

Cook Islands Southern Group IMMA

Description

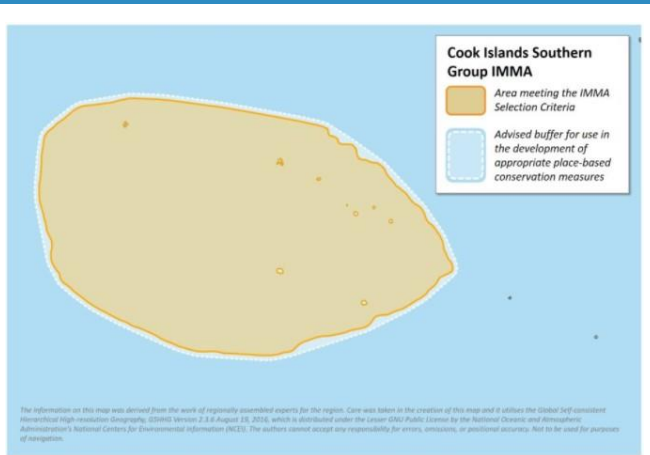
This IMMA includes southern group islands within the Cook Islands Exclusive Economic Zone. Most of the southern group islands and seamounts form one linear volcanic chain, while Rarotonga and Mangaia belong to a separate linear system which is dominantly seamounts. Concave slopes surrounding these islands are geologically complex, consisting of the original volcanic slopes, slumped debris, and reef talus deposits. At the base of each volcano there appears archipelagic aprons of sedimentary origin. Parasitic cones and laccolith intrusions occur along fractures circling the volcanic base. Formation of "moat and arch" structures of crustal warping has resulted due to subsidence of the Aitutaki-Mauke group of volcanoes. There is a diversity of small volcanic clusters and the larger cones of Rarotonga and Mangaia.

Criterion A: Species or Population Vulnerability

Humpback whales across Oceania are listed as Endangered on the IUCN Red List, and the Cook Islands represent important habitat for this threatened population during the austral winter. Nineteen years of humpback whale research around Rarotonga, Aitutaki, Mangaia, Atiu and Palmerston has generated a large amount of information, including photo and genetic identification of individuals, acoustics, communication, behaviour, migration patterns from satellite tagging, population identity and abundance (Fig. 1) (Hauser and Clapham, 2005).

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

Spinner dolphins occur around the south-eastern islands of Rarotonga, Mangaia, and Palmerston and photo-ID data describe their long-term residency (Cook Islands Whale Research Annual Reports, 1998 to 2016).



Area Size

431,498 km²

Qualifying Species and Criteria

Humpback whale – *Megaptera novaeangliae*

Criteria A, C1, C3

Spinner dolphin – *Stenella longirostris*

Criteria B1, C1

Marine Mammal Diversity (D2)

Balaenoptera bonaerensis, *Mesoplodon densirostris*, *Balaenoptera musculus*, *Balaenoptera edeni*, *Ziphius cavirostris*, *Pseudorca crassidens*, *Balaenoptera physalus*, *Lagenodelphis hosei*, *Peponocephala electra*, *Balaenoptera omurai*, *Feresa attenuata*, *Steno bredanensis*, *Balaenoptera borealis*, *Globicephala macrorhynchus*, *Physeter macrocephalus*, *Megaptera novaeangliae*, *Stenella longirostris*

Summary

The southern group of the Cook Islands includes Palmerston, Aitutaki, Manuae, Atiu, Takutea, Mitiaro, Mauke, and the Eclipse Seamount, which form a linear volcanic island chain, and also Rarotonga and Mangaia which belong to a separate linear system composed primarily of seamounts. This IMMA is considered important habitat for breeding and migrating humpback whales of the Endangered Oceania subpopulation, as well as many small and resident populations of spinner dolphins around each of the islands.

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

The Southern Cook Islands represent a calving ground for humpback whales during the austral winter. Humpback whale calves are born between early June and late October, close to the shores of all the Islands in the Southern Cook's Group IMMA (Hauser and Clapham 2005). This is indicated by the presence of mothers with calves in the area, the sightings and acoustic detection of many singers, as well as the observation of competitive groups (Hauser and Clapham, 2005). In addition, calves have been observed in the resident pods of spinner dolphins that occur in the south-eastern Islands of Rarotonga, Mangaia, and Palmerston (Cook Islands Whale Research Annual Reports, 1998 to 2016).

