Draft Management Plan for THE Amathole Marine Protected Areas

March 2021

Prepared by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In collaboration with: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Funded by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

March 2021

# Authorization

This Management Plan for the Amathole Marine Protected Area and the Amathole Offshore Marine Protected Area was drafted and recommended by East Cape Parks and Tourism Association and partner organisations and has been internally accepted and approved.

***Recommended and adopted by:***

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**Approved by the Minister of Forestry and Fisheries and the Environment**

***This Integrated Management Plan (2021-2031) for the Amathole Marine Protected Area, is approved in accordance with the National Environment Management: Protected Area Act, 2003 (Act 57 of 2003) and the Public Finance Management Act, 1999 (Act 1 of 1999)***

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| **DRAFT Management Plan**  **AMATHOLE MARINE PROTECTED AREA and Amathole offshore marine protected area** |

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# Acknowledgements

# Acronyms and Abbreviations

BCMM Buffalo City Metropolitan Municipality

CBD Convention on Biological Diversity

CBA Critical Biodiversity Area

DDG Deputy Director General

DEA Department of Environmental Affairs

DEFF Department of Environment, Forestry and Fisheries

DMRE Department of Mineral Resources and Energy

EBSA Ecologically and Biologically Significant Area

ECPTA East Cape Parks and Tourism Association

EEZ Exclusive Economic Zone

IMO International Maritime Organisation

LME Large Marine Ecosystem

MCS Monitoring Control and Surveillance

METT Management Effectiveness Tracking Tool

MIMS Marine Information Management System

MLRA Marine Living Resources Act,

MPA Marine Protected Area

MPG Marine Protection and Governance

NBA National Biodiversity Assessment

NEM:PAA National Environmental Management: Protected Areas Act

NPAES National Protected Area Expansion Strategy

NSRI National Sea Rescue Institute

OCIMS Oceanographic and Coastal Information Management System

SAEON South African Environmental Observation Network

SAIAB South African Institute of Aquatic Biodiversity

SAPS South African Police Service

VMS Vessel Monitoring System

# Introduction

With the current rate of global development, human well-being in both the developing and developed world is increasingly dependent upon the ability of marine and coastal ecosystems to provide a range of ecosystem services. Unless these uses are managed sustainably, the users of marine ecosystems can threaten, change and destroy the very ecosystems and services upon which they depend. In recent years there has been increasing recognition of the threats to marine species and ecosystems, and a growing focus on the conservation of marine biodiversity. The establishment of Marine Protected Areas (MPAs) is one of the key strategies by which the biodiversity and ecosystems of the world’s oceans are effectively managed. MPAs can help protect marine habitats, species and representative communities, as well as ecological systems and processes. MPAs can also assist in restoring the productivity of marine and coastal habitats, reduce further degradation and mitigate the impacts of climate change. In some cases, MPAs can also contribute to the socio-economic welfare of coastal communities. In recognition of the importance of the sustainable management and protection of marine and coastal ecosystems, the Convention on Biological Diversity (CBD) Strategic Action Plan for Biodiversity 2011-2020 encourages all signatory nations to ensure that “by 2020, 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas……” (Aichi Target 11).

Levels of marine biodiversity protection were raised as a key concern in South Africa’s first National Spatial Biodiversity Assessment (Driver *et al.* 2005). With a view to expanding the protected area estate of South Africa generally, the former Department of Environmental Affairs (DEA, now the Department of Environment, Forestry and Fisheries – DEFF) developed a National Protected Area Expansion Strategy (NPAES), approved in 2009 and revised in 2016, which highlighted the lack of offshore MPAs, especially areas zoned for no-take. The offshore expansion of South Africa’s MPA network was identified as a national priority and a collaborative five-year Offshore Marine Protected Area project was undertaken to support the identification of a network of potential offshore spatial management measures including MPAs. Using systematic conservation planning, ten priority focus areas were identified for offshore biodiversity protection (Sink *et al.* 2011).

In 2014, South Africa embarked on the Phakisa Oceans Economy initiative aimed at unlocking economic development in South Africa’s Oceans space. The Phakisa Oceans Economy Lab was a based on the Big Fast Results (BFR) methodology developed by the Malaysian government and adapted to the South Africa environment. Four potential growth areas were identified and prioritised during the Operation Phakisa LAB process. These were 1) Marine Transport and Manufacturing, 2) Oil and Gas, 3) Aquaculture and 4) Marine Protection and Governance Lab (MPG). The MPG lab focused on the need to develop an integrated ocean governance plan and concluded that in order to sustainably manage growth within the ocean environment, the conservation of marine ecosystems and biodiversity had to be considered through a representative network of marine protected areas. The offshore priority areas identified by Sink *et al.* (2011) provided the basis for a proposed expanded MPA network consisting of 21 mainly offshore MPAs, which, together with Addo Elephant National Park MPA (AENP MPA) that had already been submitted to the Minister for consideration, were gazetted for public comment in February 2016 (Operation Phakisa 2014; Government Gazette No. 39646 of 3 February 2016).

After stakeholder engagement and the public participation process, nineteen of the 21 proposed MPAs defined in the Operation Phakisa process, together with the AENP MPA, were finally declared on 23 May 2019, moving South Africa closer to the CBD Aichi 11 target of 10% marine protection. South Africa now has 42 MPAs, 41 within the ocean territory of mainland South Africa, and one very large MPA, the Prince Edwards Islands MPA declared in 2013, in the Southern Ocean territory. Approximately 5.4% of the ocean area around South Africa is now formally protected under MPA designation (Sink *et al.* 2019a).

The Amathole Offshore MPA in the Eastern Cape Province was one of the 20 MPAs proclaimed in May 2019. The MPA is made up of two polygons that extend from the shallow inshore across the continental shelf and slope to the lower bathyal zone at -2200 m. The MPA includes a canyon ecosystem, provides protection to a range of cold water coral species and several threatened ecosystem types in good condition (some of them previously unprotected) and it has high habitat and species biodiversity (Figure 1). The MPA is one of South Africa’s larger offshore MPAs with an area of 4210 km2. Parts of the Amathole Offshore MPA are contiguous with sections of the Amathole MPA, a coastal MPA which was proclaimed in 2011 under section 43 of Marine Living Resources Act 18 of 1998 (Government Gazette No. 34596 No. 730 of 16 September 20011) after extensive public participation and deliberation.

The Amathole MPA (hereafter referred to in this document as the Amathole Coastal MPA to distinguish it from the Amathole Offshore MPA) consists of three separate sections of between 12 and 30 km of coastline between the Kei River and Christmas Rock. The three sections are the Kei area, the Gonubie area and the Gxulu area and in each area the MPA extends from the high tide mark to 5.5 km offshore (Figure 1). The Amathole Coastal MPA originated from voluntary sanctuaries which Border angling clubs established around 1981 to protect inshore reefs from over-fishing. The initiative was supported by both commercial and recreational fishermen and the voluntary sanctuaries extended along the shoreline in much the same areas as the existing sections of the current Amathole Coastal MPA, but they extended only 2 kilometres seawards. Although the sanctuaries were not officially recognized by scientists and officials, reportedly because the sanctuaries were not supported by sufficient research, in 1984 Border area fishermen persuaded the Government authorities that the sanctuaries should be officially gazetted as closed areas. The restrictions on fishing allowed no boat-based fishing for 5.5 km from the shore, but recreational angling from the shore and intertidal invertebrate collection were permitted.

The closed areas of the Amathole Coastal MPA were not allocated any budget for research and policing so the Border Deepsea Angling Association, its associated clubs and the South African Police Service’s (SAPS) water wing enforced the fishing regulations related to boat based fishing in the closed areas. Data collected to evaluate the effectiveness of the closed areas appeared to indicate an increase in the numbers and biomass of key fish species, but the findings were not scientifically rigorous enough for publication. However, Government, scientists and the Border fishing clubs continued to motivate for formal protection of the three areas as MPAs and the Amathole MPA was eventually declared in 2011 under section 43 of Marine Living Resources Act 18 of 1998. Although there was very little detailed scientific data at the time of the declaration of the Amathole MPA, the proclamation had the full support of Border Deep Sea Angling Association and other stakeholders.

Both the Amathole Offshore MPA and the Amathole Coastal MPA fall within the Algoa to Amathole EBSA, previously partly included in the Offshore of Port Elizabeth EBSA recognized by the CBD Conference of the parties in 2014. Proposed revisions to the Offshore of Port Elizabeth EBSA include boundary changes and a division of the EBSA into the Kingklip Corals EBSA and the Algoa to Amathole EBSA. These proposed changes are currently under review (MARISMA Project 2020). The main justifications for the Algoa to Amathole EBSA, in terms of scientific criteria established by the CBD, are the Uniqueness and Rarity of the area (presence of rare ecosystems and surf diatom accumulations, canyon ecosystems and coelacanth habitats); the Special importance for life-history stages (a breeding and foraging area for African penguins and Cape gannets; spawning area for kingklip, squid, sparids, sardine, anchovy, kob and hake, nursery area for fish, mussels, sharks and lobsters and a transiting/foraging areas for seabirds, sharks, cetaceans); Importance for threatened  endangered or declining species and/or habitats (breeding and feeding area for African penguins and Cape gannets, includes 18 threatened ecosystem types); Biological productivity (chlorophyl fronts on the outer shelf, coastal upwelling possibly enhanced by Natal pulses); and Biological diversity (presence of 36 very varied ecosystem types; see Sink 2016; Sink *et al.*, 2019b; MARISMA Project 2020).

Pragmatism dictates that the Amathole Offshore MPA and the Amathole Coastal MPA should be managed as a single entity in the same way that the original Aliwal Shoal MPA has been incorporated in the new (2019) much larger Aliwal Shoal MPA. This Management Plan is designed to cover both elements of the protected ocean space in the Amathole region. In this document, for clarity, the Amathole MPA (2011) will be referred to as the **Amathole Coastal MPA** and the Amathole Offshore MPA (2019) will be referred to as the **Amathole Offshore MPA**. The combined area will be referred to as the **Amathole MPAs**.

It is a requirement of the National Environmental Management: Protected Areas Act (NEM:PAA, Section 39(2)) that each Protected Area has a management plan to guide the development and management of the area to meet the purpose for which it was declared. The purpose of the Amathole MPA Draft Management Plan developed below is to ensure that the Amathole MPA has clearly defined management objectives and proposed activities to direct the protection and sustainable use of its natural resources over a ten-year time horizon. The Draft Management Plan indicates where the MPA management authority should focus its efforts in the next ten years, providing a medium-term operational framework for the prioritized allocation of resources and capacity in the management, use and development of the MPA. The drafting of the Management Plan follows the Guidelines for Development of a Management Plan for a Protected Area in terms of NEM:PAA, and the Norms and Standards for the Management of Protected Areas in South Africa.

# Legal Status

The Amathole MPA was proclaimed on the 16 September 2011 in Notice 730 of Government Gazette34596, under section 43 of the Marine Living Resources Act (Act No. 18 of 1998). The Amathole Offshore MPA was proclaimed in 2019 in terms of section 22A of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003), in Notice 763 of Government Gazette 42478, in May 2019. This was after the Offshore MPA had been proposed and gazetted for public comment in February 2016 through Operation Phakisa (2014) and relevant public comments had been considered and incorporated where possible.

