



IMPACT STATEMENT:

Exploitation of sharks and rays in South Africa applicable to species listed under the National Environmental Management: Biodiversity Act (NEMBA) for Threatened or Protected Species (TOPS)



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IMPACT STATEMENT

EXPLOITATION OF SHARKS AND RAYS IN SOUTH AFRICA APPLICABLE TO SPECIES LISTED UNDER THE NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (NEMBA) FOR THREATENED OR PROTECTED SPECIES (TOPS)

WHAT ARE THREATENED OR PROTECTED SPECIES AS DEFINED IN SOUTH AFRICAN LAW?

Critically endangered species, being any indigenous species facing an extremely high risk of extinction in the wild in the immediate future; **endangered species**, being any indigenous species facing a high risk of extinction in the wild in the near future, although they are not a critically endangered species; **vulnerable species**, being any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future, although they are not a critically endangered species or an endangered species. **Threatened species**, means an indigenous species listed as critically endangered, endangered or vulnerable species;^{1,2} and **protected species**, being any species which are of high conservation value or national importance or require regulation to ensure that the species are managed in an ecologically sustainable manner.¹

The list of critically endangered species, endangered species, vulnerable species and protected marine species is collectively referred to as the listed threatened or protected marine species list (MTOPS list).³

WHY ARE SHARKS AND RAYS THREATENED GLOBALLY AND HOW ARE THREATENED OR PROTECTED SPECIES BEING EXPLOITED IN SOUTH AFRICA?

Sharks and rays are the most threatened group of marine animals on the planet, as high exploitation rates coupled with low resilience to fishing pressure have resulted in population declines globally.^{4,5} Sharks and rays are highly vulnerable to overexploitation largely due to their life-history characteristics, such as slow growth, late maturation, long gestation periods, and low fecundity.^{6,7}

Overfishing has been identified as the primary threat to sharks and rays, with 391 of 1,199 assessed species classified as threatened (listed as either *Vulnerable*, *Endangered* or *Critically Endangered* by the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species. Overfishing is, therefore, driving over one-third of shark and ray species toward extinction.⁵ Sharks and rays are captured in most marine fisheries either as non-targeted (bycatch) or targeted catch,^{5,8} both legally and illegally. They are harvested for their meat, high value fins, skin, cartilage, liver (for oil and squalene) and teeth.^{9,10,11} These derivative products are among the most valuable seafood products traded in international markets. Monitoring and enforcement are essential to ensure this trade is legal, sustainable and traceable and so, since 2003, an increasing number of shark and ray species have been listed in the Appendices* of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) according to the degree of protection they need.¹¹

In South Africa, approximately 100 species comprising almost half of southern Africa's known shark and ray fauna, are caught across fisheries within the country's Exclusive Economic Zone (EEZ). These fisheries include the demersal shark longline, inshore and offshore demersal trawl, midwater pelagic trawl, large pelagic longline, demersal hake longline, commercial linefishing, recreational linefishing, emerging small-scale fisheries, and the bather protection programme in KwaZulu-Natal (KZN).^{8,12,13} Many threatened pelagic species have distributions that extend beyond South Africa's EEZ and into the high seas, where they have limited refuge from commercial fisheries^{13,14} and little to no protection from illegal fishing.

*Appendix 1: species threatened with extinction; trade is permitted only in exceptional circumstances

Appendix 2: species not necessarily threatened with extinction; trade must be controlled to avoid utilisation incompatible with their survival.

The high demand for sharks and rays for human consumption, alongside other uses like cosmetics and scientific research, intensifies overexploitation. These threats are compounded by climate change and habitat loss and degradation, particularly in coastal habitats like coral reefs⁵ and kelp forests,¹⁵ and critical nursery areas such as estuaries.¹⁶ Pollution also affects many species as a non-lethal stressor, while human intrusions, energy production, and mining further exacerbate risks.⁵ South Africa is working to “unlock an ocean economy”, where oil and gas exploration, sea-bed mining, marine infrastructure development, aquaculture, and tourism are prioritised.¹⁷ The scale of these activities is particularly concerning for a coastline with high biodiversity and that hosts many threatened and endemic species. These threats, compounded by the impacts associated with climate change, may shift or limit species to narrower distribution ranges, decreasing carrying capacity and increasing vulnerability.^{13,18,19}

HOW IS THE EXPLOITATION OF THREATENED OR PROTECTED MARINE SPECIES REGULATED IN SOUTH AFRICAN LAW?

