



## GeoContext:

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### Companion Document for “The Māori & Antarctica”

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**Location:** New Zealand, Antarctica

**People:** Māori, Hui-Te-Rangiora, Fayne Robinson

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This companion guide accompanies the slides for “The Māori & Antarctica.” We provide additional context for the slides, a list of sources for the content in the slides, and additional articles and academic papers of interest related to these slides. For accessibility purposes, we also provide alternative text for images. Links for the images can be found at the end of the document.

#### Additional Context for Slides

**Slide 1** | Māori is pronounced **mau**-ree, a link to the pronunciation can be found here:

<https://upload.wikimedia.org/wikipedia/commons/e/ec/Rar-M%C4%81ori.ogg>

**Slide 2** | Polynesians began exploring east across the Pacific Ocean from New Guinea in canoes around 1500 B.C., soon reaching the Solomon Islands, only ~1000 km from New Guinea. Continuing from this initial exploration, the Polynesians improved their canoes and began traveling much further distances throughout the Pacific. Within 2500 year, (by ~ 1000 A.D.) Polynesians had settled on islands throughout the Pacific. This area of settlement is known as the “Polynesian Triangle” and spans from Hawaii in the north, Easter Island in the southeast, and New Zealand in the southwest. These islands are highlighted in the map projection in the middle of the slide with Hawaii marked as #1, #2 New Zealand (Aotearoa), and #3 Easter Island (Rapa Nui).

European colonization of New Zealand began in the early 19<sup>th</sup> century however, these islands were settled centuries before. Between 1320 and 1350 A.D, Polynesians traveled to and settled on New Zealand. These Polynesians became known as the Māori, the Indigenous Polynesian people of Aotearoa, which is now known as New Zealand. The image in the bottom right corner is a drawing of a traditional Māori canoe, or waka.

**Slide 3** | According to the oral histories of the Māori tribal groups Ngati Rarua and Te Ati Awa a great Māori explorer and chief, Hui Te Rangiora sailed into Antarctic waters and caught sight of land in 650 A.D.

Hui Te Rangiora was sent on an expedition south of the Cook Islands (highlighted on the map to the right) to reach Aotearoa (New Zealand). He and his crew traveled south from the Cook Islands, however, they missed Aotearoa to the west and continued south. The route can be seen as the bolded track highlighted in Figure 3. As their journey continued south, they spotted “a white land that was floating.” Hui Te Rangiora and his crew likely had spotted the ice shelves surrounding Antarctica, similar to the photograph of the Ross Ice Shelf in the bottom left corner of the slide.

**Slide 4** | There are documented observations of the Māori exploration of the Southern Ocean and Antarctica. They described the ocean water as Te tai-uka-a-pia, or “sea foaming like arrowroot.” The term “pia” refers to arrowroot, a root vegetable common in the Polynesian diet. When pia is scraped and powdered, it looks like snow as seen in the image at the top left of the slide (Figure 5). The Māori explorers were likely describing ice floes within the Antarctic waters, similar to that seen pictured in the bottom left of the slide (Figure 6).

The quote within the green box is an account of the sub-Antarctic flora, fauna, and physical geography from a Māori voyager, Te Aru-tanga-nuku, and expands upon the Māori observations of Antarctica. Note that they highlight the “frozen sea of pia,” likely indicating the masses of ice floating. They also observe “deceitful animal of the sea who dives to great depths,” which were likely marine mammals and penguins. They also go on to describe “Other things are like rocks, whose summits pierce the skies, they are completely bare and without vegetation on them,” likely observing the mountainous terrain of the Antarctic continent.

**Slide 5** | While Māori are an integral piece of Antarctica’s history of exploration in the past, they continue to be a vital presence in Antarctica today. This slide shows photographs of a Māori carving located in Antarctica. In 2013, a Māori carver (from the Māori “iwi” or nation, Ngāi Tahu) Fayne Robinson carved a post named Te Kaiwhakatero o te Taki, or “Navigator of the Heavens.” This Māori post sits at Scott Base, New Zealand’s Antarctic research station situated adjacent to the Ross Ice Shelf. The head of the carving (see in the middle photograph, Figure 8) looks directly skyward to symbolize the importance of celestial navigation to the Māori. The post is also decorated with stars, waves, water and animals to celebrate the Antarctic ecosystem and the importance of the environment. Figure 8 (middle) shows the full carving in the foreground with Scott Base in the background while Figure 9 (bottom right) pictures the view looking outward from the carving across the vast Ross Ice Shelf.