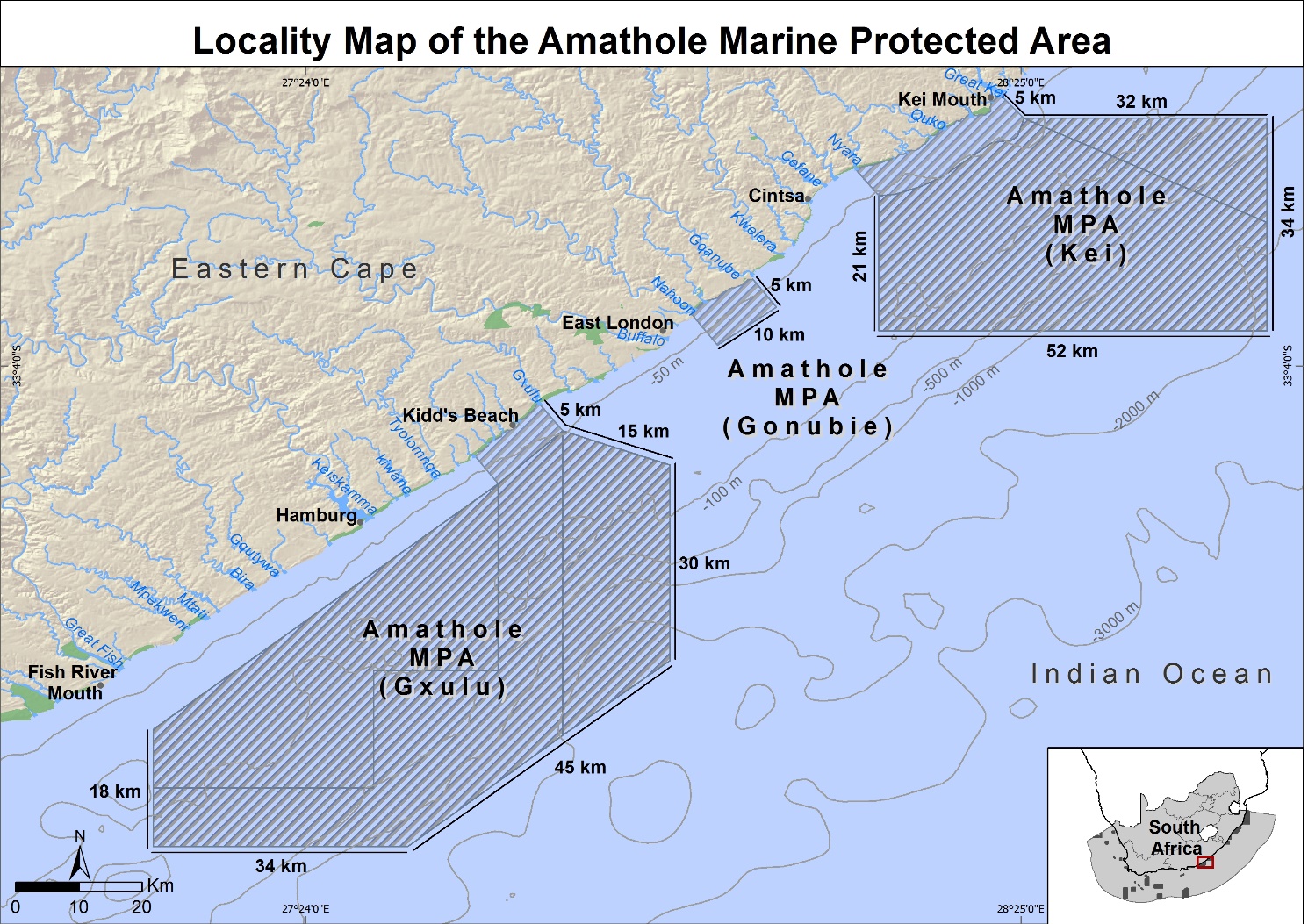
## Co-Management Agreement

Although the Amathole MPA has been in existence since 2011 there is currently no co-management arrangement with stakeholders. The Amathole Offshore MPA has only recently been declared and currently there are no co-management arrangements in place. Eastern Cape Parks and Tourism Agency recognises the need to develop future co-management arrangements with communities along the coast of the Amathole region in the Eastern Cape Province. Any future co-management arrangements will include stakeholders for both the Coastal and Offshore components of the Amathole MPAs.

## Location and total area

The Amathole Coastal MPA is located in three sections along the Amathole coast of the Eastern Cape Province to the north and south of East London. The northern section of the MPA (the Kei area) extends along the coast from the Kei River mouth to the Nyara River (+23 km, +115 km2). The central section (the Gonubie area) of the MPA extends from Gonubie Point to Nahoon Point (+10 km of coastline, +60 km2) and the southern section of the MPA (the Gxulu area) extends from the Gxulu River to Christmas Rock but excludes the Gxulu estuary (+14 km of coastline, +70 km2). All three sections of the Amathole Coastal MPA extend seawards for 5.5 km from the high water mark. The total area of the MPA is 245 km2 and the depth range is 0 m to about -80 m (Figure 1).

The Amathole Offshore MPA is made up of two polygons referred to as Amathole Offshore Kei in the north and Amathole Offshore Gxulu in the south. These areas are partly contiguous with the respective inshore Kei and Gxulu components of the Amathole Coastal MPA. The Amathole Offshore Gxulu polygon extends from roughly the latitude of the Ngqenga River to the latitude of the Great Fish River and the Amathole Offshore Kei polygon extends from the latitude of the Kei River to the latitude of Nahoon Point. Amathole Offshore Kei extends seawards for a maximum distance of almost 60 km from the shore while the furthest point offshore of Amathole Offshore Gxulu is 44 km. Both polygons extend from the outer edge of their respective Amathole Coastal MPA areas (-80 m depth) across the continental shelf and slope to the lower bathyal zone at -2200 m. The total area of the Amathole Offshore MPA is 4213 km2 (1740 km2 for Amathole Offshore Gxulu and 2473 km2 for Amathole Offshore Kei; Figure 1).



**Figure 1.** Location of the Amathole MPAs.

## Contractual Agreements

The management of the marine environment and its living resources is a national responsibility undertaken in the first place by the Minister of Forestry, Fisheries and the Environment who is mandated to give effect to Section 24 of the Constitution (a healthy environment, conserved and used sustainably). The Minister may delegate the management of the environment and protected areas to provincial or municipal authorities and with regard to the management of the both the Amathole MPA and the Amathole Offshore MPA, management is delegated to the Provincial Conservation Agency, Eastern Cape Parks and Tourism Agency (ECPTA) as per NEM:PAA section 38(1). ECPTA is responsible for biodiversity conservation and the management of nature conservation including protected areas within the Eastern Cape Province. The implementation of awareness and compliance as well the management plan will be the responsibility of ECPTA.

## Municipal Areas

The Amathole Coastal MPA is adjacent to the Buffalo City Metro (the coastal boundaries of the Metro are the Kwelera and Keiskamma Rivers) and the Great Kei Municipality (between the Kwelera River and the Great Kei River; Figure 1). The Great Kei Local Municipality falls under the Amathole District Municipality. The Amathole Offshore MPA has no municipal affiliations but is located offshore of the Great Kei Local Municipality and the Buffalo City Metro.

## International Listing

The offshore biodiversity significance of the Amathole region was recognised by Sink *et al.* (2011) and it was prioritized as a key area for the location of an offshore MPA. Its importance was underlined by the inclusion of the area in the revised Algoa to Amathole ecologically or biologically significant marine area (EBSA) that covers 19659 km2 of the shore, shelf, shelf edge, slope and canyons between the Kei River and Cape St Francis (Convention on Biological Diversity COP 12 2014; MARISMA Project 2020). The main justifications for the EBSA, in terms of scientific criteria established by the CBD, are the Uniqueness and Rarity of the area; the Special importance for life-history; Importance for threatened, endangered or declining species and/or habitats; Biological productivity; and Biological diversity (Sink 2016; Sink *et al.*, 2019b; MARISMA Project 2020). The original Algoa to Amathole EBSA (COP 12 2014) did not include significant biodiversity features of the area and the revised EBSA boundaries must be submitted to COP for approval.

# Policy Framework

International laws and agreements as well as National Acts and Policies underpin the proclamation of MPAs and direct the planning and operational management activities that occur within the MPA. Section 41 of the NEMA:PAA requires that management plans be located within the context of a Coordinated Policy Framework. The legislative instruments outlined below provide the policy framework for Management Planning in the marine environment.

## 3.1 Global Legal Instruments

* *The United Nations Law of the Sea* (*UNCLOS*) is a binding agreement which provides a comprehensive framework for the governance of the oceans and their resources. States have a general obligation to protect and preserve the marine environment. Coastal States can, with the consent of the International Maritime Organisation (IMO) and without hampering the freedom of navigation of foreign vessels, adopt special measures to reduce the risk of ship-based pollution in specific designated areas.
* *The International Convention for the Prevention of Pollution from Ships (1973)* and its 1978 Protocol together known as MARPOL 73/78, is the principal IMO treaty dealing with the threat of pollution from ships. In 1991 the IMO Assembly adopted Resolution A.720 (17), which allowed for the designation of *Particularly Sensitive Sea Areas* (PSSAs).
* *The Convention on Biological Diversity* requires States to establish a system of protected areas, to develop, guidelines for the selection, establishment and management of protected areas and to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. The Aichi target 11 states that at least 17% of terrestrial and inland waters and 10% of coastal and marine areas should be conserved by 2020 through a well-connected system of protected areas and other effective area-based conservation measures, which should be effectively and equitably managed, and ecologically representative
* The *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity* is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.
* South Africa is signatory to the *World Summit on Sustainable Development Plan of Implementation (2002)* and is thereby committed to establishing and implementing an ecosystem approach to fisheries (EAF) in the country by 2010.
* *The 2003 World Parks Congress* set specific goals as to the extent of effectively managed, representative networks of marine and coastal protected areas.
* *The 2014 World Parks Congress* where South Africa pledged in the “Promise of Sydney” to triple the oceans protection over the next ten years through the creation of a network of Marine Protected Area within its Exclusive Economic Zone.
* *The Agreement on the Conservation of Albatrosses and Petrels* which South Africa has ratified, places obligations on states to protect habitats that are important for the survival of these species.
* *The FAO Code of Conduct for Responsible Fisheries* is a voluntary instrument which sets international standards and behaviours for governments and other stakeholders to bring about responsible practices for the effective conservation, management and development of living aquatic resources.
* *The International Plan of Action to Prevent, Deter and Eliminate IUU Fishing* is a voluntary instrument that has been elaborated within the framework of the FAO Code of Conduct for Responsible Fisheries and provides a range of measures for combatting IUU fishing and promoting an integrated approach to address all impacts of IUU fishing.
* *The Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels* is a compilation of certified information on vessels involved in fishing operations, providing a tool with which to combat IUU fishing.
* *The Port State Measures Agreement*, to which South Africa is a signatory, includes all the internationally acceptable measures for port state control of fishing vessels in order to eliminate IUU fishing activities.
* *The African Integrated Maritime Strategy* includes a plan of action to address IUU fishing and reinforces the call for cooperation across states, Regional Economic Communities and Regional Fisheries Management Organisations.
* *The Convention on International Trade in endangered Species of Wild Fauna and Flora (CITES)* which in an international agreement between Governments which ensures that the trade in wild plants and animals does not threaten their survival

## 3.2 National legal instruments

The current legal framework that directs planning and operational management activities in MPAs is largely contained in the following legislation:

* *The Constitution of the Republic of South Africa Act, No. 108 of 1996*. Section 24 provides the right to every person for a non-harmful environment and simultaneously mandates the government to protect the environment.
* *The National Environmental Management Act, No. 107 of 1998* (amended 2013) is the statutory framework to enforce Section 24 of the Constitution. It provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment.
* *The National Environmental Management: Biodiversity Act, No. 10 of 2004* (amended 2014) provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act.
* *The National Environmental Management: Protected Areas Act, No. 57 of 2003* (amended 2014) provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity. MPAs are declared under the National Environmental Management: Protected Areas Amendment Act, 2014.
* *The Marine Living Resources Act, No. 18 of 1998* (amended 2014) provides for the conservation of the marine environment, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources.
* *The National Heritage Resources Act, No. 25 of 1999* ensures that the national heritage is conserved and protected.
* *The Sea Birds and Seals Protection Act, No. 46 of 1973* provides for the protection of sea birds and seals.
* *The National Environmental Management:* *Integrated Coastal Management Act, No. 24 of 2008* establishes a system of integrated coastal and estuarine management in South Africa which includes norms, standards and policies, in order to promote the conservation of the coastal environment.
* *The Minerals and Petroleum Resources Development Act No 28 of 2002* (amended 2008) makes provision for equitable access to, and sustainable development of, the nation's mineral and petroleum resources.
* *The National Protected Areas Expansion Strategy (2016)* seeks to achieve a representative and cost-effective protected area network.
* *The Disaster Management Act, No. 57 of 2002* provides for: an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters.
* *The Merchant Shipping Act, No. 57 of 1951* (as amended) provides for the control of merchant shipping and matters incidental thereto.
* *The Marine Traffic Act 2 of 1981* empowers the Minister of Transport to make regulations that regulate marine traffic in the territorial and internal waters of South Africa.
* *The Maritime Zones Act 15 of 1994* asserts South Africa’s right under the United Nations Law of the Sea Convention (LOSC) to a Territorial Sea (12 nautical miles from coast) and an Exclusive Economic Zone (EEZ) extending 200 nautical miles to sea from the coastal baselines.
* *The Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986* empowers the Minister of Transport to make regulations that give effect to the MARPOL 73/78 Convention.
* *The Marine Spatial Planning Act No. 16 of 2018* provides a framework for marine spatial planning in South Africa.
* *The Public Finance Management Act, 1999 (Act 1 of 1999)* establishes the duties and responsibilities of government officials in charge of finances with the aim of securing transparency, accountability and sound financial management in government and public institutions*.*
* *The Spatial Planning and Land Use Management Act (SPLUMA)* *16 of 2013* allows the Department of Rural Development and Land Reform (DRDLR) to pass regulations related to land development and land use.
* *The Local Government: Municipal Systems Act 32 of 2000* defines the legal nature of municipalities as part of a system of co-operative government.
* *The Intergovernmental Relations Framework Act (IGRF) 13 of 2005* establishes a framework for the elements of national, provincial and local government to interact.
* *The Bioprospecting, Access and Benefit Sharing (BABS) Regulations,* *2008* made under the National Environmental Management Biodiversity Act (NEMBA), Act 10 of 2004 regulates bioprospecting involving indigenous biological resources, the export of biological resources and provides for fair and equitable sharing by stakeholders in benefits arising from bioprospecting involving indigenous biological resources

## 3.3 Other legislation, plans and policies

* Integrated Development Plans (IDPs) for Buffalo City Metro and the Great Kei Municipality (2020/2021) provide strategic guidance on the projects, programmes and key initiatives that need to be undertaken to deliver on the Councils’ electoral mandate to govern the people of the Municipalities. The Spatial Development Framework (SDF) is a legally required component of any Municipality’s IDP and serves to guide and inform all decisions made by the Municipal Council on spatial development and land use management.
* Eastern Cape Provincial Growth and Development Strategy, 2004 – 2014 provides the strategic framework, sectoral strategies and programmes necessary to improve the quality of life for the poorest people of the Province.
* Eastern Cape Provincial Development Plan (2030) provides a clear long-term vision and agenda for growth and development of the Eastern Cape Province to improve the human conditions of the province.
* Draft Eastern Cape Environmental Management Bill (2019) seeks to rationalize, consolidate and reform the law regulating environmental management in the Province and harmonise provincial legislation with national legislation regulating protected areas, biodiversity, waste management and air quality.

