

Nakhiloo Coastal Waters IMMA

Summary (continued)

in the area. Opportunistic sightings of both species further indicate their regular presence in the Nakhiloo National Marine Park. Both of these species are threatened by trawl fisheries, gillnet fisheries, and coastal development activities occurring in the IMMA.

Description

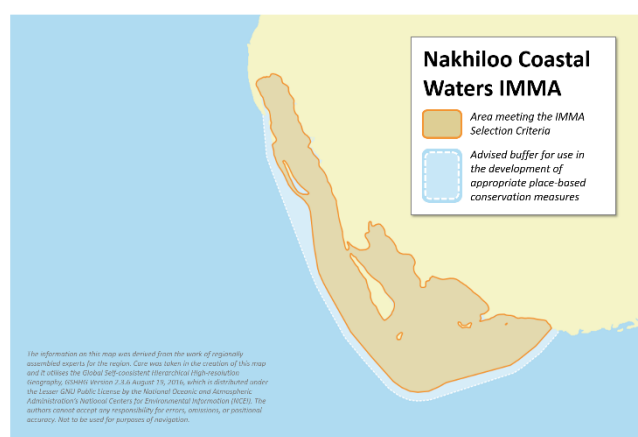
The Persian Gulf constitutes an almost closed body of shallow water with an average depth of 35m (Sheppard et al., 1992). These waters are subject to salinity fluctuations from 42 to 70 ppt and summer sea surface temperature ranges from 16°C to over 36°C (Preen, 2004). A low tidal displacement in this Gulf allows little discharge of its waters into the Indian Ocean and thus little opportunity to flush out pollutants. The Nakhiloo marine national park is an Important Area for breeding marine bird species such as terns (*Sterna bengalensis*, *Sterna bergii*, *Onychoprion anaethetus*), crab plover (*Dromas ardeola*), and the western reef heron (*Egretta gularis*). Moreover, these waters are an important breeding area for hawksbill turtles (*Eretmochelys imbricata*) and foraging area for green sea turtles (*Chelonia mydas*).

Criterion A: Species or Population Vulnerability

The IMMA supports the year-round presence of Indian Ocean humpback dolphins (*Sousa plumbea*) (Fig. 1), listed as Endangered on the IUCN Red List of threatened species. Indian Ocean humpback dolphins are present in a small resident population. Year-round monitoring, from 2014 to 2019, of these



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Area Size

401 km²

Qualifying Species and Criteria

Indian Ocean humpback dolphin – *Sousa plumbea*
Criteria A, B1

Indo-Pacific finless porpoise – *Neophocaena phocaenoides*
Criteria A, C1

Other Marine Mammal Species Documented

Balaenoptera edeni, *Delphinus delphis*, *Stenella longirostris*

Summary

This IMMA, located at the mouth of the Mond River Delta in the Bushehr province in southern Iran, encompasses the Dayer-Nakhiloo National Marine Park. The park is 20,434 hectares in size and includes shallow coastal waters with mangrove forests. These waters support a small, resident population of Endangered Indian Ocean humpback dolphins (*Sousa plumbea*). Surveys conducted year-round between 2014 and 2019 (a total of 42 months of research and 127 surveys) have yielded 97 sightings of Indian Ocean humpback dolphins and four sightings of Indo-Pacific finless porpoises (*Neophocaena phocaenoides*). These boat-based surveys also allowed the photo-identification of 39 individual Indian Ocean humpback dolphins resident

humpback dolphins using boat-based surveys has allowed the photo-identification of 39 individuals resident in the area. Their limited coastal range and near-shore distribution make this small community of humpback dolphins particularly vulnerable to mortality and traumatic injury in trawl nets and gillnets. One of the most famous shrimp (*Penaeus semisulcatus*) fishing grounds in the Persian Gulf is located around and inside the IMMA with a considerable shrimp bottom trawling effort. Gillnet, fishing trap (local name Gargoor) and other traditional fisheries are also present.

