

Area Size

19 470 km²

Qualifying Species and Criteria

Irrawaddy dolphin – *Orcaella brevirostris*

Criterion A; B (1); C (1)

Sperm whale – *Physeter macrocephalus*

Criterion A; C (2)

Fin whale – *Balaenoptera physalus*

Criterion A

Indo-Pacific humpback dolphin – *Sousa chinensis*

Criterion A; C (1, 2)

Marine Mammal Diversity

Criterion D (2)

Balaenoptera omurai, *Balaenoptera physalus*,

Delphinus delphis, *Delphinus d. tropicalis*,

Dugong dugon, *Feresa attenuata*,

Globicephala macrorhynchus, *Grampus griseus*,

Kogia sima, *Kogia breviceps*,

Lagenodelphis hosei, *Megaptera novaeangliae*,

Neophocaena phocaenoides,

Orcaella brevirostris, *Orcinus orca*,

Peponocephala electra, *Physeter macrocephalus*

Pseudorca crassidens, *Sousa chinensis*, *Stenella*

longirostris longirostris, *Stenella longirostris*

roseiventris, *Stenella attenuata*, *Stenella*

coeruleoalba, *Steno bredanensis*,

Tursiops aduncus, *Tursiops truncatus*,

Ziphius cavirostris

Berau and East Kutai District, Kalimantan IMMA

Summary:

The area has a high importance for at least 25 identified cetacean species (70% of all cetacean species present in Indonesia) and one Sirenian species. The area covers two districts, i.e. Berau and East Kutai of which the first is a Protected Marine Park. The areas encompass both estuaries and bay areas that provide habitat to two species including the Irrawaddy dolphin (*Orcaella brevirostris*) and the Indo-Pacific humpback dolphin (*Sousa chinensis*). Irrawaddy dolphins are known to have a year-round presence in the IMMA. Surveys conducted between 2003, 2007-2008 and 2013-2017 showed that most species are sighted near islands and reefs. Sperm whales (*Physeter macrocephalus*) have been observed feeding at different locations throughout the IMMA range during all survey periods (March-August, October, except for December). Omura's (*Balaenoptera omurai*) and Fin whales (*Balaenoptera physalus*) were observed feeding in nearshore narrow shelf habitat with steep slope in months March-June, the former species over different years.

Description

The area has importance for one sirenian and at least 25 identified cetacean species, representing 70% of all cetacean species present in Indonesia (Kreb & Budiono, 2004 & 2005; Kreb et al., 2008, 2012, 2015). The IMMA area covers two districts, i.e. Berau and East Kutai. The Berau District is already a Protected Marine Park. Both districts provide discrete habitats for *Orcaella brevirostris*, which have been observed in Sangkulirang Bay and the Berau delta during