# Consultation

The NEM:PAA Sections 31, 32 and 33 require the participation of civil society and other authorities in the governance of protected areas and thus once a Draft Management Plan has been developed, a formally constituted Amathole Stakeholder Forum under the chair of ECPTA, should be responsible for guiding the ongoing development, review, evaluation, and updating of the components of the MPA management plan. The stakeholder group that was assembled in 2014 during the Operation Phakisa Process prior to the declaration the Amathole Offshore MPA would need to be re-constituted and expanded to include coastal stakeholders before being formalised. The management agency will need to consult regularly with the formalised Amathole Stakeholder Forum to maintain an effective consultative management programme.

The following Terms and Conditions should apply to the formation and functioning of the Stakeholder Forum:

* The different stakeholder groups to be represented on the Forum should be clearly defined.
* The Stakeholder Forum should be structured to ensure that a platform is not created in which specific stakeholder interests are perceived to dominate the functioning of the Forum.
* The size of the Forum should be contained to a manageable size with representatives from each stakeholder group attending and reporting back to their respective members.
* Each stakeholder group representative should have a clear mandate to represent the interests of the stakeholders he/she represents and a mechanism to report back to their constituency
* The Amathole Forum should be formalised by the adoption of a constitution.
* DEFF/ECPTA should commit to actively providing administrative and logistical support in the functioning of the Stakeholder Forum
* The Forum should meet at least four times a year but more frequently when important issues arise

Based on previous consultation processes, the major stakeholders for the Amathole Coastal and Offshore MPAs and their immediate surrounds are:

* The Department of Environment, Forestry and Fisheries (DEFF), Branch Ocean and Coasts (OC) as the national management authority
* East Cape Parks and Tourism Agency as the delegated provincial management authority
* Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
* Buffalo City Municipality
* Great Kei Local Municipality
* Amathole District Municipality
* Local rate payers’ associations
* South African Police Service (SAPS) Marine Unit
* Border Undersea Club and Commercial Scuba Diver operations
* Recreational spearfishing sector
* Recreational ski-boat fishing sector
* Recreational shore angling sector
* Charter-boat fishing sector
* Commercial ski-boat fishing sector
* Small-scale fishing sector
* National Sea Rescue Institute (NSRI)
* Coastal conservancies
* South African National Biodiversity Institute
* Research organisations (e.g. Oceanographic Research Institute, Nelson Mandela University, SAEON, Rhodes University, SAIAB etc.)
* NGOs (e.g. Wild Oceans, WESSA)
* South African Squid Management Industrial Association
* South Coast Rock Lobster Industry Association
* Wild Coast Abalone Farm
* Whale watching and scenic tour operators
* Local community representatives

During the public participation process that preceded the gazetting and zonation of the Amathole Offshore MPA (Feb-May 2016), stakeholders raised several issues. These included:

* Overlap of the Gxulu Offshore section with petroleum and gas exploration rights
* Concerns by the South Coast Rock Lobster Association that the declaration of the MPA reduced their fishing grounds
* Border Deepsea Angling Association requested a controlled zone within the Kei area and clarity on inclusion in Gxulu controlled zone
* Design optimisation was recommended by scientists (SAEON, SAIAB, UCT)
* The small scale fishing sector requested that the MPA accommodate their sector

Problem issues were largely overcome through direct compromise with stakeholders. Other than these objections there was generally strong public support for the implementation and zonation of the Amathole Offshore MPA.

# Purpose and Vision

## Purpose of the Amathole Coastal MPA

The purpose for declaring the Amathole Coastal Marine Protected Area is:

(1) To protect and conserve the marine environment and marine biodiversity in the Amathole region

(2) To provide a sanctuary for species impacted by boat-based exploitation

(3) To provide benchmark areas for scientific research and monitoring aimed at the protection and conservation of biodiversity and ecosystems

(4) To control activities in the Marine Protected Area to reduce the risks of habitat degradation

(Government Gazette No. 34596 Notice No. 730, September 2011).

## Purpose of the Amathole Offshore MPA

The selection of the Amathole Offshore MPA was driven by the fact that it is an area of high benthic and pelagic habitat diversity and many habitat types are represented in a relatively small area. It includes several ecosystem types in good condition within the area that are not protected elsewhere, including sensitive canyon and cold water coral ecosystems.

The gazetted purposes of the Amathole Offshore MPA are:

*(a)* To contribute to a national, regional and global representative system of marine protected areas by conserving and protecting offshore benthic and pelagic ecosystems of the outer shelf and slope, comprising canyon, deep reef, cold water coral, sandy, gravel, mud, fluvial fan and pelagic habitats and including threatened ecosystem types

*(b)* to conserve and protect the ecological processes and ecologically sensitive biodiversity associated with these ecosystems, including threatened, overexploited and sensitive species such as seventy four, dageraad, red steenbras, white steenbras, dusky kob and wreckfish

*(c)* to support the recovery of linefish by protecting spawning, nursery, foraging, aggregation and refuge areas for overexploited species

*(d)* to facilitate species management and sustainable use of linefish and south coast rock lobster by supporting fisheries recovery and enhanced species abundance in fished areas

*(e)* to conserve and protect an area of life history importance for migratory species including seabirds, turtles, sharks, seabreams, wreckfish and other fish

*(f)* to support sustainable nature-based tourism opportunities in the area through the protection and management of marine wildlife, maritime heritage and cultural assets

*(g)* to protect and provide an appropriate reference environment for research and monitoring particularly with regard to habitat and fisheries recovery, habitat requirements of south coast rock lobster and climate resilience, and also to promote and contribute to environmental education.

(Government Gazette No. 42478, 23 May 2019)

## Draft Vision for the Amathole MPAs

To effectively manage the Amathole MPAs in a way that maintains the ecological integrity, unique biodiversity and conservation value, and the associated benefits of these ecosystems to people including their contribution to the sustainable management of key fisheries.

## Key Determining Factors

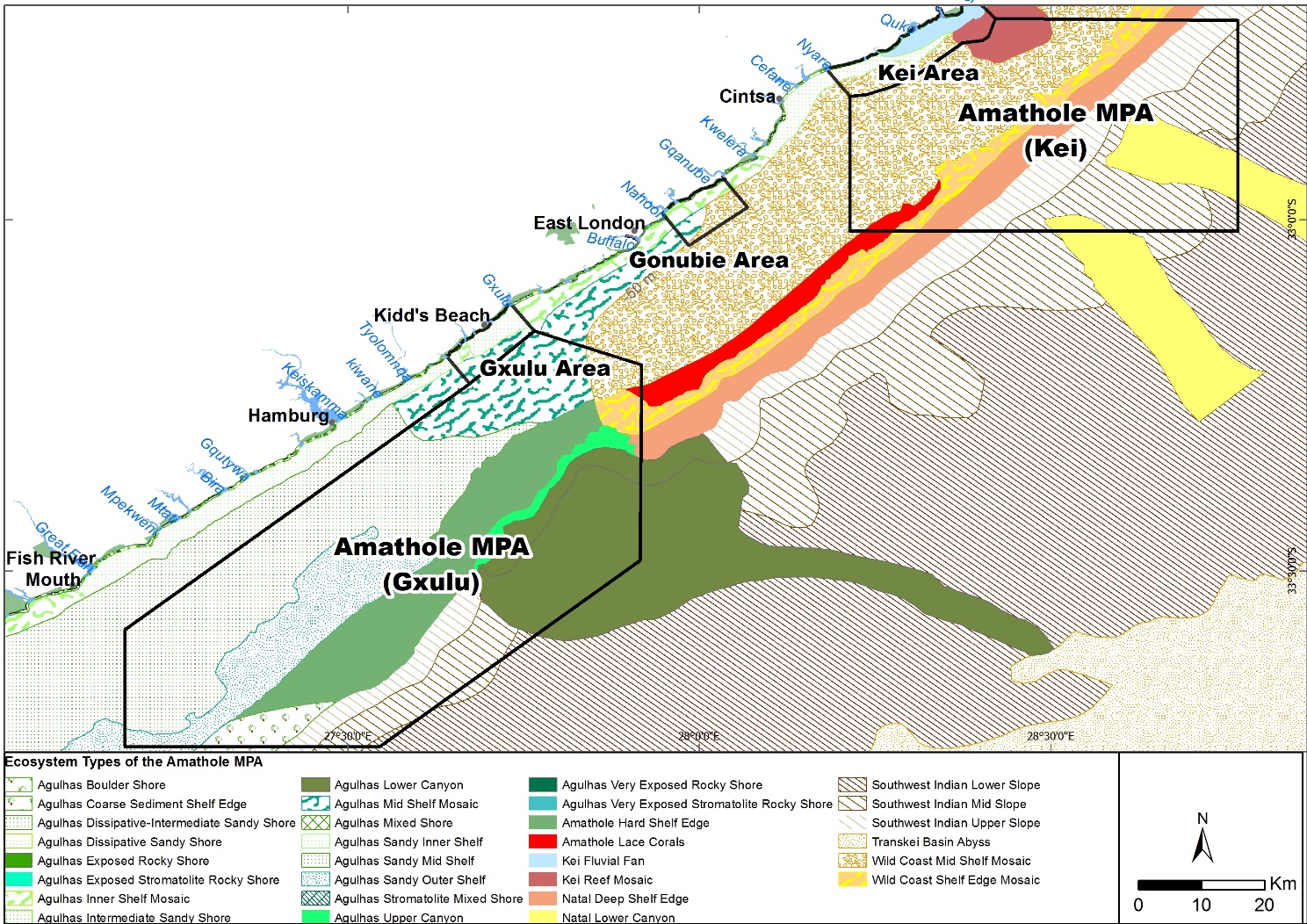
### Ecosystem types

The Amathole Coastal and Offshore MPAs are situated in the Agulhas Shelf ecoregion, one of four main shelf ecoregions described for South Africa (Sink *et al.* 2019b). The MPAs include 11 ecosystem types in the coastal area and 16 ecosystem types in the offshore area (Table 5.1; Figure 2). These include two endangered ecosystems types (Kei Fluvial Fan and Kei Reef Mosaic) and fifteen near threatened or vulnerable ecosystem types (Sink et al. 2019c). An overview of the ecosystem types that have been identified within the MPA is provided in Table 5.1.

