

# POLICY IMPACTING SOUTH AFRICAN SHARKS & RAYS 2022

## CONSERVATION MANAGEMENT: CRITICAL AREAS FOR SHARKS AND RAYS



### KEY MESSAGES AND RECOMMENDATIONS

#### **Problem:**

There is currently inadequate spatial protection (~5.4% of the mainland South African EEZ) in the form of Marine Protected Areas (MPAs) for sharks and rays. South Africa has a rich biodiversity of sharks and rays and several of these species are severely threatened. Increased spatial protection is required to meet both national and global targets, including protecting 10% of South Africa's mainland EEZ. This can be achieved in several ways:

#### **Recommendations:**

1. Identify the location of critical habitats for endemic and threatened sharks and rays which fall outside MPAs or outside no-take zones within MPAs.
2. Expand existing MPAs or delineate new MPAs to meet the 10% target and to provide increased protection to endemic and threatened sharks and rays.
3. Add shark and ray species to the prohibited species list within management plans of all MPAs.
4. Establish, outside the network of existing MPAs, Shark and Ray Sanctuaries, where critical phases of the life history of endemic and threatened sharks and rays are known to take place.
5. Increase funding to improve compliance within MPAs.

# CONSERVATION MANAGEMENT: CRITICAL AREAS FOR SHARKS AND RAYS



South Africa is a global hotspot for shark and ray diversity, ranking in the top five countries globally. These marine species, among others, define South Africa's rich biodiversity, but many of their populations are under threat from various fishing sectors. A primary tool in the arsenal of marine conservation is the development of spatial protection measures in the form of Marine Protected Areas (MPAs). South Africa currently protects 5.4% of its Exclusive Economic Zone (EEZ), 3% within no-take zones. As sharks and rays are vital to ocean health, there is an urgent need to expand the MPA network by including areas used by endemic and threatened species during critical life-history stages. These areas must be incorporated into the National Marine Spatial Planning (MSP) process. This policy brief informs decision-makers that several of South Africa's shark and ray populations are under threat and require greater spatial protection.

## CONTEXT

Many species of sharks and rays that occur in South African waters are classed as threatened (either Vulnerable, Endangered or Critically Endangered), in terms of their IUCN Red Listing. This is largely the result of fishing pressure, due to the fact that these animals are slow growing and have low fecundity. There are also endemic species which are found only in South Africa or southern Africa. Both these groups require special attention to ensure their conservation. There are a number of tools available to protect and conserve marine resources, including sharks and rays, one of which is spatial protection through the establishment of Marine Protected Areas (MPAs). In terms of internationally recognised guidelines, South Africa does not protect enough of its marine waters. Any expansion of the current MPA network needs to take cognisance of the need to protect threatened and endemic sharks and rays during critical phases of their life histories.

## STATUS OF SHARKS AND RAYS IN SOUTH AFRICA

South Africa is a global hotspot for shark and ray diversity. It harbours 194 species (114 sharks, 72 rays and 8 chimaeras), one-fifth of the global fauna. There are 54 threatened shark species, (defined as Vulnerable, Endangered or Critically Endangered in terms of current IUCN Red List Assessments) and 27 threatened rays in South African waters. South Africa is also home to 14 endemic species, of which six endemics are threatened. These small, range-restricted species occur mainly on the south and east coasts. In addition, many larger, wide-ranging threatened sharks and rays also occur in neighbouring countries such as Mozambique, where there is considerable fishing pressure from artisanal and commercial operations. South African MPAs constitute the only spatial protection available to some species in the region.

## THREATS TO SHARKS AND RAYS

Sharks and rays are extremely vulnerable to overexploitation as they are slow growing and produce few young. A total of 99 (51%) of South Africa's 194 shark and ray species are targeted or caught as bycatch in a number of fishing sectors. The total estimated annual catch is around 3000 tonnes, two-thirds of which is non-targeted or bycatch, largely from the demersal trawl fishing industry. In this fishery much of the bycatch is discarded but the levels of survival are extremely low. Directed shark fisheries include the pelagic and demersal longline fisheries and the linefishery which has both commercial and recreational components. Extrapolation of actual catches from those observed in shark-processing factories suggest that fisher reporting rates may be as low as 25-50%.

