became Te Pūtea Iti a Tama Rereti (the Southern Cross),

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[4] See for example George Grey, *Polynesian Mythology and Ancient Traditional History of The New Zealand Race* (H. Brett, Auckland: 1885), 36-48; Henare Potae, "The Story of Tawhaki," *Journal of the Polynesian Society* Vol. 37 (1928): 359-366; and S. Percy Smith, "The Peopling of The North: Notes on the Ancient Maori History of the Northern Peninsula and Sketches of the History of The Ngati-Whatua Tribe of Kaipara, New Zealand: "Heru-Hapainga,"" *Journal of the Polynesian Society* Vol.5 (1896): 21-22.

[5] Percy Smith, 21.

[6] In Tainui tradition, for instance, it is Tāwhaki who "ascended the heavens and received the three baskets of knowledge"; a feat predominantly associated with Tāne-Mahuta. See Te Ahukaramū Charles Royal, "Hawaiki – The significance of Hawaiki," Te Ara – the Encyclopedia of New Zealand, http://www.TeAra.govt.nz/en/object/476/tawhaki (accessed 12 August 2017).

[7] Percy Smith, 22.

[8] For images of this, see Ian Christensen, *Cliff Whiting: He Toi Nuku, He Toi Rangi*, Palmerston North, N.Z.: He Kupenga Hao i te Reo, 2013), 171.

[9] Hirini Moko Mead and Neil Grove, *Ngā Pēpeha a ngā Tīpuna*, 2nd ed. (Wellington, NZ: Victoria University Press, 2004), 99.

its decorative inlaid paua shell became Autahi (Canopus), the anchor rope became Te Taura o te Punga (The Pointers). The anchor, Te Punga o Te Waka a Tama Rereti (The Coalsack), is also visible.

The lesson in this narrative is that small matters can bring down important people, and the neglect of minor details, can have disastrous results.

Multiple versions of the Tama Rereti myth are found throughout New Zealand. To quote James Cowan, "it is a famous allusion in native songs, and one of great antiquity."[10] It is, at its most basic level, a parable, but also a mental map of the heavens. Moreover, it has an ongoing currency beyond what might be termed ethnographical research. As well as being recalled in compositions such as waiata and in whaikōrero, in late 2015 it was the basis of a bilingual illustrated children's story book born out of a close working relationship between Te Rau Aroha Marae and Bluff School, supported by a partnership between Te Rūnanga o Ngāi Tahu and the Ministry of Education. Over 75% of Bluff School's children are Māori, predominantly Ngāi Tahu, and these books help them to understand stories encoded on their local marae and increase their capacity in te reo Māori.[11] They might also inspire these pupils to reflect on the Southern Ocean and Antarctica which shape the natural environment and culture of their community in multiple ways, especially with respect to the local tītī harvest, as detailed below.[12]

Another Polynesian figure is also said to have sailed sufficiently deep into the Southern Ocean to have encountered icebergs. This was Hui Te Rangiora, known as Ui-te-Rangiora in Rarotonga. Percy Smith records that this figure, who is cast in human rather than supernatural terms, led a flotilla into a frozen ocean they termed Te Tai Huka a Pia.[13] Ngāti Rārua and Te Āti Awa maintain a Māori version of this story and assert that Hui Te Rangiora was the first human to travel to the Antarctic region. His memory and supposed feat are commemorated at the whare-nui *Tūrangapeke* on Te Awhina Marae near Motueka.[14] This additional story gestures towards the diverse ways that the Southern Ocean and Antarctica have entered Māori imaginations and the different manner in which these are recorded.

Archaeological evidence shows that the initial Polynesian settlement of New Zealand was not, as might be assumed, "progressive": gradually running from the warm north to the cold south. It was instead radial: "expanding in all directions from mainland New Zealand," almost immediately after its discovery.[15]

This "starburst" pattern of settlement meant that all outlying islands, in all directions, were discovered "within an archaeologically-instantaneous event."[16] This has inspired Atholl Anderson to reject the narrow idea of pre-European "New Zealand" in favour of a more expansive "South Polynesia": mainland New Zealand (i.e. the North Island, South Island and Rakiura/Stewart Island) together with outer islands including Norfolk Island, the Kermadec Islands, Raoul Island and the Subantarctic islands.[17] As such, the conventionally understood Polynesian triangle that runs from Hawaii in the

[10] James Cowan, *The Maori Yesterday and To-day* (Christchurch, N.Z.: Whticombe and Tombs Limited, 1930), 87.
[11] In 2015, 71% of the school's 161 pupils were of Māori descent. Education Review Office (ERO), Bluff School, 21 October 2015, ERO website, http://www.ero.govt.nz/review-reports/bluff-school-21-10-2015/#about-the-school.
[12] Mark Revington, "Stories were waiting to be told," *Te Karaka* 67 (2015), 36-37.
[13] Stephenson Percy Smith, *Hawaiki: The Whence of the Maori* (Wellington, N.Z.: Whitcombe & Tombs, 1898), 90-91.
[14] "Discovering Māori Antarctic stories," University of Waikato, 4 July 2016, University of Waikato website, http://www.waikato.ac.nz/news-events/media/2016/discovering-mori-antarctic-stories.
[15] Anderson, "Subpolar settlement," 798.
[16] Atholl Anderson and Gerard O'Regan, "To the final shore: prehistoric colonisation of the Subantarctic Islands in South Polynesia," *Australian archaeologist: collected papers in honour of Jim Allen* (2000): 450.
[17] Ibid., 448.

north, to Easter Island in the east and New Zealand in the south, needs to sharpen its southern endpoint. While historians and archaeologists had long assumed Rakiura represented the southern limit of pre-European Māori settlement, unambiguous evidence was produced in the early 2000s to show that early Māori reached Maungahuka, the Auckland Islands. In Anderson's words, "the diaspora of Indo-Pacific peoples reached its final shores in the subpolar region".[18]

That the Polynesian discoverers of New Zealand found all outlying islands in the region within approximately a century of arrival, is a remarkable feat. This process of discovery took place in an area of sea a third larger than Central East Polynesia and required voyages of up to 1300km in length. Moreover, South Polynesia's islands are distributed over 21 degrees of latitude (29-50^{o}S), which in climatic terms ranges from subtropical to subpolar.[19] This helps to explain why voyaging conditions were significantly more challenging than Oceanic voyaging generally, especially in the far south. However, the speed of dispersal from mainland New Zealand and the consistency in species targeted for consumption throughout South Polynesia strongly suggests that the settlement of outlying islands was not driven by population density or competition for resources, so-called push factors, but by a desire to fully explore and take stock of the region.[20]