**Table 5.1.** Overview of ecosystem types found in the Amathole MPAs (for specific descriptions of each ecosystem type see Sink *et al.* 2019a, b, c, d). EN = Endangered, LC = Least Concern, NT = Near Threatened, VU = Vulnerable

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Amathole Coastal**  **Marine Protected Area** | **Description.** | **NBA Threat Status** | **NBA Protection Level\*** | **Area Protected in this MPA (km2)** | **Total Extent (km2)** | **Percentage of ecosystem type protected in this MPA** |
| Agulhas Boulder Shore | Shore type characterised by boulders in the Agulhas ecoregion | NT | WP | 0,50 | 1,64 | 30,49% |
| Agulhas Dissipative Intermediate Sandy Shore | Fine grained, sloping sandy shore with moderately wide beach and surf zone in the Agulhas ecoregion | LC | WP | 0,39 | 116,45 | 0,33% |
| Agulhas Dissipative Sandy Shore | Fine-grained wide gently sloping sandy beach in the Agulhas ecoregion with a wide surf zone. | NT | WP | 0,20 | 25,15 | 0,81% |
| Agulhas Exposed Rocky Shore | Rocky shore type in the Agulhas ecoregion exposed to moderate wave intensity | VU | MP | 2,48 | 89,51 | 2,77% |
| Agulhas Exposed Stromatolite Rocky Shore | Rocky shore with structures formed by lithified cyanobacteria in the Agulhas ecoregion, exposed to moderate wave intensity | VU | PP | 0,15 | 8,29 | 1,82% |
| Agulhas Inner Shelf Mosaic | Mosaic seafloor and associated water column on the inner shelf in the Agulhas ecoregion. Extends from the back of the surf zone to fair weather wave base at -40 m | VU | MP | 24,80 | 1853,59 | 1,34% |
| Agulhas Intermediate Sandy Shore | Beach with medium grain size and moderate slope in the Agulhas ecoregion. Often with cusps on the shore and sandbars and rips in the surf | LC | MP | 0,096 | 14,45 | 0,66% |
| Agulhas Mid Shelf Mosaic | Mosaic reef and sand seafloor and associated water column in -40 to -100 m on the mid shelf in the Agulhas ecoregion | NT | MP | 37,81 | 3632,56 | 1,04% |
| Agulhas Mixed Shore | A shore with both rocky and sandy habitat in the Agulhas ecoregion | NT | MP | 7,22 | 188,08 | 3,84% |
| Agulhas Sandy Inner Shelf | Sandy seafloor and associated water column on the inner shelf in the Agulhas ecoregion extending from the back of the surf zone to the fair-weather wave base (approximately -40 m). | VU | MP | 53,61 | 521,55 | 10,28% |
| Agulhas Stromatolite Mixed Shore | A shore with both rocky and sandy habitat with lithified cyanobacteria structures in the Agulhas ecoregion | VU | MP | 0,15 | 8,36 | 1,80% |
| Agulhas Very Exposed Stromatolite Rocky Shore | Rare rocky shore type with structures formed by lithified cyanobacteria in the Agulhas ecoregion, exposed to high wave intensity | NT | MP | 0,18 | 1,26 | 14,66% |
| Kei Fluvial Fan | The shallow river influenced fluvial fan off the Kei river mouth. Mixed substrate beyond the surf zone and extending to the fair weather wave base (approximately -40 m). | EN | MP | 34,05 | 49,02 | 69,44% |
| Kei Reef Mosaic | High profile reef complex with coarse sediment, rhodoliths and gravel off the Kei River on the mid shelf in the southern part of the Natal ecoregion | EN | MP | 16,69 | 93,69 | 17,81% |
| Wild Coast Mid Shelf Mosaic | Mosaic seafloor and associated warm, moderate visibility pelagic habitat in -30 to -80/100m depth zone on the shelf from East London to Mngazi in the Natal Shelf ecoregion | LC | WP | 66,96 | 2385,89 | 2,81% |
|  |  |  |  |  |  |  |
| **Amathole Offshore**  **Marine Protected Area** | **Description.** | **NBA Threat Status** | **NBA Protection Level\*** | **Area Protected in this MPA (km2)** | **Total Extent (km2)** | **Percentage of ecosystem type protected in this MPA** |
| Agulhas Coarse Sediment Shelf Edge | Coarse sediment seafloor and associated pelagic habitat on shelf edge in the Agulhas ecoregion. High current environment -150 to -500 m | VU | PP | 66,40 | 3990,51 | 1,66% |
| Agulhas Lower Canyon | Slope component of canyons in the Southwest Indian ecoregion extending below -500 m | LC | MP | 396,53 | 1152,52 | 34,41% |
| Agulhas Mid Shelf Mosaic | Mosaic reef and sand seafloor and associated water column in -40 to -100 m on the mid shelf in the Agulhas ecoregion | NT | MP | 224,58 | 3632,56 | 6,18% |
| Agulhas Sandy Mid Shelf | Sandy seafloor and associated water column on the mid shelf in the Agulhas ecoregion (-40 to -100 m). | NT | MP | 730,11 | 20233,09 | 3,61% |
| Agulhas Sandy Outer Shelf | Sandy seafloor and associated pelagic habitat on the outer shelf in the Agulhas ecoregion (-100 to -150 m). | VU | PP | 324,44 | 7058,51 | 4,60% |
| Agulhas Upper Canyon | Shelf indenting component of canyons in the Agulhas ecoregion. Closely coupled benthic and pelagic habitats are a key feature of this ecosystem type | VU | WP | 54,71 | 101,99 | 53,64% |
| Amathole Hard Shelf Edge | Hard seafloor and coupled pelagic habitat on the steep shelf edge (-200 to -500 m) in the Amathole region of the Agulhas ecoregion. This ecosystem type is characterised by many octocorals (particularly *Anthomastis giganteus*), south coast rock lobster and windtoy *Spicara australis*. Water temperatures are cooler than adjacent areas to the north | VU | WP | 468,74 | 468,74 | 100,00% |
| Amathole Lace Corals | Lace coral gardens in -80 to - 200 m on the shelf edge in the Amathole region which is a transition area between the Agulhas and Natal ecoregions. This ecosystem is influenced by the strong flow of the Agulhas current and water is warmer and clearer than the adjacent Amathole hard shelf edge. *Anthomastus giganteus* is absent | NT | MP | 22,24 | 131,64 | 16,89% |
| Kei Reef Mosaic | High profile reef complex with coarse sediment, rhodoliths and gravel off the Kei River on the mid shelf in the southern part of the Natal ecoregion | EN | MP | 51,94 | 93,69 | 55,44% |
| Natal Deep Shelf Edge | Unknown seafloor habitat on the shelf edge of the southern part of the Natal ecoregion extending approximately between -200 and -500 m, between Durban and East London | LC | MP | 176,10 | 1377,22 | 12,79% |
| Natal Lower Canyon | Slope components of canyons in the southwest Indian ecoregion adjacent to the Natal ecoregion | LC | WP | 157,81 | 1481,39 | 10,65% |
| Southwest Indian Lower Slope | Unclassified seabed, -1801 to -3500 m in the Southwest Indian Deep Ocean ecoregion | LC | NP | 44,13 | 197988,10 | 0,02% |
| Southwest Indian Mid Slope | Unclassified seabed, -1000 to -1800 m in the Southwest Indian Deep Ocean ecoregion | LC | PP | 466,01 | 78270,72 | 0,60% |
| Southwest Indian Upper Slope | Unclassified seabed, -500 to -1000 m in the Southwest Indian Deep Ocean ecoregion | LC | WP | 345,16 | 17527,17 | 1,97% |
| Wild Coast Mid Shelf Mosaic | Mosaic seafloor and associated warm, moderate visibility pelagic habitat in -30 to -80/100m depth zone on the shelf from East London to Mngazi in the Natal Shelf ecoregion | LC | WP | 538,62 | 2385,89 | 22,58% |
| Wild Coast Shelf Edge Mosaic | Mosaic seafloor and associated warm high current pelagic habitat in -100 to -300 m depth zone on the shelf edge from East London to Port St Johns in the Natal Shelf ecoregion | LC | WP | 145,76 | 1435,24 | 10,16% |

\* PP = Poorly Protected, MP = Moderately Protected, WP = Well Protected



**Figure 2.** Marine ecosystems associated with the Coastal and Offshore Amathole MPAs**.**

### Physical oceanographic features

The Amathole MPA is situated on a relatively narrow part of the continental shelf (23 km wide) immediately before the continental shelf broadens dramatically south of Port Alfred and Port Elizabeth to form the Agulhas Bank on the south coast of South Africa. Thus, the oceanography of the region tends to be dominated by the powerful, southward flowing, Agulhas Current. The Agulhas Current is a well-defined western boundary current that follows the edge of the continental shelf, transporting over 8000 m3.sec-1 at speeds that sometimes exceed 7 km.h-1 (Lutjeharms 2006; Morris *et al.* 2017). Despite the fact that the Agulhas Current is considered to be very stable (Lutjeharms, 1996, Lutjeharms *et al.* 2000) there are often anomalies in its flow. Common features are the formation of cold-water eddies, intrusions of Agulhas water onto the shelf, large offshore meanders of the Agulhas Current and shelf edge upwelling which results in localised increases in productivity. Smaller pockets of colder water sometimes occur at the inner boundary of the Agulhas current producing a northward flow of water which plays an important role in facilitating the northward movement of sardines during the annual sardine run between the South East Coast and Durban (Roberts *et al.* 2010). These anomalous oceanographic features support key ecological processes (Harris 2012; Sink *et al.* 2011; MARISMA Project 2020). There is also a deep water Agulhas Undercurrent flowing northwards up the East Coast of southern Africa below the Agulhas Current (Beal and Bryden 1997).

The sea surface temperature in the main body of the Agulhas current is relatively constant (24 - 260C) but inshore sea surface temperatures are much cooler, ranging from 16 - 22°C with the highest temperatures recorded in summer (Jan-Feb) and the lowest during winter. Offshore the water clarity is normally good since the water is made up of warm, nutrient-poor Agulhas water. Inshore the water can be turbid, especially during the summer months following periods of heavy rainfall and discharge of sediment from the numerous rivers (and particularly the Kei, Buffalo and Fish Rivers) into the sea. During the summer months a thermocline often develops on the shelf inshore of the Agulhas Current and this thermocline moves further inshore (upwelling) following periods of strong north-easterly winds, resulting in decreased water temperature. The thermocline generally breaks down during the winter months with the regular passing of cold fronts and the associated strong south-westerly winds and large swell which result in downwelling and mixing of the water column.

### Bathymetry and Seafloor Characteristics

The depth of the three sections of the Amathole Coastal MPA ranges from 0 m in the inter-tidal zone to about -80 m. The depth of the Amathole Offshore MPA ranges from -40 m to -2200 m. The continental shelf north of East London narrows from 23 km to about 6 km off Port St Johns. South of East London the shelf widens slowly and at Port Alfred it is 37 km wide and thereafter it widens rapidly to about 80 km near Port Elizabeth.

The inner shelf is relatively narrow (<5 km wide) and is mainly rocky substrate covered by a thick sediment wedge that extends seawards off the major river mouths (Great Fish, Tyolomnqa, Buffalo, Nahoon, Gonubie and Kei). The sediment wedge extends up to 14 km offshore near the Kei River. There is a well developed incised drainage valley running across the northern half of this sediment wedge, from the mouth of the Great Kei River seawards, continuing onto the middle shelf area. In recent times poor agricultural practices and increased rates of erosion within the catchment area have greatly increased sediment loads flowing into the marine environment.

The middle shelf between the Kei and Fish Rivers is relatively flat and featureless and slopes gently. The outer shelf is relatively wide (up to 15 km), flat and featureless but includes hard outer shelf and shelf edge reefs (De Wet 2012; ACEP Imida Frontiers Project 2017).

The shelf is disrupted by an unknown submarine canyon that indents the outer shelf area roughly 32 km to the south of East London. The middle and outer shelf areas are mainly devoid of sediments because of the scouring effect of the Agulhas current on the shelf edge (De Wet 2012).

A single well defined shelf break occurs at a depth of -110 m offshore. The adjacent continental slope tends to steepen from East London northwards and steepens from upper slope to lower slope. The middle to lower continental slope has numerous slope indenting canyons that continue eastwards into the adjacent deep Transkei ocean basin (De Wet 2012).

The shores of the Amathole MPA are characterised by wave cut rocky platforms alternating with mainly fine- grained sandy beaches that extend offshore into the inner shelf region. Rocky reefs are found close to the shore, particularly off prominent headlands, and are mainly an extension of rocks found on land. The Amathole Coastal MPA is intersected by 13 estuaries which provide varying levels of terrigenous input to the marine environment. The sandy beaches consist of a surf zone, the beach, recently formed and mobile fore dunes and well developed secondary dunes.

### Key fauna

There was limited information regarding the fauna and flora of the Amathole region at the time of the declaration of the Amathole Coastal MPA. East London Museum had undertaken some unpublished research on intertidal organisms (M. Bursey EL Museum, *pers. comm*.) and the University of Cape Town together with the Seaweed Research Unit of DEFF have investigated the distribution of seaweed species along the coast (Bolton *et al.* 2004). More recently there have been some Environmental Impact Assessment specialist reports evaluating the impact of coastal developments on the inshore marine environment (Fielding 2018, 2020) but these are research reports focusing on limited areas of the coast.

The coastline of the MPA includes both rocky shores and sandy beaches as well as estuarine environments. Sandy shore fauna include subsurface benthic macrofauna (isopods, amphipods, ghost crabs (*Ocypode* spp.), plough snails (*Bullia* spp.), and numerous meiofaunal species in the sediment. A wide variety of seabirds such as kelp gulls (*Larus dominicanus*), white-fronted plovers (*Charadrius marginatus*) and swift terns (*Thalasseus bergii*) and black oystercatchers (*Haematopus moquini*)roost and forage on the shoreline.

Key rocky shore species include brown mussels (*Perna perna*), red-bait (*Pyura stolonifera*), Natal rock oysters (*Saccostrea cucullata*), barnacles (*Octomeris angulosa* and *Tetraclita serrata*) and periwinkles (*Afrolittorina spp.*), as well as a large variety of seaweeds (Phaeophyta, Rhodophyta and Chlorophyta). Intertidal limpet densities (upper shore *Siphonaria* and *Cellana spp*. and low shore *Scutellastra cochlear*) can be very high in some places and the tube worm *Gunnarea capensis* is a prominent space occupier in some areas. Rocky pools on the low shore contain a wide variety of organisms including many species of seaweeds, echinoderms, crabs, anemones and clinid fishes (Fielding 2018, 2020).

Shallow inshore subtidal reef systems are generally algal dominated communities but support a rich diversity of marine organisms. However, there is little formal documentation of these biota. There are still scattered shallow water abalone populations along the coast in the area between the Fish and Kei Rivers and abalone poaching is a common activity. Spiny lobsters (*Panulirus homarus*) are also present in small numbers. Octopus (*Octopus vulgaris*) and Cape oysters (*Striostrea margaritacea*) are other key shallow subtidal invertebrate fauna (Fielding *pers. obs*).

