

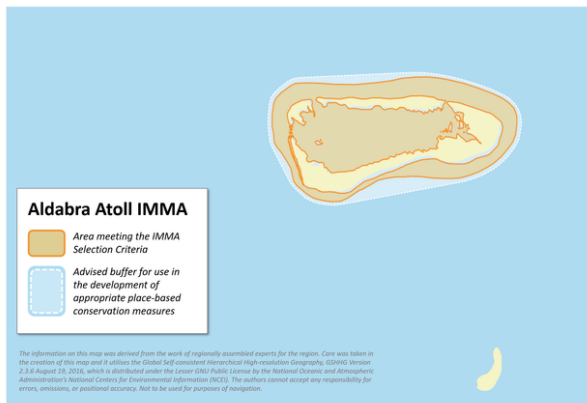
# Aldabra Atoll IMMA

## Description

Aldabra Atoll is one of the Seychelles most distant islands, located over 1000 km southwest of the main island of Mahé. Aldabra is a large coral atoll with a land area of 153km<sup>2</sup>, but together with the lagoon and the channels it occupies a total area of 346 km<sup>2</sup>. The Atoll is 34 km long and 14.5 km wide at its widest point. The atoll comprises four main islands separated by channels and which surround a shallow central lagoon (226 km<sup>2</sup>, <8 m deep) scattered with inlets and encircled by fringing coral reef with a steep seaward slope. Aldabra seaward reef complex is approximately 53 km<sup>2</sup> and the lagoon reef is 19 km<sup>2</sup> (SIF, 2016).

Aldabra was declared a Special Reserve in 1981 and a UNESCO World Heritage Site in 1982, managed and strictly protected by the Seychelles Islands Foundation (SIF). The Aldabra Special Reserve was extended in 2016 to cover an area of 2,559 km<sup>2</sup> to encompass additional important reef systems that were excluded from the original boundary of 1 km from the mean high-water mark. The new square boundary approximates the 3000 m depth contour line (Haupt et al. 2015; SIF, 2016). Based on the species present at Aldabra (see below), which includes several deep-water and slope-associated species, the boundaries of the IMMA exactly track the 3000 m depth contour to encompass the diversity of habitat important to species found in this area and reflect the important habitats identified as the basis of the extended boundaries for the Aldabra Special Reserve.

Historically common throughout the Seychelles waters, currently the only remaining population of dugongs in the Seychelles is found at Aldabra. Aldabra's large, shallow lagoon and extensive seagrass beds provide ideal foraging habitat for dugongs (Hamylton et al. 2012). Sightings of one or two animals were recorded as far back as 1970, but it has only been since 2001 that dugong sightings have been documented every year around Aldabra, including adults and juveniles. A partial aerial survey of the lagoon in 2013 recorded a minimum of 14 dugongs in the area covered, which is by far the largest number counted to date and suggests that the total population in the lagoon is between 20-25 individuals. The survey also recorded calves, indicating that Aldabra is a breeding or nursery site for the species (Appoo et al. 2019). Furthermore,



**Area Size**  
380 km<sup>2</sup>

## Qualifying Species and Criteria

Dugong  
*Dugong dugon*  
Criterion A; C (1, 2)

Humpback whale  
*Megaptera novaeangliae*  
Criterion C (1, 3b)

## Other Marine Mammal Species Documented

*Delphinus delphis*, *Dugong dugon*, *Globicephala macrorhynchus*, *Grampus griseus*, *Megaptera novaeangliae*, *Mesoplodon densirostris*, *Orcinus orca*, *Peponocephala electra*, *Physeter macrocephalus*, *Pseudorca crassidens*, *Stenella attenuata*, *Stenella longirostris*, *Tursiops truncatus*, *Ziphius cavirostris*

## Summary

Aldabra Atoll is a large coral atoll located in the southern Seychelles group, being one of the Seychelles most distant islands, located over 1000 km southwest of the main island of Mahé. Aldabra is a large coral atoll with adjacent lagoon and channels. Aldabra was designated as a marine UNESCO World Heritage Site in 1982 and has been strictly protected ever since. The area includes the inner waters of the lagoon, outer slope of the barrier reef, and oceanic waters out to the 3000 m depth contour. Aldabra represents important habitat for the only known remaining population of dugongs in the Seychelles island group and forms part of the breeding grounds and migratory corridor for humpback whales in the region.

dugong sightings have been documented year-round suggesting a potential resident population (Hamyton et al. 2012; Appoo et al. 2019).