The Auckland Islands, which are located 460km of mainland New Zealand, were probably discovered by island hopping, in this instance by using Tini Heke, the Snares, which are located 100km south of southern Rakiura and are visible from there. Although "idealised conjecture," this means that in suitable conditions a waka could, in one day, get halfway to the Auckland Islands without losing sight of land. It is therefore perhaps more remarkable that an offshoot of early Māori, later known as Moriori, discovered and settled the Chatham Islands located 750km east of mainland New Zealand.[21]

The archaeological evidence located on the Auckland Islands was found at Sandy Bay, on the north shore of Enderby Island. It was here that researchers discovered a 70-100m^2 site consisting of basalt artefacts; oven-stones; mussel shells, sea lion, albatross, penguin, flightless teal and tītī (sooty shearwater) bones; charred inanga, wood and a large amount of charcoal. Carbon dating indicates the site was occupied between the late 13th and late 14th centuries: that is, approximately 650 years ago.[22] This site represents a single phase or moment of habitation and while length of occupation cannot be determined, it appears to have been brief: neither building remains or human remains were located. On the basis of animal remains, occupation probably took place during summer or autumn but winter occupation cannot be ruled out.[23] Regardless, the island was too cold to grow cultivated plants and in Anderson's words "the miserable climate and virtual absence of plant foods to alleviate a diet of seals and birds, must have been a discouragement to long-term habitation."[24] Indeed, unlike the Chatham Islands, but in common with Norfolk Island, the Kermadecs and Raoul Island, Enderby Island was not home to Māori upon its European discovery in the early nineteenth century. As with those islands in

[18] Ibid., 450.
[19] Anderson, "Subpolar settlement," 798.
[20] Anderson and O'Regan, 450.
[21] Ibid., 447.
[22] Atholl Anderson, "Prehistoric Archaeology in the Auckland Island, New Zealand Subantarctic Region," in *In Care of The Southern Ocean: An archaeological and historical survey of the Auckland Islands*, eds Paul R. Dingwall, Kevin L Jones and Rachel Egerton (Auckland: New Zealand Archaeological Association, 2009), 19-24, 29.
[23] Ibid., 35.
[24] Anderson, "Subpolar settlement," 798.

northern reaches of South Polynesia, it is unclear whether the original Enderby discoverers returned to the mainland or died out.[25]

Archaeological fieldwork of the sort carried out on the Snares and the Auckland Islands is yet to take place on either Campbell Island or the Antipodes.[26] Accordingly, knowledge of pre-European Māori exploration in the Southern Ocean remains patchy and speculative. In contrast, the nature and extent of Māori involvement in the Southern Ocean from the early nineteenth century onwards, which is dominated by Ngāi Tahu, but also includes other iwi, is much clearer.

TE MOANA TĀPOKOPOKO A TĀWHAKI | The billowy sea of Tāwhaki

The founding of the New South Wales penal colony by Britain in 1788 created a springboard for sustained European and Euro-American incursion into the New Zealand archipelago and Māori communities. This commercial interest led directly to Christian missionaries being dispatched to the Bay of Islands in 1814 and New Zealand's formal incorporation into the British empire in 1840, which was facilitated by missionaries at the first signing of the Treaty of Waitangi.[27]

An early trade that fanned out of Port Jackson, Sydney, was sealing because seal furs fetched good money, initially in China and then in Britain. Relying on charts drafted by Captain Cook and his reports on seals in 1773, sealers from Sydney first visited New Zealand, at Dusky Sound, in 1792. Seals were then hunted to exhaustion in Bass Strait between 1797 and 1803. Sealers, including many Americans, then focused on the Subantarctic islands that had been progressively discovered by Europeans between 1788 and 1810.[28] Euroamericans brought knowledge of Foveaux Strait to Sydney in 1806, which was public knowledge and widely visited from 1808. Pelagic whalers were also active in New Zealand waters from the 1790s and Māori, especially from the Bay of Islands region, joined both sealing and whaling ships. A notable example is the Ngāpuhi rangatira, Ruatara, one of the first Māori to become closely associated with Europeans.[29]

Sealers and whalers attracted to the Southern Ocean's riches had major economic and political ramifications for southern Māori. Sealing, which took place in two bursts in Foveaux Strait (in the 1810s and 1820s) had four key consequences. First, it pulled inquisitive Ngāi Tahu groups south to meet and trade with newcomers, termed tākata pora (ship men/boat people). People from Banks Peninsula, for example, shifted south to Ōtākou and Foveaux Strait. These places, which had been hitherto occupied seasonally, began to be occupied year-round. Second, it possibly drove or at least confirmed peace negotiated between Ngāi Tahu and residual Kāti Māmoe groups in southern New Zealand.[30] In 1916, an aged Māmoe man told Herries Beattie that when fighting ceased, and despite high-level strategic marriages, the two groups did not necessarily live "in perfect trust together." There was he says, "always a certain amount of latent suspicion." However, "[t]his feeling was mitigated

[25] Ibid.
[26] Ibid.
[27] See for example, Tony Ballantyne, *Entanglements of Empire: Missionaries, Māori, and the question of the body* (Auckland: Auckland University Press, 2015).
[28] Ian W. G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management* (Wellington, N.Z.: Department of Conservation, 2002), 3-6.
[29] Angela Ballara, "Ruatara," first published in the Dictionary of New Zealand Biography, vol. 1, 1990. Te Ara – the Encyclopedia of New Zealand, https://teara.govt.nz/en/biographies/1r19/ruatara (accessed 12 August 2017).

[30] Atholl Anderson, *The Welcome of Strangers: An ethnohistory of southern Maori A.D. 1650-1850* (Dunedin, N.Z.: Otago University Press, 1998), 68.

when the white men came sealing and later whaling on the coasts."[31] The third development was the introduction of white potatoes into Ngāi Tahu territory, which brought the southern South Island into a horticultural framework for the first time. This made permanent occupation in the far south considerably easier.[32] Finally, sealing inaugurated a range of intimate cross-cultural relationships in southern New Zealand. The best-known manifestation of this is probably the aptly-named Whenua Hou, which literally means new land; one of New Zealand's earliest bicultural communities. This island, situated west of Rakiura, was allocated by leading Ngāi Tahu chiefs to European and Euroamerican sealers where they lived with Ngāi Tahu women and raised large families between the mid-1820s and mid-1840s.[33]