Further offshore, there are limited scientific data for the invertebrate biota of the Amathole region. There is a submarine canyon with three species of reef building cold water corals (*Goniocorella dumosa, Solenosmilia variabilis, unidentified Dendrophyllid*) recorded in the area (Sink *et al.*, 2011) and South Coast rock lobster (*Palinurus gilchristi*) occur in on the hard grounds on the inner and mid shelf. Squid (*Loligo reynaudii*) aggregate in dense spawning shoals in the southern part of the Amathole Offshore MPA.

Inshore, fish species such as strepie (*Sarpa salpa*), blacktail (*Diplodus capensis*), pinkies (*Pomadasys olivaceus*) and stone bream (*Neoscorpis lithophilus*) dominate the fish community in terms of abundance. However, key angling species such as shad (*Pomatomus saltatrix*), garrick (*Lichia amia*), dusky kob (*Argyrosomus japonicus*), Cape stumpnose (*Rhabdosargus holubi*) and spotted grunter (*Pomadasys commersonnii*) white steenbras (*Lithognathus lithognathus*), poenskop (*Cymatoceps nasutus*), white musselcracker (*Sparodon durbanensis*) and bronze bream (*Pachymetopon grande*) commonly occur in the inshore area. A wide range of shark and ray species is also present (Brouwer and Buxton 2002; Pradervand and Govender 2002).

Offshore, geelbek (*Atractoscion aequidens*), carpenter (*Argyrozona argyrozona*), hake (*Merluccius spp.*), yellowtail (*Seriola lalandi*) and panga (*Pterogymnus laniarius*), as well as reef-dwelling sparids like roman (*Chrysoblephus laticeps*), dageraad (C*hrysoblephus cristiceps*), red steenbras (*Petrus rupestris*), red stumpnose (*C. gibbiceps*), englishman (*Chrysoblephus anglicus*), false englishman (*C. lophus*) and black musselcracker (*Cymatoceps nasutus*), are targeted by commercial and recreational fishers. The area is a key habitat for several species of Endangered (EN) or Critically Endangered (CE) fish species on the IUCN Red List. These include species such as seventy-four (*Polysteganus undulosus*) dusky kob (*Argyrosomus japonicus*), Red steenbras (*Petrus rupestris*; Parker *et al.* 2016, Kerwath et al 2019, Sink *et al.* 2019b). Pelagic gamefish such as tuna (*Thunnus spp*.) and leervis/garrick (*Lichia amia*) are frequently encountered (Brouwer and Buxton 2002; Mann *et al.* 2003). Significantly, the first coelacanth known to science (*Latimeria chalumnae*), was caught by a trawler in 1938 in the Gxulu section of the Amathole Offshore MPA. Wreckfish (*Polyprion* sp.) are also are known to aggregate in the offshore area (ACEP Imida Frontiers Project 2017; MARISMA Project 2020).

The Algoa to Amathole EBSA as a whole is a transiting/foraging area for seabirds, sharks, cetaceans (e.g., Koper *et al.*, 2016; Melly *et al.*, in press), and turtles. Marine mammals like the Indian Ocean bottlenose dolphins (*Tursiops aduncus*) and the common dolphin (*Delphinus delphis*) are common in the MPA and migrating humpback whales (*Megaptera novaeangliae*) are frequently seen passing through the area during the winter months. During the annual sardine run (June-July) there is a large influx of gamefish species, copper sharks (*Carcharhinus brachyurus*), Cape gannets (*Morus capensis*), and common dolphins (*Delphinus delphis*). The EBSA also forms part of the migration routes of loggerhead and leatherback turtles (Harris *et al.*, 2018), with hatchlings of both species passing through the area during their dispersal. Green turtles, killer whales and coelocanths have also been sighted in the area (MARISMA Project 2020)

### Ecological Processes

Shelf edge upwelling and wind induced upwelling as a result of strong north easterly winds results in localised increases in productivity and this is an important feature of the Amathole Coastal and Offshore MPAs (see Physical oceanographic features). River discharge (particularly from the Kei and Fish Rivers) and the associated input of nutrients and sediments into the marine environment also contributes to high productivity in the area. Benthic pelagic coupling and terrestrial marine coupling is an important feature of the marine environment of the Amathole region Sink *et al* (2011).

The Algoa to Amathole EBSA as a whole is a transiting/foraging area for seabirds, sharks, cetaceans (e.g., Koper *et al.*, 2016; Melly *et al.*, in press), and turtles. Humpback whales (*Megaptera novaeangliae*) migrate through the area during the winter months. Hatchlings of both loggerhead and leatherback turtles pass through the area during their dispersal. This area forms key feeding grounds for the critically endangered Tristan Albatross (*Diomedea dabbenena*) and the vulnerable White-chinned Petrel (*Procellaria aequinoctialis*). This area is also important as a nursery area for sharks (MARISMA Project 2020).

The annual winter sardine run is a key feature of the Eastern Cape coastal ecology. Shoals of sardines leave the Agulhas Bank and migrate northwards up the east coast in the autumn and early winter to spawn in the waters of KwaZulu-Natal, generally making use of an inshore counter current. The sardine run is linked to both feeding and spawning migrations of many larger gamefish species, sharks, dolphins and seabirds as well as the shad (*Pomatomus saltatrix;* Fennessy *et al.* 2010). The event serves to move production from the south coast of South Africa to the east coast.

The waves and inshore currents play an important role in the long-shore scouring and deposition of sediment on the Amathole coast. Generally, storm events and big seas erode beaches in winter and the smaller waves of the summer season promotes the deposition of sand back onto the beaches. Strong summer north easterly winds also result in large scale sand movement on and off beaches. Large rivers such as the Nahoon and Kei contribute to the deposition of alluvial sediment.

### Potential climate change impacts

Changes in sea level, temperature, wind patterns, current speed, precipitation, and CO2 concentrations are all recognized components of climate change, and the rate of change of each of these variables will not be uniform across biogeographic zones (Potts *et al.* 2015). it is predicted that with warming, the Agulhas Current will get stronger along the east coast and will move further offshore with associated impacts on shelf ecosystems and ecological processes such as fish spawning (Morris *et al.* 2017). Climate change is also predicted to alter precipitation patterns, which will affect the quality, rate, magnitude, and timing of freshwater delivery to rivers and the marine environment and will potentially exacerbate existing human modifications of these flows (James *et al.* 2013). The predicted increase in the frequency of extreme weather events, together with sea level rise, may result in a loss of coastal habitats such as estuaries which will ultimately affect estuarine fish communities and have implications for fisheries targeting estuary-associated species (James *et al.* 2013). Given the the broad range of climate change impacts and life history styles of coastal fishes, the predicted impacts of climate change on fishes will be diverse and thus difficult to predict (Potts *et al.* 2015). Clearly, an integrated, interdisciplinary research approach to predict biological and ecological responses to climate change is required. Networks of MPAs are increasingly being shown to be extremely important in maintaining resilience of biological communities and allowing adaptation to climate-related changes (Roberts *et al.* 2017, Bates *et al.* 2019).

## d. Strengths, Weaknesses, Opportunities and Threats

A draft SWOT assessment has been used to help guide the development of the Management Plan and the focus of the themes, objectives, activities and indicator deliverables for the Amathole MPA.Management Objectives.

|  |
| --- |
| **STRENGTHS** |
| * Protects several habitat types that are currently unprotected and exposed to trawling in most other areas * Protects sensitive reef, canyon and cold water coral ecosystems * Provides protection to rich marine biodiversity including species, habitats and processes * Contributes to fisheries management and rebuilding of overexploited fish stocks * Popular angling coastline * Scenic area with high ecotourism potential * Helps to reduce user conflict between competing sectors * Provides resilience in the face of climate change * Strong support from some stakeholders * Includes maritime, paleontological and cultural assets – first record of coelacanth |
| **WEAKNESSES** |
| * Limited capacity of ECPTA to enforce MPA regulations – staff and patrol platforms * Limited knowledge of bathymetry, deep water coral distribution and ecosystems * Lack of compliance by some stakeholders erodes MPA effectiveness * Lack of cooperation with and between stakeholders to improve management * Lack of vision to see and market opportunities created by the MPA * Limited research and monitoring being undertaken in the MPA * Lack of clear communication about the role of the MPA to stakeholders and the wider community * Environmental monitoring for offshore environments is difficult and expensive |
| **OPPORTUNITIES** |
| * Potential for improved collaboration between management authorities and stakeholders to work towards a well-managed MPA * Potential for fish populations to recover and seed adjacent fished areas * The MPA provides important opportunities for increased tourism, future research, monitoring and environmental education * Excellent opportunities for education because of the close proximity to many schools * Potential to co-opt offshore fishing associations to assist with compliance monitoring |
| **THREATS** |
| * Lack of political will to implement the management plan * No clear accountability amongst management authorities * Negative perceptions amongst stakeholders about the MPA and MPA management authority * Potential impacts from the oil and gas industry offshore * Lack of compliance and continued overfishing leading to further decline in fish stocks * Lack of cooperation between stakeholders leading to greater user conflict * Impacts of climate change including increased sea level, increased temperatures, more extreme weather events, etc. * Potential damming of the major rivers leading to reduced riverine input and loss of mud habitat |

## Proposed Management Principles

The following principles underpin the management activities of the Amathole MPA as it moves towards realising its vision. These principles are reflected in the goals, objectives and activities described for each of the Key Management Themes detailed below which are designed to achieve compliance with the Norms and Standards for Protected Area Management. It is important to note that while these principles are intended to guide the management of the MPA, management is also subject to the principles and provisions of relevant international treaties and conventions, national legislation and policy, and any local contractual agreements.

* *Adaptive management:*An adaptive management approach will be adopted in the implementation of the Amathole MPA in that the objectives and activities of the Management Plan will be constantly adapted to achieve greater conservation impact.
* *Ecosystem based approach***:** An ecosystem-based application that includes a multisectoral and multidisciplinary approach to the assessment and management of coastal and marine resources will underpin the management of the Amathole MPA.
* *Prioritisation:*The focus of the Amathole MPA Management Plan must be on the realistic attainment of specific objectives in line with national and regional priorities.
* *Consultation, Cooperation and Participation:*The Amathole MPA Management Plan will seek to work co-operatively and in partnership with all stakeholders, to avoid and resolve potential conflicts; to protect marine resources and values; and to address mutual interests. Decision-making processes must be inclusive, fair and transparent, and subject to clear and consistent rules and procedures.
* *Transparency***:** The development and implementation of the Amathole MPA Management Plan will be undertaken in a transparent manner.
* *Accountability***:** The implementation of the Amathole Management Plan will seek to ensure that management activities are carried out efficiently and effectively, costs are controlled, and activities carried out in compliance with applicable national and international laws.
* *Diligence***:** The staff involved in the implementation of the Amathole MPA Management Plan will provide a dedicated service with full commitment in line with the objectives of the MPA.
* *Capacity*:The agency responsible for the management of the Amathole MPA (ECPTA) will seek to ensure that the implementation of Management Plan is adequately resourced to meet its objectives.
* *Empowerment:* The implementation of the Amathole MPA Management Plan will seek to empower staff and stakeholders involved in management activities by promoting capacity building.

## Management Objectives

The aim of the Management Objectives Framework is to break down the high-level purpose statements for the MPA into lower level achievable management objectives. The purposes of the Amathole Coastal and Offshore MPAs as defined in the Declaration Notices (No. 747 of Government Gazette 34596 of 16 September 2011 and No. 759 of Government Gazette No. 42478, 23 May 2019), are outlined in Section 5a and 5b. These purpose statements were taken into account in identifying Key Management Themes for the combined Amathole MPA (Coastal) and Amathole Offshore MPA Management Plan (collectively referred to as the Amathole MPAs) and developing associated Goals and Objectives.

The following **Key Management Themes** frame the management of the Amathole MPAs for the next ten years. A Key Management Theme is a priority area of management action for the MPA. Each Key Management Theme has a **Goal**. To achieve the Goal of each Key Management Theme a series of **Management Objectives** are defined. Each Management Objective will be achieved by undertaking a set of **Actions** within certain time frames. These actions are described for a 10-year timeframe and are linked to measurable *deliverables, indicators* and/or *targets* that help demonstrate the achievement of the action or objective.

