

Marlborough Sounds and Cook Strait IMMA

Summary:

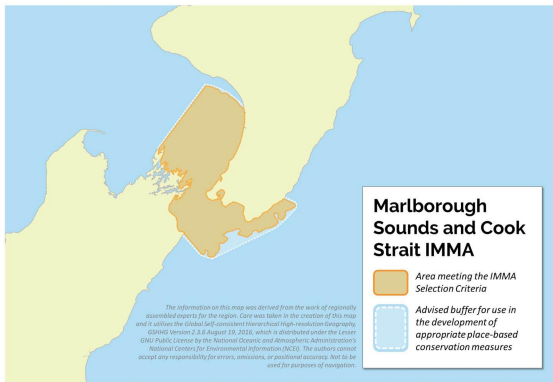
The Marlborough Sounds and Cook Strait IMMA supports a large number of marine mammals, including seven threatened species. The region has nationally and internationally important sites for dusky dolphins (e.g. culturally important cooperative feeding in Admiralty Bay; Hector's dolphins (e.g. distinct sub-population in Cloudy/Clifford Bay and Queen Charlotte Sound); forms an important migratory route for humpback whales; and is important deep-water habitat for sperm, beaked and other teuthophagous whale species and coastal delphinids. The area has among the highest rates of pinniped bycatch in New Zealand, consisting mainly of New Zealand fur seals from local breeding colonies.

Description:

The Marlborough Sounds is a complex series of drowned river valleys with deep waters of the Cook Strait at its seaward extent. The area comprises a combination of bays, estuaries, channels, tidal passages, islands, and peninsulas. Cook Strait is situated between the North and South islands of New Zealand and is characterised by strong tidal movements and currents (>10 km/h), shallow water



Figure 1 – New Zealand fur seals resting. Photo credit: Lauren Boren, Department of Conservation



Area Size

22,403km²

Qualifying Species and Criteria

Antarctic blue whale – *Balaenoptera musculus intermedia*
Criterion A, C3

Arnoux's beaked whale – *Berardius arnuxii*
Criterion C2

Cuvier's beaked whale – *Ziphius cavirostris*
Criterion C2

Dusky dolphin – *Lagenorhynchus obscurus*
Criterion C2

Gray's beaked whale – *Mesoplodon grayi*
Criterion C2

Hector's dolphin – *Cephalorhynchus hectori*
Criterion A

Humpback whale – *Megaptera novaeangliae*
Criterion A, C3

Killer whale – *Orcinus orca*
Criterion C3

New Zealand fur seal – *Arctocephalus forsteri*
Criterion C1, C2

New Zealand sea lion – *Phocarctos hookeri*
Criterion A

Pygmy blue whale – *Balaenoptera musculus breviceauda*
Criterion A, C3

Sei whale – *Balaenoptera borealis*
Criterion A

Southern right whale – *Eubalaena australis*
Criterion C3

Sperm whale – *Physeter macrocephalus*
Criterion A, C2, C3

Marine Mammal Diversity

Mesoplodon bowdoini, *Balaenoptera bonaerensis*, *Tursiops truncatus*, *Delphinus delphis*, *Pseudorca crassidens*, *Balaenoptera physalus*, *Hydrurga leptonyx*, *Globicephala melas*, *Kogia breviceps*, *Mirounga leonina*, *Lissodelphis peronii*

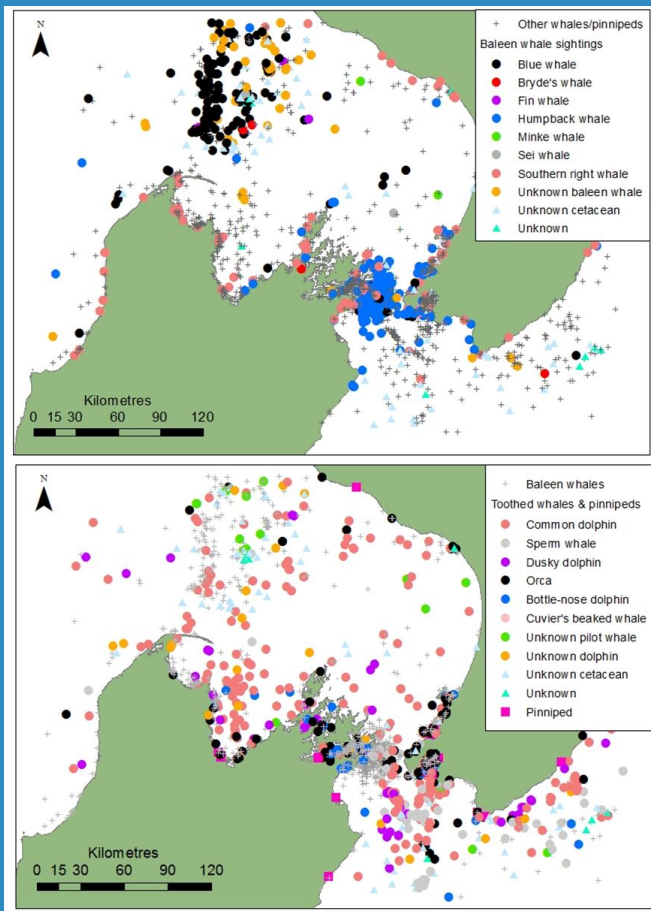


Figure 2 – The spatial locations of systemic and opportunistic marine mammal sightings (selected whales, dolphins, and pinnipeds) and strandings reported within the general Cook Strait region and associated waters of both the North and South Island, including the South Taranaki Bight and Marlborough Sounds. The top panel shows all baleen whales and the bottom panel shows all other marine mammal species. Data accessed in June 2019 from the New Zealand Department of Conservation (DOC) Marine Mammal Sighting and Stranding database 2020.