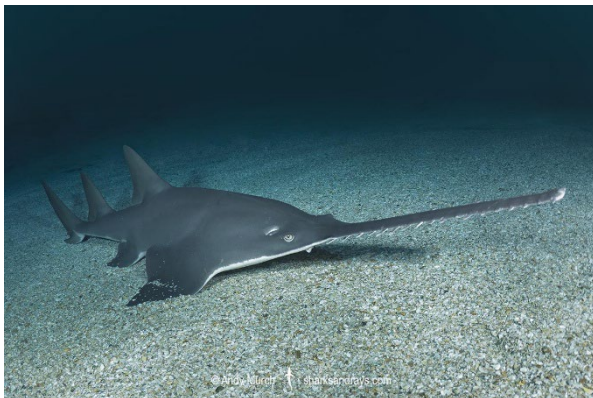
In South Africa, the regulation of threatened or protected species is primarily governed by the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA)¹ and its associated Threatened or Protected Marine Species (MTops) Regulations.³ These legal frameworks aim to protect biodiversity, prevent exploitation, and ensure sustainable use of listed species listed.

WHAT IS THE IMPACT OF EXPLOITATION OF THREATENED OR PROTECTED (NEMBA: TOPS LISTED) SPECIES ON THE MARINE ECOSYSTEM?

TOPS List: Critically Endangered³

Sawfishes (Family *Pristidae*)

(Locally Extinct²⁰; IUCN Red List: *Critically Endangered*;^{21,22} CITES: Appendix I & II)¹⁰



Largetooth sawfish, *Pristis pristis*



Green sawfish, *Pristis zijsron*

The exploitation of sawfish species (Largetooth sawfish, *Pristis pristis* and Green sawfish, *P. zijsron*) in South Africa, particularly along the KwaZulu-Natal (KZN) coast, has likely led to their local extirpation. Man-made changes to the St Lucia estuarine system and other KZN estuaries, gillnetting for bather protection, and illegal fish harvesting, coupled with the sawfish's non-adaptive life-history traits, such as slow growth and low reproductive rates, have precipitated their disappearance from South African waters, with the last confirmed capture in 1999. This loss disrupts ecological balance, as sawfish play a critical role in estuarine and nearshore habitats, potentially affecting prey populations and habitat dynamics.^{20,23}

Natal shyshark, *Haploblepharus kistnasamyi* (Endemic; IUCN Red List: *Vulnerable*)²⁴



The Natal shyshark, endemic to South Africa, is restricted to nearshore waters from central KZN to Mossel Bay. Caught as bycatch by inshore trawlers and often discarded by recreational fishermen who consider it a nuisance,²³ the species is inferred to have declining populations. Fishing pressure, climate change, coastal urban development, and pollution near major cities like Port Elizabeth, East London, and Durban that overlap with their limited range, intensify the effects of overfishing, making the Natal shyshark particularly vulnerable to exploitation.²⁵ Endemic species are critical for the diverse and unique functional roles they play in marine ecosystems.⁴ Not only is the Natal shyshark important to the ecology of the shallow rocky reefs it inhabits, but it is also considered to have ecotourism value.²³

Ornate sleeper ray, *Electrolux addisoni* (Endemic; IUCN Red List: *Least Concern*)²⁶



This species is restricted to shallow coastal waters along South Africa's east coast, from Umhlanga in KZN to Coffee Bay in the Eastern Cape. Its limited geographic range and high site fidelity makes it susceptible to overexploitation.²⁷ As a demersal endemic, it enhances the functional diversity of the critical marine protected areas (MPAs) in which it occurs, such as Aliwal Shoal and Protea Banks MPAs. Although elusive, its presence further supports ecotourism for divers visiting these MPAs.²³

TOPS List: Endangered³

Scalloped hammerhead shark, *Sphyrna lewini* (IUCN Red List: *Critically Endangered*,²⁸ CITES: Appendix II)¹¹



The scalloped hammerhead, a large, pelagic shark with a circumglobal distribution in tropical and warm-temperate waters, is highly threatened due to intense fishing pressure along South Africa's east coast.²³ The species' valuable fins and prized meat drive exploitation,^{23,29} while its low post-capture survival rate, caused by high vulnerability to capture stress, means that even individuals released from longline and recreational fisheries are unlikely to survive.³⁰ As a nomadic species, it gains limited protection from MPAs, with the uThukela Banks MPA being critical as a nursery ground. These nursery grounds and adult aggregations suggest that the species may complete its life cycle within South African waters,²³ highlighting its ecological importance in maintaining marine food webs as a top predator.³¹ Large packs of adults are often seen in summer in the Protea Banks MPA - a major attraction for divers, highlighting the significance of the species for ecotourism.²³