The way in which each Theme and its Goal helps to achieve the purposes of the MPA is outlined in the Strategic Plan (Section 10). The Key Management Themes and Objectives were developed based on international best practice in protected area management and an evaluation of existing national protected area management plans developed by the various conservation agencies in South Africa.

| **Management Objectives Framework** | |
| --- | --- |
| **KEY MANAGEMENT THEMES** | **MANAGEMENT OBJECTIVES** |
| **Theme 1:**  **Governance**  **Goal: To ensure effective governance and management of the MPAs, in adherence with management principles.**  **(Purpose 1, 2, 3 a-h)** | * 1. To establish and ensure the on-going involvement of a representative and functional MPA Stakeholder Forum to participate in and help with the management of the Amathole MPAs   2. To reduce conflict among stakeholders of the Amathole MPAs   3. To ensure sufficient and effective staff capacity to achieve management objectives   4. To improve management effectiveness through appropriate monitoring and evaluation   5. To adopt an ecosystem approach to management of the MPAs |
| **Theme 2:**  **Biodiversity and Conservation**  **Goal: To conserve and protect the ecosystems, ecological processes and biodiversity of the Amathole MPAs.**  **(Purpose 1,2 a-b)** | 2.1 To conserve and manage the ecosystems and ecological processes in the Amathole MPAs to ensure their long-term persistence  2.2 To protect and restore populations of vulnerable, depleted, threatened, rare, and endemic species  2.3 To contribute to the recovery and long-term viability of economically and recreationally important fisheries by providing refuges for exploited species and through enhancing resource abundance in adjacent exploited areas  2.4 To facilitate species management by protecting areas of importance for migratory species including turtles, sharks, seabirds and a range of fish species |
| **Theme 3:**  **Socio-economic benefits - Natural Resource use, Recreation, Tourism, Heritage and Culture**  **Goal: To ensure sustainable social and economic benefits from the Amathole MPAs**  **(Purpose 4, f)** | 3.1 To allow for controlled resource use in a manner and in areas permitted by the regulations in a way that does not compromise the biological integrity of the MPA  3.2 To promote and support the Amathole MPAs as a key eco-tourism destination in the Eastern Cape  3.3 To support food and job security for fishers and to maintain opportunities for recreational fisheries in the long term |
| **Theme 4: Compliance and Enforcement**  **Goal: To ensure adherence to the regulations of the Amathole MPAs**  **(Purpose 1-4, a-g)** | 4.1 To develop, implement and maintain effective enforcement and awareness that minimizes illegal activities and negative impacts in the MPA and deters transgressors  4.2 To promote compliance among stakeholders and resource users within and adjacent to the MPA |
| **Theme 5:**  **Disaster Management**  **Goal: To provide for the safety of the biodiversity and human elements, and the continued functioning of the ecological processes of the MPA in the face of any environmental crisis**  **(Purpose 1-4, a-g)** | 5.1 To establish and maintain an effective disaster management plan to minimise risk of pollution and other disaster events in the MPA and its vicinity and provide for the persistence of the biodiversity, human elements and ecological processes of the MPA in the event of an environmental crisis |
| **Theme 6:**  **Planning**  **Goal: To integrate the management of the MPA with external developments, processes and impacts to ensure that the MPA objectives are not compromised**  **(Purpose 1-4, a-g)** | 6.1 To co-operate with relevant international and national government structures, industries, NGOs, municipalities and communities insofar as their activities affect the MPA and to keep track of issues affecting the MPA and its proximity to ensure functional ecosystems are protected and the objectives of the MPA are achieved.  6.2 To develop and implement a zone of influence policy for the MPA |
| **Theme 7:**  **Engagement, Education and Public awareness**  **Goal: To engage resource users, stakeholders and the general public on the attributes, functions and benefits of the MPA including its contribution(s) to marine conservation and sustainable use**  **(Purpose g)** | 7.1 To raise the profile of the Amathole MPAs and to increase appreciation of the attributes, functions, social and economic benefits, including the contribution(s) to marine conservation, sustainable use and social and economic benefits, with a focus on improving voluntary compliance with regulations |
| **Theme 8:**  **Monitoring, Research and Information management**  **Goal:** **To realise the potential of the Amathole MPA for enhancing scientific knowledge and increasing the evidence base to inform wise ecosystem-based management**  **Purpose 3, g)** | 8.1 To support research and monitoring that increases understanding of the ecosystems, biodiversity and benefits of the MPA, including research on linefish stocks and the effectiveness of MPA zonation  8.2 To develop and maintain a monitoring programme that provides managers with accurate and timely information on the state of the MPA, the potential threats to achieving the MPA objectives, and which provides scientific reference points for management of ecosystems  8.3 To collate and adequately manage data and information on the MPA, ensuring ease of access to support research and management decisions |

# Boundaries, Zoning and Regulations

## Boundaries

**Amathole Coastal MPA** consists of three sections that extend 5.5 km offshore from the highwater mark. Coordinates are listed in Table 6.1 and see Figure 3.

1. The Gxulu area encompasses the sea (excluding any estuary) enclosed by sequentially joining coordinates 1, 2, 3 and 4 (Table 6.1), with the line joining coordinate 1 (Christmas Rock) and coordinate 4 (Gxulu River Mouth) located along the high tide mark (Figure 3).

2. The Gonubie area encompasses the sea (excluding any estuary) enclosed by sequentially joining coordinates 5, 6, 7 and 8 (Table 6.1) with the line joining coordinate 5 (Nahoon Point) and coordinate 8 (Gonubie Point) located along the high tide mark (Figure 2).

3. The Kei area encompasses the sea and shoreline (excluding any estuary) enclosed by sequentially joining coordinates 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18 (Table 2) with the line joining coordinate 9 (Nyara River) and coordinate 18 (Kei River) located along the high tide mark (Figure 2).

All three areas include the substrata, seabed, subsoil and water column within these boundaries.

**The Amathole Offshore MPA** consists of two sections located offshore between the mouth of the Kei River and Port Alfred. Coordinates are listed in Table 3 and see Figure 3.

1. The Offshore Kei area comprises of straight lines sequentially joining the following coordinates: A, B, C, D, E, F, G, H, I, J and K, joining along the existing boundary of the Amathole Marine Protected Area (Figure 2).

2. The offshore Gxulu area comprises of straight lines sequentially joining the following coordinates: L, M, N, O, P, Q and R, with the first and last point joining the existing inshore Gxulu area of the existing Amathole Marine Protected Area (Figure 2).

The two areas include the substrata, seabed, subsoil and water column within these boundaries.

## Zoning

The primary objective of the MPA zoning plan is to co-ordinate conservation, tourism, and commercial and recreational resource use initiatives and activities to ensure that they can continue with a minimum of conflict and without compromising the MPA’s objectives. The areas of Kei Mouth and Chintsa East are identified in the Great Kei Municipality IDP as major coastal resorts and settlement foci, and have considerable tourism potential. However, an upgrade in infrastructure is required to support development. The Buffalo City Metro has identified the need to improve tourism infrastructure related to beaches, the improvement of sanitation services and road infrastructure, the renewal of the Central East London Urban Area and the prioritization of the West Bank as a large scale urbanization area as key development issues. Clearly, such developments and increases in tourism will impact on both the Coastal and Offshore components of the Amathole MPAs and MPA management should actively participate in the development of municipal IDPs and SDFs in the region in order to integrate marine and terrestrial spatial planning and management.

All three sections of the Amathole Coastal MPA are zoned as Controlled Zones. The two sections of the Amathole Offshore MPA are zoned as Controlled and Restricted Zones with an additional Controlled Pelagic Line Fishing Zone in the Gxulu Offshore sector of the MPA. The relevant GPS coordinates are provided in Tables 6.1 and 6.2. The conservation objectives and regulations relating to the Coastal and Offshore zoning plans are provided below.

## a. Inshore (Coastal) Zonation

(1) **Gxulu Inshore Controlled Zone** is the area defined as the Gxulu area under the Amathole Coastal MPA boundaries below (Table 2; Figure 3).

(2) **Gonubie Inshore Controlled Zone** is the area defined as the Gonubie area under the Amathole Coastal MPA boundaries below (Table 2; Figure 3).

(3) **Kei Inshore Controlled Zone** is the area defined as the Kei area under Amathole Coastal MPA boundaries below (Table 2; Figure 3).

Shore based line fishing, spearfishing and invertebrate collecting are allowed in the Inshore Controlled Zones but no boat based fishing activities of any kind are permitted. The objective is to provide a refuge area for both demersal and pelagic fish species to grow and reproduce with the intent that both reproductive products and excess biomass enhances resource abundance in fished areas.

**Table 6.1**. Geo-reference coordinates for the boundaries of the three sections of the Amathole Coastal MPA (Decimal degrees).

|  |  |  |  |
| --- | --- | --- | --- |
| **Area** | **Point** | **Latitude** | **Longitude** |
| **Gxulu Area** | | | |
| Amathole Coastal MPA  Christmas Rock | 1 | -33.19267 | 27.64377 |
| Amathole Coastal MPA  Offshore Christmas Rock | 2 | -33.23363 | 27.67370 |
| Amathole Coastal MPA  Offshore Gxulu River M. | 3 | -33.15855 | 27.76522 |
| Amathole Coastal MPA  Gxulu River Mouth | 4 | -33.11908 | 27.73155 |
| **Gonubie Area** | | | |
| Amathole Offshore MPA  Nahoon Point | 5 | -32.99630 | 27.95160 |
| Amathole Coastal MPA  Offshore Nahoon Point | 6 | -33.03688 | 27.98532 |
| Amathole Coastal MPA  Offshore Gonubie Point | 7 | -32.98258 | 28.06875 |
| Amathole Coastal MPA  Gonubie Point | 8 | -32.94142 | 28.03533 |
| **Kei Area** | | | |
| Amathole Coastal MPA  Nyara River | 9 | -32.78333 | 28.18138 |
| Amathole Coastal MPA  Offshore Nyara River | 10 | -32.82440 | 28.21462 |
| Amathole Coastal MPA  Offshore | 11 | -32.82220 | 28.23742 |
| Amathole Coastal MPA  Offshore | 12 | -32.81132 | 28.27282 |
| Amathole Coastal MPA  Offshore | 13 | -32.79678 | 28.30558 |
| Amathole Coastal MPA  Offshore | 14 | -32.74875 | 28.37478 |
| Amathole Coastal MPA Offshore | 15 | -32.74492 | 28.40333 |
| Amathole Coastal MPA  Offshore | 16 | -32.73967 | 28.41152 |
| Amathole Coastal MPA  Offshore Kei River | 17 | -32.71388 | 28.42110 |
| Amathole Coastal MPA  Kei Mouth | 18 | -32.68027 | 28.38655 |

## b. Offshore Zonation

(1) **Kei Offshore Restricted Zone (KORZ)** comprises the north eastern portion of the Amathole Offshore MPA and is defined as the area within straight lines sequentially joining the points: A, S, C, D, E, F, G, H, I, J, K and joining the first co-ordinate to the last (Table 6.2; Figure 3).

(2) **Kei Offshore Controlled Zone (KOCZ)** comprises the northern portion of the Amathole Offshore MPA and is defined as the area within straight lines sequentially joining the points A, B, S, and joining the first co-ordinate to the last (Table 6.2; Figure 3).

(3) **Gxulu Offshore Restricted Zone (GORZ)** is the furthest offshore section of the Gxulu portion of the Amathole Offshore MPA within straight lines sequentially joining the points: R, L, T, O, P, U, V, W, X and joining the first co-ordinate to the last (Table 6.2; Figure 3).

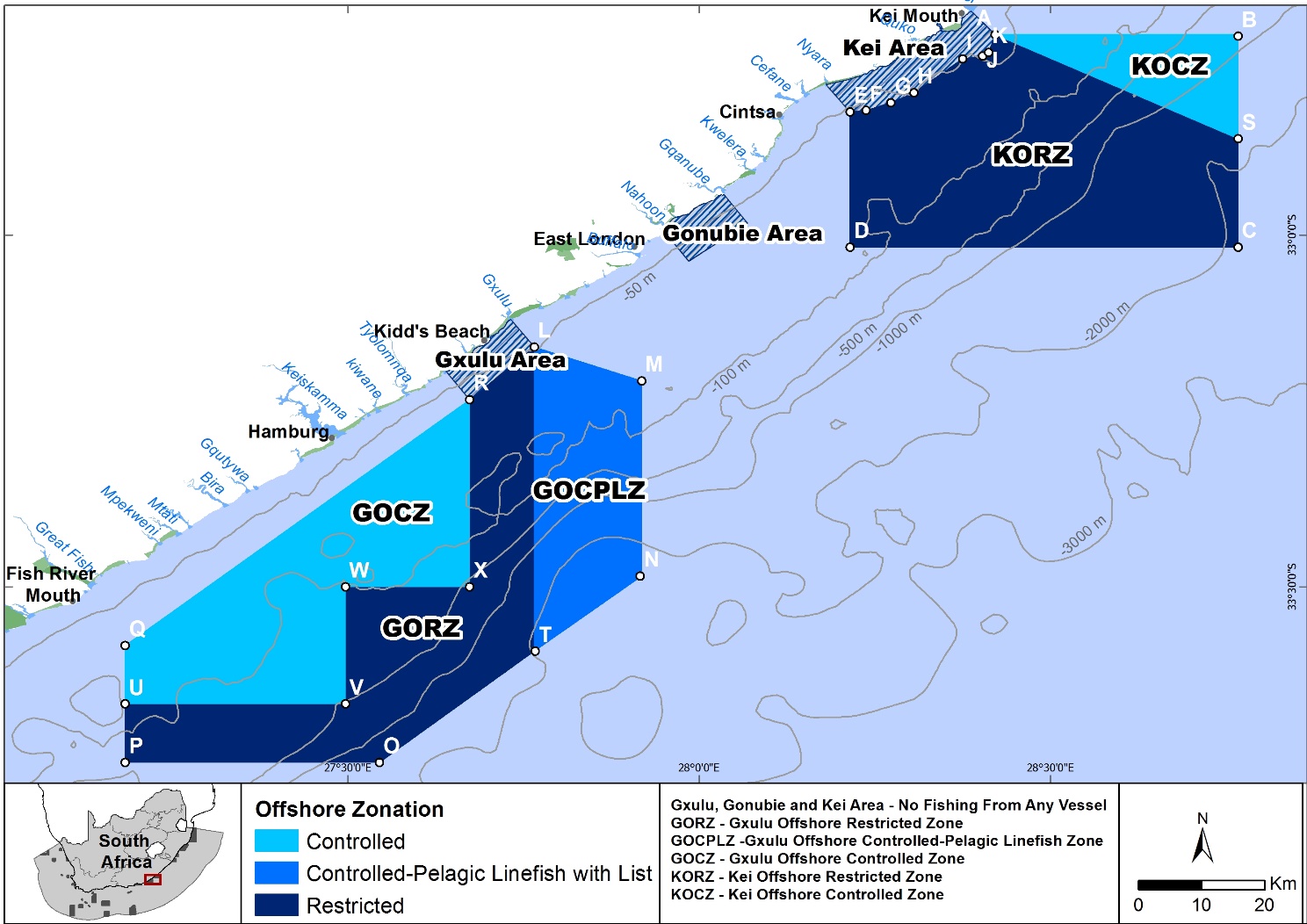
(4) **Gxulu Offshore Controlled Zone (GOCZ)** comprises the inner area of the Gxulu portion of the Amathole Offshore MPA within straight lines sequentially joining the points: R, X, W, V, U, Q and joining the first co-ordinate to the last (Table 6.2; Figure 3).

