Wild Sea: A History of the Southern Ocean, Joy McCann (2018). Sydney, Australia: University of New South Wales Press. 256 pp., paperback. ISBN: 978-1742235738. AUD 33.

“The Southern Ocean is a wild and elusive place, an ocean like no other. With its waters lying between the Antarctic continent and the southern coastlines of Australia, New Zealand, South America and South Africa, it is the most remote and inaccessible part of the planetary ocean, the only part that flows completely around Earth unimpeded by any landmass. It is notorious amongst sailors for its tempestuous winds and hazardous fog and ice. Yet it is a difficult ocean to pin down.”

These opening sentences set the tone for this comprehensive and highly engaging environmental history. While the mysteries and complexities of this ocean are indeed difficult to pin down, McCann surfaces them in a rich blend of narratives from the biophysical sciences, geopolitics and the humanities. Like the ocean, their boundaries are fluid, dynamic and highly complex, and the book does not constrict itself to a formal chronological timeline or disciplinary structure. Rather its seven chapters (Ocean, Wind, Coast, Ice, Deep, Current and Convergence) take more fluid perspectives on the circumpolar ocean which merge into a much richer, thicker analysis of the geophysical, the ecological and the social. While Antarctic social history is often structured into the Exploratory, Heroic and Scientific Eras, here pertinent aspects of each feature throughout as they lend meaning to the deeper thesis. In so doing, the author includes those who have pioneered travel in and around the Southern Ocean and Antarctica. Explorers, scientists and those seeking to exploit its many natural resources are all glimpsed on the way. Yet it is the ocean itself, not just on its surface, but in its physical and temporal depths which is, quite appropriately, centre stage. How could it be otherwise when half of the ocean's surface freezes in winter, a process described as one of the “largest seasonal physical processes in the world ocean” (p. 87)?

The narrative is eloquent, flowing effortlessly from topic to topic, story to story—each chapter beginning with an excerpt from the author's own travel diaries in the region, followed by undercurrents and eddies where stories sometimes loop back on themselves to reveal another layer. Among these ebbing and flowing narratives are multiple elements of contemporary interest which merge to a call to arms in the concluding chapter. There, the various elements circulating in the preceding chapters, of human greed and wanton slaughter without heed to the consequences, come together to provide a disturbing backdrop to the climate crisis and the need for perspectives on the Southern Ocean and, perhaps, on the integration of science not just across biophysical disciplines but with the arts and social sciences. The text is accessible to a broad audience yet sufficiently supported by rigorous references and a copious bibliography to provide plenty of scope for further research and as a primer for those seeking to bridge the humanities and the biophysical sciences.

In her blog post about writing the book, the author reflects on why she chose to write a history spanning the geographical, temporal and spatial scales of this vast ocean. She notes that one ecologist was surprised that such a book could be written when “no-one lives there” given that the ocean only contains 20 tiny sub-Antarctic island groups. Yet the book highlights multiple waves of natural and human history no less meaningful than that on terrestrial environments. While many relate to colonial narratives from the Heroic and Scientific eras, indigenous issues have also had an important role. These include the Selk'nam, the Haush, the Alakaluf and the Yaghan of Tierra del Fuego (pp. 59–65); the Mirning peoples of Australia (pp. 173–176); and the Maori (pp. 30–31, 157, 160) and Moriori (p. 160) of Aotearoa New Zealand. Some are considered extinct, while others have gained formal redress for historical breaches of the agreements made with colonial powers including, most recently, the Moriori. This would have been a stimulating diversion from the main topic. All the more so as the sense of an “ocean consciousness” pervades the book. McCann sheets this concept back to books such as Rachel Carson's *The Sea Around Us* (1951) and a culture she feels was lost in the post-war years after which the region became more of an international research laboratory. Given that in Aotearoa New Zealand the hill country of Te Urewera as had the status of a legal person since 2014 and the Whanganui River has had similar legal representation since 2017, this is a strand about which it would be good to read more in the future.

The interwoven threads, often bleak, are not entirely without hope with some interventions, intermittently, reducing the impacts of natural resources exploitation. In the histories of commercial sealing and whaling, the various bilateral and multilateral attempts to research and limit their impacts can be viewed as a precursor to the current climate crisis. For example, while the

first whaling station in the Australian colonies was established in Tasmania in 1806, it was fluctuations in supplies that influenced ongoing exploitation until cooperative international efforts to conserve whales led to the League of Nations' Convention on the Regulation of Whaling (1931). After World War II, the long history of "serial exploitation" (p. 171) led to the establishment of the International Convention for the Regulation of Whaling (1948). However, it was not until the 1960s that the International Whaling Commission was able to ban Australia's shore-based humpback whaling operations with a complete ban on commercial whaling by the Australian Government taking place in 1979. Japan's stance on "scientific" whaling in the Southern Ocean is discussed briefly (p. 193) though its cessation of whaling in the Southern Ocean took place after the book was published illustrating how lengthy change processes can be.

The concluding comments on how the Southern Ocean provides a barometer for climate science feel, in some ways, underplayed. Though written prior to the 2019–2020 Australian bushfires, it seems obvious that the global barometer was already highly conclusive concerning climate change even if some political leaders remain in denial. It would be interesting to document how researchers' interests in how the Southern Ocean will be impacted by global change processes have evolved in recent decades. With the slow progress historically of, as noted, global efforts to restrict

whaling, greater analysis of the conditions which led to change by the ocean's neighbouring countries and the relevant global institutions would have been helpful. Given the book's great sweep across time, opening up such a conversation would have benefitted those seeking to work across disciplines in ways which this book clearly champions. It also echoes the importance of environmental history as a foundational element for researchers and policymakers seeking to grapple with global change issues and to recognise the patterns from previous institutional regimes, both successful and otherwise.

In summary, the book represents the increasing interest in cross-over between popularising research and highlighting contemporary issues without an overt theoretical or political lens. It gently yet poetically engages with the timeless mysteries of the ocean and of its human and non-human connections. Indeed, it highlights that it is the role of krill ("the most abundant creatures on Earth . . . at two quadrillion creatures" (p. 186)), as much as whales, which highlight the intimate connection between the Southern Ocean and the future of humanity. All of which opens the reader to seek out more about this fascinating and globally important ocean. (Bob Frame, Gateway Antarctica, University of Canterbury, Christchurch, New Zealand (research@frameworks.nz))

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