Area Size

105,928 km²

Qualifying Species and Criteria

New Zealand sea lion – *Phocarctos hookeri*

Criteria A, B1, C1, C2

Southern right whale – *Eubalaena australis*

Criterion C1

New Zealand fur seal – *Arctocephalus forsteri*

Criterion C2

Southern elephant seal – *Mirounga leonina*

Criteria C1, C2

Marine Mammal Diversity

Arctocephalus forsteri, Balaenoptera physalus, Balaenoptera musculus, Balaenoptera musculus brevicauda, Eubalaena australis, Globicephala melas, Hydrurga leptonyx , Phocarctos hookeri, Physeter macrocephalus, Lagenorhynchus obscurus, Lagenorhynchus cruciger, Megaptera novaeangliae, Mirounga leonina, Orcinus orca

Summary

Auckland Island/Maungahuka and Campbell Island/Motu Ihupuku are located hundreds of kilometres south of New Zealand's South Island. They both serve as breeding grounds for the Endangered New Zealand sea lion (*Phocarctos hookeri*), as well as southern elephant seals (*Mirounga leonina*) and New Zealand fur seals (*Arctocephalus forsteri*). All three of these pinniped species usually forage close to shore during the period before pups are weaned and

New Zealand Subantarctic Islands IMMA

Summary, continued.

begin to disperse. The waters surrounding Auckland Island are also the primary winter breeding ground for the genetically distinct New Zealand population of southern right whales (*Eubalaena australis*). Non cow-calf pairs are found at Campbell Island, although some individuals move between the two areas. Dusky dolphins (*Lagenorhynchus obscurus*) are also observed regularly in these waters. Some individuals move between the Auckland and Campbell Islands as the regions have similar oceanographic dynamics. At least 20 species of marine mammals have been recorded from these waters including migrating, deep-diving and oceanic cetaceans.

Description

The Auckland Islands are an archipelago of New Zealand, lying 465+ kilometres south of the South Island of New Zealand. Most of the islands have a volcanic origin, with the archipelago dominated by two 12-million-year-old Miocene volcanoes, subsequently eroded and dissected. Campbell Island was formed by the remains of a shield volcano, characterised by large cliffs, boulder beaches and a few sandy bays. It lies 660 km south of the South Island, and it is New Zealand's southernmost island. Its marine environment comprises a narrow band of sea about 100 m deep around Campbell Island and its islets, dropping to 200 m at the limit of the territorial sea (12 nautical miles). There is an existing marine reserve, created in 2014, that covers 39% of this territorial sea and a "type 2 marine protected area" covering the rest of the territorial sea. The existing marine reserve and the type 2 marine protected area, however, do not cover the main feeding ground for the marine mammal populations feeding around Campbell Island.

New Zealand sea lions have a highly restricted distribution for a marine mammal. Their primary habitat is several subantarctic islands south of New

Zealand, and their surrounding waters. The principal breeding colony is at the Auckland Islands, with most of the remaining animals breeding at Campbell Island (Maloney et al., 2012).

New Zealand fur seals occur around both the North and South Islands of New Zealand, with newly formed breeding colonies now established on the North Island and expanding breeding colonies around the entire South Island (Bradshaw et al., 2002). There are well-established and expanding colonies also found on Stewart Island/Rakiura and all of New Zealand's subantarctic islands, including Campbell and Auckland Islands.

Figure 1: New Zealand sea lion pups on Campbell Island. Photo: Mary-Anne Lea IMAS/UTAS

Southern elephant seals have a nearly circumpolar distribution in the Southern Ocean with most haul-out sites occurring on subantarctic and Antarctic islands (Hofmeyr, 2015). Three distinct populations are recognised, centred on South Georgia, Kerguelen, and Macquarie Islands (Laws, 1960). There is little interchange between these, and each displays phenotypic differences in size, growth, and onset of maturity (Laws, 1979). The Macquarie Island stock includes the small populations breeding at Campbell and Antipodes Islands/Moutere Mahui (Taylor et al., 1989). This population has been continuously decreasing for the past seven decades (McMahon et al., 2005; Hindell et al., 2016).

Dusky dolphins are widespread in the Southern Hemisphere (Brownell and Cipriano, 1999). They occur in apparently disjunct subpopulations in the waters off Tasmania, southern Australia, New Zealand (including the Campbell and Auckland Islands) (Würsig et al., 1997).

Criterion A: Species or Population Vulnerability

The endemic New Zealand sea lion (Phocarctos hookeri) exhibits a highly restricted breeding range, and was recently upgraded to Endangered on the IUCN Red List (Chilvers, 2015) and has Nationally Vulnerable status under the New Zealand Threat Classification System (Baker et al., 2019).

Criterion B: Distribution and Abundance Sub-criterion B1: Small and Resident Populations

New Zealand sea lion numbers are estimated at 11,800 individuals including pups (Roberts and Doonan, 2016) with breeding populations extending from South Island New Zealand to subantarctic Campbell Island, with marked variations in size and trajectories (Childerhouse and Gales, 1998). The breeding population of New Zealand sea lions (*Phocarctos hookeri*) is almost exclusively (98%) contained within the Auckland Island (68%) and Campbell Island (~30%) regions. The maternal care period lasts around 11 months, meaning that adult females and pups are resident in the region year-round. Little is known regarding juvenile dispersal at the two sites, but from tracking studies there are indications that juveniles behave as central place foragers at both sites from tracking studies (Leung et al., 2012; Leung et al., 2013; Leung et al., 2014).

Criterion C: Key Life Cycle Activities Sub-criterion C1: Reproductive Areas

These islands are the primary breeding grounds for the New Zealand sea lion. The largest population, on the subantarctic Auckland Islands, accounts for an estimated 68% of the overall annual pup production, while the Campbell Island and Stewart Island populations contribute ~30% and 2% respectively

Figure 2: Aerial images of mom and calf southern right whales, off the Auckland Islands. Images courtesy of the University of Auckland and Cawthron Institute, collected under a research permit granted by the NZ Department of Conservation.

(DOC/MPI 2017). Marine mammal work on Campbell Island is concentrated on New Zealand sea lions, thus little data exist for fur seal breeding colonies in this region. However, there is a breeding colony at Rocky Beach, with at least 10 pups seen in some seasons, but surveys here are not regular (Baird 2011). The Macquarie Island southern elephant seal population includes the small populations breeding at Campbell and Antipodes Islands (Taylor et al., 1989).

The main breeding area for genetically distinct New Zealand southern right whales is the Auckland Islands with increasing numbers of juvenile whales at Campbell Island, and a few cow-calf pairs (Patenaude et al., 1998; Carroll et al., 2014; Torres et al., 2016; Carroll et al., 2019). The most recent abundance estimate from 1995-2009 is 2169 whales (95% CL 1836, 2563) with population growth rate of 7% (Carroll et al., 2014). Whilst whale numbers peak in winter, a few calls were detected over the broader summer months (Webster et al., 2019).

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

The waters surrounding the Auckland and Campbell Islands provide key foraging habitat for New Zealand sea lions. At the Auckland Islands, sea lions of various age classes (Leung et al. 2012; 2013) and most commonly adult females forage across the continental shelf and shelf edges in the area north and northeast of Enderby Island (Chilvers et al., 2013). Tracking data from male southern elephant seals have shown that they use the shelf habitat associated with the Campbell plateau for foraging (Pascoe et al., 2016).

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