Criterion C: Key Life Cycle Activities

Sub-criterion C3: Migration Routes

Connectivity between feeding and breeding grounds of Oceania humpback whales has been revealed by comparing photo-ID catalogues, molecular markers, and song, and satellite tagging (all conducted by the

South Pacific Whale Research Consortium (Olavarria et al., 2007; Hauser et al., 2009). In particular, recent satellite tracks (Fig. 1) show that humpback whales in the Cook Islands migrated on to Tonga and Samoa, and therefore the Cook Islands is part of the whale migration route connecting other feeding and breeding areas (Garrigue et al. 2002).

Criterion D: Special Attributes

Sub-criterion D2: Diversity

The Southern Group of the Cook Islands IMMA contains habitat supporting an important diversity of cetaceans within the Pacific Islands Region, with up to 15 species having been observed (Cook Islands Whale Research Annual Reports, 1998 to 2016). These include deep diving species such as sperm whales, Blainville's beaked whales, Cuvier's beaked whales, and other migratory baleen whales, such as sei whales and blue whales (Hauser et al., 2000). Antarctic minke whales, and Omura's whales have also been recorded in the IMMA (Cook Islands Whale Research Annual Reports, 1998 to 2016). However, the frequency that these animals are observed do not currently support specific individually important areas for these species.

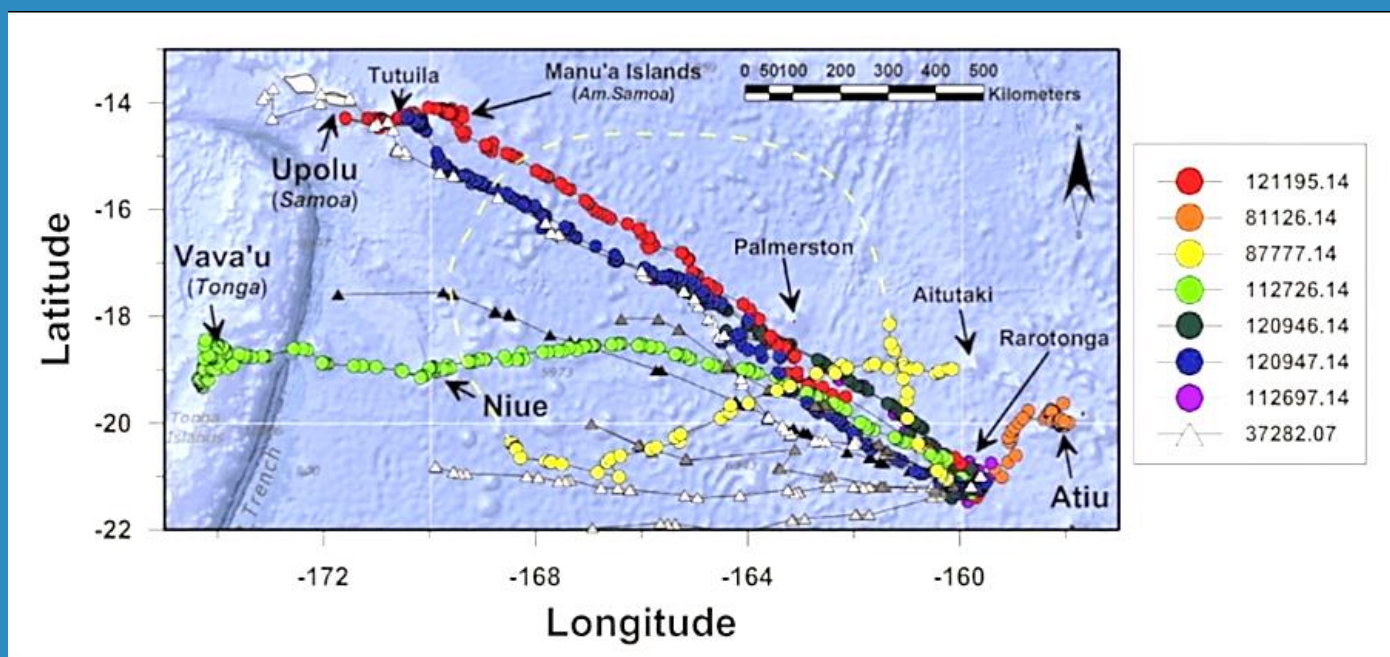


Figure 1: Satellite tracks of Oceania humpback whales tagged in the Cook Islands Southern Group IMMA. From: Cook Islands Whale Research Annual Reports 1998 to 2016.

Supporting Information

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Acknowledgements

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