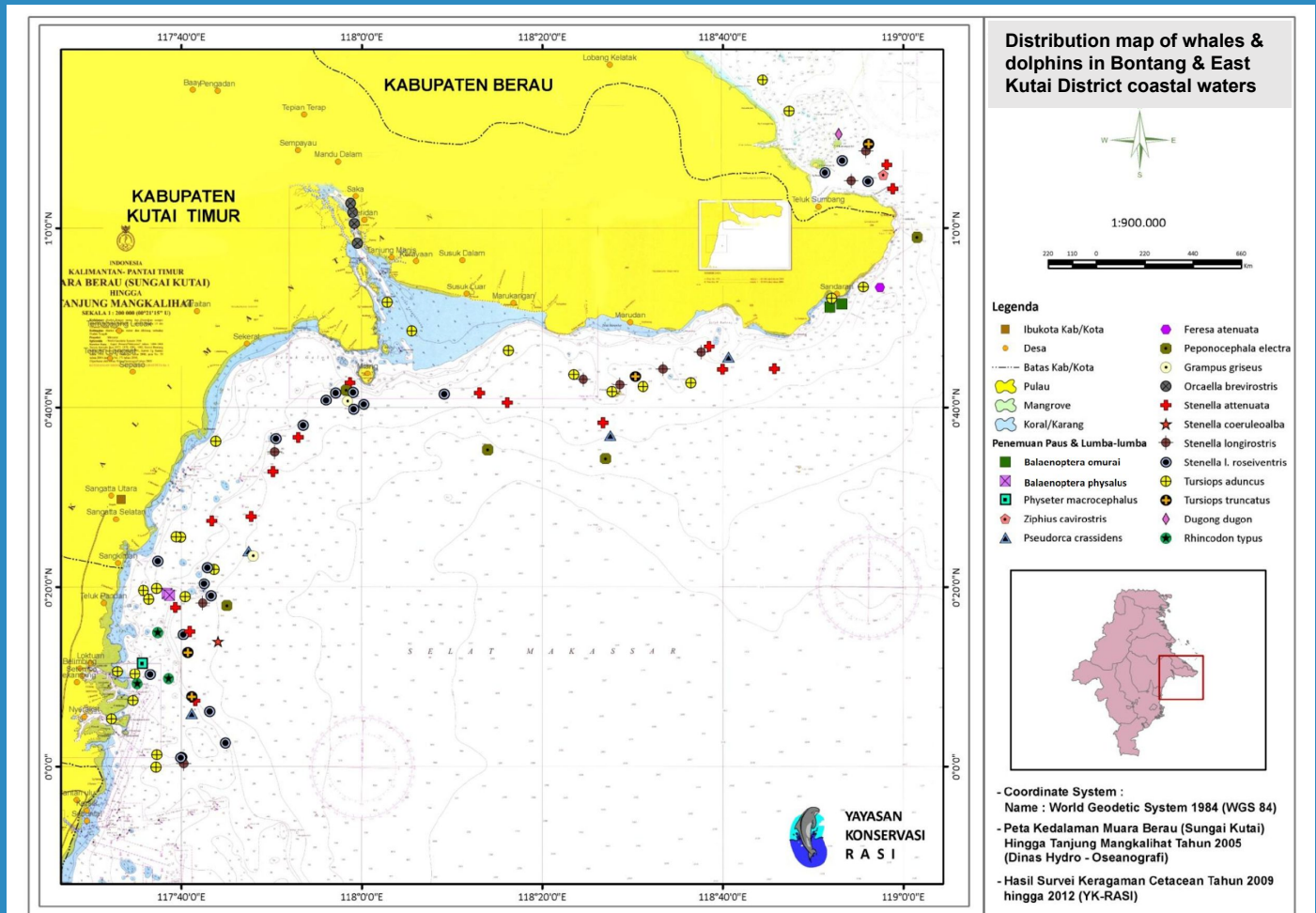


Figure 1: Sightings map of Bontang-Kutim, 2009-2012. Photo: Yayasan Konservasi RASI

different months (Dec, March, April, May, June) over different years.

Sousa chinensis has been observed twice but only in the Berau delta, north from the Mangkalihat Peninsula (Kreb & Budiono, 2005; Kreb et al., 2008, 2012). Other species that inhabit the narrow shallow shelf waters (<200 m depth) are mostly *Dugong dugon*, *Neophocaena phocaenoides*, *Tursiops aduncus* and *Stenella longirostris. roseiventris*. Dugongs have been observed four times on seagrass beds near islands and coral reef formations (Kreb et al., 2008, 2012). Photo-identification indicated a high residency for populations of *Tursiops aduncus* that were associated with particular areas/islands.

The remaining cetacean species primarily roam the

slope waters (>200 m depth). Cetacean's observations during surveys conducted between 2003, 2007-2008 and 2013-2017 are mostly made near islands and reefs. The number of sightings per km search effort outside a 5 km distance radius from island and reefs (i.e. 0.03 sightings/km) was less than half the number of sightings per km search effort within a 5 km radius from islands and reefs (i.e. 0.07 sightings/km).

Sperm whales were observed eight times in both districts during all survey periods (May-June, August, and October) and fin whales have been observed once in March. Omura's whales were observed on three sighting days in the months May and June in both districts.