Great hammerhead shark, *Sphyrna mokarran* (IUCN Red List: *Critically Endangered*,³² CITES: Appendix II)¹¹



The great hammerhead is uncommon in South African waters where it has only been recorded in KZN - most notably caught in the KZN bather protection program,^{33,34} with suspected catches in pelagic longline, and commercial and recreational line fisheries. Its piscivorous diet makes it highly susceptible to hook and line fishing, and its large fins, among the most valuable for hammerheads, is a large driver of its exploitation.^{11,23,29} With one of the lowest post-capture survival rates among sharks,³⁵ this nomadic species gains little protection from MPAs along the KZN coast²³ but there is evidence of decline of the species in South African waters.^{8,33,34} Its ecological importance lies in its role as an apex predator, regulating prey populations and maintaining marine ecosystem

balances. The species is also highly ecologically specialised, with complex behaviours and traits increasing their vulnerability to human exploitation.³⁶

TOPS List: Vulnerable³

Reef manta ray, *Mobula alfredi* (IUCN Red List: *Vulnerable*;³⁷ CITES: Appendix I & II)¹¹



The reef manta ray, is a very large pelagic ray found in tropical and subtropical Indo-West Pacific coastal and oceanic waters, including South Africa's east coast.²³ These rays are filter-feeding planktivores, consuming vast quantities of zooplankton and fulfilling a unique ecological niche and vital ecological role. Their feeding and migratory behaviour redistributes nutrients, enhancing productivity in nutrient-poor tropical waters and supporting coral reef ecosystems.³⁸ Manta rays are further an iconic ecotourism species generating revenue for local economies and incentivising conservation.²³ However, their low fecundity (only one offspring every 4-5 years) and that they are easy to target due to their large size, slow swimming speed, aggregative behaviour and predictable habitat use make them particularly vulnerable to overexploitation.³⁷ They are facing global population declines due to fishing pressure where they are increasingly targeted for consumption in artisanal fisheries or harvested for their gill plates which are sought after in Asian medicinal products. This has resulted in a directed fishery targeting the species in unsustainable numbers.^{11,37}

Spotted raggedtooth shark, *Carcharias taurus* (IUCN Red List: *Critically Endangered*)³⁹



The species is a large demersal shark with a patchy circumglobal distribution in coastal waters. Their low fecundity, producing only two pups every two years,⁴⁰ makes the species highly susceptible to population

declines.²³ In South Africa, where the species is considered stable despite its global *Critically Endangered* status, annual catches primarily stem from the KZN bather protection programme, with additional pressure from recreational and commercial linefisheries. The capture of pregnant females by recreational shore anglers in northern KZN is particularly concerning, especially with the increased potential for post-release mortality⁴¹ and capture-induced parturition of pregnant animals.⁴² These females rely on the iSimangaliso Wetland Park for their 10-month gestation period, a critical habitat for reproductive success, while neonates depend on shallow water nursery grounds in the Eastern Cape, including the Addo Elephant National Park MPA, where they remain for 4–5 years, underscoring the ecological importance of these protected areas.⁴³ Not only are South African inshore ecosystems critical for raggedtooth sharks,²³ as an apex predator, the raggedtooth shark plays a vital role in maintaining coastal ecosystem balance by regulating prey populations, making its conservation essential for biodiversity and ecosystem health.³¹ It is further one of the most popular ecotourism species with significant socio-economic value for local dive operators, as it favours high profile reefs where individuals or large aggregations are commonly found and they are easily approached by slow-moving scuba divers.²³

Oceanic manta ray, *Mobula birostris* (IUCN Red List: *Endangered*;⁴⁴ CITES: Appendix I & II)¹¹



The oceanic manta, the largest *Mobula* ray, is a pelagic, circumglobal species found in tropical and temperate coastal and oceanic waters, including South Africa's east coast. As a filter-feeding planktivore, it consumes vast quantities of zooplankton, redistributing nutrients to enhance productivity in nutrient-poor tropical waters and support coral reef ecosystems.³⁸ Although sightings are not regular or predictable in South Africa, it is considered an iconic ecotourism species in KZN.²³ The species' extremely low fecundity, combined with its large size, slow swimming speed, and aggregative behaviour, makes it highly vulnerable to overexploitation. Oceanic mantas face significant threats from targeted fisheries, particularly for their valuable gill plates used in Asian medicinal products,¹¹ and as bycatch (such as the shark nets in KZN), resulting in a sharp decline of up to 94% in previous hotspot areas.⁴⁴