Criterion B: Distribution and Abundance

Sub-criterion B1: Small and Resident Populations

Based on surveys conducted in the Nakhiloo national park and Mond protected area from 2014-2019, abundance of Indian ocean humpback dolphins was estimated using photo-identification and closed population mark-recapture models. The discovery curve had plateaued, suggesting that the majority of

the population had been identified. A photo-identification catalogue of individuals generated from the surveys has identified 39 unique dorsal fins (Mohsenian, unpublished).

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

The first observation of an Indian Ocean humpback dolphin mother and new-born calf was made on 16 July 2017. Previously, only groups of juvenile humpback dolphins had been confirmed in this area. Mating behaviour was directly observed in groups of humpback dolphins every year. As the population is presumably resident within the Nakhiloo Marine Park and calves and reproductive behaviour are observed, we conclude that this is an important area for humpback dolphin reproduction. The presence of new-born Indo-Pacific finless porpoises was confirmed by the observation of a dead calf in close proximity to an adult swimming around the carcass on 14 April 2017.



Figure 2: Three Indian Ocean humpback dolphin (*Sousa plumbea*) surface in the Nakhiloo IMMA. Photo: Nazanin Mohsenian

Supporting Information

Braulik, G.T., Findlay K., Cerchio, S. and Baldwin, R. 2015. 'Assessment of the conservation status of the Indian Ocean humpback dolphin (*Sousa plumbea*) using the IUCN Red List Criteria'. *Advance Marine Biology*, 72:119-141. DOI: 10.1016/bs.amb.2015.08.004.

Braulik, G. T., Ranjbar, S., Owfi, F., Aminrad, T., Dakhteh, S. M. H., Kamrani, E. and Mohsenizadeh, F. (2010). 'Marine mammal records from Iran'. *Journal Cetacean Res. Manage*, 11(1), 49–63

Jefferson, T. A., Webber, M. A., and Pitman, R. L. (2015). *Marine Mammals of the world. A Comprehensive Guide to Their Identification*. Second edition. Academic Press (USA).

Mohsenian, N., Moshiri, H. et al. Forthcoming. Conservation of Indian Ocean humpback dolphin, *Sousa plumbea* in Dayyer Nakhiloo marine national park and Mond protected area.

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Sheppard, C.R., 1993. 'Physical environment of the Gulf relevant to marine pollution: an overview'. *Marine Pollution Bulletin*, 27, pp.3-8.

Acknowledgements

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The graphic contains the following elements:

- Top Left:** A stylized white dolphin silhouette on a blue background.
- Top Center:** Text: "MARINE MAMMAL PROTECTED AREAS TASK FORCE". Below it are logos for IUCN, SSC (Specialist Group for Cetaceans), and WCPA (World Cetacean Protection Alliance).
- Top Right:** IMMA logo, which consists of a blue grid with a red map of the Indian Ocean region.
- Middle Left:** Text: "Supported by:". Below it is the logo of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.
- Middle Center:** TETHYS logo, featuring a blue globe and the text "TETHYS since 1986".
- Middle Right:** WDC logo, with the text "WHALE AND DOLPHIN CONSERVATION" and a stylized whale/dolphin shape.
- Bottom Left:** Text: "based on a decision of the German Bundestag".
- Bottom Center:** Suggested Citation: "IUCN-Marine Mammal Protected Areas Task Force, 2021. Nakhiloo Coastal Waters IMMA Factsheet. <https://www.marinemammalhabitat.org/wp-content/uploads/imma-factsheets/WesternIndianOcean/nakhiloo-coastal-waters-WesternIndianOcean.pdf>. Downloaded on (day month year)."
- Bottom Right:** Text: "PDF made available for download at <https://www.marinemammalhabitat.org/wp-content/uploads/imma-factsheets/WesternIndianOcean/nakhiloo-coastal-waters-WesternIndianOcean.pdf>."