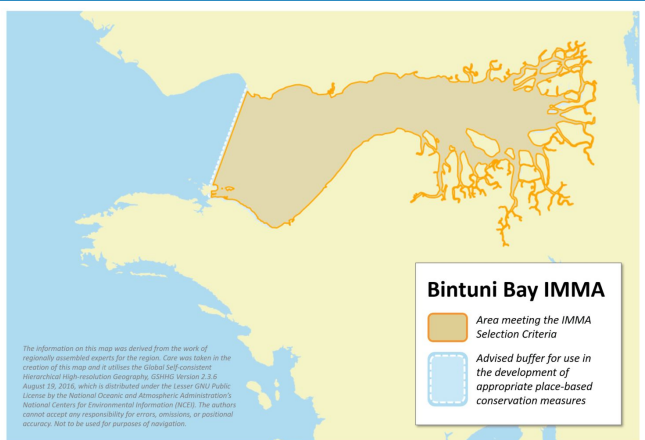


Bintuni Bay, West Papua IMMA

Description

Bintuni Bay is located on the Southern end of the Bird's Head Peninsula in West Papua, Indonesia. The bay is elongated with a total length of 160km and 70km wide at the mouth. Bintuni Bay is the inner bay with extensive river and mangrove habitats, known for one of the largest contiguous mangrove forests in the world, covering approximately 300,000 hectares of area on land and another 600,000 hectares to the 10m water depth (Ruitenbeek, 1995). The Bay is surrounded by rainforest-covered mountains and has no roads leading to it (Ruitenbeek, 1995). Bintuni Bay is subject to extensive gas development as part of BP's Tangguh LNG plant, with six gas fields located within the bay (Kahn, 2006). Berau Bay is the deep outer section connected to the open sea. No Marine Protected Area's exist for the region; however, Bintuni Bay has been designated as a Nature Reserve (Sihite et al., 2005).

Bintuni Bay is characterized by a combination of complex estuarine, coastal and oceanic habitats, where a diverse assemblage of marine mammals can be found. Fifteen days of dedicated Marine Mammal Rapid Ecological Assessment were conducted in Bintuni-Berau Bays in 2005 (Kahn, 2006), where five cetacean species were confirmed and 62 sightings; humpback dolphin (now confirmed to be the Australian humpback dolphins (*Sousa sahalensis*): Beasley et al., 2016), spinner dolphin (*Stenella longirostris*), Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), common bottlenose dolphin (*Tursiops truncatus*) and Bryde's whale (*Balaenoptera edeni*). No dugongs were sighted. Australian humpback dolphin sightings were the most numerous species sighted (76% of sightings), primarily around the Arguni-Ogar



Area Size

5 558 km²

Qualifying Species and Criteria

Australian humpback dolphin – *Sousa sahalensis*
Criterion A; C (2)

Marine Mammal Diversity

Stenella longirostris, *Tursiops aduncus*,
Tursiops truncatus, *Balaenoptera edeni*

Summary

Bintuni Bay IMMA is located in south-western West Papua, Indonesia. The bay has extensive river and mangrove habitats and is one of the largest contiguous mangrove forests in the world (~450,000 ha). The species of high conservation significance within the Bay is the 'Vulnerable' Australian humpback dolphin, *Sousa sahalensis*. Bintuni Bay represents one of only three known locations in West Papua where Australian humpback dolphins have been confirmed; the other two locations being Mayalibit Bay and the Kaimana Region. Australian humpback dolphins have not been recorded from any other area within the North East Indian Ocean and South East Asian Seas region. At least four other marine mammals have been confirmed to occur in Bintuni Bay, with more species (i.e. Australian snubfin dolphin, *Orcaella heinsohni*) likely to be recorded with future dedicated survey effort.

Island group. A total of 29 cetacean species are known to occur in Indonesian waters (Rudolph et al., 1997), therefore many cetacean species are likely to be reported in Bintuni Bay in the future, with further dedicated study.

Bintuni Bay has been declared as IMMA because of the bay's high conservation significance for the 'Vulnerable' Australian humpback dolphin (Parra et al., 2017). Bintuni Bay has extensive river and mangrove habitats and is one of the largest contiguous mangrove forests in the world, providing important habitat for numerous terrestrial and marine megafauna species. Bintuni Bay represents one of only three known locations in West Papua where Australian humpback dolphins have been confirmed. Australian humpback dolphins have not been recorded from any other area within the region. Based on studies conducted on other humpback dolphin populations and known threats along the West Papua coastline (i.e. bycatch in fisheries, habitat degradation from LNG developments and mangrove conversion), it is likely that Australian humpback dolphin populations in West Papua are small and declining, with particularly important aggregations of Australian humpback dolphins in Bintuni Bay. At least four other marine mammals have been confirmed to occur in Bintuni Bay, with more species (i.e. Australian snubfin dolphin, *Orcaella heinsohni*) likely to be recorded with future dedicated survey effort.

Criterion A: Species or Population Vulnerability

The Australian humpback dolphin is listed as 'Vulnerable' by the IUCN and considered to be potentially declining throughout much of its range (Parra et al., 2017). The major threats are considered to be habitat loss and degradation, by-catch in fisheries, water pollution, underwater noise, floods and cumulative threats (Parra et al., 2017). West

Papua represents the northwest extent of the species known distribution, with Australian humpback dolphins confirmed to occur in three locations in West Papua: Mayalibit Bay, Bintuni Bay and Kaimana Region. These regions comprise extensive mangrove, estuarine and coastal habitat particularly important for their survival. Bintuni Bay is notably important, as it represents one of the largest contiguous mangrove forests in the world. These habitats are subsequently important for the survival of Australian humpback dolphins in the region.