White shark, *Carcharodon carcharias*

(IUCN Red List: *Vulnerable*;⁴⁵ Green Status: *Moderately Depleted*;⁴⁶ CITES: Appendix I & II;¹¹ MLRA: Prohibited)⁴⁷



The white shark is a large, migratory apex predator along South Africa's coast, and plays a key role in the structure and function of marine ecosystems in tropical, subtropical, and temperate waters, both inshore and offshore.^{45,48,49} Large predatory sharks, such as the white shark, contribute to changes in abundance, distribution, and behaviour of prey species. Through direct predation and behavioural modifications, top-down effects of white sharks can lead to cascading changes in coastal ecosystems, potentially shaping marine communities over large spatial and temporal scales.⁴⁹

South Africa was globally renowned as a premier destination for white shark ecotourism, particularly for cage diving and surface viewing, with regular sightings around Cape fur seal (*Arctocephalus pusillus pusillus*) colonies boosting local economies through tourism revenue. Despite being protected in South Africa since 1991, this species remains vulnerable to the KZN bather protection programme,⁵⁰ incidental catches by recreational shore anglers, and in commercial fisheries such as longlines and illegal gill nets. The species' slow growth, with females maturing at 30-33 years, and its nomadic nature, moving unprotected between South Africa and Mozambique, enhance its vulnerability.²³

Whale shark, *Rhincodon typus*

(IUCN Red List: *Endangered*;⁵¹ Green Status: *Largely Depleted*;⁵² CITES: Appendix I & II;¹¹ MLRA: Prohibited)⁴⁷



Whale sharks (*Rhincodon typus*), the largest fish species, are filter-feeders found in South Africa's tropical and warm-temperate coastal waters, notably within 2 km of the east coast in the iSimangaliso MPA.⁵³ Their elusive reproductive biology, slow growth, and late maturity make them vulnerable to population declines, while their high mobility limits the protective benefits of coastal MPAs. They face anthropogenic threats like entanglement in gill nets and ship strikes, with occasional strandings reported, even in the cooler Western Cape waters.²³

As massive filter feeders, whale sharks eat huge amounts of plankton in warm ocean waters and often nutrient poor environments. Their large size and wide-ranging movements, both deep in the ocean and across vast distances, make them key players in spreading nutrients. By diving deep (200–1,000 meters) and bringing nutrients like nitrogen to the surface, they help phytoplankton grow, which supports the entire marine food chain. This nutrient cycling creates a positive feedback loop, boosting ocean ecosystems. As marine giants, whale sharks also transport energy and materials over long distances, keeping ocean habitats connected and healthy.^{54,55} Their presence also supports ecotourism, particularly in iSimangaliso MPA, but their unpredictable movements underscore the need for regional cooperation to ensure effective conservation of this highly migratory species.²³

Flapnose houndshark, *Scylliogaleus queckettii* (Endemic; IUCN Red List Status: *Vulnerable*)⁵⁶



The flapnose houndshark is a small species, endemic to South Africa's east coast, inhabiting the surf zone to about 50 meters depth. Endemic species are critical for the diverse and unique functional roles they play in marine ecosystems.⁴ Occupying a small geographic range, being highly resident and having a low reproductive rate make the species vulnerable to exploitation in fisheries, climate change and habitat degradation.²³ Inferred to have declining populations,²⁵ flapnose houndsharks are primarily caught by shore and ski-boat anglers in southern KZN and the Wild Coast where they are sometimes considered a nuisance and discarded.²³

Giant guitarfish, *Rhynchobatus djiddensis* (IUCN Red List Status: *Critically Endangered*;⁵⁷ CITES: Appendix II)¹¹



The giant guitarfish is a large species of wedgefish found in the shallow, coastal tropical and subtropical waters of the SW Indian Ocean and is the only species of its genus in South Africa. Overfishing, particularly in Mozambique, has resulted in a marked decline in the species over four decades, exacerbated by local catches from the now-closed KZN prawn trawl fishery, KZN bather protection nets, and recreational shore angling. While inshore MPAs, like the uThukela Banks MPA, offer some protection, the species remains vulnerable to Mozambique fisheries during winter migrations where the high demand for their valuable fins drives intense fishing pressure, with additional threats from shallow water habitat degradation in South Africa.^{23,57}

