



Community and Marine Conservation in South Africa: Are We Still Missing the Mark?

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Marine Protected Areas (MPAs) in South Africa have a long history with currently 5% of the mainland's ocean territory protected. The MPAs are celebrated and appreciated for their representative coverage of several habitat types and their ecological benefits. However, the story of correlational coastal community exclusion is not one that is often told in the 'success' story of South African MPAs. In this review we describe the history of marine conservation in South Africa and examine how the legislation and motivation has evolved since Apartheid. While legislation provides direction in terms of community inclusion, this is rarely the reality as we explore with five case studies. We go on to discuss how top-down governance continues to exclude communities and suggest key lessons drawn from our case-studies that could lead to a more community-involved approach to the ongoing protection and management of our marine habitats for greater conservation success.

Keywords: community participation, conservation policy, marine protected areas, resource use, South Africa

INTRODUCTION

On the 1st of August 2021 the first ever Africa's Marine Protected Area Day was celebrated. Marine protected areas (MPAs) are a critical tool that aims to help conserve marine biodiversity and protect species through delineating zones according to management objectives (Day et al., 2012; Jones, 2014). Increasing development and subsequent activity in the oceans has led to concern for the sustainable management and governance of marine spaces, and MPAs have been widely proclaimed as a potential solution (Dehens and Fanning, 2018). The United Nations (UN) Sustainable Development Goal 14, the Convention on Biological Diversity (CBD) and the post-2020 global biodiversity framework have significantly influenced the global agenda for the conservation of biological diversity relevant to MPAs (Charles et al., 2016). These targets are currently shaping how we will conserve marine and coastal biodiversity conservation for the next 30 years. However, while MPAs can be a powerful tool for conserving marine species and habitats (Laffoley et al., 2019), if implemented inequitably, without considering the social impacts and local development needs, MPAs can lead to social and environmental injustice (Bennett and Dearden, 2014a; Sowman and Sunde, 2018; Bennett et al., 2021). Pressure is building for South Africa to meet the goals of the UN CBD 30x30 initiative (CBD, 2021) and MPAs are at the centre of accomplishing this goal. However, if we are to successfully meet this goal for all South Africans, it is imperative that we carefully and critically reflect on our current

conservation model whilst acknowledging the often-problematic roots. There is thus a need for further discussion around the complicated context of MPAs in South Africa.

We are a group of South African Indigenous and non-Indigenous researchers with a variety of professional experience including marine ecology, political ecology, coastal governance, youth engagement, environmental documentary-making, and coastal community development. Through our careers, we have all worked closely with and researched MPAs and while we acknowledge the need to conserve nature, we question the completeness of issues considered when protected areas are established and their potential impact on coastal peoples.

In South Africa, the history of MPAs is one that has resulted in dispossession for many local communities and has been rooted in top-down conservation enforced by external state-led authorities that adopts a 'fences and fines' approach. The subsequent lack of access to marine resources has disrupted local coastal communities who rely on the ocean and coasts for their livelihoods, cultural practices, and well-being, resulting in dispossession and increased marginalization (Sunde and Isaacs, 2008; Sowman and Sunde, 2018; Muhl, 2019). Drawing on a selection of South African case studies, our paper examines the potential social implications of South Africa's commitment to 30x30. We do so by critically examining current conservation models or experiences in five MPAs. First, we begin by outlining the historical events that led to the current conservation practices of zonation and how that has led to conflict and dispossession. Second, we explore how current conservation policy does not consider communities within conservation. Thirdly, using case studies, we demonstrate how the current South African model of conservation management is dismissive of Indigenous stewardship, and disregards local and Indigenous knowledge held in communities and by Indigenous peoples, often providing barriers to access coastal and marine resources. Fourth, we discuss the implications of MPAs and other conservation strategies on coastal communities, when implemented without considering issues of equity or the potential impacts of 'protection' on local livelihoods, cultural practices, and well-being. Lastly, we make the case for centring communities at the heart of conservation for greater long-term sustainability, outlining key considerations for future management and potential roles for various stakeholders. The case studies are based on our research and practical experiences. Observations and information are provided from the literature, personal observations in the field, and personal communications with collaborators from the areas discussed.

THE HISTORY OF SOUTH AFRICAN CONSERVATION AND MPAS

The first record of fishing restrictions in South Africa can be traced back to as early as 1652 in the Western Cape province by the then Dutch commander Jan van Riebeeck. Five years later, fishing restrictions led to the exclusion of local freemen in fisheries their involvement in colonial affairs subsequently took the form of agricultural labour (Sunde, 2014). The trend of

fishing restrictions creating both a benefit for the Cape colonists and the exclusion of locals in these activities strengthened in the late 1890s (Dennis, 2009). During this period control over South Africa's natural resources evolved into a form of co-management between the colonial state and landowners to conserve threatened game (1886), birds (1899) and flora (1903) (van Sittert, 2003; Sowman et al., 2011). Due to declining commercial fish catches in the 1890s (van Sittert, 2003), there was pressure on the state to protect coastal and estuarine waters by a complicated collection of marine tenure arrangements in the 1900s (Sunde et al., 2013). As such, the colonial administration slowly started dispossessing local communities from access to certain resources (Sunde and Isaacs, 2008). Between the early 1930 and late 1950s, the state planned and implemented several other laws and restrictions that would protect natural resources (Sunde, 2014).

It was in the 1960s that the South African Apartheid government supported the call by the International Union for Conservation of Nature (IUCN) for the establishment of MPAs (Sunde, 2014; Fielding, 2021). Globally, and as with South Africa, many governments created MPAs opportunistically and/or based on growing public pressure instead of starting with an integrated and objective evaluation of the primary need for the MPAs (Hockey and Branch, 1997). The centralised approach to MPAs meant that the primary and only goal of many MPAs was biodiversity conservation (Faasen, 2006). As such, there was no plan for a rational network of overall MPA distribution or predetermined criteria for MPA selection; rather South Africa's MPAs reflected colonial and apartheid interests where only white, commercial interests were valued (Sunde, 2014). In response to calls for MPA expansion along the South African coast, the government gazetted the Sea Fisheries Act (1973 – 1988) and its various amendments, shifting how the state managed and regulated fisheries and marine conservation (Sunde, 2014). In 1964 South Africa saw its first MPA, Tsitsikamma National Park, declared under the Sea Fisheries Act (1973 -1988) (Fielding, 2021).

In 1994, the first democratic elections took place, and the post-apartheid government began extensive reforms to redress past injustices and achieve equity in fisheries by drafting new policies and laws (van Sittert et al., 2006). Over the next few years, new policies were developed in stages, starting with the Quota Board in 1994-1998, the Marine Living Resources Act (MLRA) (amended 2014) from 1998-2000, the MLRA with subsistence permits from 2000-2001, and the medium-term rights allocation from 2002-2006 (Dennis, 2009). During this period, the South African government was awarded entry into the international community which subsequently influenced fisheries policies to reflect those prioritised by the international community including equity, sustainability, and economic stability (van Sittert et al., 2006). By 2019, South Africa had 25 officially declared MPAs which covered 0.4% of South Africa's oceans. In August 2019, 20 new MPAs were established a few months after being gazetted. This was after the 2011 National Biodiversity Assessment indicated that the offshore ecosystems were poorly protected. South Africa now has 42 MPAs covering a total of 5% of its oceans (Mann-Lang et al., 2021).