(<50m) at the northern extent and deep water (>2000m) at the southern extent. The area represents a key mixing zone between the west and east coasts of New Zealand for both oceanography and biodiversity. In very general terms, the inner Marlborough Sounds are shallower and more sheltered; have warmer less saline water; and have greater levels of sedimentation and turbidity. The outer Marlborough Sounds are more influenced by the oceanic processes of Cook Strait and the Wairarapa Eddy. The eastern Cook Strait area is dominated by deep canyon systems at the southern extension of the Hikurangi trench and trough system, including the Nicholson canyon.

The Marlborough Sounds and Cook Strait IMMA forms a contiguous boundary with the South Taranaki

Bight (STB) IMMA to the west separated by a line between Wainui Beach on the North Island and Cape Stephens on D'Urville Island to the south. This boundary is broadly consistent with the 100 m depth contour and biogeographic differences. The STB IMMA to the west is strongly influenced by the Kahurangi upwelling with westward current flows while the Marlborough Sounds and Cook Strait IMMA to the east is strongly influenced by the high tidal flows through Cook Strait.

A high diversity of marine mammals (e.g. 26 species or subspecies) has been recorded within the IMMA, including seven threatened marine mammals. The IMMA area includes a distinct sub-population of threatened Hector's dolphins centred around Cloudy/Clifford Bay with smaller groups in the Marlborough Sounds (Douglas et al. 2018). There is also a small, resident population of common bottlenose dolphins listed as Nationally endangered by the New Zealand Government found in the Marlborough Sounds (Merriman et al. 2009, Baker et al. 2019).

The area has nationally and internationally important sites for dusky dolphins including culturally important cooperative feeding in Admiralty Bay (Würsig & Würsig 2009). Dusky dolphins also use the inner sounds of the Marlborough Sounds, particularly during winter, and are known to migrate seasonally between Kaikoura and the Marlborough Sounds (Markowitz et al. 2004).

Cook Strait is an important migratory route for humpback whales (Bott et al. 2017), sperm whales (Gaskin 1968, 1970, 1973) and southern right whales (Carroll et al. 2014). The western reaches of Cook Strait include important deep-water feeding habitat for sperm (Giorli and Goetz 2019), beaked (Giorli et al. 2018) and other teuthophagus whale species and coastal delphinids.

There are many New Zealand fur seals that breed and haul-out in numerous places in the region

(Bentley et al. 2014). The area has among the highest rates of pinniped bycatch in New Zealand, consisting mainly of New Zealand fur seals from local breeding colonies (Thompson et al. 2010).

Common dolphins are regularly reported within Cook Strait, but no population data are available (Gaskin 1973, Douglas et al. 2018). Cuvier's, Gray's and strap-toothed beaked whales, sperm whales, and long-finned pilot whales are recorded from strandings and acoustic surveys (Goetz and Hupman 2017). There are also live sightings and numerous strandings of cow/calf and neonate pygmy right whales which support this being an important area for this species (New Zealand DOC Marine Mammal Sighting and Stranding database 2020; Warren et al. 2021).

The New Zealand government recognises in legislation two important marine mammal sites within this IMMA. The first are "ecologically significant marine sites" in Cook Strait for migrating whales and in the Marlborough Sounds for dolphins which are formally recognised in the Marlborough Environment Plan (MDC 2020). The second is the Clifford and Cloudy Bay Marine Mammal Sanctuary implemented to protect Hector's dolphins (NZ Government 2008).

Criterion A – Species or Population Vulnerability

There are seven species or subspecies found in the IMMA that meet this criterion with IUCN threatened or vulnerable status and include Antarctic blue whales (CR), Hector's dolphins (EN), New Zealand sea lion (EN), pygmy blue whale (EN), humpback whale (Oceania sub-population; EN), sei whale (EN), sperm whale (VU) (Douglas et al. 2018). All these species have been reported from the IMMA (e.g. DOC Marine Mammal Sighting and Stranding database 2020) and this IMMA forms an important part of their range within New Zealand the wider region. Predominantly this IMMA forms an important feeding area for a range of marine mammal species with the

high current Cook Strait area being an important source and also the western reaches of Cook Strait include important deep-water feeding habitats. In addition the IMMA includes a distinct subpopulation of threatened Hector's dolphins centred around Cloudy/Clifford Bay (e.g. ~900 individuals) with a smaller group also found within Queen Charlotte Sound (e.g. ~50 individuals, Douglas et al. 2018; MacKenzie & Clement 2014).

