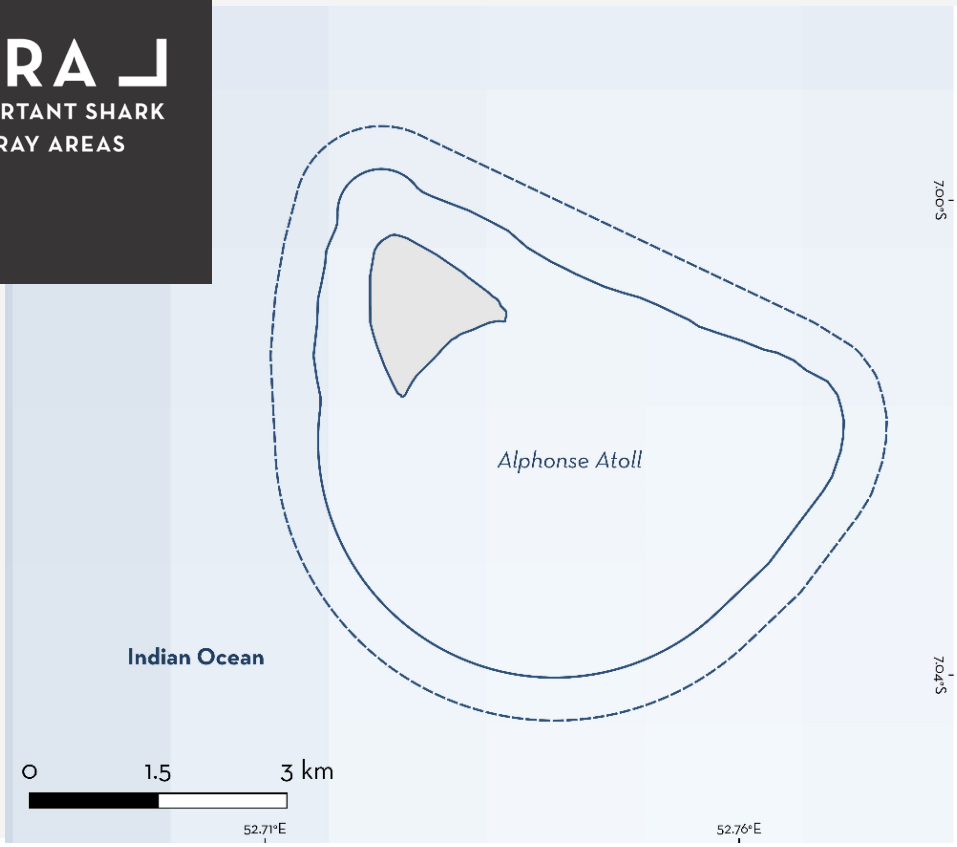
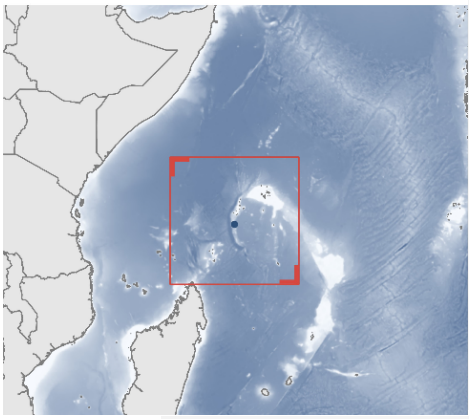
ISRA
IMPORTANT SHARK AND RAY AREAS





Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

ALPHONSE ATOLL ISRA

Western Indian Ocean Region

SEYCHELLES

0–60 metres

22.93 km²

SUMMARY

Alphonse Atoll is located 400 km southwest from the inner islands of the Mahé plateau in Seychelles. The area consists of an atoll with well-defined and extensive reef flats dominated by seagrass and fine sand. The lagoon is enclosed at low tide, but accessible by a channel which greatly influences the hydrodynamics around the atoll. This area sits within a marine protected area and within the Mahé, Alphonse and Amirantes Plateau Ecologically or Biologically Significant Marine Area. It also overlaps with Alphonse Island and Lagoon Key Biodiversity Area. Within this area there are: **threatened species** (e.g., Grey Reef Shark *Carcharhinus amblyrhynchos*); **reproductive areas** (Spotted Eagle Ray *Aetobatus ocellatus*); and **undefined aggregations** (Grey Reef Shark).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C1 – Reproductive Areas; Sub-criterion C5 – Undefined Aggregations

DESCRIPTION OF HABITAT

Alphonse Atoll lies at the southern extremity of the Amirantes archipelago, southwest of Mahé, the main island of Seychelles. Alphonse has a single chamber lagoon with mixed sand, seagrass, and scattered patches of coral (Hamylton et al. 2012). There is continuous coral reef on both the inside rim of the lagoon (on the eastern side) and outer reefs, which are steeply sloping. The Alphonse channel is ~60 m wide, 1 km long, and 5–6 m deep. There is extensive coral growth inside the channel demonstrating a lack of disturbance for +30 years (Islands Conservation Society [ICS] unpubl. data 2023). Tidal movements of water spill over the flats that surround both the island and lagoon, however, these all dry out at low tide (Hamylton et al. 2012). The southeastern corner of Alphonse Atoll has a small shallow (0.5–1 m deep) sandy bay that is sheltered from the strong currents that flow over the flats during tidal movements (ICS unpubl. data 2023). The southern part of Alphonse Island which opens to the lagoon is also sheltered from currents and the reef flat adjacent to the coral reef has more fine sand and silt than other areas.