CURRENT CONSERVATION POLICY

Globally, MPAs have been identified as an important tool for protecting marine resources and have been defined by the IUCN as “clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (Day et al., 2012:12). This international definition of MPAs has been used to inform the understanding of MPAs in South Africa (Chadwick et al., 2014). South Africa draws on various international policies and instruments in devising domestic approaches, policies and legislation pertaining to conservation. This is because the country is party to a suite of international instruments that inform conservation principles, including the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the CBD, the Convention on Wetlands of International Importance (Ramsar Convention), and the World Heritage Convention.

At a national level, South African conservation is overseen by the Department of Forestry, Fisheries, and the Environment (DFFE) which coordinates management through various provincial and local authorities. In terms of national policy, conservation is covered by the National Environmental Management Act (NEMA No. 107 of 1998) which accounts for all matters related to environmental governance and maintaining environmental function. Within the framework of NEMA, the Biodiversity Act (NEM : BA No. 10 of 2004), the Protected Areas Act (NEM : PA No. 57 of 2003), the Integrated Coastal Management Act (NEM: ICMA No. 24 of 2008), and the World Heritage Convention Act (WHCA No. 49 of 1999) provide greater detail for conservation and social inclusion respectively. The Biodiversity Act outlines clear protocol for establishing protected regions (or bioregions), monitoring these areas, and promoting research around biodiversity. Laws for dealing with threatened and alien/invasive species are also provided, along with bioprospecting protocol, and consequences of transgressions. The Protected Areas Act outlines laws regarding the declaration of protected areas and management thereof. This Act served to replace the National Parks Act which was established under the Apartheid regime. The Act also accounts for MPAs specifically in terms of mining and prospecting. Regarding the Integrated Coastal Management Act, laws are outlined regarding coastal access and ownership, waste disposal, estuarine and coastal management plans, and public participation in these processes.

Other influential legislation includes the National Water Act (NWA No. 36 of 1998) and the Waste Act (NEM WA No. 59 of 2008). The NWA, although not directly linked to MPAs, provides legislation for the management of water resources including catchment areas. Effective management of catchment areas is influential to the adjoining coastal region. The Marine Living Resources Act (MLRA) (No. 18 of 1998), and the Small-Scale Fisheries Policy of South Africa were introduced by the post-apartheid government as a way of providing redress to historically disadvantaged people in South Africa. The MLRA was the post-apartheid government's first attempt to recognize fishers from marginalized Black, Coloured and Indian coastal communities within the sector, and their historical rights of access. However,

the MLRA failed to provide the desired redress and recognition of historical rights of fishers (Isaacs, 2006; Sowman et al., 2014). This resulted in activism within the small-scale fisheries sector that propelled the enactment of the 2012 Small Scale Fisheries Policy of South Africa. This policy was the first to recognize customary rights of small-scale fishing communities. Despite this, MPAs can still act as a barrier to small-scale fishing communities wanting to exercise fishing rights in areas from which they were forcibly removed during Apartheid.

While legislation surrounding conservation makes provisions for public participation and access, it is not explicit in how the public should be included. For example, participation is often limited to members of the public who retrospectively add comments to draft management plans thus there is no opportunity to ensure that social needs are considered before management plans are drawn up. Furthermore, while biodiversity monitoring is essential for protected areas (Section 43, NEM : PA), there is no mention of monitoring social indicators to ensure that coastal land user needs are met.

CASE STUDIES

Our five case studies are located along the South African coastline (**Figure 1**). Four of these studies are state-implemented, established MPAs and the fifth, Mngazana Estuary, is in the process of being zoned.

The Karbonkelberg Reserve

The Karbonkelberg Reserve refers to a restricted zone situated within the Table Mountain National Park (TMNP) on the Cape Peninsula (**Figure 2**). The Reserve ranges from Hout Bay to Oudekraal in the Western Cape and lies directly adjacent to the fishing community of Hangberg.

This Reserve provides a relevant example on the value of customary use rights when declaring an MPA. It also forms a unique example due to its proximity to the city of Cape Town. City planning during the Apartheid regime combined with natural resource zoning have both contributed to the exclusion of the Hangberg community from the MPA formation process. Although the TMNP MPA was only formed in 2004 (DEAT, 2004), the Karbonkelberg Reserve had been previously designated as the Hout Bay Lobster Sanctuary, which was made a restricted zone in 1934 (van Sittert, 1994). Although the harvesting of West Coast Rock Lobster has occurred in the Hout Bay and Karbonkelberg areas for centuries (van Sittert, 1994), the impact of the Karbonkelberg Reserve on the local community was further exacerbated by the Apartheid Group Areas Act. The 1950 Act zoned the town of Hout Bay as a ‘White’ residential area and designated the Harbour area for ‘Coloured’ occupation (Isaacs, 2006) forcing many residents to move to the non-white designated area where many of the traditional fishermen still occupy today. The inclusion of the Karbonkelberg Reserve in the TMNP MPA in 2004 further perpetuated the Apartheid era exclusion which directly ignored the Hangberg community's rights to access traditional fishing

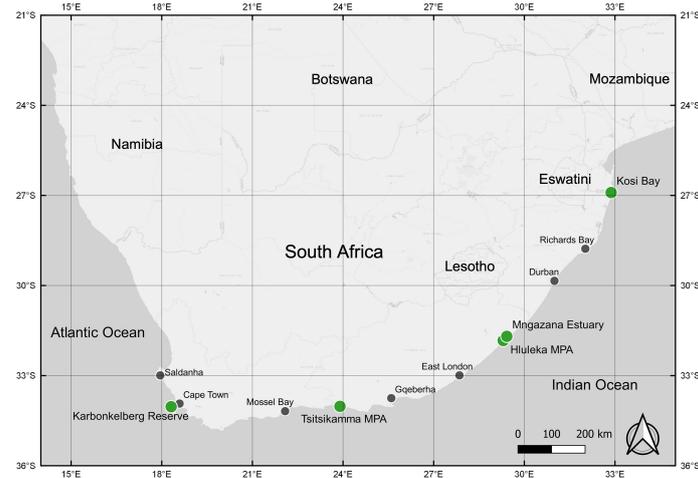


FIGURE 1 | Case study locations (green markers) across South Africa in relation to major coastal cities and towns (grey markers).

grounds (Sowman et al., 2011). Furthermore, this exclusion persists even though commercial fishing vessels are allowed into the area in March every year (Hauck, 2009). A lack of meaningful engagement with the Hangberg community (Sowman et al., 2011) combined with the economic circumstances that most of the community members find themselves in means that fishing has continued, albeit illegally, with no effective way to monitor and police catches (Omari, 2007). Further exacerbating the situation is the force with which the community is met – rather than engaging with the community, the response has been to increase policing, fines, and the confiscation of equipment (Omari, 2007; Sowman et al., 2011). In a post-Apartheid city that still sees huge

segregation along race and class lines, the criminalisation of the Hangberg community further calls into question their sense of settlement and belonging which is already made visible by the public displays of conflict between residents and law enforcement over the decades-long housing crisis (Piper et al., 2021).

Tsitsikamma MPA

As Africa's oldest MPA, the Tsitsikamma National Park (NP) (also referred to as Tsitsikamma MPA) provides crucial insight into the challenges and complexities of trying to achieve the 30x30 targets in the context of South Africa. Situated on the border of the Western and Eastern Cape Provinces in the Koukamma Municipality, the Tsitsikamma NP covers a 60km stretch along the coastline (Figure 3).