**Slide 6** | In addition to the Māori presence in Antarctic exploration and research, Māori are also involved in the commercial use and preservation of Antarctic fisheries, including the Toothfish fishery. Toothfish (pictured in the images to the right) are a top predator in Antarctic waters and are the most prosperous fishery in the Ross Sea. In 2010, there was an assessment of the long-term sustainability of the Ross Sea toothfish fishery from an Indigenous Ngāi Tahu (A Māori iwi or “nation”) perspective. Some of the main priorities are “imposing catch size and limits,” “use of seasonal and spatial closures,” protections of habitats, protections of associated and dependent

species, compliance, and enforcement. These Māori best practices highlighted how culture-centered “best practices” can lead to the sustainable long term outcome for the fishery.

There are currently very limited mechanisms for the inclusion of environmental perspectives of Indigenous people in the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). Inclusion of Indigenous best practices would likely be mutually beneficial for the sustainable management of Southern Ocean fisheries.

**Slide 7** | This slide provides a broader context for Antarctica’s human history over time and moving into the future. This timeline comes from a paper by Wehi et al. (2021) and highlights major events such as Hui Te Rangiora’s voyage in ~650 A.D. to The Antarctic Treaty in 1961 to the planned review and revision of the Antarctic Treaty System in 2048.

### **Alternative Text for Figures**

**Figure 1** | The “Polynesian Triangle” is demarcated as a lavender polygon within the Pacific Ocean. This area marks the extent of the Pacific Ocean settled by Polynesians. The light blue represents the Pacific and Southern Oceans and you can see Antarctica at the bottom of the globe, Australia to the middle-lower left and North America and South America on the right side of the globe, all shaded in a light tan tone.

**Figure 2** | A long Māori canoe, also known as a waka. This canoe is made of wood and fits about 50 people within it. A series of wooden paddles are extended outside of the vessel.

**Figure 3** | A map of Polynesian journeys around the Pacific and Southern Oceans. Australia is depicted in the middle left. There are lines of latitude (horizontal) and longitude (vertical). The lines connecting islands indicate seafaring journeys of the Polynesians. The line that is bolded marks Hui Te Rangiora’s journey to the Southern Ocean which began in the Cook Islands. Hui Te Rangiora was trying to get to *Aotearoa* (New Zealand, in blue box).

**Figure 4** | A photograph of an ice shelf with steep cliffs that plunge into the dark blue ocean. The blue shadows on the white ice shelf depict how sharp the edges of ice shelves are.

**Figure 5** | A hand holding powdered Polynesian arrowroot, a root vegetable common to a Polynesian diet. This arrowroot (pia) looks like powdered white chalk.

**Figure 6** | Antarctic icebergs, part of an “ice floe,” or a large group of floating ice.

**Figure 7** | A traditional Māori carved wooden post with a large face carved looking up towards the stars with the New Zealand Antarctic research base in the background.

**Figure 8** | A side profile of a traditional Māori carved wooden post with a large ice shelf in the background.

**Figure 9** | Top image is of an Antarctic fish popular for commercial fishing which lives in subzero degree waters below 60 degrees South. Bottom image is of a toothfish being pulled onto a fishing vessel by two people.

**Figure 10** | An outline of human involvement and exploration of Antarctica from 650 A.D. to ongoing management of Antarctica in 2048 and beyond. The timeline starts at ~650 A.D. with Hui Te Rangiora's voyages south encountering Antarctica, and moves forward in time to the present and future. In particular, in 2048 there is a planned review and potential revision of the Antarctic Treaty System which will chart perhaps a new course for the sustained management of Antarctica.

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Wehi, P. M., van Uitregt, V., Scott, N. J., Gillies, T., Beckwith, J., Rodgers, R. P., & Watene, K. (2021). Transforming Antarctic management and policy with an Indigenous Māori lens. *Nature Ecology & Evolution*, 5(8), 1055–1059. <https://doi.org/10.1038/s41559-021-01466-4>

## Articles

[The Maori Vision of Antarctica's Future](#), **New York Times**

[Māori May Have Reached Antarctica 1,000 Years Before Europeans](#), **Smithsonian Magazine**

[New Zealand Māori may have been first to discover Antarctica, study suggests](#), **The Guardian**

[Wayfinders: A Pacific Odyssey](#), **PBS**

## Women in Antarctica, New Zealand History

### **Additional Reading**

Anderson, A. (2005). Subpolar settlement in South Polynesia. *Antiquity*, 79(306), 791–800.  
<https://doi.org/10.1017/S0003598X00114930>

