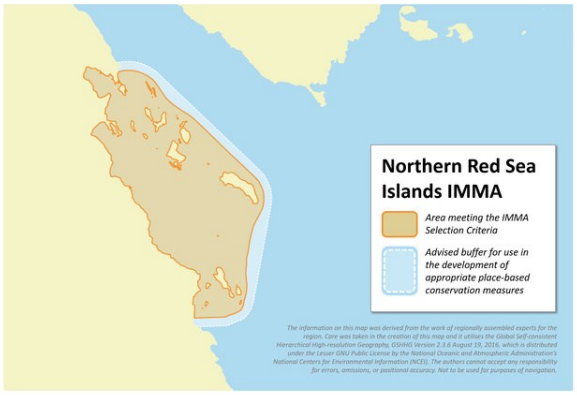

Area Size

2,125km^2

Qualifying Species and Criteria

Indo-Pacific bottlenose dolphin
Tursiops aduncus
Criterion B1; C3b; D1

Indian Ocean humpback dolphin
Sousa plumbea
Criterion A; B1

Other Marine Mammal Species Documented

Dugong dugon, Grampus griseus, Megaptera novaeangliae, Pseudorca crassidens, Sousa plumbea, Stenella attenuata, Stenella longirostris, Tursiops truncatus, Tursiops aduncus

Summary

The Northern Red Sea Islands are located in the northern part of the Red Sea, adjacent to the coastal areas of El Gouna and Hurghada. The IMMA includes a complex network of islands, coral reefs, shallow bays and lagoons, seagrass beds and open waters. The area is very important for a year-round resident population of at least 200 Indo-Pacific bottlenose dolphins, *Tursiops aduncus*. A smaller group of Indian Ocean humpback dolphins, Sousa plumbea, regularly encountered in the coastal waters and around the coastal reefs. The Indo-Pacific bottlenose dolphins feed in the open waters among islands and reefs and rest, mate, socialize and nurse their calves in proximity to several reefs in the IMMA, in particular Shaab El Fanous, Shaab El Erg, Shaab Abu Nugar and around Gubal island. The dolphins are increasingly subjected to intense swimming-with-the-dolphin tourist activities that are considered to be detrimental to the conservation of these animals.

Northern Red Sea Islands IMMA

Description

The Northern Red Sea Islands IMMA is located at the eastern end of the northern Red Sea near the opening of the Gulf of Suez. Unlike most of the Egyptian coastline which is relatively straight with few offshore reefs, the IMMA includes a unique and complex system of islands and coral reefs with ecosystems such as sea grass beds, mangrove forests, shallow bays and lagoons, fringing reefs, coral patches, and some open waters. Due to the high diversity of habitats that it contains, 1.991 km2 of the area was declared as a Natural Reserve in 2006 (Natural Protectorate of type "Developing resources protected area" - http://www.eeaa.gov.eg/en-us/topics/nature/protectorates/protectoratesdescription.aspx). Several human settlements are present along the coastline, including the cities of El Gouna (27.39˚ N, 33.68˚ E) and Hurghada (27.22˚ N, 33.84˚ E). A tourism boom, which began in the 1980s resulted in extensive coastal property development, contributing to substantial damage to the coral reefs (UNEP-PERSGA 1997, Cesar 2003, Kotb et al. 2004, Hilmi et al. 2012). In recent years, in-water interactions with wild dolphins have become a popular tourist attraction offered by a variety of organisations in the area.

Criterion A – Species or Population Vulnerability

The Indian Ocean humpback dolphin, Sousa plumbea, is found in shallow coastal waters from the northern Red Sea to the tip of South Africa and the tip of India (Braulik et al. 2017). The abundance of the species in the Red Sea is presently unknown, however, Sousa

Figure 1 - Indian Ocean humpback dolphin in the Northern Red Sea Islands IMMA. Photo Credit: Angela Ziltener

plumbea occurs throughout the region in small groups in shallow waters, with the exclusion of the Gulf of Aqaba. The species is regularly observed in the IMMA, in particular along the coast and coastal reefs in small groups of maximum three individuals (Angela Ziltener unpublished data). These shallow, sheltered habitats of the Northern Red Sea Islands host a small group of Indian Ocean humpback dolphins, listed as Endangered on the IUCN Red List (Braulik et al. 2017).

Criterion B: Distribution and Abundance

Sub-criterion B1: Small and Resident Populations

Photo-identification data collected by the Dolphin Watch Research project since 2009 recorded 189 Indo-Pacific bottlenose dolphins using the area year-round (Ziltener & Kreicker 2014). Ongoing research shows that there are a total number of 318 individuals in the area. Studies on site fidelity and occurrence at these, and neighbouring sites, are in progress. The Northern Red Sea Islands area is an important reproductive site for Indo-Pacific bottlenose dolphins as mating, newborns, and calves have been regularly observed year-round with a peak in spring and summer (Orbach et al. 2019, Ziltener & Kreicker 2014). Over the years, several females were observed with calves. Pregnant females and mothers with newborns are regularly observed during underwater observations, although births have never been witnessed. Although there is no precise information on the abundance S. plumbea in the area, dedicated observations carried out since 2009 by the Dolphin Watch Research Alliance project suggest that the number of dolphins in the area is constant based on encounter rates, in particular, if compared to other areas along the Egyptian Red Sea coast, where dedicated surveys have been carried out (Costa 2015). Repeated sightings of Indian Ocean humpback dolphins are reported in particular around El Gouna, including El Gouna harbour (i.e. Abydos Marina) and Shaab el Dir reef located just off El Gouna.