The ecological context and complex management history are outlined in Table 1. There are two key dimensions that the Tsitsikamma case reveals. The first challenge is a failure to address diverging objectives. The second challenge involves the need to balance and consider rights, access, and equity issues in relation to conservation efforts in South Africa. A key challenge confronting South African conservation efforts is the need for balancing social, economic and ecological objectives (Muhl et al., 2020). Ecological objectives linked to higher economic benefit (i.e. tourism and the idea of a 'pristine wilderness') are almost always the driving concern in South African marine conservation (Muhl et al., 2020). However, the link between ecological health and adjacent community livelihoods, cultural needs and social benefits are often overlooked. For example, in the Tsitsikamma NP, the purpose of conservation has long been a source of misinformation, with limited communication with coastal communities and decreased benefits resulting from the closure of marine areas historically used for harvesting culturally important food sources (Faasen and Watts, 2007; Muhl and Sowman, 2020).

The lack of meaningful engagement with conservation decision-makers has led to a perceived failure of the managing

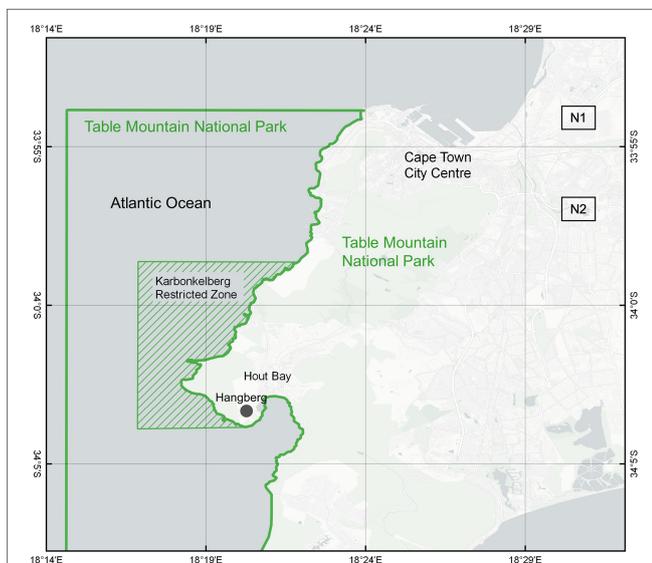


FIGURE 2 | The Karbonkelberg Reserve is a restricted zone (green dashed box) situated within the Table Mountain National Park (green border). This national park borders the city of Cape Town

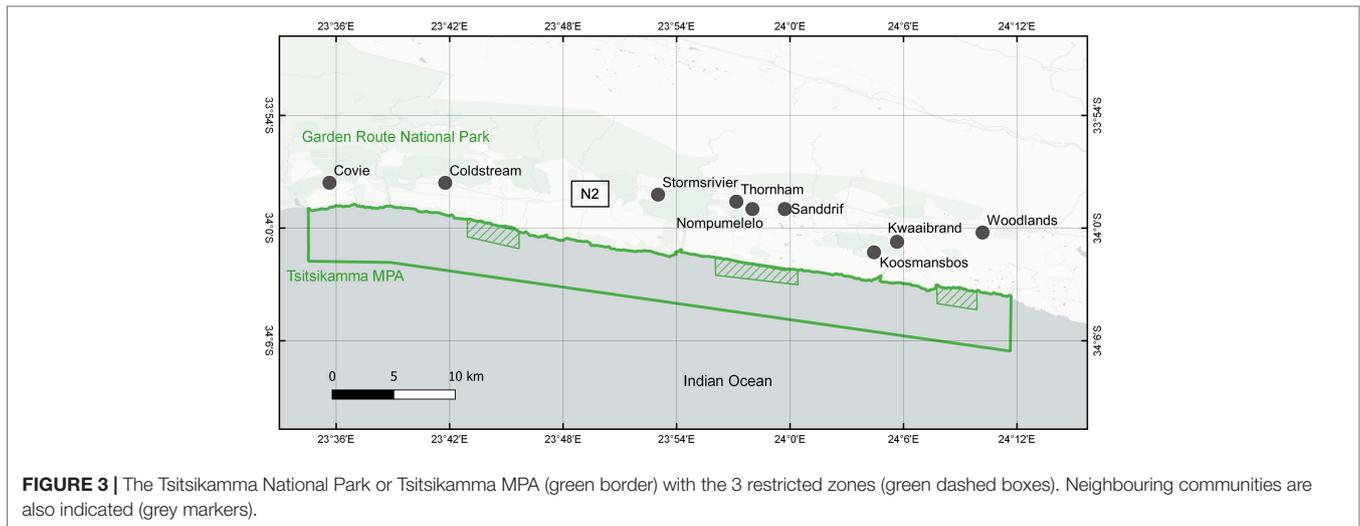
TABLE 1 | An overview of the five case studies highlighting their location, ecology, history, current zonation, and challenges to allow for comparison across sites.