This sea-centred interracial interdependence was amplified throughout the 1830s and 1840s when shore-whaling stations were established at a number of points along the south and eastern coasts of the South Island that targeted migratory whales, especially Southern right whales. These stations drew in Ngāi Tahu men who worked as oarsmen and harpooners and Ngāi Tahu women who acted as helpmates and/or entered into de jure marriages with European whalers. Thus, as the historian Damon Salesa notes, "even after the general failure of both shore whaling and sealing, the transformations they had begun continued."[34] He points out that by 1844, it was estimated that two-thirds of Māori women living between Banks Peninsula and Riverton were living with European men. Their children, from whom most present-day Ngāi Tahu descends, were bilingual go-betweens.[35] While shore-whaling took place in a Māori cultural world, beyond British authority, historian Tony Ballantyne highlights that it nonetheless introduced Ngāi Tahu to capitalism and consumerism through working for wages and having access to new clothes and foodstuffs as well as alcohol and tobacco.[36] This relatively early transition might help to explain Ngāi Tahu involvement in pelagic whaling in the Southern Ocean between the 1860s and 1880s, and again in the 1920s.

Māori individuals and groups from throughout Southern Polynesia continued to be pulled into the Southern Ocean's orbit in the mid and late nineteenth century. This included a group of 40 Ngāti Mutunga and 30 Moriori captives who relocated to the Auckland Islands from the Chatham Islands in 1842.[37] The allied Ngāti Mutunga and Ngāti Tama, from Taranaki, who invaded the Chathams in 1835 and killed and enslaved resident Moriori later violently turned on one another. This was triggered by competition for replenishing visiting whaling ships active in the Southern Ocean. In early 1839, a French whaler, *Jean Bart*, was caught up in this feud and was destroyed; its crew killed or drowned. In response, a French corvette supported by two whaleships extracted revenge on Māori at the Chatham Islands.[38]

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[31] Herries Beattie, "Traditions and Legends. Collected From the Natives of Murihiku. (Southland, New Zealand)." *Journal of the Polynesian Society* 25, no. 99 (1916): 96.

[32] Anderon, *Welcome of Strangers*, 75.

[33] Angela Middleton, Two Hundred Years on Codfish Island (Whenuahou): From cultural encounter to nature reserve (Invercargill, N.Z.: Department of Conservation, 2007); Damon Ieremia Salesa, *Racial Crossings: Race, Intermarriage, and the Victorian British Empire* (Oxford: Oxford University Press, 2011), 65.

[34] Salesa, 68.

[35] Ibid.

[36] Tony Ballantyne, *Webs of Empire: Locating New Zealand's Colonial Past* (Wellington, N.Z.: Bridget Williams Books, 2012), 133.

[37] A. Shand, "The Occupation of the Chatham Islands by the Maoris in 1835," *Journal of the Polynesian Society* 2, no. 2 (1893): 78-80.

[38] A. Shand, "The Occupation of the Chatham Islands by the Maoris in 1835," *Journal of the Polynesian Society* 1, no. 4 (1892): 202-211.

Fearing further reprisals—from other French ships or resident Ngāti Tama—in late 1842 two Ngāti Mutunga chiefs arranged for a whaleship, the *Hannah*, to transport them, their families and slaves to the Auckland Islands, which they simply knew as being uninhabited. The archipelago's bleakness was quickly discernible but the *Hannah* sailed away before the group could re-board and return to the Chatham Islands; they remained there until 1856.[39] Their precarious existence was made somewhat easier by a whaling station, Hardwicke, established by S. Enderby and Sons at Port Ross in 1849. Thus, when the station folded in 1852, some Māori and Moriori crossed to Rakiura in 1854. This group made landfall at the predominantly Ngāi Tahu settlement at Port Adventure, and lived there until 1856 when Ngāti Mutunga relatives in the Chatham Islands charted a brig to retrieve the group. The ship then sailed on to the Auckland Islands to retrieve those left behind. Bones of the dead were also exhumed and carried back to the Chatham Islands.[40]

This 14-year occupation is the basis for Ngāti Mutunga o Wharekauri including the Auckland Islands in its tribal territory. Indeed, one of five claims to the Waitangi Tribunal specific to Ngāti Mutunga o Wharekauri, relates to the Auckland Islands.[41] More recently, in early 2017, the Ngāti Mutunga o Wharekauri Iwi Trust lodged a claim under the Marine and Coastal (Takutai Moana) Act 2011 that includes the Auckland Islands.[42] Some contemporary Moriori also claim an interest to the Auckland Islands in the context of the Treaty claims process. While Te Rūnanga o Ngāi Tahu and its constituent southern papatipu rūnanga will actively embrace the history that Ngāti Mutunga ki Wharekauri and Moriori have with the Auckland Islands, the notion that this gives either iwi rights will be rejected and vigorously contested. Consistent with the so-called 1840-rule, invoked with respect to its northern terrestrial boundary in the upper South Island, Ngāi Tahu will work hard to guard its exclusive mana whenua and mana moana in the Auckland Islands.

Fifty years after the Ngāti Mutunga group arrived at Port Adventure, their story was passed on by a Ngāi Tahu man, Te Kene Turia Morokiekie.[43] Morokiekie, who was christened as Ben Wesley and known colloquially as Ben Moses, was born at Port Adventure in 1850. Ben's mother died giving birth to him so his father who was born at Te Waihora, Lake Ellesmere, in 1825, raised him. Growing up on both sides of Foveaux Strait, Ben's "working life was that of oysterman, sealer and whaler."[44] He was one of many Ngāi Tahu men who travelled and worked in the Southern Ocean in the nineteenth century and in 1866, aged 16, he went whaling in the Southern Ocean with Captain Patrick "Paddy" Gilroy on the *Amherst*. In 1867, this ship, with Ben on board, called in to the Auckland Islands and discovered survivors from the *General Grant*, the cargo and passenger ship that had sunk there almost two years earlier. The following year, Ben helped Gilroy establish a castaway depot on the Bounty Islands. Working under the ship's carpenter Ben subsequently helped build depots on the Snares, Antipodes, Auckland, Campbell and Macquarie Islands. In the early 1870s, while whaling again with Gilroy, he helped release live weka from Rakiura on the Snares, Macquaries Islands and the Auckland

[39] Shand, (1893): 78.
[40] Ibid., 81-82.
[41] As Radio New Zealand National reported in 2014, "Ngati Mutunga o Wharekauri claims its rohe, or tribal territory, includes Rekohu (Chatham Island), Rangiauria (Pitt Island) and Maungahuka (the Auckland Islands) in the Southern Ocean." Radio New Zealand National, "Chathams Iwi Trust Wins Mandate," Radio New Zealand website, http://www.radionz.co.nz/news/te-manu-korihi/240486/chathams-iwi-trust-wins-mandate.
[42] Application and letter from Paula Page, on behalf of Ngāti Mutunga o Wharekauri Iwi, filed with the Registrar of the High Court at Wellington, 31 March 2017. Available at: http://www.nzcpr.com/wp-content/uploads/2017/05/CIV-2017-485-309.pdf.
[43] Shand, (1893): 85.
[44] Olga Sansom, *The Stewart Islanders* (Wellington: A.H. & A. W. Reed, 1970), 220.

