

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

GREATER PROTEA BANKS ISRA

Western Indian Ocean Region

SUMMARY

Greater Protea Banks lies on the narrow continental shelf off southern KwaZulu-Natal Province in South Africa. The area is influenced by the warm Agulhas Current flowing southward along the shelf. It is characterised by rocky reefs, submarine canyons, deep reefs, cold-water corals, estuarine environments, and pelagic waters. This area presents high marine diversity and key ecological processes such as the annual Sardine Run. Within this area there are **threatened species** (e.g., Sand Tiger Shark *Carcharias taurus*); **range restricted species** (e.g., Flapnose Houndshark *Scylliogaleus queckettii*); **feeding areas** (Dusky Shark *Carcharhinus obscurus*); and **undefined aggregations** (e.g., Scalloped Hammerhead *Sphyrna lewini*).

CRITERIA

Criterion A - Vulnerability; Criterion B - Range Restricted;
Sub-criterion C2 - Feeding Areas; Sub-criterion C5 - Undefined Aggregations

SOUTH
 AFRICA

0-1,043 metres

592.56 km²





DESCRIPTION OF HABITAT

Greater Protea Banks lies off the KwaZulu-Natal (KZN) coastline of eastern South Africa. The main ecosystem types in the area include the Southern KZN Inner Shelf Mosaic, Southwest Indian Mid and Lower Slope, and South Western Indian Deep Ocean (NBA 2018). On the narrow continental shelf in the area there is a network of scattered reefs, roughly following the 50 m isobath contour (Penney et al. 1999). The Protea Banks is one such reef system and comprises a series of submerged, fossilised sand dunes, ~8 km offshore of Shelly Beach, extending ~6 km in length and ~800 m in width (Jackson 2000). The Protea Banks reef system ranges in depth from 25–60 m. The reef hosts a series of caves at the deeper northern end and a number of gullies and shallower formations towards the southern pinnacle (Labinjoh 2014). It is influenced by the warm, southward-flowing Agulhas Current, with sea temperatures ranging 19–24°C (Jackson 2000).

Apart from the prominent rocky reefs, the area also includes submarine canyons, deep reefs, cold-water corals, estuarine environments, and pelagic waters. Estuaries adjacent to Greater Protea Banks include the Mtentweni, Mzimkulu, Mbango, Boboyi, Zotsha, Mhlangeni, Vungu, Kongweni, Bilanhlolo, Mvutshini, Mbizane, Kaba, Umhlangankulu, and Mpenjati.

The area overlaps with the Protea Banks Marine Protected Area (MPA) and the Trafalgar MPA, as well as with the Protea Banks and Sardine Route Ecologically or Biologically Significant Marine Area (CBD 2023). The area also overlaps with South African Critical Biodiversity Areas and Ecosystem Support Areas (Harris et al. 2022).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 1,043 m based on the global depth range of Qualifying Species and the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Five Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. Threatened sharks comprise two Critically Endangered species, one Endangered species, and one Vulnerable species; threatened rays comprise one Critically Endangered species (IUCN 2023).

CRITERION B – RANGE RESTRICTED

Greater Protea Banks holds the regular presence of Flapnose Houndshark and Austin's Guitarfish as resident range-restricted species.

Flapnose Houndsharks are restricted to the Agulhas Current Large Marine Ecosystem (LME) and are endemic to the east coast of South Africa from East London to Thukela (Compagno et al. 1989). The inshore area from Palm Beach (southern border) to the Mzimkulu River within the area is particularly important for the species. Most individuals (69%; n = 1,465) caught in KZN Province in 40 years (1977–2017) of recreational competitive angling were caught in this area (Oceanographic Research Institute [ORI] 2023).

Austin's Guitarfish are restricted to the Agulhas Current LME. The species has been regularly captured on Baited Remote Underwater Video surveys (BRUVs; SAIAB 2023). It does not occur

regularly and predictably in other areas of KZN, underlining the importance of Greater Protea Banks to the species.