	Karbonkelberg Reserve	Tsitsikamma MPA	Mngazana Estuary	Hluleka MPA	Kosi Bay
Ecological habitat	Karbonkelberg is a peak bordering Table Mountain with a cliff face on the south side and a dune-like slope. Habitat types include a mix of sandy beaches, rocky shores, kelp forests, and offshore rocky reefs.	The Tsitsikamma NP has a rugged coastline with steep cliffs, rocky shores, sandy beaches, and sub-tidal rocky reefs. It is known for having several endemic reef fish species, and slow-growing long-lived line fish species.	The Mngazana system is situated within the Mngazana Estuary and consists largely of mangrove forests, seagrass and saltmarsh habitats. The estuary is permanently open to the ocean and receives freshwater from the inflowing Mngazana River.	The MPA has a collection of beach coves, protecting a rocky shoreline, an estuary, and sandy beaches. The area provides sanctuary for the Southern Right whale between April and December, the Humpback whale all year round as well as for humpback and bottlenose dolphins.	The Kosi Bay system includes coral reefs, an estuary, dune forests, mangrove, forests, seagrass habitats, sandy beaches, and rocky shores. The lake system is a series of four lakes (Figure 6) starting with the lower marine Lake Makhawulani, connected to the brackish Lake Mpungwini and ending with the two fresh upper lakes (Nhlanga and Amanzamnyama). Each lake has unique features which are described in detail in the Ramsar Information sheet (Kyle, 1995). Traditional fish traps are found in the two lower lakes.
MPA type and zoning	Partially closed - The TMNP MPA has 6 restricted areas in total, of which the Karbonkelberg Reserve is one. No extraction is allowed here with the only exception being that boat-based snoek fishing is allowed to take place within the Reserve at depths greater than 35m.	Partially closed - 80% of the TNP is characterised as a no-take zone with the rest of the park split into three zones that are restricted to harvesting by registered community members only (Figure 3).	There is no formal protection or visible control over harvesting.	The entire MPA is a no-take zone.	Partially closed - Kosi Bay forms part of the iSimangaliso Wetland Park, a UNESCO World Heritage Site. The estuary system is zoned for restricted and controlled use prohibiting fishing and harvesting to varying degrees.
Governance	The TMNP is managed by South African national Parks (SANParks)	The TNP is managed by South African National Parks (SANParks),	Mngazana Estuary forms the boundary between Caguba Traditional Authority in the north and the Gomolo Traditional Authority in the south. The local communities recognise the importance of estuaries as a source of livelihoods. Although this system has been used for years, there is no formal protection given to the estuary.	Hluleka MPA is managed by Eastern Cape Parks and Tourism Agency (ECPTA).	Kosi Bay is managed by iSimangaliso Authority. Ezemvelo KZN Wildlife, a provincial authority, assists with management. The land in Kosi Bay is also communal land under the Tembe chieftaincy.
Brief History and Current Legislation	Harvesting of West Coast Rock Lobster has occurred for centuries in local communities. 1934 - Hout Bay Lobster sanctuary erected. 1950 - The Group Areas act zones Hout Bay as a white residential area and Hout Bay Harbour zoned for 'coloured' occupation. This excludes non-white fishers and harvesters from accessing the area. 2004 - The TMNP MPA is declared, including the Karbonkelberg no take sanctuary.	1964 - Proclamation of the Tsitsikamma National Park MPA 1976-1978 Fishing is restricted to a single 3km zone with permits. 2000- TNP MPA is declared 'no-take' 2007, 2015 - Attempts to rezone the park for controlled access for local fishers 2016- The MPA is rezoned to have three controlled coastal zones for fishing with strict regulations.	2011 - Residents began requesting formal protection status. Currently the Mngazana mangroves are being considered for conservation under N2 Wild Coast Toll Road Biodiversity Offset Agreement (SLR Consulting, 2019, L. Mboyi pers. comm. 2022). There is no visible control over the mangroves in the Mngazana estuary despite the presence of an Estuarine Management Plan which discusses potential for ecotourism development, improved institutional collaboration with local communities, the establishment of estuary management forums, an increase in conservation areas, management of cattle grazing pressure, and a coherent planning framework.	1920s - State introduced conservation laws that dispossessed the local communities of their access and control coastal land, forests and marine resources 1976 - Hluleka Nature Reserve was declared 1991 - Proclamation of the Hluleka MPA 2000 - Hluleka MPA was declared a no-take MPA under the MLRA, transferred in 2014 by presidential pronouncement to Section 22A of NEM: PAA. Land claims still exist and have yet to be resolved.	1910 - Incorporated into the Union of South Africa after having formed part of Maputaland, an independent country. 1950s - The Group Areas Act leads to rezoning and forced removals of non-white communities from land that had been overseen by local chiefs. 1975 - The provincial government assumed authority over Maputaland. It is still unclear about the traditional vs state role in terms of governance. This continues with democracy. 1999 - iSimangaliso Wetland Park is established as South Africa's first UNESCO World Heritage Site along with the World Heritage Convention Act 49 of 1999. The park authority assumes control of the park. Land claims do exist however they have yet to be resolved.

(Continued)

TABLE 1 | Continued

	Karbonkelberg Reserve	Tsitsikamma MPA	Mngazana Estuary	Hluleka MPA	Kosi Bay
Key Challenges	At no point has the Hangberg community been engaged. Loss of rights to traditional fishing grounds, while commercial vessels are allowed to fish within the area during March every year. Ongoing fishing has continued, albeit illegally meaning no effective way to monitor catches. The official response has been to increase policing, fines and confiscation of equipment exacerbating conflict between authorities and local communities.	A lack of meaningful engagement between conservation decision-makers, scientists and community members. Loss of community access to the ocean. Although control zones exist they do not necessarily serve community needs. A failure to deal with issues of rights and access has created compliance and contestation issues.	Poverty and possibly an unsustainable reliance on the mangrove ecosystem. A lack of formal conservation protection, lack of governance and management capacity among the local people, and absence of a coherent planning framework means that sustainable resource use or conservation remains unregulated and unrecorded. A lack of catchment management upstream may lead to ecosystem degradation. Limited knowledge transfer between local communities, users and scientists.	A lack of meaningful engagement between conservation decision-makers, scientists and community members. There is no comprehensive system to monitor progress on conservation objectives and to facilitate adaptive management. There is no planned education programme for the MPA even though four community liaison officers had been appointed for the region to interact with communities and raise awareness for conservation in general. Loss of a livelihood. The removal of mussels, limpets, and crayfish by the locals is viewed as a compliance issue.	Ongoing conflict between conservation objectives i.e. to preserve ecosystems and to protect natural resources and rural development/community livelihoods. Unsettled land claims still exist and serve as a reminder of forced removals. The stark contrast between users (tourists attracted to the UNESCO World Heritage Site) and local low-income communities appears to increase with the continued governance and focus of iSimangaliso Wetland Park exacerbating marginalisation of local communities. Plural conservation governance systems create confusion regarding land use and management.
Key references	van Sittert (1994); Omari (2007); Hauck (2009); Sowman et al. (2011)	Faasen (2006); Faasen and Watts (2007); Muhl (2019); Muhl and Sowman (2020)	De Wet (2004); Lewis and Msimang (2004); Rajkaran et al. (2004); Peer et al. (2018); Masterson et al. (2019)	Chadwick et al. (2014); Emdon (2013); Sowman and Sunde (2018); De Villiers (2021); Fielding (2021); Mann-Lang et al. (2021)	Kyle (1995), Guyot (2005); Hansen (2013); IWPA (2017); Mbatha (2018); Peer et al. (2018)



authority to consider community needs (cultural, social, and economic) (Mann-Lang et al., 2021). One of the key questions is whether targets and challenges are aiming to protect nature through closure and exclusion of people or through managing areas and people as an enclosed system. This ultimately requires participants in the South African conservation community to focus issues of rights and access. In the Tsitsikamma NP, the exclusion of certain groups from long-held traditional areas that were previously accessed for livelihood and cultural benefits has been a fundamental reason for the ongoing contestation and compliance challenges. The creation of the MPA has created poaching in a place where people historically used to sustainably coexist with nature. Local fishers consider customary access to the area for harvesting resources a right, while park authorities perceive local fishers to be trespassing and fishing illegally (and therefore fishers are labelled as “poachers”) (Muhl and Sowman, 2020). The outcome of this is that a failure to deal with issues of rights and access leads inevitably to a widespread perception that conservation continues to be a colonial practice and one that leads to illegitimate intervention (Mann-Lang et al., 2021).

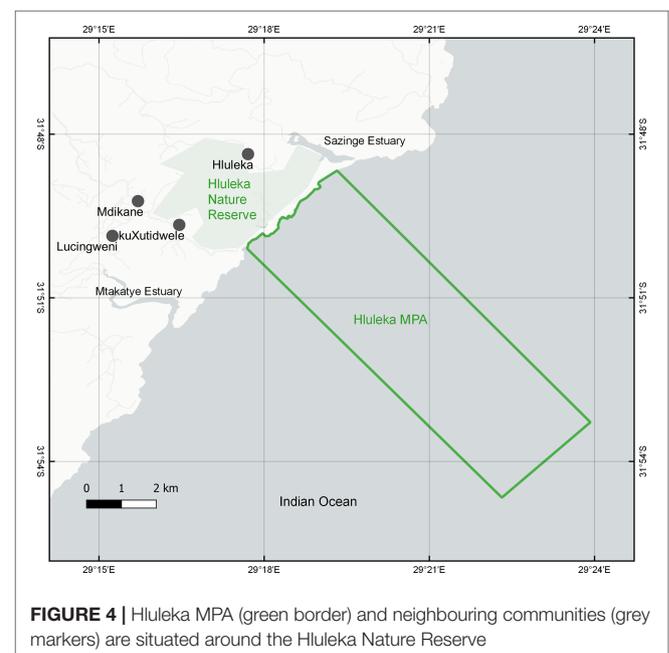
Hluleka MPA

The Hluleka MPA is one of the smallest in South Africa, located along the Eastern Cape’s Mpondoland adjacent to the Hluleka Nature Reserve. The MPA covers an area 41km² with a 4.5 km coastline that extends 6 nautical miles offshore (Emdon, 2013; Sowman and Sunde, 2018; De Villiers, 2021; Fielding, 2021) (Figure 4).