Islands; he visited the latter nine times in his life. He was a master at dead reckoning—even in foggy conditions—and is remembered as also being a very reliable weather prophet.[45]

A decade after the Ngāti Mutunga group made landfall at Port Adventure, history repeated itself to some extent. On 24 July 1863 three men in a modified, and very leaky, ship's dinghy arrived there from the Auckland Islands where they had been shipwrecked for 18 months. Their small sailing vessel, the *Grafton*, had been on a speculative tin mining and sealing cruise to the Campbell Islands. After 12 months of waiting for their business partners to send a vessel to search for them, the five-man crew decided to make for Rakiura, a bold five-day journey made by three of them, including the captain, Thomas Musgrave.[46] These men were taken in at Port Adventure by Captain Tom Cross and his Ngāi Tahu wife, Mere (née Newton) who Musgrave described as "light in colour as a European" but fluent in Māori and not English.[47]

The Cross household fed the men and gave them a bath before Tom ran them across Foveaux Strait to Invercargill in his vessel, the *Flying Scud*. This vessel was thereafter chartered to retrieve the remaining two men from the Auckland Islands.[48] Because of the cumulative nature of whakapapa and its function as the framework for arranging the Māori past, Tom and Mere's manaaki and his return trip to the Auckland Islands is commonly known and recalled by their descendants, many of them Bluff-based. In other words, their particular association with the Southern Ocean is substantially framed by their involvement in the *Grafton* story. Because Māori history is thus personal as well as collective, many other southern Ngāi Tahu associations with the Southern Ocean are framed in similar ways, as the next section shows.

In November 1881, an iron barque named *England's Glory* was shipwrecked near the entrance to Bluff Harbour. Local residents billeted its crew, which included a teenager, John Bollons. Bollons appears to have been given shelter in by husband and wife Tohi and Pani Te Marama who were both Ngāi Tahu.[49] A sailor, whaler and fisherman, Tohi was a younger brother of the rangatira, Teone Topi Patuki, who was based on nearby Ruapuke Island.[50] Both brothers, and their descendants, found enjoyment and employment at sea, including in the Southern Ocean. Tohi served on several vessels under Captain Gilroy, including on the *Amherst* with Ben Moses.[51] Tohi later worked with Gilroy on the *Chance*, a ship and crew immortalised in Frank Bullen's semi-autobiographical *Cruise of the Cachalot*.[52]

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[45] Ibid., 222-23.

[46] Thomas Musgrave, *Castaway on the Auckland Isles: A narrative of the wreck of the 'Grafton' and of the escape of the crew after twenty months' suffering* (London: Lockwood and Co., 1866).

[47] Ibid., 102-03.

[48] Ibid., 98-100, 113-118.

[49] Gavin McClean writes that Bollons was taken in by "a Pakeha whaler and his Maori wife," probably by relying on G. H. Edwards. However, Marcus Castell asserts that it was Tohi Te Marama. Castell's view is supported by a range of circumstantial evidence. See Gavin McLean, "Bollons, John Peter," from the Dictionary of New Zealand Biography. Te Ara – the Encyclopedia of New Zealand, http://www.TeAra.govt.nz/en/biographies/3b40/bollons-john-peter (accessed 14 April 2017); G. H. Edwards, "Captain John Peter Bollons," *New Zealand Marine News* 25, No 4 (1974): 99-118, at 106; Marcus Castell, "Hinemoa, 1875-1944," The New Zealand Maritime Record website, http://www.nzmaritime.co.nz/hin1.htm.

[50] See Michael J. Stevens, "Tohi Te Mararma (c.1829-1918)" in *Tāngata Ngāi Tahu: People of Ngāi Tahu*, ed. Helen Brown and Takerei Norton, (Wellington, N.Z.: Bridget Williams Books, 2017), 251-55.
Atholl Anderson, "Patuki, Topi," first published in the Dictionary of New Zealand Biography, vol. 1, 1990. Te Ara - the Encyclopedia of New Zealand, https://teara.govt.nz/en/biographies/1p11/patuki-topi (accessed 12 August 2017).

[51] Sansom, 221.

[52] Frank Bullen, *The Cruise of the "Cachalot": Around the World After Sperm Whales*, (London: MacMillan & Co., 1899), 357.

Bollons elected to remain at Bluff when the crew of the *England's Glory* shipped out from the port on a different vessel. He became fluent in te reo Māori and worked on a range of local and intercolonial vessels before becoming a Master Mariner in 1892. The following year he began working on steamers owned by the government's Marine Department: he was master of the *Hinemoa* from 1898 and its replacement, the *Tutanekai*. Captain Bollons was therefore responsible for servicing lighthouses, maintaining navigation aids, charting the coast, conducting search and rescue missions, and ferrying governors and politicians around New Zealand; and replenishing castaway depots in the Subantarctic islands.[53] An island in the Antipodes group bears his surname.

Tohi and Pani were effectively mātua-whāngai to Bollons, and he grew close to their son, Henry "Barney" Williams. So much so, Barney went to sea with Bollons and was chief mate of the *Hinemoa* from 1907. Bollons utilised many such men and it was noted he "always a fair percentage of Maoris among his crews."[54] Predominantly Ngāi Tahu, they included Kohiku Tītī, better known as Walter Joss; Taare Bradshaw (1867-1940), who is Tipene O'Regan's maternal grandfather; William Tihope "Billum" Spencer (1893-1957); George Topi, who died on board the *Hinemoa* in 1909 aged 18; George Henry Fife (c.1878-1965); and Henry Tehaeata "Sandy" Whaitiri (c.1895-1961). Most of these men have Bluff-based descendants, where Bollons himself is buried and continues to be recalled fondly. While Bollons' generosity enabled several Ngāi Tahu men to find employment in the civil service through the Marine Department, it needs to be understood that this was a direct consequence of the manaaki that Tohi and Pani first extended to him in 1881. This kindness, and Bollons' reciprocity, should be acknowledged as part of Ngāi Tahu associations with the Southern Ocean.