SUB-CRITERION C2 – FEEDING AREAS

Greater Protea Banks is an important feeding area for one shark species.

Dusky Sharks are found year-round in this area, based on catches by shore anglers (van der Elst 1979; ORI 2023) and in the KZN shark nets and drumlines (Dudley et al. 2005; KZNSB unpubl. data 2023). Historically, catches of larger individuals in the shark nets within the area have been much higher during the annual Sardine Run, the winter influx of shoals of Sardine *Sardinops sagax* from the southwest, than during the rest of the year (Dudley & Cliff 2010). The effect of this highly mobile, world-renown event, with considerable inter-annual variability, was greatest in June and July and at beaches within the Great Protea Banks area. Sardines were found in the stomachs of over 70% of Dusky Sharks (n = 421 individuals with non-empty stomachs) caught at this time of year and in this area during 1978–2005 (Dudley & Cliff 2010). Furthermore, on 34 occasions more than 10 individuals of this species were caught in the same net location on the same day, indicative of sharks caught in pursuit of the sardines (Dudley & Cliff 2010). With the passage of time the KZN Sharks Board has strived to ensure that such mass catches no longer occur, through prolonged removal of these nets during the Sardine Run. Contemporary data of Dusky Sharks feeding on sardines in the area is now largely restricted to frequent diver observations and images on social media of catches by recreational shore anglers (R Daly pers. obs. 2023).

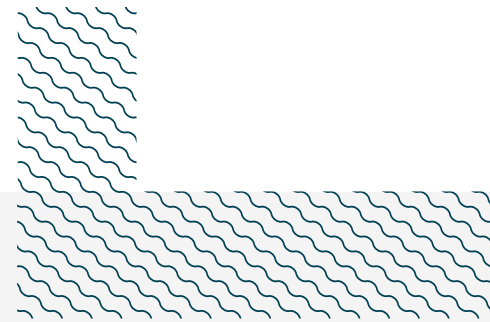
SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Greater Protea Banks is an important area for undefined aggregations of two shark and one ray species.

Larger juvenile Sand Tiger Sharks aggregate predictably in the Greater Protea Banks in the second half of the year (Cliff & Dicken 2022), considered a result of a northward migration when water temperatures are lowest. There is consistent observational data from regular diving operations at the Protea Pinnacles site, where Sand Tiger Sharks were observed on 855 of 2,447 recreational dives conducted from 2003–2018 (McGuinness-Dean 2023), with a recurring increase in sightings in late austral autumn and winter (May–August; R Mauz unpubl. data 2020). Average abundance during peak season for this species ranges from 13–28 individuals per dive from May to August, with July having the largest average abundance of 28 individuals per dive. The function of this aggregation is not yet understood.

Large aggregations of Scalloped Hammerheads are seasonally recorded in the area. Consistent observational data from regular diving operations at the Protea Pinnacles site recorded Scalloped Hammerheads on 865 of 2,447 recreational dives conducted from 2003–2018 (McGuinness-Dean 2023), with a recurring increase in sightings in late spring and summer (October–January; R Mauz unpubl. data 2020). During November to January, underwater visual surveys (UVCs) from 2003 to 2019 have revealed that an average of 100–200 individuals can be observed on a dive (R Mauz unpubl. data 2020). Peak average abundance per month was in January at 201 individuals per dive (287 dives in that month, ~19 dives a year) with a minimum in July of three individuals (347 dives, ~23 a year; R Mauz unpubl. data 2020). Although the reason for these aggregations is currently unknown, it is likely that pregnant females form part of the aggregation; thus this area might be important to their reproduction.

Whitespotted Wedgefish aggregations are seasonally reported from the area. Consistent observational data from regular diving operations at the Protea Pinnacles site show that Whitespotted Wedgefish were observed on 251 of 2,447 dives conducted from 2003-2018 (McGuinness-Dean 2023), with a recurring increase in sightings in spring/summer (R Mauz unpubl. data 2020). The largest aggregations were recorded in November/December. Up to 200 individuals were observed in the months of November and December of 2003 and 2004, with large aggregations ranging from 20-50 individuals also seen in other years (2003-2019; R Mauz unpubl. data 2020).