During the 1920s and 1930s, the state sought to conserve natural resources by introducing laws and restrictions that subsequently dispossessed local communities from access to forest and marine resources (Emdon, 2013; Sowman and Sunde, 2018). The Hluleka community’s access to marine resources was not affected by these laws in the 1920s due to the district magistrate’s support of the coastal community (Emdon, 2013). The magistrate refused to place marine resource restrictions on the community when concerns over future overexploitation arose, recognizing

the value of fishing and harvesting to the coastal community and acknowledging that fishing was an activity that was passed down generations (Emdon, 2013). However, this changed once the Sea Shore Act No. 21 of 1935 was passed and resulted in the forced removal of families along the Hluleka coast. The Act forbade people from living near the high-water mark and limited access to marine resources (Emdon, 2013).

In 1976 the Hluleka Nature Reserve was officially proclaimed. While community consultation prior to the declaration of the reserve offered resistance, authorities made promises of job opportunities, continued fishing and harvesting in the Reserve, a 10% cut in Reserve profits, and forest management training, to gain the community’s vote (Emdon, 2013). The promises were not met, and the terms around access to the Reserve tightened



leading to arrests and physical assaults from the rangers (Emdon, 2013). This resulted in 450 households forcefully removed (Sowman and Sunde, 2018). However, it was in 1991 (Mann-Lang et al., 2021) when the reserve's coastline was declared as a MPA under the Transkei Fisheries Regulations that the community first highlights negative impacts from marine conservation. For example, overnight Reserve guests had fishing rights while the adjacent community lost these rights (Emdon, 2013). These restrictions also coincided with the shift in the political economy in the Eastern Cape. During this time there was increased reliance on marine resources as an alternative livelihood because of the retrenchment of many migrant workers. When the MPA was declared as a no-take zone in 2000 this severely impacted the community's livelihoods (Sowman and Sunde, 2018). As such, the Hluleka MPA case study highlights how hasty decision-making neglected the socio-economic needs of a community that could have benefited from engagement and inclusive decision-making.

De Villiers (2021) highlights the disconnect between various stakeholders. Local community members are recorded as not understanding the value of the MPA from an ecological perspective but being open to hearing more from researchers in this regard (p. 265). The author also discusses how the MPA was proclaimed based on top-down decisions with no engagement of the local communities and no real research basis. Currently, the relationship between local communities and conservation authorities is contentious as community members continue to harvest and fish within the MPA, and the authority issues fines in response.

Mngazana Estuary

The Mngazana Estuary forms the boundary between Caguba Traditional Authority in the north and the Gomolo Traditional Authority in the south (Figure 5). The five surrounding villages of Magcakini, Cwebeni, Nkwilini, Kunonyonga, and Mqaleni are the communities that derive livelihoods from this estuary.

This estuary contains the third largest mangrove forest (118 ha) in the country. The local fishermen collect bait from the mangrove swamps and the livestock from the surrounding villages are grazed here (E. Mtambeki, 2021, pers. comm.). Communities are dependent on resources harvested from the mangrove forest to meet livelihood needs. Resources include building materials for housing, food, bait, and firewood. The current levels of harvest are considered unsustainable (Rajkaran et al., 2004) although these demands are now declining (Mtambeki 2021, pers. comm.). Reconciling demands with sustainable use limits might prove to be challenging. The estuary is not formally protected although an Estuarine Management Plan has been drawn up for the Mngazana Estuary system (Figure 5) (DEA, 2015). This management plan was an effort to engage and involve local people in the management of the estuary and its mangroves. It was largely motivated by the need to create economic incentives for communities surrounding the Mngazana mangroves to sustainably manage the forest and income generating opportunities (Lewis and Msimang, 2004) through canoe tours and beekeeping. The bees here are mainly dependent on mangrove flowers creating a unique kind of honey.

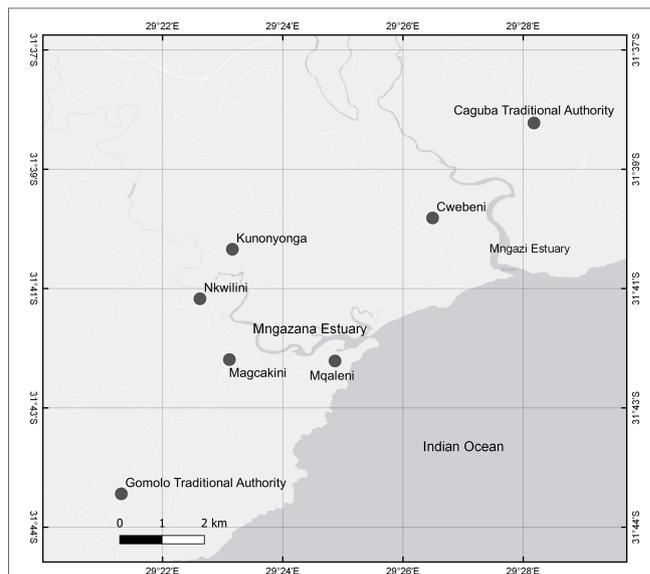


FIGURE 5 | The Mngazana Estuary together with neighbouring communities and traditional authorities (grey markers)

Management plans on communal land are often associated with projects to motivate communities to protect nature. These act as an incentive for conservation activities that the community is expected to do.

Kosi Bay

Kosi Bay is located within the iSimangaliso Wetland Park which also contains the iSimangaliso MPA (Figure 6). The Kosi Bay system consists of several coastal habitat types (Table 1) and a unique four-lake system ranging from marine to freshwater lakes.

Due to its high biodiversity and habitat richness, the Kosi Bay system, and the iSimangaliso Wetland Park as a whole, was granted UNESCO World Heritage Site status in 1999. However, formal conservation in areas within the boundaries of iSimangaliso has existed for over 100 years, and the nearby St Lucia Nature Reserve is one of the oldest protected areas in Africa, having been established in 1895 (IWPA, 2011). One of the reasons for the progressive creation of protected areas within and around the boundaries of iSimangaliso Wetland Park is the need to protect increasing populations of hippopotamuses, sea turtles and black rhinoceros within the system (IWPA, 2017).

