

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

WALTERS SHOALS ISRA

Western Indian Ocean Region

SUMMARY

Walters Shoals is located in the high seas, ~850 km south of Madagascar on the Madagascar Ridge. Walters Shoals is characterised by a deep plateau with abyssal plains and hills. The area partly overlaps with the Walters Shoals Ecologically or Biologically Significant Marine Area. Within this area there are: **range-restricted species** (Bach's Catshark *Bythaelurus bachi*); **reproductive areas** (Bach's Catshark); and **undefined aggregations** (Southern Lanternshark *Etmopterus granulosus*).

CRITERIA

Criterion B - Range Restricted; Sub-criterion C1 - Reproductive Areas; Sub-criterion C5 - Undefined Aggregations

—	—
ABNJ	—
—	—
220-1,500 metres	—
—	—
17,151.34 km²	—
—	—





DESCRIPTION OF HABITAT

Walters Shoals is located in the high seas, ~850 km south of the southern tip of Madagascar on the Madagascar Ridge in the Western Indian Ocean. The Madagascar Ridge is 1,300 km long and shallow (maximum 2,000 m depth) compared to adjacent waters that can reach >5,000 m depth. The area is characterised by abyssal plains and hills that sit on a deep plateau.

Walters Shoals is near the southern boundary of a large subtropical gyre where currents are relatively low (Vianello et al. 2020). It has some of the highest primary productivity enrichment in the high seas of the southwestern Indian Ocean (Demarcq et al. 2020).

The area partly overlaps with the Walters Shoals Ecologically or Biologically Significant Marine Area (EBSA; CBD 2023) and with a Benthic Protected Area (BPA; Rogers et al. 2017).

This Important Shark and Ray Area is benthic and extends from 220–1,500 m based on the depth ranges of the Qualifying Species and the bathymetry of the area.

ISRA CRITERIA

CRITERION B – RANGE RESTRICTED

This area holds the regular presence of one shark species as a resident range-restricted species.

Surveys in the region have been limited, but opportunistic data collected indicate the regular and predictable presence of Bach’s Catsharks in the area. The species was captured exclusively in Walters Shoals, despite surveys including nearby areas, such as the Southwest Indian Ocean Ridge and the northern part of the Madagascar Ridge. Bach’s Catsharks were recorded during surveys in 1988 (n = 32), 2012 (n = 1), and 2014 (n = 11; Weigmann et al. 2016). Although the species does not fall within a Large Marine Ecosystem (LME), its range is much smaller than the area of the nearby LME, highlighting their limited range.

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Walters Shoals is an important reproductive area for one shark species.

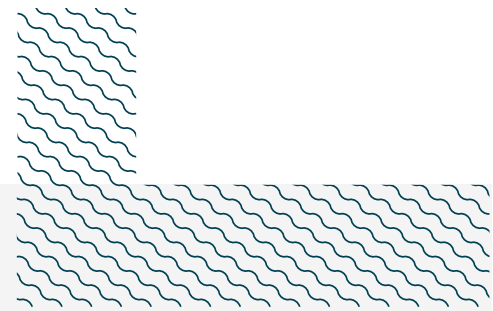
Bach’s Catsharks have only ever been recorded from this area despite surveys in adjacent areas (Weigmann et al. 2016). Of 44 specimens caught in survey trawls in 1988, 2012, and 2014, three were pregnant females with one fully developed egg case in each uterus, and three were neonates. Of the other 38 specimens, 24 were juveniles (1:1 female to male ratio), 11 were adult females, and three were adult males (Weigmann et al. 2016). This indicates that the species undertakes their whole life cycle in the area, including mating, gestating, and pupping.

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Walters Shoals is an important area for undefined aggregations of one shark species.

Southern Laternsharks are regularly caught in large numbers in the area. They were the most commonly captured shark species (n = 1,609) on a 49-day benthic trawl fishing trip in the area in June–July 2009 targeting Orange Roughy *Hoplostethus atlanticus*, during which a total of 2,099 deepwater

sharks were caught and measured (Sanders 2023). The species has been regularly recorded during exploratory research surveys and as bycatch in fisheries operating around Walters Shoal since the 1970s (e.g., Parin et al. 1993; Clerkin 2017). The relative abundance of Southern Lanternshark observed as fisheries bycatch in trawl fisheries on Walters Shoals in 2012 and 2014 (n = 97 tows) was 3.15 sharks per tow of ~60 min, respectively (Clerkin 2017). It is likely that this area is important for feeding and reproduction, but the purpose of these aggregations is currently unknown.



Acknowledgments

Paul Clerkin (Virginia Institute of Marine Science), Brittany Finucci (National Institute of Water and Atmospheric Research), and Christoph A. Rohner (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2023 ISRA Region 7 - Western Indian Ocean workshop for their contributions to this process.

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. 2023. Walters Shoals ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

QUALIFYING SPECIES

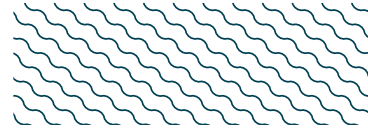
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met							
				A	B	C1	C2	C3	C4	C5	D1
SHARKS											
<i>Bythaelurus bachi</i>	Bach's Catshark	DD	910-1,365		X	X					
<i>Etmopterus granulosus</i>	Southern Lanternshark	LC	220-1,500							X	