Acknowledgments

Jennifer M. Olbers (WILDTRUST; Nelson Mandela University), Leigh de Necker (WILDTRUST), Nina Faure-Beaulieu (WILDTRUST), Jeremy Cliff (WILDTRUST), Ryan Daly (Oceanographic Research Institute), Roland Mauz (African Dive Adventures), Anthony Bernard (South African Institute for Aquatic Biodiversity), Matt Dicken (KwaZulu-Natal Sharks Board), Bethan McGuinness-Dean (Plymouth University), 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. Greater Protea Banks 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>Carcharhinus obscurus</i>	Dusky Shark	EN	0-500	X			X				
<i>Carcharias taurus</i>	Sand Tiger Shark	CR	0-232	X						X	
<i>Scylliogaleus queckettii</i>	Flapnose Houndshark	VU	5-40	X	X						
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR	0-1,043	X						X	
RAYS											
<i>Rhinobatos austini</i>	Austin's Guitarfish	DD	0-107		X						
<i>Rhynchobatus djiddensis</i>	Whitespotted Wedgefish	CR	0-70	X						X	

SUPPORTING SPECIES

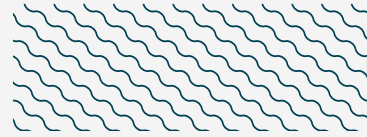


Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharhinus brachyurus</i>	Copper Shark	VU
<i>Carcharhinus brevipinna</i>	Spinner Shark	VU
<i>Carcharhinus humani</i>	Human's Whaler Shark	DD
<i>Carcharhinus leucas</i>	Bull Shark	VU
<i>Carcharhinus limbatus</i>	Blacktip Shark	VU
<i>Carcharhinus plumbeus</i>	Sandbar Shark	EN
<i>Carcharodon carcharias</i>	White Shark	VU
<i>Galeocerdo cuvier</i>	Tiger Shark	NT
<i>Halaaelurus lineatus</i>	Lined Catshark	LC
<i>Isurus oxyrinchus</i>	Shortfin Mako	EN
<i>Mustelus mosis</i>	Hardnose Smoothhound	NT
<i>Mustelus mustelus</i>	Common Smoothhound	EN
<i>Rhincodon typus</i>	Whale Shark	EN
<i>Rhizoprionodon acutus</i>	Milk Shark	VU
<i>Sphyrna zygaena</i>	Smooth Hammerhead	VU
<i>Squatina africana</i>	African Angelshark	NT
RAYS		
<i>Acroteriobatus annulatus</i>	Lesser Guitarfish	VU
<i>Acroteriobatus leucospilus</i>	Greyspot Guitarfish	EN
<i>Aetobatus ocellatus</i>	Spotted Eagle Ray	EN
<i>Aetomylaeus bovinus</i>	Duckbill Eagle Ray	CR
<i>Bathytoshia lata</i>	Brown Stingray	VU
<i>Dasyatis chrysonota</i>	Blue Stingray	NT
<i>Gymnura natalensis</i>	Diamond Ray	LC
<i>Mobula alfredi</i>	Reef Manta Ray	VU
<i>Mobula birostris</i>	Oceanic Manta Ray	EN
<i>Myliobatis aquila</i>	Common Eagle Ray	CR
<i>Pateobatis fai</i>	Pink Whipray	VU

<i>Pateobatis jenkinsii</i>	Jenkins' Whipray	EN
<i>Rhina ancylostomus</i>	Bowmouth Guitarfish	CR
<i>Taeniura lymma</i>	Bluespotted Lagoon Ray	LC
<i>Taeniurops meyeri</i>	Blotched Fantail Ray	VU

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.





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