The people of Kosi Bay have a long history of weaving together their livelihood strategies using coastal resources, engaging in activities such as fishing, harvesting indigenous forest products, eco-tourism, and agriculture for centuries. However, in the post-Apartheid era (after 1994), the area has been subject to intensified multi-scalar conservation interventions governed through instruments such as a UNESCO, the Ramsar Convention, a state-designated MPA, and a state-designated terrestrial forest reserve. This had become an issue of contention due to the mismatch between conservation expansion plans and rural development plans that are meant to uplift the livelihoods

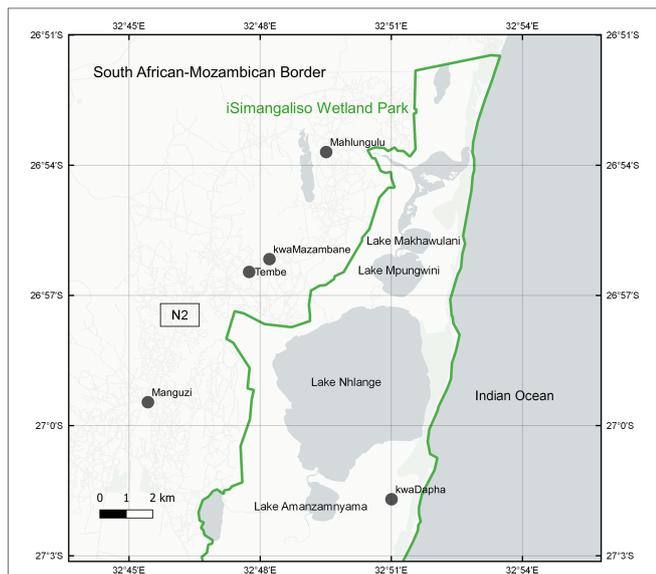


FIGURE 6 | The Kosi Bay system (black border) is made up of the four lakes and the estuary mouth and is situated within the iSimangaliso Wetland Park (green border). The park borders Mozambique to the North. Neighbouring communities are indicated here (grey markers).

of people (Mbatha, 2018). Marginalization due to Apartheid policies and exclusionary conservation governance processes and practices is still widespread in these areas. For instance, the National Development Plan of South Africa (NPC, 2012) seeks to eradicate poverty and promote food security and development in rural areas of South Africa. Simultaneously, the government's conservation targets are increasing, while the demarcation of new MPAs and the existence of old ones largely affects the same rural coastal communities. This therefore creates conflict between conservation and development goals, which is an issue that is prevalent in the Kosi Bay case.

Multi-scalar and plural conservation governance in Kosi Bay has implications on local livelihoods because the rural coastal community not only resides adjacent to an MPA, but also exists within and adjacent to a UNESCO world heritage site, a Ramsar site and a Coastal Forest Reserve. The plurality and overlap of these conservation governance arrangements creates ambiguity and confusion about governance mandates and livelihood rights (i.e. fishing rights) (Mbatha, 2018). Furthermore, part of the MPA exists where there is an ongoing land claim by a local customary structure that represents people in the community who were forcibly removed from coastal land during apartheid. Due to these forced removals, local people lost physical access to the marine environment that is important for their livelihoods, and spiritual and cultural wellbeing.

These issues remain key challenges in Kosi Bay, as there are ongoing conflicts between local people and conservation authorities, as local people perceive conservation governance processes and practices to be exclusionary and not accommodating to their social, economic, and cultural wellbeing. This is exacerbated by the fact that the establishment of the MPA

and World Heritage Site is often stated as an economic benefit to communities with the influx of tourism and with increased training and capacity development (Odendal and Schoeman, 1990, IWPA, 2017, Mbatha, 2018). However, benefits are not equally shared with local communities still receiving income based on informal roles as guides, fishing aides, and vendors. There is no real stake in the park and thus no input regarding management of resources.

IMPLICATIONS OF EXCLUDING STAKEHOLDERS

When considering local perceptions of MPAs on human dimensions (Bennett and Dearden, 2014b; Gurney et al., 2015; Charles et al., 2016; Christie et al., 2017; Sowman and Sunde, 2018), it is clear that MPAs often result in the undermining of local and Indigenous communities. This includes reduced access and tenure to resources, poor governance processes, interference with local development processes, as well as poor recognition of traditional and cultural identity and knowledge. There is need for research that explores the continued social and livelihood impacts of MPAs on marginalized coastal communities. This is a pertinent issue in the South African context where MPAs were tools for excluding coastal communities of colour from resource access and use (Sunde and Isaacs, 2008). This legacy continues to be perpetuated by governance processes that have prioritized ecological goals over socio-economic and cultural needs.

Sowman and Sunde (2018) document an array of socio-political and governance related negative impacts borne by marginalized coastal communities in South Africa due to MPA existence and ongoing management processes and practices. Among others, they note the weakening of local rights, loss of resource tenure livelihoods and access has contributed to increased marginalization with subsequent conflict at local levels (Sowman and Sunde, 2018). Including stakeholders could alleviate the continued marginalization faced by fishers and other marine resource users, and potentially provide a protective role as co-managers of coastal and marine resources (see Isaacs and Witbooi, 2019) However, more knowledge is needed to understand the implications of MPAs on communities which are excluded from them spatially, economically and from a food security perspective (Mann-Lang et al., 2021). It is also worthy to note that conflicts surrounding the existence of MPAs are ever evolving, and the nature of these conflicts vary per case study.

Economic Factors

Mann-Lang et al. (2021) discuss in greater depth the research and analyses surrounding economic gains and losses associated with MPAs along the South African coast. The authors highlight a lack of research with only a few studies documenting long-term economic gains for local users. While the economic gains associated with MPAs remain largely unrecorded, the exclusion of community input and expression regarding perceived gains remains problematic. For example, a long-term economic gain is not always considered a tangible benefit by community users

who sometimes face more immediate issues of food security. Reporting on a long-term gain is thus not synonymous with community inclusion or perceived benefit. McClanahan et al. (2005), in their paper on the perception of MPA management in Kenya highlight the discrepancy in government and local peoples' opinions on the economic benefits of MPAs. Using examples from small-scale fisheries management and coastal mining sectors, Mbatha (2011), and Mbatha and Wynberg (2014) demonstrate that perceptions of benefits to local communities held by those in power in natural resource use governance are usually different from perceptions of local communities about what benefits should entail to whom, and when. The mismatches between managers and local communities about what benefits entail is usually a result of poor governance processes. The failure of MPAs to provide equitable and fair economic benefits is highlighted in the literature, with emphasis on the need for MPA governance processes to be fair, equitable and participatory if they are to enhance local perceptions of benefits, and increase economic, job and development opportunities for marginalized coastal communities (Bennett and Dearden, 2014b; Charles et al., 2016; Abukari and Mwalyosi, 2020).

Conflict

Conservation conflicts can be defined as "situations that occur when two or more parties with strongly held opinions clash over conservation objectives and when one party is perceived to assert its interests at the expense of another" (Redpath et al., 2013). A community-conservation conflict thus specifies a conflict between conservation objectives and local communities. Conservation objectives can be represented by management authorities, researchers, or government departments. Community-conservation conflict often drives unregulated and illegal activity which in turn leads many conservationists and ecologists to call for stricter top-down enforcement (Baynham-Herd et al., 2018) possibly creating an unsustainable positive feedback loop. This is seen in South African protected areas, where priority is given to conserving and monitoring ecology with little insight regarding the translation of ecological processes into social benefits (Kirkman et al., 2021). Often biodiversity monitoring research and reports deliver a message to tighten top-down control with no insight into the social structure around these protected areas as is seen in the recent case of a Dwesa-Cwebe study (Bullock et al., 2021). While there is undoubtedly immense value in these studies which highlight the success of MPAs, presenting findings without context of historical inequality further perpetuates the narrative that local communities are a threat to biodiversity and that top-down enforcement must be the solution. Despite the physical top-down control, illegal fishing will most likely continue in the park, further driving conflict between enforcement authorities and local communities. Similarly, in Hangberg, the community is frequently at loggerheads with local authorities, with the conflict often turning violent from both sides (De Greef, 2014). This type of conflict further serves to ostracise the community and complicates community perceptions of MPAs with both 'poaching' for sustenance and as an act of defiant protest occurring in some of South Africa's MPAs (Schultz, 2015; Isaacs and Witbooi, 2019).

