

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

## NATAL SOUTHCOAST CORRIDOR ISRA

### Western Indian Ocean Region

#### SUMMARY

Natal Southcoast Corridor follows ~100 km of coastline in southern KwaZulu-Natal in South Africa. The area lies along a narrow continental shelf and is influenced by the warm Agulhas Current. This area is known for its marine diversity and for the Sardine Run which is a unique annual marine migration event. This area overlaps with three Marine Protected Areas (Protea Banks, Trafalgar, and Aliwal Shoal), and partly overlaps with the Protea Banks and Sardine Route Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species** (e.g., Dusky Shark *Carcharhinus obscurus*) and **movement areas** (e.g., Tiger Shark *Galeocerdo cuvier*).

#### CRITERIA

##### Criterion A - Vulnerability; Sub-criterion C4 -Movement Areas

SOUTH AFRICA

0-700 metres

1,927.55 km<sup>2</sup>





## DESCRIPTION OF HABITAT

Natal Southcoast Corridor lies along the narrow continental shelf of the KwaZulu-Natal (KZN) coast in South Africa. The area includes the Protea Banks in the south and Aliwal Shoal in the north. It is influenced by the warm, southward-flowing Agulhas Current, with temperatures at some of the reefs ranging from 19–24°C (Jackson 2000).

Natal Southcoast Corridor hosts a variety of habitats, including coastal beaches, sandy substrates, submarine canyons, deep reefs with cold-water corals, pelagic waters, and a network of scattered reefs, roughly following the 50 m isobath contour (Penney et al. 1999). The Protea Banks and Aliwal Shoal reefs are part of the area's reef systems. Protea Banks comprises a series of submerged, fossilised sand dunes, 4–8 km offshore, extending ~6 km in length and ~800 m in width (Jackson 2000). The Protea Banks range in depth from 25–60 m. The reef hosts a series of caves at the deeper northern end and several gullies and shallower formations towards the southern pinnacle (Labinjoh 2014). Aliwal Shoal reef is a large outcrop of aeolianite or dune rock, ~4 km in length. The Shoal is ~280 m wide in the north, narrows slightly in the central region and then widens to ~2 km in the southern areas (Bosman et al. 2005).

The Sardine Run also occurs in this area, which is a unique annual marine migration event driven by large schools of Sardine *Sardinops sagax* along the KZN south coast that occurs primarily in June and July (van der Lingen et al. 2010).

This area overlaps with three Marine Protected Areas (MPAs; Protea Banks, Trafalgar, and Aliwal Shoal), and incorporates other Critical Biodiversity Areas (CBAs) to the north and south. CBAs are biodiversity priority areas that currently fall outside of protected areas but are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole (SANBI 2017). The area partly overlaps with the Protea Banks and Sardine Route Ecologically or Biologically Significant Marine Area (CBD 2023).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 700 m based on the distribution of Qualifying Species and the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A – VULNERABILITY

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

### SUB-CRITERION C<sub>4</sub> – MOVEMENT AREAS

Natal Southcoast Corridor is an important movement area for six shark and one ray species.

Copper Sharks seasonally migrate to the area to feed on sardines during winter, as shown by tag-and-recapture data from shore-based anglers (Rogers et al. 2022). Thirteen of 73 Copper Sharks

tagged with internal acoustic transmitters throughout South Africa in 2016–2017 and 2020–2022 also moved to, and within, the area. This includes most sharks that were tagged hundreds of kilometres away but showed movements to and from the area (T Rogers unpubl. data 2023). It is evident that there is persistent multi-year use of parts of the Natal Southcoast Corridor by this species.

The area is an important movement corridor for Bull Sharks and hosts several hotspots of activity on the area's reef systems. Passive acoustic receivers located inshore and offshore on the primary reef system within this area confirm that tagged Bull Sharks ( $n = 56$ ) undertake regular migrations along the coast, typically at the beginning and end of the austral summer (Lubitz et al. 2023; R Daly unpubl. data 2023). Additionally, tagged Bull Sharks have exhibited persistent periods of residency on the offshore reef complex for periods of over a month in summer and in early winter (May and June; R Daly unpubl. data 2023).