Criterion C: Key Life Cycle Activities

Sub-criterion C3: Migration Routes

C3b – Migration / Movement Area

The diurnal activity pattern of the Indo-Pacific bottlenose dolphins in the Northern Red Sea Islands was studied from 2012 and 2017 from vessel and/or

Figure 2 - Indo-Pacific bottlenose dolphin in the Northern Red Sea Islands IMMA. Photo Credit: Angela Ziltener

underwater during SCUBA dives or snorkels. The study suggests that dolphins use the Northern Islands area to rest (60%), socialize (27%), travel (10%), and forage (3%) underlying the importance of the IMMA for the population (Kreicker & Ziltener 2017). After socializing and foraging activities in the early morning, resting activity was most prominent in the afternoon, with a peak from 09:00 to 12:00, followed by an increase in socializing, travelling and foraging in the late afternoon.

Resting and socializing occur more at reefs, while foraging and travelling was more frequent in open waters among reefs and islands. The low rate of foraging (3%) suggests that foraging mainly occurs at night (Kreicker & Ziltener 2017). This activity budget is in striking contrast to other previously described diurnal activity budgets of bottlenose dolphins, in which travelling or foraging were the most frequently reported activities and resting the least frequent (Steiner, A. 2011, Karniski, C., et al. 2015). Furthermore, the structured diurnal activity pattern seems to be comparable to that of spinner dolphins (Stenella longirostris) in the Southern Egyptian Red Sea (Fumagalli, M. 2016) and elsewhere (e.g. 61.7% daytime resting in sheltered bays off Hawaii, according to Tyne, J. 2015). Moreover, the study also revealed that some offshore reefs are particularly important for resting including Erg Kebir, Shaab El Bayout, Gotta Bayout, Shaab El Dir, Gotta El Dir, and Umm Usk. In the latter, Indo-Pacific bottlenose dolphins were observed swimming with a dugong (Hanafy, et al. 2006; Nasr et al. 2019).

Criterion D: Special Attributes
Sub-criterion D2: Distinctiveness

Self-rubbing, also known as object rubbing, involves an individual physically touching and rubbing themselves on the substrate (e.g. sand, pebble stones, seagrass, or rocks), objects, or other, non-conspecific organisms, possibly for hygiene (e.g. ectoparasite removal), social and sensual functions (Ford et al., 2000; Dudzinski et al., 2012), play (Kuczaj et al., 2006), and/or to facilitate moulting (O'Corry-Crowe, 2009). The Indo-Pacific bottlenose dolphin population inhabiting the IMMA displays an unusual rubbing behaviour into sand, seagrass and different coral species (Ziltener & Kreicker, 2013; Ziltener et al. 2015a). Underwater video recordings conducted while scuba diving showed that dolphins are rubbing their whole body into sand, seagrass and gorgonians (Rumphella aggregata). Leather corals (Sarcophyton sp.) and sponges (Callyspongia sp.) are mostly used by dolphins to rub their head region, ventral side and fluke. Finally, hard corals (Favia sp.) are used to rub the edges of the pectoral fins (Ziltener et al. 2015a). Such selective self-rubbing behaviour for certain corals has not been observed in other dolphins worldwide (Ziltener et al. 2015a) and may represent a cultural trait of this specific population. This has already been hypothesised for the behaviour of rubbing on pebble beaches observed in killer whales (Whitehead et al., 2004).

Supporting Information

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Figure 3 - Indian Ocean humpback dolphin pair. Photo Credit: Angela Ziltener

Aknowledgements

The participants of the 2019 IMMA Regional Expert Workshop held in Salalah, Oman for the Identification of IMMAs in the Western Indian Ocean and Arabian Seas. . Funding for the identification of this IMMA was provided to the Global Ocean Biodiversity Initiative by the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag. Support was also provided by Whale and Dolphin Conservation and the Tethys Research Institute.

Suggested Citation: IUCN-MMPATF (2020). Northern Red Sea Islands IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2020.

PDF made available for download at: https://www.marinemammalhabitat.org/wp-content/uploads/imma-factsheets/WesternIndianOcean/Northern-Red-Sea-Islands-WesternIndianOcean.pdf

Figure 5 - Indo-pacific bottlenose dolphins in the Northern Red Sea Islands IMMA.
Photo credit: Angela Ziltener