## CURRENT LEGISLATION AND POLICY

### Existing spatial protection for sharks and rays

South Africa has protected 5.4% of its continental EEZ (~57,530 km<sup>2</sup>), which excludes the Prince Edward Islands in the Southern Ocean, through 41 Marine Protected Areas (MPAs). Although none of these MPAs were designed solely for the protection of sharks and rays, they are widespread along the entire coast and cover a variety of habitats. However, each MPA has its own zonation structure, and only zones referred to as Restricted, Sanctuary or Wilderness are designated as no-take which prohibits harvesting of any kind, including catch-and-release. These no-take zones only cover 3% of the EEZ (~33,550 km<sup>2</sup>) and whilst they do offer protection to sharks and rays, they are not necessarily optimally located for this purpose.

### Other spatial designations

In addition to MPAs, South Africa also has a Critical Biodiversity Area (CBA) map which defines Critical Biodiversity Areas and Ecological Support Areas, based on a systematic biodiversity plan. These areas are not legally protected in any way, but they showcase the important areas for biodiversity in South Africa's EEZ and have suggested management objectives for each.

A global initiative was launched in January 2022 by the IUCN Shark Specialist Group to identify important shark and ray areas (ISRAs: Important Shark and Ray Areas). The ISRA program has a working group made up of international scientists, conservationists, policymakers, and marine protected area practitioners working together to identify and delineate ISRAs around the world. South Africa is part of the working group contributing to the ISRA process.

## BENEFITS OF MPAS

The primary objective of MPAs is to protect a portion of the habitat that is representative of the area, together with its associated biodiversity. In the terrestrial environment protected areas such as game reserves and game parks attract large numbers of visitors/ecotourists, thereby generating valuable income which can be channelled into the maintenance and management of these land entities and facilitate job creation. Diver ecotourism has become an extremely popular pastime and is fulfilling a similar function in MPAs such as iSimangaliso Wetland Park, Aliwal Shoal and Protea Banks, where sharks and rays have become a drawcard.

## KNOWLEDGE OF SHARK AND RAY DISTRIBUTIONS, MOVEMENT PATTERNS AND AGGREGATION SPOTS

### Distributions

A recent conservation plan resulting from the WILDTRUST Shark and Ray Protection Project has mapped the distribution of 82 different shark and ray species. These distribution maps have been used to identify critical areas and will be used to propose new areas for consideration as no-take areas for sharks and rays, based on hotspots of species diversity.

## Movement patterns

South Africa has a vast network of acoustic receivers in coastal waters across the country, known as the Acoustic Tracking Array Platform (ATAP). These receivers are placed along the coastline and record data on any tagged teleost, shark or ray that swims past the receiver. This is an incredibly useful resource to identify movement patterns of the tagged species, thereby contributing towards the identification of critical shark and ray areas. In addition, the Oceanographic Research Institute (ORI) provides anglers and scientists with external tags to mark a catch prior to release. Recaptures of these tagged individuals also helps elucidate movement patterns.

## Aggregation sites

Many of South Africa's shark and ray species aggregate at specific locations and/or times of the year to mate or give birth. During these periods they are extremely vulnerable to exploitation. For example, pregnant ragged-tooth sharks spend most of their 9-10-month pregnancy in shallow coastal waters of the iSimangaliso Wetland Park, where they are often targeted by shore anglers, before returning to Eastern Cape waters to give birth. Adult scalloped hammerhead sharks aggregate in early summer in the uThukela Banks MPA for mating and pupping. There is currently no central database or clear reference detailing the various shark and ray aggregation sites in South Africa.

# A SYSTEMATIC CONSERVATION PLAN

A systematic conservation plan was developed as a component of the WILDTRUST Shark and Ray Protection Project to identify optimal areas for the protection of South Africa's sharks and rays. This plan collated data on sharks and rays sourced from scientists across the country to produce up-to-date distribution maps for 82 species. Spatial prioritisation mapping was then used to assess the current representation of sharks and rays in South Africa's MPA network and to identify critical areas for sharks and rays which merit some form of spatial protection. Whilst additional information on aggregation sites and migration routes is still needed, the conservation plan serves as a useful starting point to identify zones inside current MPAs that should become no-take zones for sharks and rays, as well as other locations outside the MPA network that merit some spatial protection for these species.