Humpback whales are commonly seen between July and November every year around Aldabra, including mothers and calves, indicating that the atoll represents part of the breeding/nursery area for the group currently defined as "Breeding Stock C" by the International Whaling Commission. Humpback whales are spotted at several sites around the atoll and on few occasions have been seen entering the lagoon via channels, which are roughly 15-25 m deep. In September 2017, the first recorded humpback whale beaching occurred on Aldabra.



Figure 1 - A humpback whale photographed at Aldabra Atoll. Photo credit:

## **Criterion A – Species or Population Vulnerability**

Aldabra is now the only location in the Seychelles where dugongs occur (Hermans and Pistorius, 2008). Classified as Vulnerable on the IUCN Red List, dugongs in east Africa are thought to be more highly threatened (Marsh et al. 1992). Aldabra hosts vast areas of seagrass beds both inside the lagoon (Hamyton et al. 2012) and on the seaward reef flat (Haupt et al. 2015). Spatial analysis of dugong sightings suggests a co-occurrence of dugongs and seagrass beds inside the lagoon (Hamyton et al. 2012). Aldabra therefore contains habitat important for the survival for the dugong and meets Criterion A. Furthermore, Aldabra's dugongs include breeding females and calves, indicating the site may be a key area for the population and a promising area for population recovery (Appoo et al. 2019).

## **Criterion C: Key Life Cycle Activities**

### **Sub-criterion C1: Reproductive Areas**

A partial aerial survey of the lagoon in 2013 recorded a minimum of 14 dugongs in the area covered, which is by far the largest number counted to date and suggests that the total population in the lagoon is between 20-25 individuals. The survey also recorded calves, indicating that Aldabra is a breeding or nursery site for the species (Appoo et al. 2019). Humpback whales with calves are observed around Aldabra from July to November (Hermans and Pistorius, 2008; Appoo et al. 2019), coinciding with the breeding period of humpback whales in the region (e.g., Rosenbaum et al. 2009; Fossette et al. 2014). The atoll therefore forms part of the broader humpback whale breeding area known in the region.

### **Sub-criterion C2: Feeding Areas**

Aldabra hosts extensive seagrass beds found inside the lagoon as well as on the outer reef flat. The seagrass beds are considered to be near-pristine due to little anthropogenic impacts and strict protection of the atoll. Aldabra's large, shallow lagoon and extensive seagrass beds therefore provide ideal foraging habitat for dugongs, which are seagrass specialists. Previous research has indicated a cluster of dugong sightings in the lagoon correlated with seagrass areas (Hamyton et al. 2012). This suggests that the lagoon represents important foraging habitat for this species.

### **Sub-criterion C3: Migration Routes**

#### **C3b – Migration / Movement Area**

Aldabra is on the migration route of humpback whales associated with Breeding Stock C as they move annually between feeding areas in the Southern Ocean and breeding (wintering) areas off east Africa, the islands of the Mozambique Channel, Madagascar, and the Mascarenes (e.g., Fossette et al. 2014; Cerchio et al. 2016). Humpback whales make up the highest proportion of marine mammal sightings on Aldabra (Hermans & Pistorius, 2008; Appoo et al. 2019). Humpback whales on Aldabra are seen exclusively between July and November, with calves, indicating that the atoll represents part of the breeding/nursery area for this population of humpback whales (Appoo et al. 2019).



Figure 2 - A dugong surfaces close to Aldabra Atoll inside the IMMA. Photo credit:

## Supporting Information

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## Aknowledgements

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PROTECTED AREAS  
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