The southern Ngāi Tahu men who worked under Bollons helped to advance scientific knowledge through their superb seamanship—safely ferrying the likes of botanists and zoologists to and from specific sites of inquiry. However, they were more than just proverbial Man Fridays. They were also sources of local mātauranga Māori that Bollons and visiting scientists tapped into. All of this was evident in November 1907 when the *Hinemoa*, on its annual relief voyage to the subantarctic islands, transported a scientific expedition to the Auckland and Campbell Islands.

This expedition was led by the Philosophical Institute of Canterbury, the forerunner of the Canterbury branch of the Royal Society of New Zealand and included Dr Leonard Cockayne, a leading founder of modern science in New Zealand.[55] Expedition leaders praised Bollons for his active assistance in which he "was most willingly assisted by the officers and crew of the vessel."[56] For example, the Auckland Island party that Cockayne was in "had the services of a whale-boat and boat's crew (head man, Whaitiri, of Ruapuke Island)."[57] This was almost certainly Sandy Whaitiri.

In another part of the official 1909 publication that disseminated the expedition's findings, Cockayne, in discussing plants introduced to the Auckland Islands, relayed that according to "Mr. Walter Joss, of the Neck, Stewart Island" harakeke was "introduced by the sealers in order to furnish them with

[53] McClean, "Bollons."
[54] E. R. Martin, *Marine Department Centennial History, 1866-1966* (Wellington: Marine Department, 1969), 72.
[55] A. D. Thomson, "Cockayne, Leonard," first published in the Dictionary of New Zealand Biography, vol. 3, 1996. Te Ara - the Encyclopedia of New Zealand, https://teara.govt.nz/en/biographies/3c25/cockayne-leonard (accessed 12 August 2017).
[56] *The Subantarctic Islands of New Zealand*, Vol. 1, ed. Charles Chilton (Christchurch, N.Z.: Philosophical Institute of Canterbury, 1909), v.
[57] Ibid., ix.

footwear suitable for walking on the slippery rocks when sealing."[58] Joss was referring to pāraerae (woven slippers) made and used by Ngāi Tahu sealers.

In summary, this work carried out by the *Hinemoa* and related vessels has a number of parallels with work conducted by NIWA and the RV *Tangaroa* today. So too the acquisition of Southern Ocean-related mātauranga Māori, which is a key feature of the Deep South National Science Challenge, which this report feeds in to.[59] This is a reminder of how old is the new, and tiresome is the new that does not acknowledge the old.[60]

In 1907, Cockayne commented that it was trade rather than science that first made the subantarctic islands valuable and visible, an interest subsequently sustained by "small sailing craft, manned frequently by Stewart Island Maories" who visited these islands to go sealing.[61] This later sealing, which persisted until 1946, was worked in around other seasonal activities, including "muttonbirding": the harvest and preservation of juvenile tītī (sooty shearwaters; muttonbirds) from the so-called Tītī Islands clustered around Rakiura.

In the early twentieth century, Ngāi Tahu "muttonbirders" also visited the Snares to harvest tītī. Located between Rakiura and the Auckland Islands, the Snares are home to approximately 5.5 million tītī, which represents about a quarter of the population that nests within New Zealand. Unfortunately, despite the Snares being predator-free, tītī occupancy has declined nearly 40% over the last 30 years. There is evidence of a similar decline in harvesting rates between 1978 and 2004 due to less tītī chicks being available on the Tītī Islands.[62] A research project dedicated to understanding this situation has revealed that tītī are both monitors and predictors of climate change.

TE MANU TĪTĪ | Ngāi Tahu taonga and Southern Ocean sentinel[63]

Tītī are one of the world's most abundant seabirds and are found in both the Pacific and Atlantic oceans. Within the Pacific Ocean basin, they undertake an annual 64,000-kilometre figure-of-eight migration in pursuit of an "endless summer."[64] However, they nest and feed in temperate and sub-Antarctic regions of the Southern Hemisphere, including on Ngāi Tahu-owned islands adjacent to Rakiura; the aforementioned Tītī Islands.[65]

During the nesting period, which lasts from approximately November to May, adult tītī, which are known as kaieke, forage widely for food, often as far south as the Antarctic. This is a major reason why southern Ngāi Tahu whānau and institutions, including Te Rūnanga o Ngāi Tahu, are particularly interested in the ecological health and management of the Southern Ocean region. Far from being

[58] Ibid., 231.
[59] "Te Tai Uka a Pia: Iwi relationships with the Southern and Antarctic Oceans," The Deep South National Science Challenge website, http://www.deepsouthchallenge.co.nz/te-tai-uka-pia.
[60] After Tom Griffiths on Geoffrey Blainey in *The Art of Time Travel: Historians and their Craft*, 2 ed. (Carlton, Australia: Black Inc., 2017), 87.
[61] L. Cockayne, "An Important Expedition," *Auckland Star*, 6 November 1907, 6.
[62] Grant Richard Woodrow Humphries, "Using long term harvest records of sooty shearwaters (*Tītī; Puffinius griseus*) to predict shifts in the Southern oscillation" (PhD diss., University of Otago, Dunedin, NZ, 2014, 6-7.
[63] After Grant Humphries who describes tītī as "perfect sentinels due to their conspicuous and charismatic nature, and because they integrate resources across the entire food web." Ibid., 152.
[64] For data and graphic representations of tītī migration, see S. A. Shaffer *et al*. "Migratory shearwaters integrate oceanic resources across the Pacific Ocean in an endless summer," *Proceedings of the National Academy of Sciences USA* 103, (2006): 12799-12802.
[65] Sooty shearwaters also nest in Tierra del Fuego, the southern South America archipelago.

passive recipients of emerging scientific knowledge about this relatively unknown part of the world, mātauranga Māori held by muttonbirders and a co-designed study, has enabled a greater understanding of this ecosystem and negative effects of climate change.