Figure 2: *Balaenoptera physalus*. Photo: Kreb, D.-YK-RASI

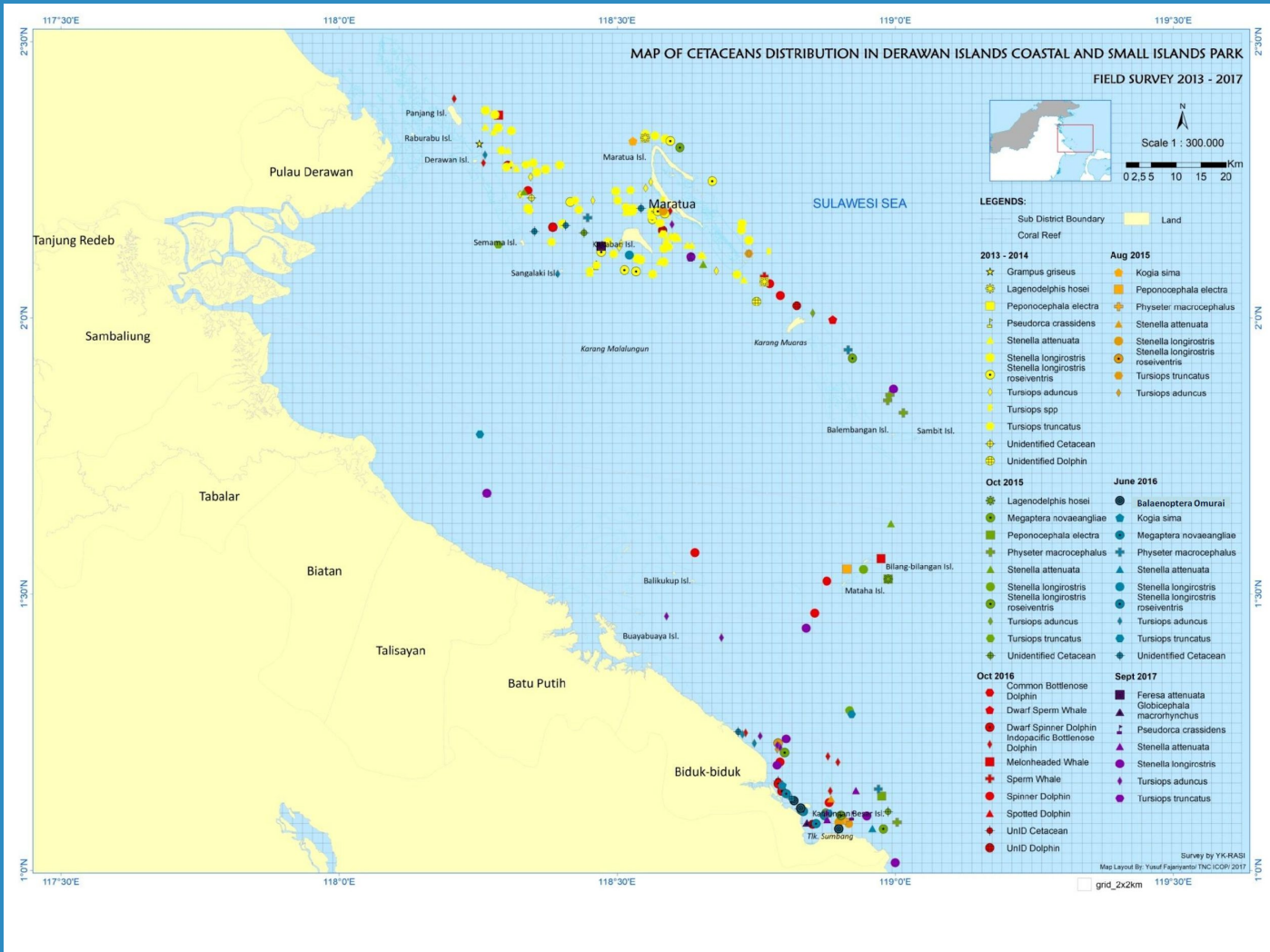


Figure 3: Sightings map of Berau, 2013-2017. Photo: Yayasan Konservasi RASI



Figure 4: *Balaenoptera omurai*. Photo: Kreb, D.-YK-RASI

Criterion A: Species or Population Vulnerability

Criterion A applies as the Irrawaddy dolphin is listed as Endangered on the IUCN Red List. Criterion A also applies to Sperm whales and Indo-Pacific humpback dolphins listed as Vulnerable on the IUCN Red List.

Criterion B: Distribution and Abundance

Sub-criterion B1: Small and Resident Populations

Irrawaddy dolphin populations that locally occur in the region are small and occupy small areas in relation to the species' global population. They occupy specific niche habitats within the IMMA such as estuaries and bays where they are observed throughout the years of study. They have never been observed in coastal habitat outside of these estuarine or bay habitats and therefore it is suspected that these form discrete populations. The two areas where Irrawaddy dolphins have been observed in the IMMA is in the Berau Delta and Sangkulirang Bay. These locations are separated by the Tanjung Mangkalihat Peninsula, which has a very shallow

shelf with a steep bathymetric drop off to 1 km, Irrawaddy dolphins here but also in other parts of Kalimantan and Indonesia have never been observed in waters deeper than 100 m.



