

Scott Islands and Iselin Bank IMMA

Area meeting the IMMA Selection Criteria

Advised buffer for use in the development of appropriate place-based conservation measures

The information on this map was derived from the work of regionally assembled experts for the region. Care was taken in the creation of this map and to follow the Global Self-Assessment Methodological High-resolution Integrity (GSHRI) Version 2.3.6 August 28, 2020, which is distributed under the Creative Commons Public License by the National Oceanic and Atmospheric Administration's National Centers for Environmental Information (NCEI). The authors cannot accept any responsibility for errors, omissions, or positional accuracy. Not to be used for purposes of navigation.



Area Size

765,120 km²

Qualifying Species and Criteria

Humpback whale – *Megaptera novaeangliae*

Criterion C2

Antarctic Blue whale – *Balaenoptera musculus intermedia*

Criteria A, C2

Fin whale – *Balaenoptera physalus*

Criterion A

Antarctic minke whale – *Balaenoptera bonaerensis*

Criterion C2

Marine Mammal Diversity (D2)

Balaenoptera acutorostrata, *Balaenoptera musculus intermedia*, *Balaenoptera bonaerensis*, *Balaenoptera physalus*, *Globicephala melas edwardii*, *Hydrurga leptonyx*, *Lobodon carcinophaga*, *Megaptera novaeangliae*, *Mirounga leonina*, *Orcinus orca*,

Summary

The Scott Islands IMMA includes Scott Island, Balleny Island and the Iselin Bank. Situated at the northern end of the Ross Sea, they are far enough from the Antarctic mainland to be directly in the path of circumpolar ocean currents. Consequently, they create an upwelling of nutrient-rich deep water to the surface, which then generates high levels of biological productivity. This rich marine ecosystem serves as an important feeding area for humpback whales (*Megaptera novaeangliae*) and a

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Summary, continued.

hot spot for Critically Endangered Antarctic blue whales (*Balaenoptera musculus intermedia*) and Antarctic minke whales (*Balaenoptera bonaerensis*). The IMMA is used by many other species of marine mammals such as killer whales (*Orcinus orca* – both Type C and Type B1); Vulnerable fin whales (*Balaenoptera physalus*); southern long-finned pilot whales (*Globicephala melas edwardii*), southern elephant seals (*Mirounga leonina*), crabeater seals (*Lobodon carcinophaga*) and leopard seals (*Hydrurga leptonyx*).

Description

Scott Island is a small island of volcanic origin in the Ross Sea, 505 kilometres northeast of Cape Adare, the northeastern extremity of Victoria Land, Antarctica. It is 565 metres long from north to south, and between 130 metres and 340 metres wide, reaching a height of 54 metres and covering an area of 4 hectares. The Scott Islands, together with Balleny Island are the only oceanic islands in southwestern Antarctica, making them distinctive from any neighbouring areas. Iselin Bank (72°30'S 179°0'W) is a submarine bank in the Ross Sea off Antarctica. Its shallow waters support a rich underwater ecosystem. The region is a hotspot for top predators as well as one of the most productive toothfish feeding grounds in the world (Brooks 2013).

Criterion A: Species or Population Vulnerability

Blue whales, *Balaenoptera musculus*, were hunted for over a century and whaling brought them to the brink of extinction before the species became protected by international agreement in 1966. The Antarctic subspecies is Critically Endangered on the IUCN Red List (Cooke, 2018) and is of global interest as one of the most at risk baleen whale species in the Southern Ocean. The Antarctic form *B. m. intermedia*, which used to be the most abundant form of blue

whale, occurs in the Antarctic in summer, from the Antarctic Polar Front up to and into the ice (Branch et al., 2006), including (in the past) the South Georgia area. Its winter distribution is poorly known, but the presumption has been that animals migrate in winter to lower latitudes, largely because blue whales were caught off Namibia and South Africa, in winter (Best 1998, Mackintosh 1965). Commercially exploited to critically low population levels, the fin whale, *Balaenoptera physalus*, is currently a vulnerable species in the Southern Ocean (Reilly et al., 2013). Fin whales have a nearly circumpolar distribution in the Southern Ocean (De Broyer et al., 2014) with numerous records around the Balleny Islands (Naganobu et al., 2005).

Criterion C: Key Life Cycle Activities Sub-criterion C2: Feeding Areas

This IMMA has been identified as an important feeding area (historically and present-day) for humpback whales (Andrews-Goff et al., 2018; Riekkola et al., 2018). Found in oceans and seas around the world, humpback whales typically migrate up to 25,000 km each year. Most populations feed in high-latitude waters, and migrate to tropical or

subtropical waters to breed and give birth, fasting and living off their fat reserves. In the Southern Ocean, their diet consists of krill and their foraging habitat in the Scott Islands region is associated with the marginal ice zone (Andrews-Goff et al., 2018). This area has also been identified as an important feeding area, using passive acoustics, for Antarctic blue whales (Double et al., 2015; Miller et al., 2015). In addition, Antarctic minke whales are known to occur from around 70°S to the ice edge (and into the ice fields) during the austral summer in the region where they feed mainly on krill (Ballard et al., 2012).