### **Links to Figures**

**Figure 1** | <https://commons.wikimedia.org/wiki/File:Polynesia-triangle.png#/media/File:Polynesia-triangle.png>

**Figure 2** | [https://commons.wikimedia.org/wiki/File:An account of the voyages undertaken by the order of His present Majesty for making discoveries in the Southern Hemisphere, and successively performed by Commodore Byron, Captain Wallis, Captain \(14796336363\).jpg#/media/File:An account of the voyages undertaken by the order of His present Majesty for making discoveries in the Southern Hemisphere, and successively performed by Commodore Byron, Captain Wallis, Captain \(14796336363\).jpg](https://commons.wikimedia.org/wiki/File:An_account_of_the_voyages_undertaken_by_the_order_of_His_present_Majesty_for_making_discoveries_in_the_Southern_Hemisphere,_and_successively_performed_by_Commodore_Byron,_Captain_Wallis,_Captain_(14796336363).jpg#/media/File:An_account_of_the_voyages_undertaken_by_the_order_of_His_present_Majesty_for_making_discoveries_in_the_Southern_Hemisphere,_and_successively_performed_by_Commodore_Byron,_Captain_Wallis,_Captain_(14796336363).jpg)

**Figure 3** | <https://ir.canterbury.ac.nz/bitstream/handle/10092/14205/Turi%20McFarlane%20project.pdf?sequence=1&isAllowed=y>

From Best, E. (1923). *Polynesian Voyages: The Maori as a Deep-sea Navigator, Explorer, and Colonizer*. Wellington, New Zealand: Dominion Museum.

**Figure 4** | [https://commons.wikimedia.org/wiki/File:Ross Ice Shelf 1997.jpg](https://commons.wikimedia.org/wiki/File:Ross_Ice_Shelf_1997.jpg)

**Figure 5** | [https://commons.wikimedia.org/wiki/File:Starr-121108-0896-Tacca leontopetaloides-ground into powder for thickening with plant-Pali o Waipio-Maui \(24829009209\).jpg#/media/File:Starr-121108-0896-Tacca leontopetaloides-ground into powder for thickening with plant-Pali o Waipio-Maui \(24829009209\).jpg](https://commons.wikimedia.org/wiki/File:Starr-121108-0896-Tacca_leontopetaloides-ground_into_powder_for_thickening_with_plant-Pali_o_Waipio-Maui_(24829009209).jpg#/media/File:Starr-121108-0896-Tacca_leontopetaloides-ground_into_powder_for_thickening_with_plant-Pali_o_Waipio-Maui_(24829009209).jpg)

**Figure 6** | [https://commons.wikimedia.org/wiki/File:AP97 ice floes \(3422931129\).jpg#/media/File:AP97\\_ice floes \(3422931129\).jpg](https://commons.wikimedia.org/wiki/File:AP97_ice_floes_(3422931129).jpg#/media/File:AP97_ice_floes_(3422931129).jpg)

**Figure 7** | Wehi, P. M., Scott, N. J., Beckwith, J., Rodgers, R. P., Gillies, T., Van Uitregt, V., & Watene, K. (2021). A short scan of Māori journeys to Antarctica. *Journal of the Royal Society of New Zealand*, 0(0), 1–12. <https://doi.org/10.1080/03036758.2021.1917633>

**Figure 8** | Wehi, P. M., Scott, N. J., Beckwith, J., Rodgers, R. P., Gillies, T., Van Uitregt, V., & Watene, K. (2021). A short scan of Māori journeys to Antarctica. *Journal of the Royal Society of New Zealand*, 0(0), 1–12. <https://doi.org/10.1080/03036758.2021.1917633>

**Figure 9** | Toothfish - [http://www.westarctica.wiki/index.php/File:Antarctic\\_toothfish-water.jpg](http://www.westarctica.wiki/index.php/File:Antarctic_toothfish-water.jpg)

Toothfish fishing - <http://www.westarctica.wiki/index.php/File:Toothfish-fishin.jpg>

**Figure 10** | Wehi, P. M., van Uitregt, V., Scott, N. J., Gillies, T., Beckwith, J., Rodgers, R. P., & Watene, K. (2021). Transforming Antarctic management and policy with an Indigenous Māori lens. *Nature Ecology & Evolution*, 5(8), 1055–1059. <https://doi.org/10.1038/s41559-021-01466-4>