## RECOMMENDATIONS

1

### **Identify the location of critical habitats for endemic and threatened sharks and rays which fall outside MPAs or outside no-take zones within MPAs.**

Some research has already been undertaken to address this gap in current knowledge, with the development of a systematic conservation plan in which the distribution of 82 species has been mapped. More focus is needed on the lesser-known species.

2

## **Expand existing MPAs or delineate new MPAs to meet the 10% target and to provide increased protection to endemic and threatened sharks and rays.**

South Africa currently only protects 5.4% of its EEZ (with 3% as no-take zones). This needs to be increased to 10%. In planning the expansion of existing MPAs and establishment of new ones to achieve this goal, cognisance needs to be taken of the need to protect endemic and threatened sharks and rays.

3

## **Add shark and ray species to the prohibited species list within management plans of all MPAs.**

This is a simple, easily implemented and very effective tool aimed at preventing the targeting of all shark and ray species in all MPAs.

4

## **Establish, outside the network of existing MPAs, Shark and Ray Sanctuaries where critical phases of the life history of endemic and threatened sharks and rays take place**

Given the fact that establishing new MPAs is a lengthy process requiring extensive stakeholder engagement, an alternative source of spatial protection would be the creation of specific Shark and Ray Sanctuaries.

5

## **Increase funding to improve compliance within MPAs.**

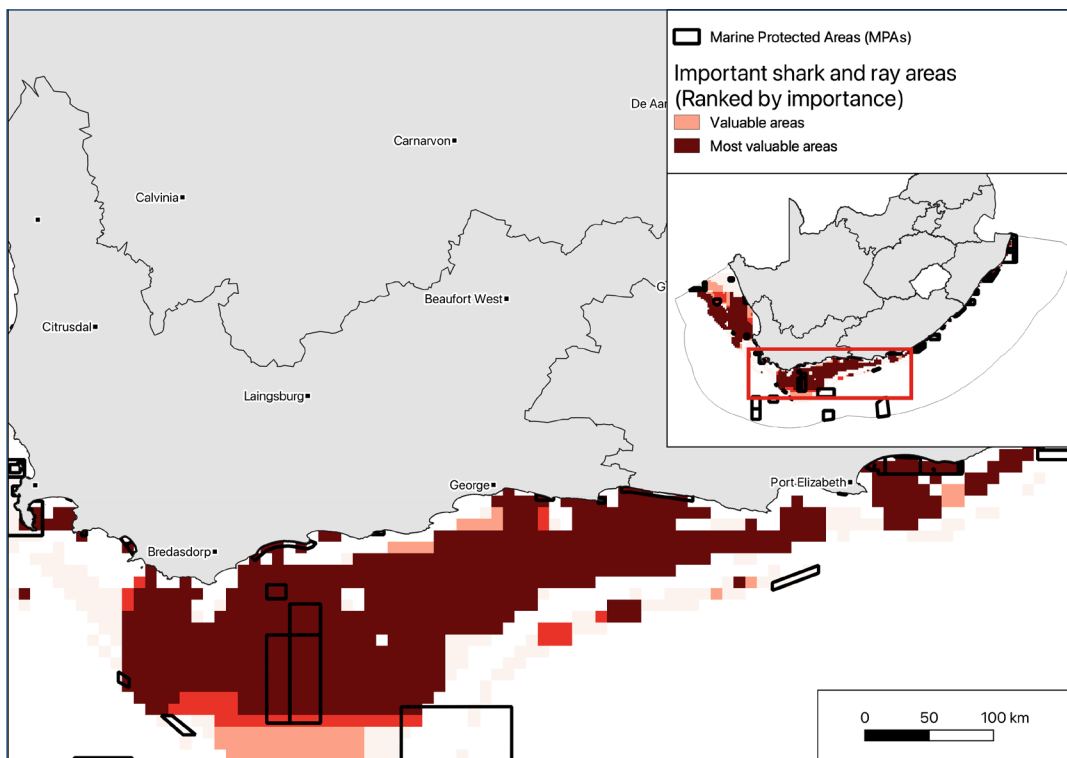
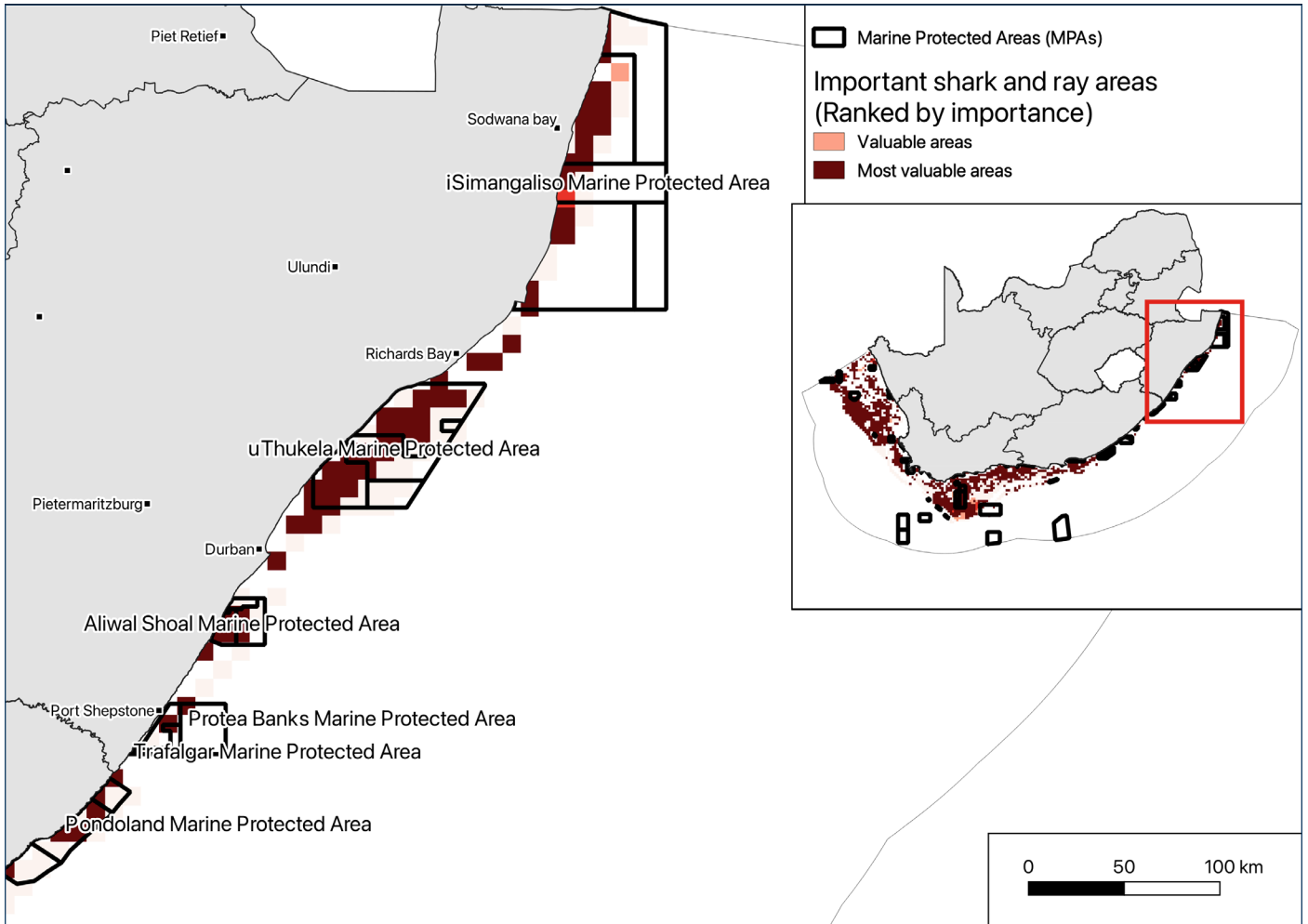
Funds generated from visitors accessing MPAs, together with funds obtained from the nationwide sale of recreational fishing permits, should be used to improve levels of awareness and education among visitors to the MPAs and levels of compliance and law enforcement. Ignorance of zonation, especially the location of no-go sanctuaries, is a problem. Motivation and education of law enforcement staff in MPAs needs urgent attention.