The annual tītī harvest, which takes place during April and May, was one of the only mahinga kai (customary wild-food sources) left in Ngāi Tahu hands by the close of the nineteenth century. Almost all others were more or less alienated or destroyed by colonial settlement. The tītī harvest is therefore an important source of personal and whānau wealth as well as collective identity. In short, it plays a significant role within the iwi and is the most culturally Māori aspect of many Ngāi Tahu families, so-called muttonbirders.[66] The tītī harvest's significance explains why tītī are listed as Taonga Species in the Ngāi Tahu Claims Settlement Act 1998 and why the so-called Tītī Islands and the annual harvest were subjected to an in-depth study by the University of Otago from the mid-1990s to the mid-2000s.[67]

The 'Kia Mau Te Tītī Mō Ake Tonu Atu' (KMTT) research project was sparked by a group of muttonbirders who were worried about declining tītī numbers and wanted to ensure the harvest's sustainability for present and future generations. Early on in the project it was established that there was a correlation between the quantity and quality of tītī chicks available to harvest in a given season and the Southern Oscillation Index (SOI). The SOI measures a mass of air that see-saws back and forth across the International Date Line in the tropics and subtropics and indicates the development and intensity of El Niño or La Niña events in the Pacific Ocean.[68]

Sustained negative SOI readings lead to El Niño situations while sustained positive readings culminate in La Niña events. During the latter, easterly winds push warmer water into the Western Pacific thereby allowing cooler, nutrient-rich water to come to the surface in the Eastern Pacific, which increases ocean productivity. An El Niño system does the exact opposite.[69] It also generates intense storms and droughts throughout the world that can disrupt agriculture and human settlement and thus the global economy. El Niño weather conditions also have a severely negative impact on kaieke. Indeed, it has been estimated that a severe El Niño could kill as many as 50% of adult tītī, a potentially catastrophic result for what is a long-lived and slowly-reproducing bird.[70]

The physical processes that drive the frequency and intensity of El Niño Southern Oscillation (ENSO) events are not currently known. As such, there is much debate about whether the frequency and intensity of ENSO is increasing or decreasing, likewise its potential relationship with anthropogenic warming of the Earth's atmosphere. Regardless, it is well-known that ENSO has far-reaching ecological, social and economic consequences right around the Pacific Rim. The KMTT research is therefore significant over and above predictions it might offer Ngāi Tahu whānui in terms of the future of

[66] See Michael J. Stevens, "Te Hopu Tītī ki Rakiura: Fat Meat for the Winter," in Atholl. Anderson, Judith Binney and Aroha Harris (eds), *Tangata Whenua: An Illustrated History*, (Wellington, N.Z.: Bridget Williams Books, 2014, 316–17.

[67] Schedule 97, Ngai Tahu Claims Settlement Act 1998. ; "Harvests of Tītī by Rakiura Maori," University of Otago Centre for Sustainability website, http://www.otago.ac.nz/centre-sustainability/research/environment-people/otago038965.html.

[68] See https://www.niwa.co.nz/climate/faq/what-is-the-southern-oscillation; http://www.bom.gov.au/climate/glossary/soi.shtml.

[69] Humphries, "Using long term harvest records," 4.

[70] Henrik Moller, extract of confidential report prepared for Rakiura Tītī Island Administering Body, 2019, copy in author's possession.

muttonbirding. In short, it may lead climate scientists to where and when ENSO events start and how their frequency and intensity can be worked into global climate change modelling.[71]

It was hypothesised in the mid-1990s that seabirds could be used to monitor ENSO events and this was demonstrated by several constituent projects of the KMTT programme.[72] These projects analysed harvesting information such as chick size and catch effort as well as at-sea foraging movements of kaieke. Such projects therefore required active input from Ngāi Tahu muttonbirders as well access to cutting edge scientific instruments and complex climate data. Underpinned by a high level of trust in academic researchers by muttonbirders, and a co-designed study, the KMTT project is a powerful example of the way that local, regional and global knowledge systems can be brought together for mutual benefit.

One of the last bodies of work to come out of KMTT developed a data set using eight muttonbirders' diaries and tally-books from between 1957 and 2010 and investigated whether or not this data predicted shifts in the SOI.[73] To do this, machine learning techniques were used to create harvest success indices that better accounted for variation in muttonbirders' tallies and catch effort between seasons.[74] This harvesting data and associated information was then cross-referenced with complex oceanographic and climate data including aforementioned SOI values, the Oceanic Niño Index (ONI) (a measure of sea surface temperatures in the Eastern equatorial Pacific), and Pacific Decadal Oscillation (PDO) (which measures shifts in a 15 to 30-year cycle of Northern Pacific sea temperatures).[75]

This approach found that "La Niña events tended to occur after those harvest seasons with relatively high success and chick size, whereas El Niño events tended to occur after harvest seasons with relatively low success and chick size." It further found that SOI and ONI values before a given harvest "were highly correlated with PDO values averaged for two years before the harvest."[76] Basically, when the PDO is in a warmer phase 18 to 10 months before the tītī harvest, there are usually more chicks available to harvest. When it is in a cooler phase, there are less.[77] In turn, when muttonbirders have a good season, there is typically an increase in the air pressure differential between Tahiti and Darwin (in favour of Tahiti), which leads to positive SOI values indicative of a La Niña event. In contrast, when muttonbirders have a bad season, the aforementioned air pressure decreases (in favour of Darwin), leading to negative SOI values and an El Niño situation.[78] However, it should be noted that the PDO is very complex and its connection with the abundance and health of tītī warrants significantly more research.[79]

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[71] For more on tītī as bioindicators, see G. R. W Humphries *et al*, "Seabirds as early warning indicators of climate events in the Pacific," *PICES Press* 23, no. 1, (2015): 18.

[72] Humphries, "Using long term harvest records," 55.

[73] Ibid., iv.

[74] Se G. W. R Humphries *et al*, "Pattern recognition in long-term Sooty Shearwater data: applying machine learning to create a harvest index." *Ecological Applications*, 24, no. 8, (2014): 2107-2121.

[75] Humphries, "Using long term harvest records," iv.

[76] Ibid.

[77] Ibid., 74.

[78] Ibid., 71.

[79] To quote Professor Henrik Moller, who led the KMTT project, it is not clear how PDO events impact on the number and condition of tītī chicks available to be harvested. "The pressure patterns that are caused by PDO tend to cause enhanced counter clockwise wind stress over the North Pacific and high sea level pressures over Western North America and the Subtropical Pacific. All three of these regions are used by tītī at various times of the year. Assuming these shifts in sea level pressure and wind stress contribute to changes in productivity or flight energetics when sooty shearwaters are migrating

Notwithstanding, it is speculated that the PDO affects the condition of kaieke when they arrive to breed, and therefore the *number* of chicks in burrows, while oceanographic conditions in the Southern Ocean, which precede SOI shifts, then influences chick *size*. If that is correct, then the combination of these two factors might be the basis of predicting shifts in SOI and ONI. In any event, the size of tītī chicks was found to be especially crucial in making these links. Indeed, this alone was able to predict shifts in SOI from 0-12 months after the harvest and ONI from 0-12 and 14-24 months after the harvest. In other words, kaieke foraging at sea – and thus the abundance and size of chicks ashore – are "being affected by oceanographic conditions that are also precursors to shifts in SOI and ONI."[80]

