

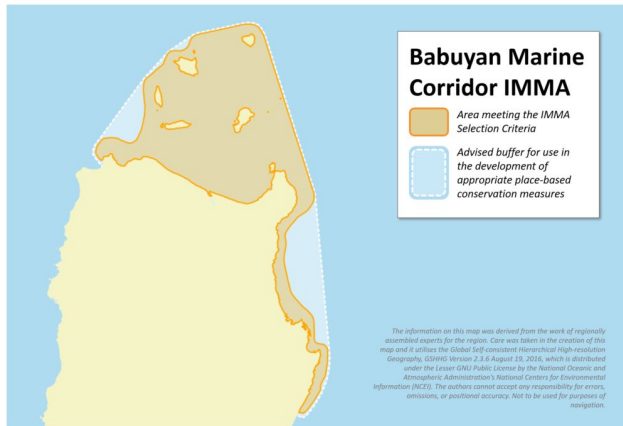
Babuyan Marine Corridor IMMA

Summary, continued.

reveals that the proportion resighted annually is 42.61%. A within-region return index of 3.41 may indicate a small population utilising this breeding ground with a high rate of return (Acebes et al., 2021). Group composition and behaviour observed during sightings confirm the area's importance for mating, calving and nursing. The IMMA also hosts a small resident population of rough-toothed dolphins (*Steno bredanensis*), which are rarely observed in the Philippines but are one of the most commonly encountered species in the Babuyan Marine Corridor. Furthermore, this IMMA which is also a marine Key Biodiversity Area (KBA), is home to 11 other species of cetaceans as well as whale sharks, sea turtles and numerous species of fish and corals.

Description

The Babuyan Marine Corridor covers the waters surrounding the Babuyan Group of Islands, and the Babuyan Channel, including the waters around Palau Island in the northern Philippines. It extends South along the eastern coast of northern Luzon, all the way down the southern coastal boundary of the Northern Sierra Madre National Park. It is the only known wintering/breeding ground of humpback whales in the Philippines (Acebes et al., 2007). Movements between other breeding grounds in Ogasawara and Okinawa, Japan, including one to the main Hawaiian Islands and another in the Mariana archipelago have been shown through fluke photo-identification matches (Yamaguchi et al., 2002; Acebes et al., 2007; Calambokidis et al., 2008; Hill et al., 2020; Acebes et al., 2021), as well as movements to the Russian Far East feeding grounds (Silberg et



Area Size

16 893 km²

Qualifying Species and Criteria

Humpback whale – *Megaptera novaeangliae*

Criterion A; C (1)

Rough-toothed dolphin – *Steno bredanensis*

Criterion B (1); C (2)

Marine Mammal Diversity

Criterion D (2)

Physeter macrocephalus, *Globicephala macrorhynchus*, *Pseudorca crassidens*, *Feresa attenuata*, *Peponocephala electra*, *Kogia sima*, *Stenella attenuata*, *Stenella longirostris*, *Tursiops truncatus*, *Grampus griseus*, *Lagenodelphis hosei*, *Steno bredanensis*, *Megaptera novaeangliae*

Summary

The waters around the Babuyan Islands, northern Luzon, in the Philippines serve as the only known wintering/breeding ground for humpback whales (*Megaptera novaeangliae*) in the Philippines. These whales are part of the Western North Pacific Distinct Population Segment (DPS), one of only four DPSs to be listed as Endangered under the U.S. Endangered Species Act, when most others were delisted in 2016. A photo identification catalogue of 230 individual whales

al., 2013; Titova et al., 2017).



Figure 1: Humpback whale fluke. Photo: Jo Marie V. Acebes

Small vessel surveys have been conducted from 2000–2006 off all of the main islands in the Babuyan Island Group: Camiguin, Fuga, Dalupiri and Babuyan Claro (Acebes et al., 2007; Silberg et al., 2013). Due to logistical constraints, from 2007–2013 surveys were limited to the western coast of Camiguin Island while from 2014–2016 surveys were conducted around Camiguin and Fuga islands. As of 2016, there have been 230 whale individuals photo-identified in the area (Okabe et al., 2017; Acebes et al., 2021). An average of 27 whales are photo-identified each season and with a proportion of re-sights of individuals of 42.61%, it is apparent that there is a significant number of humpback whales wintering in this area (Acebes et al., 2021).