The area sits within a marine protected area and within the Mahé, Alphonse and Amirantes Plateau Ecologically or Biologically Significant Marine Area (EBSA; CBD 2023). It also overlaps with Alphonse Island and Lagoon Key Biodiversity Area (KBA 2023).

This important Shark and Ray Area is benthopelagic and delineated from inshore and surface waters (0 m) to 60 m based on the bathymetry of the area and the observations of the Qualifying Species in the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. These are the Endangered Grey Reef Shark (Simpfendorfer et al. 2020) and Spotted Eagle Ray (Finucci et al. submitted).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Alphonse Atoll is an important reproductive area for one ray species.

Courtship behaviour including 'mating trains' lasting multiple days and active biting/mating attempts of Spotted Eagle Rays have been recorded. Animals are seen in aggregations of one female and up to six males in shallow water (0.5–2 m) areas of the Alphonse lagoon, adjacent to the beaches on the southern and southeastern side. These courtship displays are a regular annual event and although sightings data on when they occur are sporadic, accounts vary from February to May (ICS unpubl. data 2012–2022). Additionally, neonate Spotted Eagle Rays (~25–35 cm disc width [DW]) are regularly observed in very shallow water along the beaches of Alphonse Atoll (ICS unpubl. data 2012–2022). The size-at-birth for this species is 33–36 cm DW (Last et al. 2016).

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Alphonse Atoll is an important area of undefined aggregations for one shark species.

Scientific divers have recorded aggregations of adult Grey Reef Sharks 13 times on the western side of Alphonse Atoll at a specific location (from 'Galawa' to 'Bluewater Stop/Wonderland') from 2017 to 2023 and from January to September (E Brighton unpubl. data 2023; Alphonse Dive log 2017–2023). Four to 12 individuals were seen on each occasion, and animals were of varying sizes (~120–210 cm total length). The function of these aggregations is currently unknown. However, the location where the sharks aggregate is a steep sloping reef with distinct spur and groove structures in the shallows, high levels of live hard coral cover on the slope, and large sea fans below 16 m (ICS 2018). This site experiences cold water upwelling which does not seem to be consistent with the seasonal upwelling around other areas of the atoll and could be an influencing factor. Furthermore, there are often strong currents along this reef (E Brighton pers. obs. 2020–2023).

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QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
Carcharhinus amblyrhynchos	Grey Reef Shark	EN	0–280	X						X		
RAYS												
Aetobatus ocellatus	Spotted Eagle Ray	EN	0–40	X		X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Alopias pelagicus	Pelagic Thresher	EN
Carcharhinus falciformis	Silky Shark	VU
Carcharhinus leucas	Bull Shark	VU
Galeocerdo cuvier	Tiger Shark	NT
Nebrius ferrugineus	Tawny Nurse Shark	VU
Negaprion acutidens	Sharptooth Lemon Shark	EN
Rhincodon typus	Whale Shark	EN
Sphyrna lewini	Scalloped Hammerhead	CR
Triaenodon obesus	Whitetip Reef Shark	VU
RAYS		
Mobula alfredi	Reef Manta Ray	VU
Mobula birostris	Oceanic Manta Ray	EN
Mobula tarapacana	Sicklefin Devil Ray	EN
Rhynchobatus djiddensis	Whitespotted Wedgefish	CR
Urogymnus asperrimus	Porcupine Ray	EN
Urogymnus granulatus	Mangrove Whipray	EN

IUCN Red List of Threatened Species Categories are available by searching species names at www.iucnredlist.org Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.

SUPPORTING INFORMATION

There are indications that this area may be important for two other ray species.

The sheltered, shallow area on the southeast point of Alphonse Island hosts aggregations of two to more than 20 early life-stage Mangrove Whiprays (20–50 cm DW) (ICS unpubl. data 2012–2022). The size-at-birth for this species is 14–28 cm DW (Manjaji 2004). These aggregations appear to be related to reproduction, however, further information is required to understand the nature and function of these aggregations.

Aggregations of up to 20 Whitespotted Wedgefish are often sighted on the shallow sand flat that stretches from the southeast corner of Alphonse Island to the southeast corner of the lagoon (ICS unpubl. data 2021–2023). These aggregations are likely driven by tidal height, time of day, and wind direction. Observations suggest that this aggregation has a feeding purpose, however, further information is required to understand the nature and function of these aggregations.

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