Loss of Ownership

A combination of historic forced removal, current top-down regulation of protected areas, and lack of integration of traditional and cultural knowledge in MPA governance leads to a continued sense of loss. MPAs that are associated with the exclusion of local people in their design, implementation and governance tend to result in loss/erosion of rights, way of life, material assets, culture, identity, traditional practices, local knowledge and human-nature interactions between local people and resources (Bennett and Dearden, 2014a; Christie et al., 2017; Sowman and Sunde, 2018). The ideals embodied by strictly top-down regulation - and the impacts thereof - are acutely illustrated in the literature (Sunde and Isaacs, 2008; Emdon, 2013; Sunde, 2014; Mbatha, 2018; Sowman and Sunde, 2018; Muhl, 2019; De Villiers, 2021). These studies find that where community participation is referenced, this participation is generally "instrumental", meaning that communities are expected to participate in the implementation of management initiatives but generally have no say in the designing and implementation of the initiatives. All these authors go on to list the clearly-documented costs to local communities including loss of livelihood, expulsion from traditional fishing grounds and living spaces, as well as violations of human and community rights.

These losses have been recorded specifically for the Dwesa-Cwebe community (Sunde, 2014; Sunde, 2016), Tsitsikamma communities (Muhl, 2019), and Kosi Bay communities (Mbatha, 2019). In Kosi Bay where the issues of land claims remain unresolved, loss of ownership is compounded by the World Heritage status of the park where local communities say they were not consulted in the World Heritage process and that protection and regulations are for the benefit of international tourists (Mbatha, 2018). Documentaries created by local filmmakers also highlight community perceptions, perhaps more directly, than official records. An example includes 'Hluleka' (Janna, 2020), a documentary directed by Jamila Janna, which explores the Hluleka MPA from the perspective of the Hluleka community, including harvesters and fishers. Another example includes 'Removed' (Loubser 2020), directed by Loren Loubser, which highlights the Apartheid-era forced removal of the Redhill community. This community is still unable to reclaim their land which is now officially protected by SANParks and falls within the TMNP.

This loss of ownership stretches into a perpetuation of pre-democracy exclusive research and management practices. This includes not requesting permission from traditional leadership, ignoring the social or human component of ecosystem and conservation models, and dismissing traditional knowledge. The Karbonkelberg Reserve is a prime example, where a local small-scale fishing community has been excluded from fishing an area that has been part of their lives for centuries while commercial fisheries are allowed to harvest in the area, based on a pre-democracy designation that itself was based on opinions of the South African Food Canners Council. Although governance has changed for the country, the exclusive laws remain.

KEY LESSONS

If we hope to successfully and meaningfully meet the 30x30 MPA target in South Africa, we will require conservation that considers local needs tied to marine and coastal resources. In this section we highlight common insights drawn from our five case studies situated in South Africa. We focus on three key lessons that have implications for future management, which emerged across all five case studies. Out of the five case studies, one is a no-take MPA, three are partially closed MPAs with zoning partially open in specific areas for restricted and controlled use, the last case study (Mngazana) is currently in the process of being zoned. Although these areas have been used by community members for their livelihoods and cultural needs for generations, their proclamation and zoning are relatively recent occurring between 1964-2004 (with the exception of Mngazana), except in two areas where restriction was indirectly a consequence of forced removal under Apartheid. The proclamation and subsequent enforcement within these areas often remain contested as resource-use and cultural practices are tied to ocean and estuarine access, effectively linking people and nature in multiple ways.

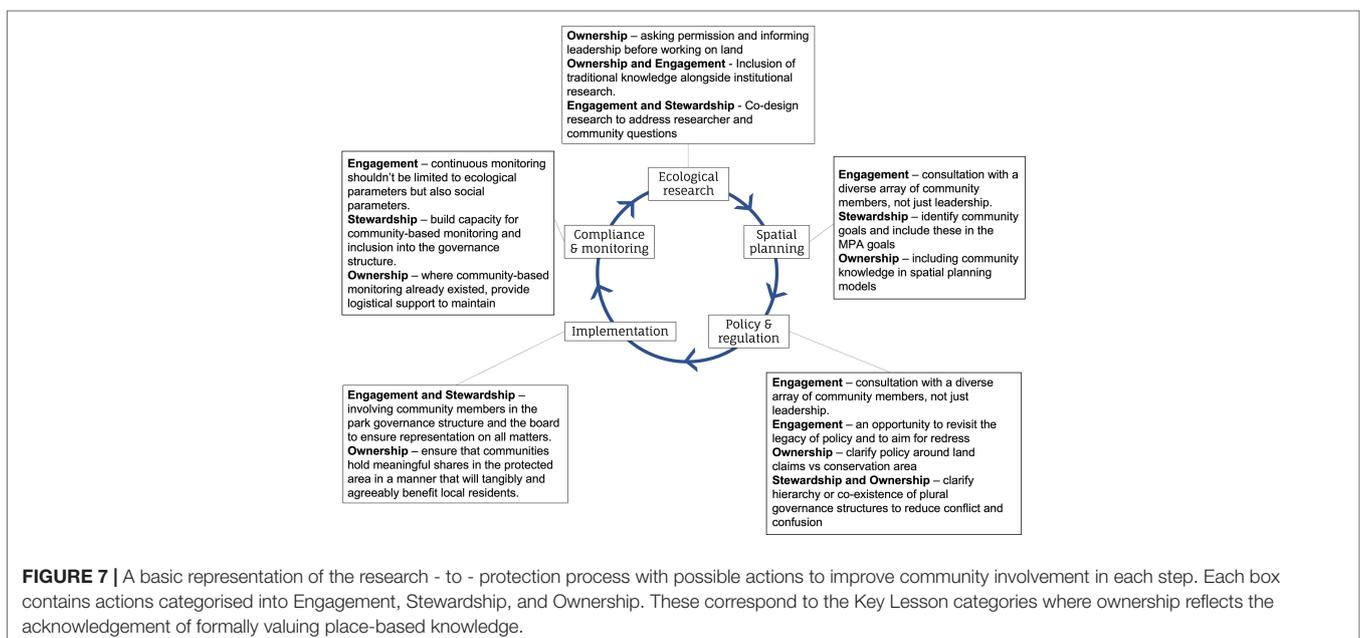
Using these five case studies we highlight three key lessons for moving forward: 1) Engagement; 2) Stewardship; and 3) Valuing place-based knowledge. We use **Figure 7** to outline possible actions for community involvement in each step of a simplified cyclical process illustrating the path from basic research to MPA planning, implementation, and monitoring.

Engagement

A critical issue that emerged across all case studies is the need for further engagement. A key need for community engagement, specifically, emerged in our case studies. Community engagement is selecting a representative group of people to identify issues

that affect their well-being over a period of extended time (International Association for Public Participation, quoted in VAGO, 2015). Engagement has been widely endorsed internationally as contributing to trust and leading to improved management in academic and policy circles (Reed, 2008; Sayce et al., 2013; Gaymer et al., 2014; Sterling et al., 2017). Considerations for effective community engagement requires: (1) considering who is involved, (2) recognising agency (do they want to be included), and (3) providing opportunity and access (Day, 2017). The complexity surrounding engagement is illustrated in Kosi Bay, Hluleka and the Tsitsikamma where unsettled and ongoing land claims require ongoing communication not just with local leaders but also land claimants and resource users (e.g. fishers). For communities such as Hangberg, the issue of agency requires careful and considered engagement. Fishers who have been previously policed and fined may be wary to engage, requiring a steady commitment that leads to concrete changes in how the area is being managed to address fishers' concerns.