Rough-toothed dolphins (*Steno bredanensis*) are considered uncommon in the Philippines yet it is one of the most commonly encountered species in the Babuyan Marine Corridor (Alava et al., 2012; Dolar et al., 2006; Nakagun et al., 2013). Encounter data has been collected opportunistically during yearly humpback whale surveys in the Babuyan Marine Corridor. Preliminary evidence based on photo-identification from photographs taken for 12 years (2002–2013) also shows that a small population of rough-toothed dolphins are resident in the area (Nakagun et al., 2013).



Figure 2: *Steno bredanensis*. Photo: Shotaro Nakagun

This marine key biodiversity area is home to 12 other species of cetaceans: *Physeter macrocephalus*, *Globicephala macrorhynchus*, *Pseudorca crassidens*, *Feresa attenuata*, *Peponocephala electra*, *Stenella attenuata*, *Stenella longirostris*, *Tursiops truncatus*, *Tursiops aduncus*, *Kogia sima*, *Grampus griseus*, and *Lagenodelphis hosei* (Acebes and Lesaca 2003; Acebes et al., 2013).

Criterion A: Species or Population Vulnerability

Humpback whales which winter and breed within this area are a part of the western North Pacific Distinct Population Segment (DPS), which is listed as Endangered under U.S. Federal Status (U.S. Federal Register, 2016). Based on the review of the National Marine Fisheries Service, who upon reconsideration of the information available at that time has classified the extinction risk to the Western North Pacific DPS as high, not moderate, this DPS was listed as Endangered instead of Threatened (U.S. Federal Register, 2016). There is only one breeding area for humpback whales in the Philippines and due to a restricted area of occupancy and the level of threats present in that particular site the locally occurring population of the species is listed as Vulnerable on the National Red List of the Philippines (Alava et al., 2012).



Figure 3: Humpback whale breach. Photo: Shotaro Nakagun

Criterion B: Distribution and Abundance

Sub-criterion B1: Small and Resident Populations

Based on a preliminary photo-identification study of *Steno bredanensis* there are 56 individuals around the Camiguin Norte Island in the Babuyan Marine Corridor (Nakagun et al., 2013). Group size estimates varied from 5-50 individuals although the largest group size based on photo-identification was 17 individuals (Ibid.). Re-sights of individuals between and within seasons also suggests residency within the area.

Criterion C: Key Life Cycle Activities

Sub-Criterion C1: Reproductive Areas

This is the only known winter/breeding area for humpback whales in the Philippines (Acebes et al., 2007). Humpback whales are seen in social groups common to breeding/wintering grounds including cow-calf pairs, cow-calf-escort groups, singers and surface-active groups.

Criterion D: Special Attributes

Sub-Criterion D2: Diversity

This marine key biodiversity area is home to 12 other species of regularly occurring cetacean species and includes sperm whales (*Physeter macrocephalus*), short-finned pilot whales (*Globicephala macrorhynchus*), false killer whales (*Pseudorca crassidens*), pygmy killer whale (*Feresa attenuata*), melon-headed whale (*Peponocephala electra*), pantropical spotted dolphin (*Stenella attenuata*), spinner dolphin (*Stenella longirostris*), common bottlenose dolphin (*Tursiops truncatus*), Indo-pacific bottlenose dolphin (*Tursiops aduncus*), dwarf sperm whale (*Kogia sima*), Risso's dolphin (*Grampus griseus*), and Fraser's dolphin (*Lagenodelphis hosei*) (Acebes and Lesaca 2003; Acebes et al., 2013).

Supporting Information

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**MARINE MAMMAL
PROTECTED AREAS
TASK FORCE**



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