Oceanographic conditions include wind speed and direction, wave height and shape, and sea surface temperatures that directly influence ocean productivity and thus food availability. All of these factors, which appear especially important in the month of March, influence where and when kaieke feed, how they locate food sources, how they travel, and how long they are away from their chicks. Lower wind conditions are especially challenging for kaieke as they make travel and foraging much harder and thereby consume time and energy that would otherwise be invested in chicks. Consistent with the importance placed on wind for assisting with travel, it is noted that higher wind conditions prevail in the sub-Antarctic region prior to La Niña events. This is due to a southern shift in the Southern Hemisphere's jet stream. In contrast, El Niño events are preceded by a northern shift in the jet stream and thus lower wind conditions.[81]

The relationship between SOI and tītī confirmed that this species of seabird, which is an apex predator in its ocean environment, is an important *monitor* of ocean ecosystems, especially the Southern Ocean. However, it revealed that tītī are also a *predictor* of major climate events that have global ramifications. Put differently, tītī highlight the impact of climate change because they are "very sensitive bio-indicators" but have also begun to shed light on climate and ocean shifts and something of their dialectical relationship. In particular, the KMTT research project has narrowed down regions where (barely understood) precursors to El Niño events occur.[82]

The general significance of the KMTT programme is that it developed an index potentially capable of predicting El Niño events nearly two years before they occur. Given the often-disruptive nature of El Niño periods, this is of worldwide importance in terms of pro-active preparation, mitigation, and adaptability. While this index was not created by Ngāi Tahu muttonbirders, ecological knowledge and data held by muttonbirders was central to its development. An ongoing relationship with a critical mass of muttonbirders is likewise required to further use and refine this predictive climate modelling.[83] As one of the programme's researchers noted, "For New Zealand (and globally), the implication of communication with [Ngāi Tahu muttonbirders] about the status of the harvest are immense."[84] The research can also deliver benefits specifically to Ngāi Tahu in that wind data and surface pressure in the sub-Antarctic region can be monitored during a February to March period and

through, the effects would invariably be seen in population trends on the breeding colonies by either: (A) birds dying prior to returning to the colony, reducing the number of adults able to raise offspring, (B) a geographic "reorganization" of birds, wherein birds do not return to the colony to breed those years due to shifts in abundance or distribution of prey, or (C) adults being unable to return to the colony in time to breed because they are energetically stressed." Henrik Moller, extract of confidential report.

[80] Humphries, "Using long term harvest records," 59-66, 76.

[81] Ibid., 143-149.

[82] Humphries, "Using long term harvest records," v-vii, 2, 19.

[83] Ibid., 150.

[84] Ibid., 142. See also 153.

tentative predictions can be made about an upcoming harvest.[85] This mixture of interdependence, cooperation, and mutual benefit, which was at the heart of the KMTT project, clearly illustrates the importance of Māori and non-Māori researchers working together to best understand the Southern Ocean and Antarctic regions and challenges they face from climate change.

Tītī have enormous ecological, social, economic and political significance for Ngāi Tahu whānau and institutions. This alone accounts for Ngāi Tahu interest in research pertaining to the Southern Ocean and Antarctica. The case of tītī also makes it clear that Ngāi Tahu interests in these areas are not necessarily the same as those held by New Zealanders in general, or the New Zealand Government. In summary, Ngāi Tahu interests reflect Ngāi Tahu history, culture and knowledge, and a desire to protect these things for present and future generations.

TE TIRI O TE MOANA | Antarctica

To borrow a phrase, "Māori and Antarctica are two words that are rarely heard together."[86] It is not clear that pre-European Māori ever ventured further south than the Auckland Islands and as such, no hapū or iwi can claim mana whenua over Antarctica on the basis of discovery or occupation. However, New Zealand has a physical presence and sovereign claims in Antarctica and if the New Zealand Government affirms the principle that where New Zealand goes, the Treaty of Waitangi goes too, then Māori may well have an increasing role to play there.[87] Early signs suggest that is so. Either way, the fact remains that there are several Māori connections with Antarctica. This section outlines some of these associations.

It is thought that the first Māori, indeed possibly the first New Zealand-born person, to lay eyes on Antarctica occurred in 1840. This was a Ngāpuhi man, Tuati, also known as John Sac, who was part of the United States Exploring Expedition. Also known as the Wilkes Expedition after its leader Lieutenant Charles Wilkes, it explored the Southern Ocean between 1838 and 1842. The son of a Ngāpuhi woman and Captain William Stewart, a sealer and whaler active on New Zealand's pre-colonial frontier, Tuati arrived in the United States on a whaling ship in the mid-1830s and joined the Wilkes Expedition in 1838.[88] To mark his involvement in the expedition, the New Zealand Geographic Board named an Antarctic peak after Tuati in 1993.[89] The earliest known Ngāi Tahu person to visit Antarctica was William Timaru Joss of Rakiura, a son of a Ngāi Tahu woman, Puwaitaha, and Captain James Alexander Joss. In 1895, aged 51, he and three other men at Rakiura signed on to the Norwegian whaler *Antarctic*, bringing its total crew up to 26 men.[90] The ship subsequently made the first definitively recorded

[85] Another example of how global connections and an outward-looking view can benefit muttonbirders, is the Command oil spill reparation process. In summary, part of a fine for an intentional at-sea oil spill off the Californian coast was used for pest eradication on several Ngāi Tahu-owned Tītī Islands. See P. J. McClelland *et al*, "The Rakiura Titi Islands Restoration Project: community action to eradicate Rattus rattus and Rattus exulans for ecological restoration and cultural wellbeing," in *Island Invasives: Eradication and management*, eds C. R. Veitch, M. N. Clout, and D. R. Towns (Gland, Switzerland: International Union for Conservation of Nature, 2011).

[86] Abigail Haverkamp, "Māori and Antarctica," thesis completed as part of a Postgraduate Certificate in Antarctic Studies, University of Canterbury (2003), 1.

[87] Klaus Dodd, quoted by Barrie Cook, "Bigger Māori role in Antarctica urged," *Dominion Post*, 6 June 2013.

[88] New Zealand Ministry of Culture and Heritage, "First sighting of Antarctica by Tuati," https://nzhistory.govt.nz/media/photo/tuati-and-discovery-antarctica, updated 22-Jul-2014.

[89] Ibid.