(5) **Gxulu Offshore Controlled-Pelagic Linefish Zone (GOCPLZ)** comprises the northern area of the Gxulu portion of the Amathole Offshore MPA within straight lines sequentially joining the following points: L, M, N, T and joining the first co-ordinate to the last (Table 6.2; Figure 3).

The controlled zones within the Amathole Offshore MPA allow only recreational and commercial line-fishing, except that South Coast rock lobster (trap fishing) may also be caught in the Gxulu Controlled Zone. No night fishing is allowed in the MPA. Only specified pelagic species may be caught in the Gxulu Offshore Controlled Pelagic Zone (see Appendix 1). The objective is to conserve sensitive ecosystems and ecological processes and provide a refuge for over-exploited linefish species with a view to sustainable management of linefish.

**Table.6.2.** Geo-reference coordinates for the boundaries and zoning of the Amathole Offshore MPA (Decimal degrees).

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Point** | **Latitude** | **Longitude** |
| Amathole Offshore MPA | A | -32.713883 | 28.4211 |
| Amathole Offshore MPA | B | -32.713883 | 28.7667 |
| Amathole Offshore MPA | C | -33.016667 | 28.7667 |
| Amathole Offshore MPA | D | -33.016667 | 28.2146 |
| Amathole Offshore MPA | E | -32.8244 | 28.2146 |
| Amathole Offshore MPA | F | -32.8222 | 28.237417 |
| Amathole Offshore MPA | G | -32.811317 | 28.272817 |
| Amathole Offshore MPA | H | -32.796783 | 28.305583 |
| Amathole Offshore MPA | I | -32.74875 | 28.374783 |
| Amathole Offshore MPA | J | -32.744917 | 28.403333 |
| Amathole Offshore MPA | K | -32.739667 | 28.411517 |
| Amathole Offshore MPA | L | -33.15855 | 27.7652 |
| Amathole Offshore MPA | M | -33.207081 | 27.918 |
| Amathole Offshore MPA | N | -33.484873 | 27.918 |
| Amathole Offshore MPA | O | -33.75 | 27.545 |
| Amathole Offshore MPA | P | -33.75 | 27.1833 |
| Amathole Offshore MPA | Q | -33.583333 | 27.1833 |
| Amathole Offshore MPA | R | -33.233633 | 27.6737 |
| Amathole Offshore MPA | S | -32.862554 | 28.7667 |
| Amathole Offshore MPA | T | -33.59174 | 27.7652 |
| Amathole Offshore MPA | U | -33.666741 | 27.1833 |
| Amathole Offshore MPA | V | -33.666741 | 27.4967 |
| Amathole Offshore MPA | W | -33.5 | 27.4967 |
| Amathole Offshore MPA | X | -33.5 | 27.6737 |



**Figure 3.** Boundaries and zonation of the Amathole MPAs

## c. Regulations

### Inshore

The Amathole Coastal MPA is zoned for multiple use and within the three areas of the MPA (i.e. the Gxulu, Gonubie and Kei areas) shore based fishing activities and invertebrate collection for food or bait are permitted in terms of the Marine Living Resources Act (Act No. 18 of 1998) and the regulations thereunder. No boat based fishing of any kind is allowed, no spearfisher may use any floatation device to extend swimming range and no shore based angler may use any device to extend casting distance. The regulations are contained in Government Gazette No. 34596 of 2011 (No. 731; 16 September 2011). The regulations applicable to vessels traversing any section of the MPA are the same as those for the Amathole Offshore MPA (see below).

### Offshore

The Amathole Offshore MPA is also zoned for multiple use and allows line-fishing in the Controlled Zones, fishing for specified species in the Pelagic Linefish Controlled Zone and only non-extractive resource use in the Restricted Zones. Apart from trap fishing for South Coast rock lobster in the Gxulu Controlled Zone, no industrial fishing like trawling, longlining or purse seine fishing, and no mining or oil and gas exploration may occur anywhere within the boundaries of the Amathole Coastal and Offshore MPAs. The regulations for the Amathole Offshore MPA are contained in Government Gazette No. 42479 of 2019 (No. 778). Readers of this Management Plan are encouraged to carefully study the MPA regulations. A summary of some of the main points contained in the regulations are provided here.

Any vessel used in the Amathole MPAs (except paddle craft) must be registered and the skipper must be qualified in terms of the Merchant Shipping Act (Act No. 57 of 1951) and the regulations thereunder. No littering or discarding of waste is permitted in the MPAs. Any motorised vessel required by law to have a vessel monitoring system (VMS), such as a commercial fishing vessel, must have the VMS switched on while traversing the MPAs. All scuba diving within the MPAs must have a permit. Any vessel with fishing gear on board traversing a Restricted Zone or the Amathole Coastal MPA must have an active GPS tracking trail operational. Vessels traversing a Restricted Zone or any of the areas of the Amathole Coastal MPA must have all fishing gear appropriately stowed (i.e. not available for immediate use).

No anchoring is allowed (except in the case of an emergency) in a Restricted Zone, a Controlled Pelagic Linefish Zone or the Amathole Coastal MPA. Stopping for more than 3 minutes and moving at less than 5 knots is not allowed in these zones. Within the Offshore Controlled Pelagic Linefish Zone (i.e. GOCPLZ) only listed pelagic gamefish and baitfish species may be caught by line fishing. No bottom or reef fishing is allowed. No boat-based night fishing is allowed within the Amathole Offshore MPA. In the Offshore Controlled Zones (i.e. KOCZ and GOCZ) both pelagic and bottom fishing and spearfishing is permitted subject to the MLRA and associated regulations.

# Access and Facilities

**Access Points**

The three sections of the Amathole Coastal MPA lie adjacent East London and several smaller towns and holiday settlements (e.g. Kidds Beach, Sunrise on Sea, Morgan Bay and Kei River), each with their popular beaches and rocky shore fishing spots. There are several larger estuaries that also provide recreational services. Most of the beaches, larger estuaries and rocky shorelines have access points with parking areas and sometimes additional facilities such as ablutions. There are launch sites for sea going ski boats at Christmas Rock, East London Harbour, Orient Beach, Gonubie, Chintsa East, Haga Haga, Morgan Bay and Kei Mouth. The administrative office for the Amathole Coastal MPA is at Kei Mouth. DEFF maintain a compliance office in East London.

## Fisheries and Resource use

Fisheries within the coastal and offshore Amathole MPAs can broadly be divided into the recreational commercial and small scale sectors. There are small subsistence fishing communities based in the Gonubie area and in the Kei area. These communities target intertidal resources and line fish. In terms of the number of participants, fishing along the Eastern Cape coast is dominated by the recreational line fishing sector (DAFF 2016). Shore-based fisheries include recreational line-fishing and invertebrate harvesting, minor subsistence line fishing, and spearfishing. Invertebrate harvesters target mussels, octopus, and redbait since most invertebrate harvesting is for bait purposes.

Common line-fish species caught from the shore include shad, strepie, blacktail, stone bream, pinkies, bronze bream banded galjoen and barbel (Dunlop and Mann 2012). Drone-fishing (i.e. using a drone to fly and drop a bait further offshore) has rapidly increased in popularity over the past few years but the Amathole Coastal MPA regulations prohibit the use of any device that enhances casting distance. Shore-based spearfishers tend to target larger reef fish species such as baardman (*Umbrina robinsoni*), white steenbras (*Lithognathus lithognathus*), black steenbras (*Cymatoceps nasutus*) and rockcod (*Epinehelus* spp.; Mann *et al.* 1997) since pelagic species mainly occur further offshore.

Boat-based fisheries are either recreational or commercial line fishing. Charter-boat fishing also occurs in the MPA, but fishers on board are governed by recreational fishing regulations (Pradervand and van der Elst 2008). There are multiple ski boat launch sites along the coast between Christmas Rock and Kei River and boats may also enter the MPA from launch sites further afield. Fishing-skis (kayaks) may launch through the surf anywhere along the coast.

Recreational boat anglers in the Amathole region mainly target demersal fish like black and copper steenbras, yellowtail, and several sparid species. Pelagic gamefish such as yellowfin tuna and occasionally and marlin are targeted to a lesser extent. Commercial line-fishers mainly target reef fish species including santer, trawl soldier, englishman, dageraad, roman, carpenter and several rockcod species (Dunlop and Mann 2013; Parker *et al.* 2016; Kerwath *et al.* 2019). Historically, both recreational and commercial line-fishers have caught species such as geelbek and dusky kob along the Amathole coastline, mainly at night.

In 2010 - 2012 an experimental fishing programme was instituted by the Eastern Cape Government to evaluate the sustainability of harvesting abalone in the Hamburg – Tyolomnqa area. Permits for an annual quota of 31.5 tonnes per annum were issued with strict permit conditions. The permit conditions could not be enforced and within a few years the abalone resource was economically extinct. Abalone poaching is a perennial problem along the entire Amathole coastline. Enforcement and compliance capacity is insufficient and little is done to reduce the problem.

Seaweed harvesting (*Gelidium* species) under permit has taken place along the Amathole coast since the mid-1950s. The seaweed is hand-picked by teams of labourers: mostly women from very poor rural communities. The area to be harvested over the spring low tide period (about 5 days) is chosen in advance, based on visual inspection and harvesting history. Each area is only harvested about once every four months. Seaweed is generally dried and bagged before being collected. About 80 – 100 tonnes are collected annually between Kei River and Cape Seal on the Southern Cape coast but the bulk of this is collected near Port Elizabeth to the south of the Amathole MPAs (Anderson and Rothman 2013; DAFF 2016).

Non-consumptive resource use within the MPA can also be divided into shore-based and boat-based activities. Typical shore-based activities include sun-tanning, beach walking/hiking, swimming, surfing, kite surfing and snorkelling. Boat-based activities include surf-ski paddling, pleasure trips, whale/dolphin watching, snorkelling, and scuba diving. These activities are undertaken privately or by charter vessel. None of the estuaries between Kei River and Christmas Rock are included in the Amathole Coastal MPA but they provide a focus for recreational activities (fishing, swimming, skiing, paddling). Subsistence use of estuaries is very limited.

## Aquaculture

The Wild Coast Abalone farm is located in the Kei section of the Amathole Coastal MPA and currently exports about 350 tonnes of abalone a year using a through flow culture system. The farm has planned to expand farming operations to about 1200 tonnes a year. The environmental impact assessment for the expansion is still under way. The farm also re-seeds the inshore environment adjacent to the farm with excess abalone juveniles.

A pilot scale fish farm is based in the East London Industrial Development Zone but employs recirculating technology and inputs to the marine environment are minimal. The farm is viable and currently expanding to commercial scale operation.

The Aquaculture Laboratory of Operation Phakisa identified a fish (kob) farm and an oyster farm as priority projects for development at Hamburg, south of the Gxulu section of the Amathole Coastal MPA. Both projects continue to receive funding and were developed but the fish farm is more or less defunct and not financially viable. The oyster farm in the Keiskamma Estuary currently produces 16 tonnes of oysters per annum but there is a need to expand production to make the farm economically viable. The oyster farm has potential to supply spat to other oyster production facilities.