Blacktip Sharks show seasonal migrations within the area. Blacktip Sharks, even those tagged with acoustic transmitters in neighbouring Mozambique, migrate to the reefs in Natal Southcoast Corridor (Daly et al. 2023; R Daly unpubl. data 2023). Both males and females seasonally migrate inshore in winter with the arrival of the Sardines which they prey on (Dudley & Cliff 1993; van der Lingen et al. 2010). There are also several hotspots of Blacktip Shark activity, such as at Aliwal Shoal and Protea Banks, where mostly females are regularly seen throughout the year by dive operators. Acoustically tagged adults ( $n = 25$ ) also had periods of residency at these reefs for up to two months between their coastal migrations (Daly et al. 2023; R Daly unpubl. data 2023).

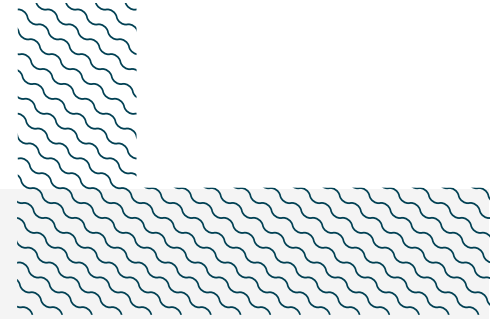
Dusky Shark movement in this area is likely to be influenced by the annual Sardine Run in winter (Dudley et al. 2005; Dudley & Dicken 2013). Only large mature individuals are seen close inshore within Natal Southcoast Corridor in winter when they specifically migrate to this inshore zone to pup and feed on sardines (Dudley et al. 2005; Hussey et al. 2009). In addition to their seasonal migration, Dusky Sharks also exhibit predictable periods of residency at some of the reefs between July to October. Of 35 juvenile, sub-adult, and adult Dusky Sharks fitted with acoustic tags in the larger region, individuals from all size classes showed continuous periods of residency in the centre of the area (Geelbek Reef in particular) in spring.

Sand Tiger Sharks undertake seasonal movements using the Natal Southcoast Corridor to move between their major aggregation sites at Aliwal Shoal and Protea Banks. Their seasonal movements are predictable, persistent, and well-documented by recreational scuba divers as the species arrives at the start of winter and departs at the end of autumn (Dicken et al. 2006). Caves and ledges at the offshore Aliwal Shoal and Protea Banks reefs are particularly important for them as they form aggregations (10–30 sharks) at several sites. Acoustically tagged individuals further support their movement within the area showing periods of presence and absence at receivers located at Protea Banks and areas directly adjacent to that reef system (M Smale unpubl. data 2023).

Tiger Sharks frequent the area in summer. A study tracking 19 sub-adults and adults with SPOT satellite tags between 2013–2016 showed that they frequently move between Protea Banks and Aliwal Shoal, highlighting the importance of this movement corridor for the species (Daly et al. 2018). Their movements extended offshore to the 500 m isobath. Additional acoustic tag detections at Protea Banks from 26 tagged individuals confirms that Tiger Sharks seasonally move to the reef every summer, although there is some variability among individuals between years (Daly et al. 2023, R Daly unpubl. data 2023). The satellite tagging study confirmed that Protea Banks was a major activity hotspot for the species in the southern African region (Daly et al. 2018).

A conventional tag and recapture study of Whitespotted Wedgefish from 1984–2017 has shown that the species undertakes movements along the inshore part of the Natal Southcoast Corridor (Jordaan et al. 2021). This includes localised inshore movements between the south (Ramsgate, Umtentweni) and the north of the area (Umkomaas), with some moving even further north past the area. Juveniles

typically undertake more localised movements within the Natal Southcoast Corridor, while adults may move through the area during summer (Jordaan et al. 2021).



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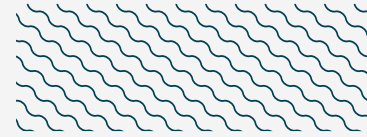
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### **Suggested citation**

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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
<b>SHARKS</b>											
<i>Carcharhinus brachyurus</i>	Copper Shark	VU	1-145	X					X		
<i>Carcharhinus leucas</i>	Bull Shark	VU	0-256	X					X		
<i>Carcharhinus limbatus</i>	Blacktip Shark	VU	0-140	X					X		
<i>Carcharhinus obscurus</i>	Dusky Shark	EN	0-500	X					X		
<i>Carcharias taurus</i>	Sand Tiger Shark	CR	0-232	X					X		
<i>Galeocerdo cuvier</i>	Tiger Shark	NT	0-1,136						X		
<b>RAYS</b>											
<i>Rhynchobatus djiddensis</i>	Whitespotted Wedgefish	CR	0-70	X					X		



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