Figure 1: Humpback dolphin images from Bintuni and Berau bays, West Papua. Photo: Benjamin Kahn

There are no known population or residency estimates for Australian humpback dolphins in Bintuni Bay. However, based on other known populations in northern Australia and southern Papua New Guinea, it is likely that the Australian humpback dolphin population in Bintuni Bay is relatively small and resident (Parra et al., 2018; Beasley et al., 2013, 2015). Bintuni Bay is one of only three regions in West

Papua where humpback dolphins have been sighted, with no other Australian humpback dolphin sightings known for the region. As a result of the habitat characteristics of Bintuni Bay, it is proposed that aggregations of Australian humpback dolphins occur in the Bay, representing an important concentration for this species.

Criterion C: Key Life Cycle Activities

Sub-Criterion C2: Feeding Areas

Bintuni Bay is a notably important feeding area, as it represents one of the largest contiguous mangrove forests in the world. As a result of this rich biodiversity and productivity, the region provides an important nutritional base on which many terrestrial and marine fauna species depend, particularly Australian humpback dolphins and other coastal dolphin species.

The known habitat preferences of Australian humpback dolphins are shallow and protected coastal habitats such as inlets, estuaries, shallow bays, inshore reefs and coastal archipelagos rather than in open stretches of coastline. In Queensland and Northern Territory, Australian humpback dolphins are mainly found in water less than 20 km from the nearest river mouth and in water less than 15-20 m deep (Parra et al., 2004, 2017). Few animals have been observed in waters up to 30-50 m deep but remained in close proximity (within 5 km) to the coast (Parra et al., 2004, 2017). In both Queensland and Northern Territory, Australian humpback dolphins have been also recorded as far as 20-50 km upstream in large rivers such as the East Alligator River, Northern Territory, and in the Fitzroy and Brisbane rivers in Queensland (Cagnazzi, 2010; Palmer et al., 2014; Parra et al., 2004). In Southern Papua New Guinea, Australian humpback dolphins were only found adjacent to delta/coastal mangroves, and no further than 2km from the coast

(Beasley et al., 2013, 2015). Bintuni Bay therefore represents ideal habitat to support biological productivity and concentration of prey aggregations for marine mammals.

Supporting Information

Beasley, I. Golding, M. and Anamiato, J. 2013. Looking for Pidu (Dolphins and Dugongs) in the Kikori Delta of Papua New Guinea – 2013 Surveys. Unpublished report submitted to James Cook University.

Beasley, I. Golding, M. and Anamiato, J. 2015. Looking for Pidu (Dolphins and Dugongs) in the Kikori Delta of Papua New Guinea – 2015 Surveys. Unpublished report to James Cook University.

Beasley, I., Jedensj, M., Wijaya, G.M., Anamiato, J. Kahn, B. and Krebs, D. Observations on Australian Humpback Dolphins (*Sousa sahulensis*) in Waters of the Pacific Islands and New Guinea. In: Thomas A. Jefferson and Barbara E. Curry, editors, *Advances in Marine Biology*, Vol. 73, Oxford: Academic Press, 2016, pp. 219-271.

Cagnazzi, D. 2010. Conservation Status of Australian snubfin dolphin, *Orcaella heinsohni*, and Indo-Pacific humpback dolphin, *Sousa chinensis*, in the Capricorn Coast, Central Queensland, Australia. PhD Thesis, Southern Cross University.

Kahn, B. 2006. Bintuni-Berau Bay rapid ecological assessment (REA): Marine mammals and marine reptiles. Unpublished technical report APEX Environment.

Palmer, C., Parra, G.J., Rogers, T. and Woinarski, J. 2014b. Collation and review of sightings and distribution of three coastal dolphin species in waters of the Northern Territory, Australia. *Pacific Conservation Biology* 20: 116-125.

Parra, G., Cagnazzi, D., Perrin, W. and Braulik, G.T. 2017. *Sousa sahalensis*. The IUCN Red List of Threatened Species 2017: e.T82031667A82031671.

<http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T82031667A82031671.en>. Downloaded on 01 November 2018.

Parra, G.J., Cagnazzi, D., Jedensjö, M., Ackermann, C., Frere, C., Seddon, J., Nikolic, N. and Krützen, M., 2018. Low genetic diversity, limited gene flow and widespread genetic bottleneck effects in a threatened dolphin species, the Australian humpback dolphin. *Biological Conservation*, 220, pp.192-200.

Parra, G.J., Corkeron, P.J. and Marsh, H. 2004. The Indo-pacific humpback dolphin, *Sousa chinensis* (Osbeck 1765) in Australian waters: a summary of current knowledge. *Aquatic Mammals* 30(1).

Rudolph, P., Smeenk, C and Leatherwood, S. Preliminary checklist of Cetacea in the Indonesian Archipelago and adjacent waters. *Zool. Verh. Leiden* 312, 30.xii.1997: 1-48.

Ruitenbeek, J. 1995. Evaluating Bintuni Bay: Some practical lessons in applied resource valuation. *Economy and Environment Program for Southeast Asia Special Paper*.

Sahri, A., Putra, M.I.H., Mustika, P.L.K., Kreb, D., and Murk, A.J. 2021. Cetacean habitat modelling to inform conservation management, marine spatial planning, and as a basis for anthropogenic threat mitigation in Indonesia. *Ocean and Coastal Management*, 205: 105555.

<https://doi.org/10.1016/j.ocecoaman.2021.105555>

Sihite, J., Lense, O.N., Suratri, R., Gustiar, C. and Kosamah, E. 2005. Bintuni Bay nature reserve management plan, Irian Jaya Barat Province, 2006 –

2030. The Nature Conservancy Coral Triangle Centre. 252pp.

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.



**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) Bintuni Bay 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/bituni-bay-west-papua/>