Criterion D: Special Attributes Sub-criterion D2: Diversity

Tracking data show that humpback whales use the IMMA for feeding (Andrews-Goff et al., 2018). This is also the case for some southern elephant seals (Hindell et al., 2017). Transect survey data show that this productive area is used by many species of marine mammals, including: fin whales, *Balaenoptera physalus* (Tangaroa Census of Antarctic Marine Life; Bowden et al., 2020), humpback whales, *Megaptera novaeangliae* (Bowden et al., 2020), Antarctic blue whales

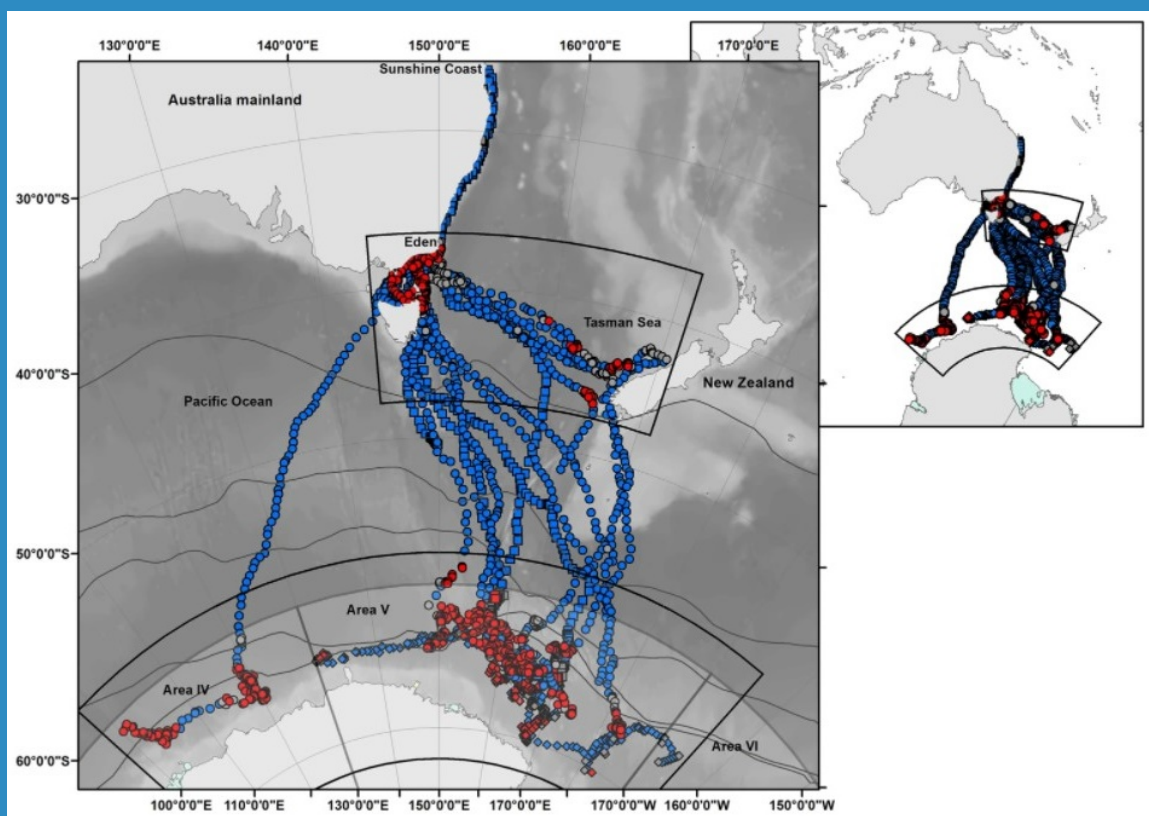


FIGURE 1: Migration pathways for 30 humpback whales satellite –tagged off the eastern coast of Australia. Location estimates from the state-space model are coloured according to the behavioural state estimate: 'search' (red), 'transit' (blue) and 'uncertain' (grey). Grey lines show climatological oceanic frontal positions. From Andrews-Goff et al., 2018.

(Tangaroa Census of Antarctic Marine Life), minke whales (probably mainly *B. bonaerensis* but possibly also *B. acutorostrata*) (Tangaroa Census of Antarctic Marine Life), killer whales, *Orcinus orca*, (Tangaroa Census of Antarctic Marine Life); southern long-finned pilot whales, *Globicephala melas edwardii*, and leopard seals, *Hydrurga leptonyx*. Satellite studies conducted in both McMurdo Sound and Terra Nova Bay show areas along the western Ross Sea coastline where Type-C killer whales engage in feeding activities and long-distance travel beyond the coast, outside the polar front (Eisert et al., 2015). The Type-B1 killer whales, which feed on mammals and birds that commonly occur along the ice shelf in this region during the austral summer, take advantage of both the seal and Adelie penguin colonies in the area (Andrews et al., 2008; Lauriano et al., 2007; 2007b). Antarctic minke whales are known to occur from around 7°S to the ice edge (and into the ice fields) during the austral summer. They feed mainly on krill and, in turn, are important prey for killer whales. High densities of Antarctic minke whales are recorded in the entire Ross Sea area (Ballard et al., 2012). The distribution of crabeater seals is tied to seasonal fluctuations of the pack ice. They can be found right up to the coast and ice shelves of Antarctica, as far south as the Bay of Whales, during the late summer ice break-up. They occur in greatest numbers in the seasonally shifting pack ice surrounding the Antarctic continent (Hückstädt, L. 2015). Van Dam & Kooyman (2004) reported several sightings during a late autumn transect through the Ross Sea. Southern long-finned pilot whales are found circumpolar throughout the Southern Ocean in cold currents (Goodall and Galeazzi, 1985). The Australian 'Southern Ocean Cetacean Ecosystem Program' (SOCEP) surveys, whales were found near ice as far south as 64° South (Waerebeek et al., 2004) and Brownell (1974) reported sightings near Scott Island (67°S, 179°W).

Supporting Information

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