Reflecting on *who* is engaged and selecting a representative group will better capture the interests, needs and concerns and provide an entry point to better understand conflict and risk. However, engagement is not limited to only community engagement. For example, in Mngazana, the five adjacent communities are driving the conservation process and there is a need for management and support for mangrove protection that requires engagement with ecologists, biologists and conservation managers for a conservation plan. Often such management plans are drawn up without meaningful engagement between ecologists, policy makers, communities, and technical stakeholders. Adams et al. (2020) provide a framework for estuarine research, restoration and management and propose a socio-ecological systems approach where both ecological indicators and social indicators are continuously monitored to assess success in reaching defined targets. This certainly



encourages a more inclusive approach as opposed to the current research and monitoring practices in most of South Africa's MPAs and coastal systems in general. Meaningful and inclusive engagement at all stages of the process (Figure 7) helps create opportunities and builds relationships between individuals and groups based on shared interests. While lack of capacity and time-constraints can hinder engagement, successful protected area management hinges on long term, ongoing commitment and communication that allows for trust-building between groups that ultimately leads to more effective and harmonious conservation management (Ban and Frid, 2018; Cvitanovic et al., 2018; Dehens and Fanning, 2018).

Stewardship

Stewardship is defined by Bennett et al. (2018) as “the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social-ecological contexts”. Stewardship is the promotion of human-environment interactions for guiding sustained and constructive environmental protection (MEA, 2005; Díaz et al., 2015).

Local stewardship has been written about extensively as evidenced and documented by Bennett et al. (2018) as “community-based conservation (CBC), community-based management (CBM), community-based natural resource management (CBNRM), Indigenous and community conserved areas (ICCAs), integrated conservation-development projects (ICDPs), locally managed marine areas (LMMAs), (Berkes, 2004; Cinner and Aswani, 2007; Jonas et al., 2014; Riehl et al., 2015; ICCA Consortium, 2022). In practice, local stewardship in South Africa is often challenging in the marine landscapes due to a strong biodiversity focus and the non-emergence of co-management initiatives (Barendse et al., 2016; Cockburn et al., 2019). As a result, communities are either excluded and fined rather than engaged (see above examples) or the complexity of the socio-ecological system is ignored (Barendse et al., 2016; Cockburn et al., 2019). The need to promote local stewardship is ever pressing in the context of ecological decline and Mngazana provides a crucial example of local community protection and stewardship over an estuarine system that requires government support. An increase in government support that fosters stronger socio-ecological and environmental stewardship would lead to visible community benefits (i.e. protection of estuarine resources for sustainable use) and enforcement of rules that are community-led.

Our focus on local stewardship also aligns with an increasing emphasis on centering local communities and resource users in conservation and environmental management policies, programs, and practice globally. As these examples show, locally oriented stewardship practices, policies and programs have emerged in fisheries, agriculture, forestry, protected areas, wildlife, ecosystem service, and water management across rural to urban environments.

Environmental stewardship is a valuable and holistic concept for guiding productive and sustained relationships with the

environment that can lead to solutions where both communities and conservation benefit.

Recognising Ownership and Knowledge-Holders

Place-based knowledge is defined as the intimate knowledge that locals have of their “community and the surrounding areas both in terms of the natural landscapes, local culture, and values” (Shamah and MacTavish, 2009). This knowledge is gained from the exploration of the *place* and the interactions with the land and other community members (Shamah and MacTavish, 2009). Traditional ecological knowledge is defined by Berkes (1993) as “a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including human beings) with one another and with their environment”. The exclusion of traditional ecological knowledge (TEK), local knowledge, and Indigenous knowledge in MPA planning, design, implementation, and monitoring results from a lack of meaningful engagement with communities. Further, with the sense of loss of ownership from the communities and lack of strong environmental stewardship, as highlighted in the previous sections, valuing place-based knowledge (PBK), TEK, and cultural practices linked to the ocean, is a necessary step towards inclusive MPAs.

For the sustainable use of coastal resources PBK as well TEK should be documented and included in conservation goals. For example, in the case of the Hangberg community, existing traditional fishermen have PBK which would be useful for mitigating conflicts, re-evaluating economic goals, and improving future management of the TMNP MPA. Similarly, in the case of Tsitsikamma, Hluleka and Kosi Bay, the traditional and cultural values tied to the coastal environment have been neglected – due to forced removals and loss of access - and require stronger recognition in all aspects related to MPAs. Restrictions and access to resources influenced by PBK should be community led, as many communities in Africa implemented management practices before the intervention of scientists (Mathooko, 2005). For example, it was tradition for fishermen from Hluleka to exclude juvenile fish from their catch (Janna pers. comm., Hluleka and Janna, 2020). Disrupting the idea that researchers and scientists are the only stakeholders with knowledge that is beneficial to local and Indigenous communities' wellbeing, or that researchers are entitled to extract knowledge from local communities without acknowledging them (Davidson-Hunt and O'Flaherty, 2007) is fundamental in preventing further marginalisation of these communities in decision-making. In 2021 a court interdict was granted against Shell's exploratory seismic survey off the South African Eastern Cape coastline. While the first interdict was dismissed based on inadequate supporting information, small-scale fishers and the local coastal communities continued to quietly add their voices and work together with researchers to gather a solid body of evidence against the social and ecological impacts of seismic exploration (Mail and Guardian, 2021). The community-led second interdict was granted and bears testament to the dedication of local communities to protect their resources. In 2022 the small-scale fishers from the west coast of South

Africa won another interdict, this time against the Australian company Searcher which planned to conduct a seismic survey along the coastline (Mail and Guardian, 2022). These examples perhaps show that while scientific knowledge is valuable, a strong synergy between TEK/PBK and scientific knowledge is required (Mathooko, 2005) where coastal and Indigenous communities are concerned (Figure 7).

CONCLUSION

There is no doubt that MPAs offer immense ecological benefit. However, the means of designing and enforcing protected areas are called into question in our review. We highlight that many South African MPAs and associated regulations were designed during a colonial era in which environmental protection was implemented in association with forced removal of non-white local communities. The removal and protection led to diminished livelihoods, reduced connection to the environment, loss of ownership and economic stability, and increased conflict between park authorities and displaced communities. In the post-Apartheid era, we have not accounted for the dark origins of many South African MPAs and continued to expand the network of top-down protected areas with no proper inclusion of the adjacent or associated communities. Despite this, it is well-known globally that local communities hold knowledge of their

land and resources and in many cases, are dedicated to the same protection that we hope to achieve with MPAs. Recognising that conflicts surrounding MPAs are dynamic over time and with each case, it is important for South African researchers and conservationists to work towards understanding these issues so that they are accounted for in future planning, execution, and monitoring. To bridge this gap, we put forward a few key actions for conservationists, researchers, managers, and policy makers to consider as we move forward so that South African MPAs move away from contested and unjust top-down managed parks towards more inclusive, collaborative areas that are beneficial to all.

AUTHOR CONTRIBUTIONS

NP, E-KM, and JJ conceptualized the manuscript. NP, EK-M, JJ, MB, SZ, and PM all contributed to the content and revisions of the manuscript.

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