Wedgefishes play an important ecological role in shallow, coastal, tropical and subtropical marine ecosystems. As demersal predators, they primarily feed on benthic organisms such as crustaceans, molluscs, and small fish,⁵⁸ helping to regulate these populations and maintain balance in the benthic food web. Their foraging behaviour, which often involves disturbing the seabed, is likely to contribute to nutrient cycling and sediment turnover, enhancing habitat complexity and supporting biodiversity.⁵⁹ This species also has socio-economic importance to ecotourism, where it features as a popular aquarium species and occurs in the iSimangaliso, Aliwal Shoal and Protea Banks MPAs, where scuba diving is extremely popular.²³

TOPS List: Protected³

Tiger shark, *Galeocerdo cuvier* (IUCN Red List Status: *Near Threatened*)⁶⁰



The tiger shark, is a large, nomadic, apex predatory species prevalent in tropical coastal waters worldwide. Significant coastal movements occur between South Africa and Mozambique, including within and around MPAs like the iSimangaliso Wetland Park and Maputo National Park. Globally, this species is caught in targeted shark fisheries and as bycatch in commercial, artisanal and recreational fisheries.^{60,61} In South Africa, the species is

targeted by the KZN bather safety programme.³⁴ Large predatory sharks, such as the tiger shark, play an important role in the structure and function of marine ecosystems by contributing to changes in abundance, distribution, and behaviour of key prey species such as turtles. Through direct predation and behavioural modifications, top-down effects of tiger sharks can lead to cascading changes in coastal ecosystems potentially shaping marine communities over large spatial and temporal scales.⁴⁹ The tiger shark is also an important ecotourism species on the Aliwal Shoal and Protea Banks, underscoring substantial economic contributions to the diving industry.^{61,62}

Leopard catshark, *Poroderma pantherinum* and Striped catshark, *Poroderma africanum*

(Endemic; IUCN Red List Status: *Least Concern*)^{63,64}



Leopard catshark, *Poroderma pantherinum*



Striped catshark, *Poroderma africanum*

These two species from the genus *Poroderma* are small, demersal sharks, endemic to South Africa's coast, inhabiting rocky reefs and kelp beds. Occupying a small geographic range and being highly resident makes these species vulnerable to exploitation in fisheries, climate change and habitat degradation.²³ Primarily caught as bycatch in the inshore trawl industry, these sharks are also taken in recreational and commercial linefisheries, rock lobster, and net fisheries. There is a growing concern around linefishers who are becoming notorious for killing or dumping these endemic and ecologically important sharks on the beach, viewing them as pests.^{23,63,64} Endemic species are critical for the diverse and unique functional roles they play in marine ecosystems.⁴ Both *Poroderma* species are important to the ecology of the rocky reefs and kelp forests they inhabit along the South African coast, where they serve as both important predator⁶⁵ and prey⁶⁶ species. These species are also considered to have ecotourism value and are popular amongst divers and in commercial aquaria.²³

Sixgill sawshark, *Pliotrema warren* (Endemic to Southern Africa; IUCN Red List Status: *Least Concern*)⁶⁷



The sixgill sawshark is a small, demersal shark found over a wide depth range (10-430 m, exceptionally 915 m) along the entire east and south coasts of South Africa and appears to be a southern African endemic.⁶⁸ The

species is caught in the demersal trawl, demersal longline and KZN offshore crustacean trawl fisheries.^{8,12,61} As a restricted-range species, the sixgill sawshark enhances the functional diversity within southern African waters and is likely to play an important role within the unique, deep-water environment in which it occurs.^{4,69}

In conclusion, South Africa is a top five global biodiversity hotspot for sharks and rays, with a relatively high level of endemism. South Africa's EEZ, has been flagged as a hotspot for shark and ray species richness and functional diversity.^{4,69} This functional diversity of sharks and rays is crucial in maintaining the structure and function of our local marine ecosystem⁴⁹ – an ecosystem which we rely on not only as an important source of the food we eat, an ecosystem sustaining the livelihoods of many of our people and an ecosystem that provides much of the oxygen in the air we breathe.

CITATION

WILDTRUST, 2025. Exploitation of sharks and rays in South Africa applicable to species listed under the National Environmental Management: Biodiversity Act (NEMBA) for Threatened or Protected Species (TOPS). *WILDTRUST Impact Statement 4*. 15pp.

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