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

AMPHITHEATRE CAVES ISRA

Australia and Southeast Indian Ocean Region

AUSTRALIA

0–22 metres

0.12 km²

SUMMARY

Amphitheatre Caves is located in western Shark Bay, Western Australia, Australia. This area is situated off Steep Point in South Passage which is the westernmost point of mainland Australia. It encompasses multiple limestone caves and crevasses. This area overlaps with Shark Bay Marine Park. Within this area there are: **threatened species** and **resting areas** (Sand Tiger Shark *Carcharias taurus*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C3 – Resting Areas

DESCRIPTION OF HABITAT

Amphitheatre Caves is located in western Shark Bay, Western Australia, Australia. This area sits off Steep Point in South Passage which is the westernmost point of mainland Australia. South Passage is a deep, narrow, high-energy channel bordered by rugged limestone cliffs and rocky shores with a benthic sediment composed of turf rubble (Sutton & Shaw 2020). It serves as one of the main conduits for oceanic water exchange between the open Indian Ocean and the semi-enclosed Shark Bay (Sutton & Shaw 2020). This area encompasses multiple limestone caves and crevasses in a site known by recreational divers as Amphitheatre and Purple Rain (Shark Bay Eco Tours unpubl. data 2016–2024; E Gosden pers. obs. 2025).

This area has a semi-arid climate characterised by two main seasons: warm to hot summers (October–March) and mild winters (April–September). The bay's waters are warmer than adjacent oceanic waters in summer and cooler in winter (Nahas et al. 2005). Average sea surface temperatures are higher in summer (mean = 24.6 ± 1.0°C) than in winter (mean = 20.8 ± 1.7°C). Water circulation is influenced by the Leeuwin Current, which brings warm, low-salinity tropical water southward, mixing with the bay's hypersaline inner waters.

This area overlaps with Shark Bay Marine Park (WA DBCA 2025).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 22 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 Critically Endangered Sand Tiger Shark (Rigby et al. 2025).

SUB-CRITERION C3 – RESTING AREAS

Amphitheatre Caves is an important resting area for one shark species.

Between late September and mid-November from 2016–2024, dives were regularly conducted once a week within the area. Sand Tiger Sharks were observed on ~90% of the dives with an average of three animals observed per dive (range, 1–8 individuals) generally resting in caves (Shark Bay Eco Tours unpubl. data 2016–2024; E Gosden pers. obs. 2025). During this period, individuals observed were mainly mature females with body sizes visually estimated at 220–320 cm total length (TL). Size-at-maturity for this species is 220–230 cm TL for females (Ebert et al. 2021). Between late October and mid-November, more than half of the females recorded were either visibly pregnant (determined from their distended abdomens) or with relatively fresh mating scars. At the beginning of the season (late September), few females show scars, but their prevalence increases as the season progresses (mid-November). Adult male sharks were rarely observed with a proportion of one out of 10 individuals. This area might function as a reproductive area where females in early pregnancy rest after mating.

Compared to eastern Australia, critical habitat for Sand Tiger Sharks has been poorly studied in western Australia, with most known aggregations occurring near Perth (Hoschke et al. 2023). This

area represents the only naturally occurring, regularly used aggregation site for the species in central and northern Western Australia.

Acknowledgments

Emily Gosden (Shark Bay Eco Tours) and Adriana Gonzalez-Pestana (IUCN SSC Shark Specialist Group – ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2025 ISRA Region 08 – Australia and Southeast Indian Ocean workshop for their contributions to this process.

We acknowledge the Traditional Owners of Country throughout Australia and recognise the continuing connection to land, waters, and culture. We pay our respects to Elders past, present, and emerging.

This factsheet has undergone review by the ISRA Independent Review Panel prior to its publication.

This project was funded by the Shark Conservation Fund, a philanthropic collaborative pooling expertise and resources to meet the threats facing the world's sharks and rays. The Shark Conservation Fund is a project of Rockefeller Philanthropy Advisors.

Suggested citation

IUCN SSC Shark Specialist Group. 2025. Amphitheatre Caves ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category/ EPBC Act	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
Carcharias taurus	Sand Tiger Shark (Grey Nurse Shark)	CR/VU*	0–232	X				X				

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus obscurus	Dusky Shark	EN
Eucrossorhinus dasypogon	Tasselled Wobbegong	LC
RAYS		
Bathytoshia brevicaudata	Smooth Stingray	LC
Pastinachus ater	Broad Cowtail Ray	VU
Rhinoptera neglecta	Australian Cownose Ray	DD

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.

Australian Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) categories are available at: https://www.dcceew.gov.au/environment/epbc/our-role/approved-lists Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; CD, Conservation Dependent.

** Status for the west coast population.*

SUPPORTING INFORMATION

There is additional evidence that Amphitheatre Caves might be an important area for undefined aggregations of one ray species. Between 2019–2025, at least ten aggregations of Australian Cownose Ray, recorded as fevers, were observed by recreational divers (Shark Bay Eco Tours unpubl. data 2019–2025). Exact numbers of individuals were not documented and additional information is needed to confirm the importance of the area for this species.

REFERENCES

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

Hoschke AM, Whisson GJ, Haulsee D. 2023. Population distribution, aggregation sites and seasonal occurrence of Australia's western population of the grey nurse shark *Carcharias taurus*. *Endangered Species Research* 50: 107–123. https://doi.org/10.3354/esr01225

Nahas EL, Pattiaratchi CB, Ivey GN. 2005. Processes controlling the position of frontal systems in Shark Bay, Western Australia. *Estuarine, Coastal and Shelf Science* 65: 463–474. https://doi.org/10.1016/j.ecss.2005.06.017

Rigby CL, Carlson J, Derrick D, Dicken M, Pacoureau N, Simpfendorfer C. 2025. *Carcharias taurus* (amended version of 2021 assessment). *The IUCN Red List of Threatened Species* 2025: e.T3854A232113997. https://dx.doi.org/10.2305/IUCN.UK.2025-2.RLTS.T3854A232113997.en

Sutton AL, Shaw JL. 2020. A snapshot of marine research in Shark Bay (Gathaagudu): Literature review and metadata collation (1949-2020). Perth: Western Australian Marine Science Institution.

Western Australia Department of Biodiversity, Conservation and Attractions (WA DBCA). 2025. Management. Available at: https://www.dbca.wa.gov.au/management Accessed September 2025.