



9.2 MARINE PROTECTED AREAS

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INTRODUCTION



Marine protected areas (MPAs) in South Africa are, by definition, areas of the ocean (which may include the adjacent coast) that have been proclaimed as protected areas in terms of the National Environmental Management: Protected Areas Act (57 of 2003). MPAs are primarily established to protect marine biodiversity and to assist fisheries management by providing a refuge for overexploited stocks and to seed adjacent areas by spillover (Attwood *et al.* 1997a). They can also provide important functions in terms of tourism, scientific research, marine education and offer resilience to climate change (Roberts *et al.* 2017). MPAs range greatly in size and can be zoned from complete no-go, no-take restricted areas to controlled areas where different specified forms of human use are allowed (Edgar *et al.* 2014). KZN has four relatively large MPAs including iSimangaliso (10 715 km²), uThukela (4 100 km²), Aliwal Shoal (678 km²) and Protea Banks (1 191 km²), all of which are zoned for multiple use (Figure 9.1).

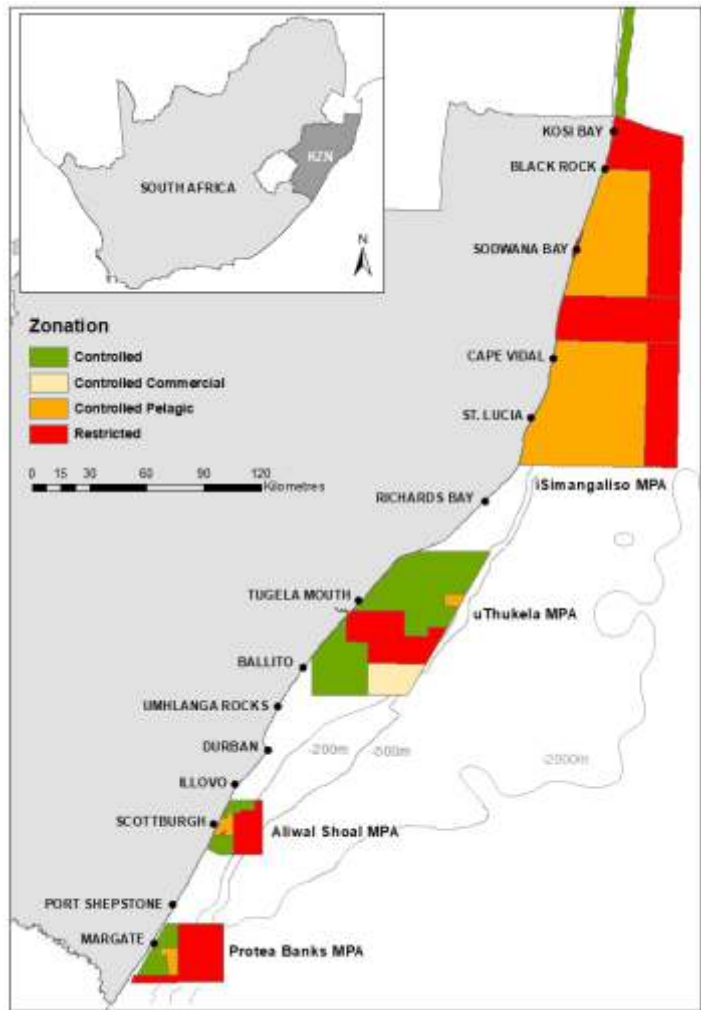


Figure 9.1: Current MPAs and management zones in KZN.

DRIVERS

South Africa is a signatory to several international protocols and conventions such as the Convention for Biological Diversity (CBD), the Jakarta Mandate, the World Summit for Sustainable Development (WSSD), etc. (Attwood 1997b). The country is therefore obliged to try to achieve international targets established for biodiversity protection. In addition, the

increasing realisation of the value of MPAs is helping to fuel greater efforts to establish more MPAs and ensure their wise management, both locally and globally.

Threats to MPAs are ever present and the recent opening of no-take areas within the Tsitsikamma and Dwesa-Cwebe MPAs are stark reminders of some of the challenges facing MPA management in South Africa (Lombard *et al.* 2020).

PRESSURES

The biodiversity of our oceans is under increasing threat from overfishing, pollution, coastal development, climate change and many other anthropogenic activities. MPAs are increasingly being promoted as an effective method of helping to mitigate these threats. Globally, the Aichi Biodiversity Targets were set to encourage maritime nations to protect at least 10% of the world's oceans (in terms of surface area) in MPAs by 2020 (O'Leary *et al.* 2016). Excluding the Prince Edward Islands MPA, South Africa only managed to protect 5.4% of her exclusive economic zone (EEZ) in MPAs by 2019 (Sink *et al.* 2019). However, more recent research has suggested that a better target would be to protect at least 30% of the world's oceans in MPAs (O'Leary *et al.* 2016). As a nation, South Africa therefore still has a long way to go to achieve this level of protection of its EEZ.