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

Important New Zealand fur seal breeding colonies (e.g. Cape Campbell, The Brothers, Stephens Island, Cape Palliser) occur along the Cook Strait Coastline of both the North and South Islands (Taylor et al. 1995) whose coastal and offshore feeding (particularly for nursing females) are constrained to area restricted foraging completely within the IMMA

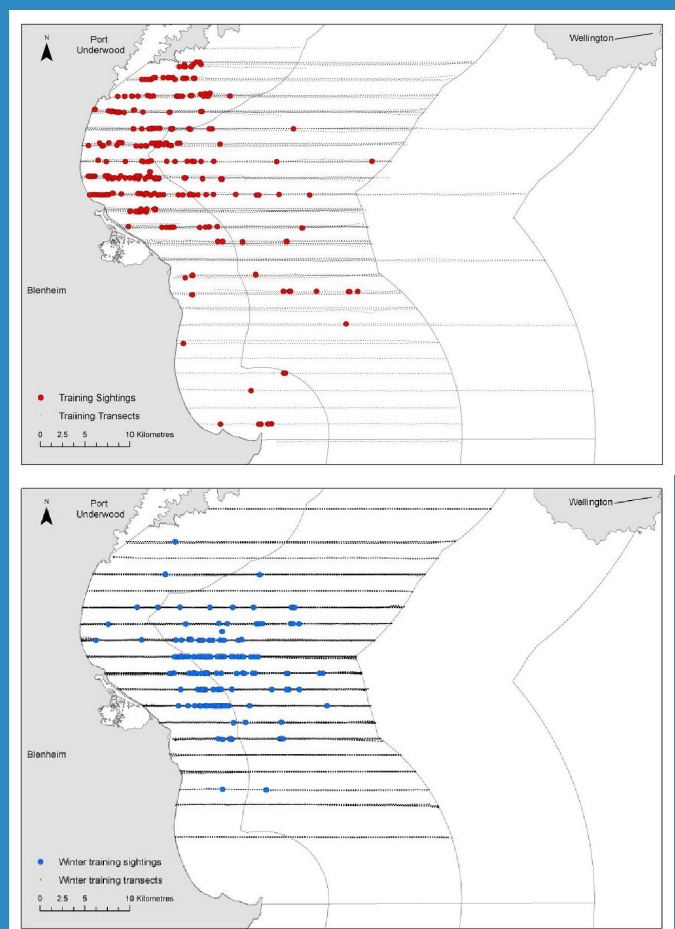


Figure 3 - Locations of Hector's dolphin sightings during aerial surveys in Clifford and Cloudy Bays for winter (blue) and summer (red) 2013. From MacKenzie & Clement (2014).

during the breeding season (MPI 2017).

Sub-criterion C2: Feeding Areas

Important New Zealand fur seal breeding colonies (e.g. Cape Campbell, The Brothers, Stephens Island, Cape Palliser) occur along the Cook Strait Coastline of both the North and South Islands (Tayloret al. 1995) whose coastal and offshore feeding (particularly for nursing females) are constrained to feeding completely within the IMMA during the breeding season (MPI 2017). The IMMA includes a nationally and internationally important site for dusky dolphins including culturally important cooperative feeding in Admiralty Bay (Würsig & Würsig 2009). Arnoux's, Cuvier's, and Gray's beaked whales, and sperm whales have been recorded from sightings, strandings (including with full stomachs) and acoustic surveys particularly within the deep water eastern reaches of Cook Strait highly with data likely to be indicative of important feeding areas (Gaskin 1968, Goetz and Hupman 2017, Giorli et al. 2018, Giorli and Goetz 2019, New Zealand DOC Marine Mammal Sighting and Stranding database 2020).

Sub-criterion C3: Migration Routes

Historical whaling data confirms this IMMA as an important migration route for humpback whales (Dawbin 1956), sperm whales (Gaskin 1968, 1970, 1973) and southern right whales (Richards et al. 2009, Carroll et al. 2014). Recent records, including satellite tracking of blue whales, have also confirmed that this IMMA still contains important migratory pathways for humpback, southern right whales, and blue whales (Bott et al. 2017, Carroll et al. 2013, Goetz et al. 2018; Warren et al. 2021).

Supporting Information

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We would like to thank the participants of the 2020 IMMA Regional Expert Workshop for the identification of IMMAs in the Australia, New Zealand and South East Indian Ocean seas region. Funding for the identification of this IMMA was provided by the Global Ocean Biodiversity Initiative funded by the German government's International Climate Initiative (IKI). Support was also provided by Whale and Dolphin Conservation and the Tethys Research Institute.

Suggested Citation: IUCN-MMPATF (2022). Marlborough Sounds and Cook Strait IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2022.

PDF made available for download at: <https://www.marinemammalhabitat.org/portfolio-item/marlborough-sounds-cook-strait/>