

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

## PARDA REEF ISRA

### European Atlantic Region

#### SUMMARY

Parada Reef is located on northeast Sal Island, Cabo Verde. The habitat is composed of basaltic rock from ancient eruptions, forming a shallow rocky reef. The northern and southern sections of the area encompass two small narrow beaches. Within this area there are: **threatened species** and **reproductive areas** (Lemon Shark *Negaprion brevirostris*).

#### CRITERIA

**Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas**

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<b>CABO VERDE</b>	
—	—
<b>0-15 metres</b>	
—	—
<b>14.12 km<sup>2</sup></b>	
—	—



## DESCRIPTION OF HABITAT

Parda Reef is located on northeast Sal Island, Cabo Verde. Sal Island is one of the windward islands in the northern sector of Cabo Verde. This area is a coastal zone composed of basaltic rock from ancient eruptions, forming a shallow rocky reef. The northern and southern sections of the area encompass two small narrow beaches (Johnson et al. 2020).

Sal Island is impacted on a steady basis by wave swell generated from the Northeast Trade Winds coming from the Canary Islands, commonly reaching 5 to 6 on the Beaufort scale and capable of generating surface swells with an amplitude of 3.5 m (Johnson et al. 2020).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 15 m based on the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A – VULNERABILITY

One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Vulnerable Lemon Shark (Carlson et al. 2021).

### SUB-CRITERION C1 – REPRODUCTIVE AREAS

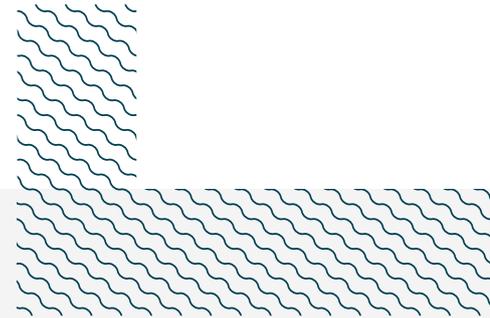
Parda Reef is an important reproductive area for one shark species.

Aggregations of 12–23 neonate, young-of-the-year (YOY), and small juvenile Lemon Sharks are observed year-round within this area (Associação Projeto Biodiversidade [APB] unpubl. data 2011–2025). Visual census surveys were carried out by 1–2 people standing in the water within this area. Over an average of 2.5 hours per survey, observers recorded the number of visible Lemon Sharks every 10 minutes. Neonates and YOY represent 80% of the reported aggregations, although during boreal summer months (June–September), this percentage increases to ~90% (APB unpubl. data 2011–2025).

Between November 2022–February 2025, 59 tagging surveys were conducted within this area. Each shark received a Passive Integrated Transponder (PIT) tag, and when feasible, an external identification tag was also applied. A total of 83 Lemon Sharks were captured and tagged, of which 81 were measured (50–92 cm total length [TL]) and 90.1% measured <80 cm TL (APB unpubl. data 2022–2025). The size-at-birth for Lemon Shark is 60–65 cm TL (Ebert et al. 2021) indicating ~90% were neonates and YOY. Of the 83 Lemon Sharks captured, 35 individuals were recaptured (n = 43 recaptures), supporting that Lemon Sharks remain or return to the area for up to 22 months. Of these individuals, five were recaptured after 12 months (influenced by the fact that ~50% of the sharks had been tagged less than 12 months from the date of the report). Additionally, information from 68 Baited Remote Underwater Video Station (BRUVS) surveys (APB unpubl. data 2022–2025) and 250 drone flights (The Eizaguirre Lab unpubl. data 2025) in the area suggest more intensive use of Parda Reef by Lemon Sharks compared to adjacent areas (APB unpubl. data 2025).

Collectively, the evidence supports that the area meets the three criteria to be identified as a nursery (Heupel et al. 2007). Lemon Sharks are more commonly encountered in the area than in

surrounding areas, individuals tend to remain in the area, and the habitat is consistently used across multiple years.



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### **Suggested citation**

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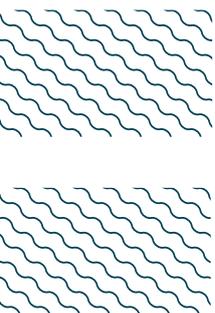
## QUALIFYING SPECIES

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	
<b>SHARKS</b>													
<i>Negaprion brevirostris</i>	Lemon Shark	VU	0-90	X		X							

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Carcharhinus falciformis</i>	Silky Shark	VU
<i>Ginglymostoma cirratum</i>	Atlantic Nurse Shark	VU
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR

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



## REFERENCES

**Carlson J, Charvet P, Ba A, Bizzarro J, Derrick D, Espinoza M, Doherty P, Chartrain E, Dia M, Leurs GHL, et al. 2021.** *Negaprion brevirostris*. *The IUCN Red List of Threatened Species 2021*: e.T39380A2915472. <https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T39380A2915472.en>

**Ebert DA, Dando M, Fowler S. 2021.** *Sharks of the world: A complete guide*. Princeton: Princeton University Press.

**Heupel MR, Carlson JK, Simpfendorfer CA. 2007.** Shark nursery areas: concepts, definition, characterization, and assumptions. *Marine Ecology Progress Series* 337: 287-297. <https://doi.org/10.3354/meps337287>

**Johnson ME, Ramalho R, Marques da Silva C. 2020.** Storm-related rhodolith deposits from the Upper Pleistocene and recycled coastal Holocene on Sal Island (Cabo Verde Archipelago). *Geosciences* 10: 419. <https://dx.doi.org/10.3390/geosciences10110419>