STATE

Historic perspective

Despite not having achieved the Aichi targets around the mainland by 2020, South Africa still has a proud history of establishing MPAs, with the Tsitsikamma National Park MPA established in South Africa in 1964 (Lombard *et al.* 2020). In KZN, the St Lucia Marine Reserve and the Trafalgar Marine Reserve were established in

1979 (Mann *et al.* 1998). This was followed by the Maputaland Marine Reserve (1986) and the Aliwal Shoal MPA (2004). These came about, largely thanks to the foresight of early conservationists in Ezemvelo (then Natal Parks Board) and the Oceanographic Research Institute (ORI). These efforts were further improved by the Coastal and Marine Biodiversity Plan for KZN, otherwise known as the SeaPLAN project developed by EKZNW (Harris *et al.* 2012).

To date, management plans have only been implemented for the iSimangaliso and Aliwal Shoal MPAs and monitoring of MPA effectiveness has largely focused on the iSimangaliso MPA, especially in terms of turtles (Nel *et al.* 2013), coral reefs (Schleyer 2000), inshore reef fish (Mann *et al.* 2016a, 2016b) and offshore reef fish (Garratt 1993, Floros 2013, Dames *et al.* 2019).

Current state

The SeaPLAN research has since fed into the Operation Phakisa process and led to the recent (2019) establishment of 20 new Marine Protected Areas (MPAs) for the country. Importantly for KZN, the uThukela and the Protea Banks MPA (2019) were established. Additionally, this process led to substantial increases in size as well as the re-zonation of the St Lucia and Maputaland MPAs (now called the iSimangaliso MPA) and the Aliwal Shoal MPA (RSA 2019). The small Trafalgar MPA was also incorporated into the new Protea Banks MPA.

Together, these MPAs cover 16 684 km² of ocean space offshore of KZN and with the other newly declared MPAs they now protect 5.4% of South Africa's EEZ. While approximately 40% of these MPAs are comprised of no-take restricted areas, most of these fall into the deeper offshore waters, leaving many of the shallower ecosystems and communities still vulnerable to pressures such as fishing. The establishment of

these new MPAs has, however, provided a large amount of protection to the marine ecosystems off the KZN coast from more destructive pressures such as offshore mining and trawling.

IMPACT

The establishment of a well-designed and well-managed network of MPAs within the KZN EEZ (and the broader South African EEZ) is critical to the future sustainable development of the province (and the country). Amongst other factors, this will ensure an element of resilience to overfishing and climate change, as well as provide important opportunities for ecotourism, research and education. Without our MPAs, the province would face greatly increased risk from overfishing and habitat destruction (e.g., from activities such as offshore mining and oil and gas exploration), as well as reduced resilience to the

imminent threats of climate change. It is thus essential that every effort is made to safeguard our MPAs and to manage them wisely to ensure the greatest benefit to society.

RESPONSE



With KZN already having achieved a well-designed network of MPAs in the provincial EEZ, the focus must now fall on developing and implementing effective management plans for these MPAs and ensuring that the organisations delegated with management

responsibility have sufficient capacity to undertake the work required. This must include monitoring programmes to determine MPA effectiveness. Such a process must be undertaken in full consultation with all relevant



Aerial photograph of the Inshore Wilderness Zone in the iSimangaliso Marine Protected Area, looking south towards Leven Point
Photo: Bruce Mann

stakeholders. However, further efforts should also be made to incorporate more key habitats, especially within shallower inshore ecosystems within existing MPAs, into no-take areas, to increase the levels of full protection.

Furthermore, as much of our more tropical marine biodiversity is shared with Mozambique, greater efforts should be made with the Mozambican authorities to ensure strong transboundary collaboration, especially regarding the adjacent Ponta do Ouro and iSimangaliso MPAs.

Gaps

One of the glaring gaps in biodiversity conservation along the KZN coast is the lack of proclaimed estuarine protected areas (EPAs) (Whitfield *et al.* 2020). Estuarine habitats play a critical role in the life cycles of many marine fish and invertebrate species which use them as important nursery areas (Whitfield 1998). Considering the degraded state of many of KZN's estuaries (Harrison and Whitfield 2006; Section 5.1), concerted efforts need to be made to identify and protect healthy, productive estuaries in the province.

Data Requirements

When establishing an MPA it is important to realise that not just any section of ocean and/or coast will do. A much more effective approach is to plan a rational network of MPAs to maximise marine biodiversity protection and at the same time minimise costs. This requires a substantial amount of data, both in terms of mapping marine biodiversity (including habitats, species distributions and processes) as well as determining spatial threat/cost layers. Software such as MARXAN can then be used to determine Critical Biodiversity Areas (CBAs) using an iterative approach (Lagabriele *et al.* 2018). While this has been done for much of the South African EEZ (Sink *et al.* 2019), there is still much refinement required and ground-truthing is needed where biodiversity surrogates have been used (Livingstone 2018). Once an MPA has been established following the required public participation process, then a rational management plan needs to be implemented to ensure that the MPA achieves its set objectives and does not simply become a “Paper Park”. Part of the management plan should include a well-designed monitoring programme to help measure MPA effectiveness (Pomeroy *et al.* 2004).

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