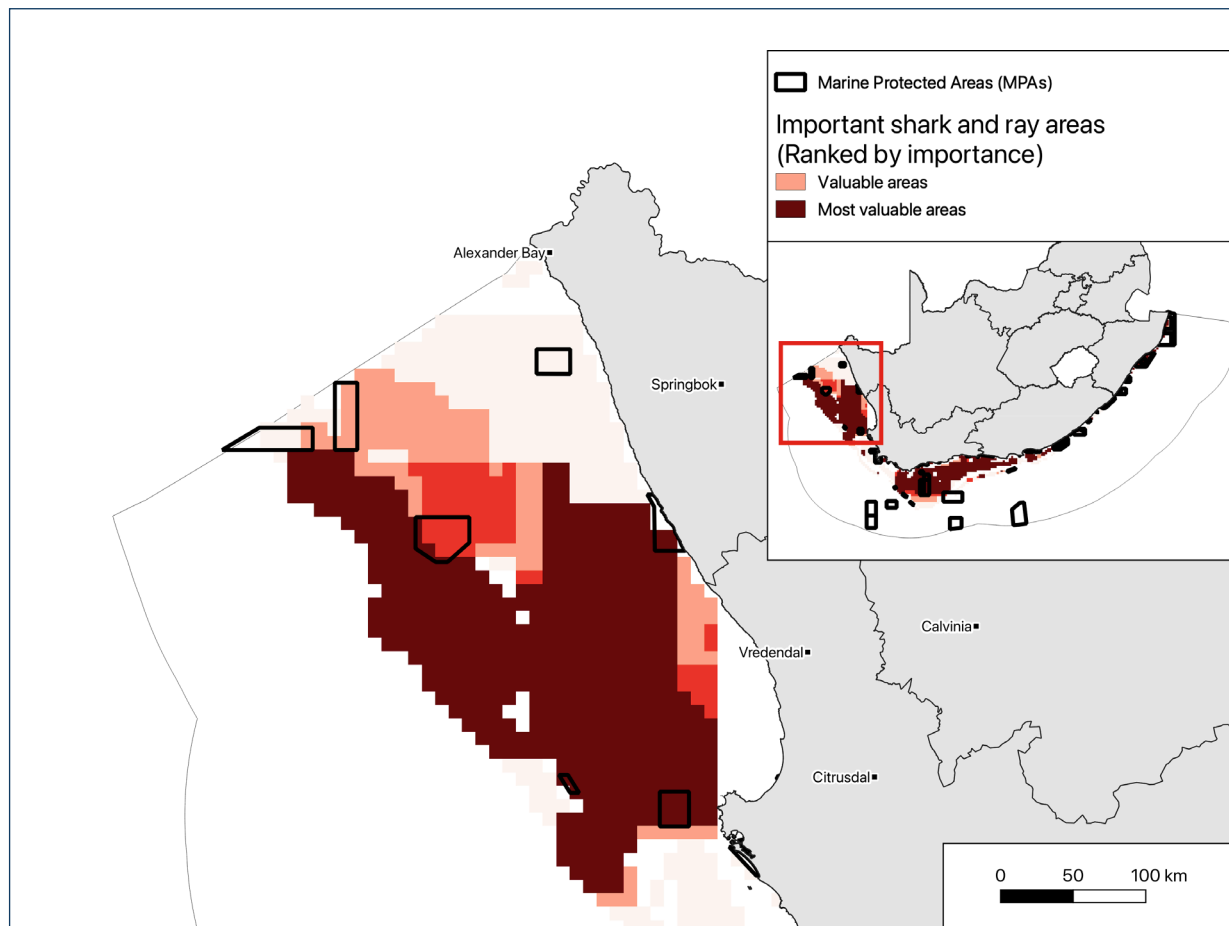
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## **CONCLUSION**

These recommendations are all aimed at increasing the existing network of MPAs (5.4%) to achieve the recommended minimum of 10% of our EEZ protected. Spatial protection for endemic and threatened shark and ray species, with an emphasis on critical phases in their life history, notably mating and pupping locations should be prioritised. This is achievable by rezoning or expanding existing MPAs to include no-take areas for sharks and rays or by creating Shark and Ray Sanctuaries outside the existing network of MPAs.

# MAPS: CRITICAL AREAS FOR SOUTH AFRICAN SHARKS & RAYS





## REFERENCES

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