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Apristurus manocheriani</i>	Manocherian's Catshark	LC
<i>Bythaelurus naylori</i>	Duskysnout Catshark	DD
<i>Centroscymnus coelolepis</i>	Portuguese Dogfish	NT
<i>Centroscymnus owstonii</i>	Roughskin Dogfish	VU
<i>Centrophorus granulosus</i>	Gulper Shark	EN
<i>Centrophorus squamosus</i>	Leafscale Gulper Shark	EN
<i>Centroselachus crepidater</i>	Longnose Velvet Dogfish	NT
<i>Dalatias licha</i>	Kitefin Shark	VU
<i>Deania calcea</i>	Birdbeak Dogfish	NT
<i>Deania profundorum</i>	Arrowhead Dogfish	NT
<i>Etmopterus alphus</i>	Whitecheek Lanternshark	LC
<i>Etmopterus bigelowi</i>	Blurred Lanternshark	LC
<i>Etmopterus brosei</i>	Barrie's Lanternshark	LC
<i>Etmopterus pusillus</i>	Smooth Lanternshark	LC
<i>Etmopterus sculptus</i>	Sculpted Lanternshark	LC
<i>Pseudotriakis microdon</i>	False Catshark	LC
<i>Odontaspis ferox</i>	Smalltooth Sandtiger	EN
<i>Scymnodon macracanthus</i>	Largespine Velvet Shark	DD
<i>Zameus squamulosus</i>	Velvet Dogfish	LC
RAYS		
<i>Bathyraja tunae</i>	Cristina's Skate	LC
CHIMAERAS		
<i>Chimaera buccanigella</i>	Dark-mouth Chimaera	DD
<i>Chimaera didierae</i>	Falkor Chimaera	DD
<i>Chimaera willwatchi</i>	Seafarer's Ghostshark	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.

SUPPORTING INFORMATION



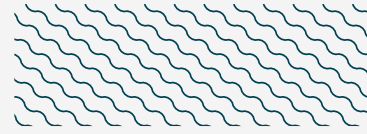
There are additional indications that Walters Shoals is an important area for several range-restricted species including those which were described from Walters Shoals. Further specimens are required to understand the geographic range, and hence range restriction, of these species.

Manocherian Catshark was recently described from Walters Shoals, with additional specimens collected on the Southwest Indian Ocean Ridge (Cordova & Ebert 2021). Eight individuals were collected in 2012 and 2014.

Whitecheek Lanternshark was described from Walters Shoals, with additional specimens collected in the central Mozambique Channel (Ebert et al. 2016). All specimens were collected >15 years ago with no contemporary data.

Dark-mouth Chimaeras were caught exclusively in Walters Shoals in 2002 (n = 2) and 2012 (n = 1).

Falkor Chimaera is only known from this area but has only been described from a single specimen.



REFERENCES

- Clerkin PJ. 2017.** Life history aspects and taxonomy of deep-sea chondrichthyans in the Southwestern Indian Ocean. Unpublished PhD Thesis, San Jose State University, San Jose.
- Convention on Biological Diversity (CBD). 2023.** Walters Shoals. Ecologically or Biologically Significant Areas (EBSAs). Available at: <https://chm.cbd.int/database/record?documentID=204007> Accessed September 2023.
- Cordova JA, Ebert DA. 2021.** *Apristurus manocheriani* (Carcharhiniformes: Pentanchidae), a new species of catshark from the Southwest Indian Ocean. *Journal of the Ocean Science Foundation* 38: 13-26. <https://doi.org/10.5281/zenodo.5081131>
- Demarcq H, Noyon M, Roberts MJ. 2020.** Satellite observations of phytoplankton enrichments around seamounts in the South West Indian Ocean with a special focus on the Walters Shoal. *Deep Sea Research II - Topical Studies in Oceanography* 176: 104800. <https://doi.org/10.1016/j.dsr2.2020.104800>
- Ebert DA, Straube N, Leslie RW, Weigmann S. 2016.** *Etmopterus alphas* n. sp.: a new lanternshark (Squaliformes: Etmopteridae) from the southwestern Indian Ocean. *African Journal of Marine Science* 38(3): 329-340. <https://doi.org/10.2989/1814232X.2016.1198275>
- Parin NV, Nesis KN, Sagaidachnyi AY, Shcherbachev YN. 1993.** Fauna of Walters Seamount (southwestern part of the Indian Ocean). *Trudy Instituta Okeanologii* 128: 199-216.
- Rogers AD, Alvheim O, Bemanaja E, Benivary D, Boersch-Supan P, Bornman TG, Cedras R, Du Plessis N, Gotheil S, Høines A, et al. 2017.** Pelagic communities of the south west Indian ocean seamounts: R/V Dr Fridtjof Nansen cruise 2009-410. *Deep Sea Research Part II: Topical Studies in Oceanography* 136: 5-35. <https://doi.org/10.1016/j.dsr2.2016.12.010>
- Sanders J. 2023.** Vessel trip report on aimed bottom trawling for Orange Roughy in the Southwestern Indian Ocean, June-July 2009. FAO Fisheries and Aquaculture Circular No. 1235. Rome: FAO.
- Vianello P, Ternon J-F, Demarcq H, Herbette S, Roberts MJ. 2020.** Ocean currents and gradients of surface layer properties in the vicinity of the Madagascar Ridge (including seamounts) in the South West Indian Ocean. *Deep Sea Research II - Topical Studies in Oceanography* 176: 104816. <https://doi.org/10.1016/j.dsr2.2020.104816>
- Weigmann S, Ebert DA, Clerkin PJ, Stehmann MFW, Naylor GJP. 2016.** *Bythaelurus bachi* n. sp., a new deep-water catshark (Carcharhiniformes, Scyliorhinidae) from the southwestern Indian Ocean, with a review of *Bythaelurus* species and a key to their identification. *Zootaxa* 4208(5): 401-432. <http://doi.org/10.11646/zootaxa.4208.5.1>