[90] See Henrik Johan Bull, *The Cruise of the 'Antarctic' to the South Polar Regions*, p.128. Therefore, the assertion that Dr Louis Potaka was the second Māori to visit Antarctica, with Admiral Byrd in 1935, cannot be sustained. (As per Haverkamp, 1).

landfall at Antarctica at or near Cape Adare in the northern tip of Victoria Land. A great-grandson of Puwaitaha and Captain Joss, Timaru William Joss, also visited Antarctica, as a member of Admiral Richard E. Byrd's second Antarctic expedition in the 1930s. Joss rescued a seaman from the top of a mast during this expedition for which he received a medal from the United States Navy. He then served in the United States Navy during World War Two before returning to Stewart Island and working as a fisherman.[91]

Admiral Byrd's first expedition, which took place between 1928 and 1930, had a fleet of two ships. Captain Frederick C. Melville (whose father was a cousin to Herman Melville of *Moby Dick* fame) commanded one of these, the *City of New York*. This vessel sailed from New Jersey to Dunedin via the Panama Canal and during its one-month stay in Dunedin before heading to the Ross Sea, Ngāi Tahu from Puketeraki and Ōtākou visited the ship. A photo exists of two young members of the Ellison/Taiaroa whānau wearing kākahu and standing on the ship's bridge with Melville who is similarly adorned.[92] Similar ceremonial manaaki had been extended by Ngāi Tahu at Rāpaki and Tuahiwi to the likes of Robert Falcon Scott, Ernest Shackleton and Roald Amundsen when the port of Lyttelton was utilised during earlier exploratory voyages to Antarctica.[93] While worthy of note, this Ngāi Tahu involvement does not detract from the observation and criticism of Antarctica as being a "White Man's Club."[94] Indeed, when Byrd departed Dunedin in 1928, the city's mayor and local Member of Parliament wished him every success and asked that they return first to "civilisation" in Dunedin, where "On behalf of the Anglo-Saxon race…we shall extend to you a right royal welcome."[95] For all the white jingoism though, in a 1930 national radio address to New Zealand children, Byrd paid special tribute to Māori children for Māori musical broadcasts that he and his men received at "Little America" on the Ross Ice Shelf. "The singing and music," he said, "gave us one of the pleasantest times we had during the winter night."[96]

Māori culture has entered Antarctica in a more substantive manner in recent years. This is a consequence of New Zealand's national interests in Antarctica, especially its research station Scott Base, the state's ongoing investment in biculturalism, and the growing institutional power of Te Rūnanga o Ngāi Tahu. In January 2013, two carved panels, two tukutuku panels and a large pouwhenua, Te Kaiwhakatere o Te Raki, carved from tōtara that embody "exploration, adventure and discovery" were unveiled at Scott Base by New Zealand's then Prime Minister, John Key, and the then Kaiwhakahaere of Te Rūnanga o Ngāi Tahu, Mark Solomon, along with noted Ngāi Tahu weaver Ranui Ngarimu.[97] Ngāi Tahu were invited to prepare the pou on behalf of all Māori, which Solomon considered an honour.[98] A Te Rūnanga o Ngāi Tahu employee subsequently expanded on why the pou

[91] Ulva Belsham, "Joss, James Alexander," in *Southern People: A Dictionary of Otago Southland Biography*, ed. Jane Thomson (Dunedin, N.Z.: 1998), 262. At least two further Joss descendants of have retraced their ancestors' footsteps to the Southern Ocean and Antarctica in recent years: a great-granddaughter of William Timaru Joss, Irene Schroder, voyaged into the Southern Ocean in 2011, while a great-great-great granddaughter, Rata Pryor Rodgers, visited Antarctica in December 2016. See http://ngaitahu.iwi.nz/our_stories/postcard-from-antarctica/ and http://ngaitahu.iwi.nz/our_stories/the-helmsmans-apprentice/.

[92] A copy of this photo held by Hawea Ellison, a kaumātua from Kāti Huirapa ki Puketeraki.

[93] Haverkamp, 2, 7.

[94] Ibid., 9.

[95] "Civic Reception," *Otago Daily Times*, 30 November 1928, 7.

[96] "Flying to the Pole," *Press*, 19 March 1930, 13.

[97] "Ngāi Tahu unveil a pouwhenua, carved sign and tukutuku panels in Antarctica"; see also "Ngāi Tahu unveil art work in Antarctica," http://www.tepanui.co.nz/tpr/2013/03/ngai-tahu-unveil-art-work-in-antarctica/.

[98] "Ngāi Tahu unveil a pouwhenua, carved sign and tukutuku panels in Antarctica."

was erected: "to maintain our mana moana" over the sub-Antarctic and "reflect our tribal status and history in the deep South."[99]

More recently, in 2019, two Ngāi Tahu carvers created and personally installed whakawae and a pare at Scott Base. Fittingly, one of these carvers, James York, was raised in Murihiku and is a lifelong muttonbirder. Indeed, he was motivated to undertake this work due to his concerns about climate change. In his words, the carvings are "a wero really – what are the leaders of nations actually doing about this problem of climate change?" From his workshop at Oraka (Colac Bay) on the south coast of Murihiku – where foreshore is subject to increasing erosion due to a rising sea level – York asked "How is what's happening in Antarctica affecting the sea and therefore, the rest of the world?"[100] In thinking through this question and posing it for others via whakairo, York is asserting a role for mātauranga Māori in Antarctica.

This investment of material culture by Ngāi Tahu built on earlier contributions. For instance, the Ngāi Tahu elder statesman Sir Tipene O'Regan represented the iwi on the New Zealand Geographic Board for nearly 30 years, during which time it was responsible for New Zealand's naming rights in Antarctica. This led to several Māori names being planted on the continent.[101] The Ngāi Tahu contribution to the New Zealand nation state and to Antarctica was also visible in 2004 when water was taken from a stream at Aoraki-Mount Cook and sprinkled at the memorial cross on Mount Erebus to mark the 25th anniversary of New Zealand's worst aviation accident, which claimed 257 lives.[102]

[99] Te Rūnanga o Ngāi Tahu, "The Helmsman's Apprentice," 14 December 2016, http://ngaitahu.iwi.nz/our_stories/the-helmsmans-apprentice/

[100] Rebecca Fox, "Carving out a key discussion," *Otago Daily Times*, 7 February 2019, https://www.odt.co.nz/entertainment/arts/carving-out-key-discussion.

[101] Mark Revington, "A View from the Top," *Te Karaka* 59 (2013), 12-14; Haverkamp, 12-14.

[102] New Zealand Ministry of Culture and Heritage, "Erebus memorials," https://nzhistory.govt.nz/media/photo/memorial-cross-mount-erebus, updated 28-Nov-2014.