Figure 5: *Orcaella brevirostris*. Photo: Kreb, D.-YK-RASI

Criterion C: Key Life Cycle Activities

Sub-Criterion C1: Reproductive Areas

Criterion C1 applies as the locally occurring Irrawaddy population only occupies the bays and estuaries within the IMMA, where they occur year-round with young calves having been observed within groups (as well as mating behaviour) (Kreb, 2008). Calves of *Sousa chinensis* have been observed in the month of April with total best-estimated group sizes between 11 to 15 individuals (Kreb, 2008).

Sub-Criterion C2: Feeding Areas

Sperm whales have been recorded to undertake repeated long-dives and respiration behaviour has been observed for sperm whales during 5 out of 8 sightings at more or less similar locations. These observations indicate the likely feeding activities. A maximum of 6 sperm whales have been observed, with observations in the months of May, June, August, and October. *Sousa chinensis* was also observed in April 2008 to be mud feeding in the Berau estuary, and were observed several times to perform head stands with their tailstock vertical out of the water while shaking their body.



Figure 6: 'Feeding frenzy' *Stenella longirostris*.
Photo: Kreb, D.-YK-RASI

Criterion D: Special Attributes

Sub-criterion D2: Diversity

25 species of cetaceans and one sirenian species have been observed in this IMMA. These include Omura's whale, Fin whale, Long-beaked common dolphin, Common dolphin, Dugong, Pygmy killer whale, Short-finned pilot whale, Risso's dolphin, Dwarf sperm whale, Pygmy sperm whale, Fraser's dolphin, Humpback whale, Indo-Pacific finless porpoise, Irrawaddy dolphin, Killer whale, Melon-headed whale, Sperm whale, False killer whale, Indo-Pacific humpback dolphin, Gray's spinner dolphin,

Dwarf spinner dolphin, Pantropical spotted dolphin, Striped dolphin, Indo-Pacific bottlenose dolphin, Rough-toothed dolphin, Common bottlenose dolphin, Cuvier's beaked whale.



Figure 7: *Feresa attenuata* leaping from the water.
Photo: Kreb, D.-YK-RASI



Figure 8: *Physeter macrocephalus*. Photo: Kreb, D.-YK-RASI

Supporting Information

Kreb, D. and Budiono, I. 2004. 'Biodiversity assessment of cetaceans and mantas near the Berau Islands, East Kalimantan, Indonesia'. Provisional Final Report for the Indonesian Institute of Sciences (LIPI).

Kreb, D. and Budiono, I. 2005. 'Cetacean Diversity and Habitat Preferences in Tropical Waters of East Kalimantan, Indonesia'. The Raffles Bulletin of Zoology 53 (1), 149-155.

Kreb, D., Budiono, I. and Pitman, R.L. 2008. 'Sulawesi Sea Cetacean Project 2007-2008. Conservation and diversity of marine cetaceans in the Berau Archipelago, East Kalimantan, Indonesia'. Final technical report.

Kreb, D., Budiono, I. and Syachraini. 2012. 'East Kalimantan Cetacean Conservation Project 2009-2012. Conservation and diversity of cetaceans within a new potential MPA in East Kalimantan, Indonesia'. Final technical report.

Kreb, D. and Budiono, I. 2015. 'Berau Cetacean Conservation Project 2013-2014. Cetacean species identification, distribution and relative abundance in the northern part of Derawan Islands Marine Park'. Final technical report.

Acknowledgements

We would like to thank the participants of the 2018 IMMA Regional Expert Workshop for the identification of IMMAs in the Northeast Indian Ocean and Southeast Asian 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.

Research executed by Yayasan Konservasi RASI in this IMMA, which contributed to its identification, was funded during the multiple years study by the VTS Van Bree Award and OPCF.



Contact for this IMMA:
Yayasan Konservasi RASI
Rare Aquatic Species of Indonesia
E-mail: yk.rasi@gmail.com
<http://www.ykrasi.org>



Figures 9-12: Photo: Kreb, D.-YK-RASI



Figure 13: Photo: Kreb, D.-YK-RASI



**MARINE MAMMAL
PROTECTED AREAS
TASK FORCE**







Supported by:



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

based on a decision of the German Bundestag





Suggested Citation: IUCN-MMPATF (2022) Berau and East Kutai District, Kalimantan 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/berau-east-kutai-district/>