## Pollution

The sewerage infrastructure throughout the BCMM is generally of inadequate capacity, old and poorly maintained, resulting in regular sewage spills into rivers and the marine environment. The East Bank Waste Water Treatment Works pumps treated effluent into the sea immediately (+1 km) south of the Gonubie area of the Amathole Coastal MPA. Effluent quality is moderate. South of the Buffalo River, between the Gxulu and Gonubie sections of the Amathole Coastal MPA, effluent made up of a combination of raw mixed domestic and industrial sewage from the West Bank of East London and waste activated sludge from the East Bank Waste Water Treatment Works is pumped straight into the marine environment inside the Transnet National Ports Authority area of the East London Harbour. There has been a proposal to extend the outfall 1.4 km into the ocean to improve waste dispersal, but the environmental impacts are still under investigation. There are regular raw sewage spills into the marine environment from the Inhlanza and Nahoon Rivers in the Gonubie section of the Amathole Coastal MPA. These sewage outputs negatively impact water quality in the inshore marine environment generally and affect recreational activities.

The Wild Coast Abalone Farm is responsible for significant plastic pollution on the shore and the expanded operation will probably have significant impacts in terms of nitrogenous products and suspended solids entering the inshore marine environment. Effluent of the current operation meets permit water quality requirements but has impacted the rocky shore environment to a limited extent in the immediate area of the outfall.

The two fish farms (Industrial Development Zone and Hamburg) employ recirculating technology in their operations and inputs to the marine environment are minimal.

The East London harbour situated on the Buffalo River is a source of general pollution to the marine environment (plastics, hydrocarbons, sewage) and is potentially a source for the introduction of alien invasive entering the South African marine environment by way of shipping.

## Estuaries

The four major estuaries along the Amathole coast are the Buffalo, Nahoon, Gonubie and Great Kei but only the Nahoon falls within the Amathole Coastal MPA boundaries. All four of them are permanently open and deliver fresh water, sediments and terrigenous nutrients to the marine environment. Only the Buffalo and Nahoon estuaries have Estuary Management Plans. A further 13 temporary open/closed estuaries are located within the boundaries of the Amathole Coastal MPA. From south to north these are Ross Creek, Ncera, Mlele, Mcantsi, Hlaza, Nahoon, Qinira, Imtwendwe, HagaHaga, Mtendwe, Quko, Morgan and Cwili estuaries. None of the Amathole estuaries are formally protected as part of the MPA. The current management of estuaries within Amathole Coastal MPA is poor but many are still in a good condition (Whitfield, 2000). Mangroves occur naturally in the Kei and Kwelera estuaries and were introduced into Nahoon estuary from Durban Bay where they have flourished (Steinke, 1999).

## Heritage resources

Maritime archaeological heritage on the Amathole coast is extensive. A wreck discovered in 2020 of the mouth of the Nahoon River inside the Gonubie area of the Amathole Coastal MPA is possibly that of the 1643 Santa Maria Madre de Deus. An application to conduct a maritime archaeological investigation has been made to SAHRA. No access is permitted until the wreck has been properly investigated. The ACEP Imida team discovered a wreck that warrants further investigation in the Amathole Offshore MPA (K. Sink pers.comm.) and a wreck off Double Mouth in the Kei section of the Amathole Coastal MPA may be the Santa Esperita. The Santo Alberto was wrecked off Sunrise-on-Sea near the Kwelera River and the first scientific record of a coelacanth was obtained in the Gxulu area of the Amathole Offshore MPA by Captain Goosen in 1938. There are also shell middens scattered along the Amathole coastline.

There are also significant palaeontological heritage features of the Amathole Coastal MPA. A 120 000 year old footprint was discovered in the consolidated sandstone of the primary dune fields of East London Nature Reserve, immediately adjacent to the Gonubie section of the Amathole Coastal MPA. At Double Mouth and Morgan Bay fossils are found in the Beaufort rocks of the Karoo Supergroup in the intertidal zone and stromatolites occupy a unique niche within the supratidal and upper intertidal zone of the high energy rocky headland at Cape Morgan.

The Kwelera National Botanical Garden is a botanical heritage site adjacent to the coast between the Gonubie and Kei sections of the Amathole Coastal MPA.

## Tourism

The Amathole coastal area is a moderately popular tourist destination for both local and up-country visitors. It also entertains international visitors drawn to the Eastern Cape by the Addo National Elephant Park, the inland cultural heritage sites of the Eastern Cape, and the attractions of the Wild Coast. The coastal zone is used by visitors and residents mainly for recreational activities such as swimming and beach activities, shore and boat based angling and spearfishing, minor invertebrate collecting, and walking or hiking. There are many fine beaches in the region and several popular hiking trails such as the Strandloper trail that pass through the Amathole coastal zone.

Shore and boat-based recreational fishing is mainly undertaken by local anglers. The Amathole offshore marine environment is home to many gamefish species including several tuna species, marlin and leervis, and a wide variety of desirable reef fish are caught by line fishers on the reefs between the Kei and Fish Rivers. The support industries associated with recreational fishing (e.g. bait, tackle, boating equipment, fuel, accommodation, etc.) makes this an important economic activity in the area.

Although the Border Undersea Club undertakes regular dives in the Amathole region, scuba diving is not a high profile activity because underwater visibility is often poor. There are no data available to evaluate the total number of launches and whether these were for scuba diving, private or charter recreational fishing or commercial fishing.

There is a boat based whale watching franchise based on the migration of humpback whales to and from their summer feeding grounds in the Antarctic. The annual sardine run with its attendant gamefish, seabirds and apex predators also attracts visitors and generates boat based viewing charters.

Ten coastal nature reserves managed by ECPTA abut the coast between the Kei River and Tylomnqa River, occupying 57% of the 250-kilometre coastline and 3424 hectares between the two rivers. They are tourist attractions and important terrestrial conservation features of the Amathole region. The ECPTA manages the reserves and is in the process of developing tourism centre at Morgan Bay which includes a conference centre. There are environmental education facilities present at Kei Mouth and Morgan Bay.

## Mining and Gas Exploration

No mining or exploration for minerals is allowed within declared MPAs (NEM:PAA 2016 Section48A(k)). Oil and gas field exploration rights for the Amathole area are held by the Exxon Mobil/Impact Africa/Equinor consortium (252ER) from the inshore area to a depth of about -3000 m, and by Silverwave Energy (276ER) from -3000m shore to the limit of the EEZ (+-4000 m depth). There is a direct overlap of the Exxon Mobil/Impact Africa/Equinor Exploration Rights Lease Area and the boundaries of the Amathole MPA. However, Exxon Mobil has recently given up its exploration rights in South Africa and it is not certain how ER 252 has been restructured.

The greatest threat to biodiversity from the oil and gas industry is the possibility of an oil spill. Other biodiversity concerns are the physical impacts to ecosystems and species from infrastructure installation, pollution from chemicals in water-based and oil-based drilling muds, the introduction and proliferation of alien and potentially invasive species, the disruption of feeding and communication in a range of species such as cetaceans, and potential physical damage caused by noise pollution (Hawkins and Popper 2014, Sink *et al.* 2019c).

# Consolidation and Expansion Strategy

It is unlikely that any expansion strategy will be developed for the Amathole MPA in the time frame for which this Management plan would apply. However, expansion of the marine protected area estate remains a priority for DEFF (National Protected Areas Expansion Strategy 2016). In the short term, the Amathole Coastal MPA and Amathole Offshore MPA should be consolidated by proclaiming the two MPAs as a single entity managed under one management plan.

In the longer term, an expansion of the Marine Protected Ares estate is required in order for South Africa to meet the 10% Aichi Biodiversity Target. The Conventional of Biological Diversity (CBD) is likely to set new targets for protected areas and other effective conservation measures (OECMs) through the CBD post 2020 Biodiversity Framework which South Africa will work towards. The National Protected Area Technical Task Team that supported the implementation of the Phakisa MPAs is willing to assist in further expansion of the protected area estate. The work of the Ecologically and Biologically Significant Areas (EBSAs) team led by the MARISMA Project supported by DEFF, Nelson Mandela University and SANBI, together with plans and maps of Critical Biodiversity Areas will play a key role in informing future protected area expansion efforts.

Effective coastal and offshore protection relies on protection of the interconnected ecosystems at the land-sea interface, and ideally protection should extend landward beyond the high water mark. Using the high water mark as an MPA boundary not only fails to effectively protect the marine environment but it is also creates a challenge in terms of boundary demarcation and law enforcement.

The East London Coast Nature Reserves are located along much of the coastline of the Amathole Coastal MPA and the management of the marine and terrestrial aspects of these protected areas should be integrated. Further engagement with coastal communities may support additional areas for conservation action. Initiatives to improve catchment health and the condition of freshwater and estuarine ecosystems should also be encouraged. It would be of significant benefit to the Amathole MPAs generally if parts of the Kei, Kwelera, Gonubie and Nahoon Estuaries were incorporated in the Amathole MPA estate.

# Concept Development Plan

A Concept Development Plan would normally set out the long term development goals including access and facilities and expansion of tourism products for the MPA. The purpose of the Amathole Coastal and Offshore MPAs is to conserve and protect coastal and offshore ecosystems and their biodiversity and ecological processes, to support the recovery, management, and sustainable use of fish resources, to support sustainable eco-tourism activities and to protect cultural spiritual aspects associated with the MPAs. The Amathole Coastal MPA extends seawards of the high water mark so land-based elements do not fall within either of the two MPAs However, the upgrade and maintenance of existing tourism products associated with the marine environment, the development and implementation of new tourism products/activities, and the support infrastructure together with the administrative facilities necessary to achieve these ends should be a primary focus of support for ECPTA although responsibilities lie with the municipalities and private business interests. The launch sites within the MPA should developed and managed to the extent that boat launches and retrievals are recorded, catch inspections undertaken and the launch site infrastructure maintained.

# Strategic Management Plan

The implementation framework translates the strategic management objectives described in Section 5e above into **management actions** and **management targets**, which will be used to inform annual plans of operation and the resources required to implement them.

Management actions are the key activities that should be implemented to achieve the MPA objectives. Management actions are defined and **prioritised** for the ten-year time horizon of this Management Plan. Each management action has been prioritised as follows:

|  |  |
| --- | --- |
| **Category** | **Priorities** |
| **HIGH** | Critical to the effective management[[1]](#footnote-1) of the MPA. |
| **MEDIUM** | Important to the effective management of the MPA, but its implementation may be delayed because of limited funds or resources. |
| **LOW** | Constitutes good management practice, but not critical or important to MPA management effectiveness. |

**Time Frames, Targets, Key Performance Indicators** and **Responsibilities** are allocated for each management action, or a group of linked management actions. Management targets reflect the desired outcome of the management action and KPIs provide an index of progress towards the target.

**Each of the Key Management Themes is introduced by:**

* A demonstration of a link between the Key Management Theme and the Purposes for which the MPA was declared
* A brief discussion of the issues relevant to the Management Theme
* An outline of the MPA’s approach to addressing the Key Management Theme

## Theme 1: Governance and Stakeholder involvement

**Goal: To ensure effective governance and management of the MPA, in adherence with management principles**

This Key Management Theme and its Goal are a principal requirement for the protection of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It is also a principal requirement if the gazetted purposes of the Amathole MPAs are to be achieved i.e. “.…….to conserve the marine environment and biodiversity and to contribute to a national, regional and global representative system of MPAs by conserving and protecting coastal and offshore benthic and pelagic ecosystems…….” and “……… to provide a sanctuary for species and conserve and protect the biodiversity and ecological processes associated with these ecosystems….. “ (Purposes (1) (2) and (3) in Chapter 5a and Purposes (a) and (b) in Chapter 5b). Without effective governance it is also not possible to achieve the other purposes of the MPAs namely facilitate species management and sustainable use of resources; reduce habitat degradation; support recovery of line fish and sharks; conserve and protect an area of life history importance; support nature based tourism opportunities and cultural and spiritual assets; and provide an appropriate environment for research and educations (Purposes 2-4 in Chapter 5a and Purposes (c) – (g) in Chapter 5b. In terms of South African environmental and conservation legislation governance must be undertaken in a consultative manner and it is thus critical that a formal Stakeholder Forum be established. The Forum should be constituted from the Stakeholder bodies outlined in Section 4 (Consultation). The roles of the Stakeholder forum should include:

* Providing input and recommendations to ECPTA on management issues surrounding effective management of the Amathole MPA.
* Helping identify and resolve issues and conflicts.
* Serving as a liaison between and disseminate information about the MPA to the various stakeholders and bring the concerns of stakeholders to ECPTA.
* Providing technical and background information on issues affecting the MPA.

Following the first year when the Stakeholder Forum is being established (four quarterly meetings recommended), it is recommended that the Forum should meet at least twice a year or more frequently when important issues arise.

Regarding management responsibility, the Deputy Director-General (DDG) for Oceans and Coasts is responsible for the promotion, management and strategic leadership on oceans and coastal conservation in South Africa. Under the DDG, the Directorate of Specialist Monitoring Services will be responsible for developing the contract delegating management responsibility for the Amathole MPA to ECPTA. In turn, ECPTA will be responsible for implementation of the Management Plan.

The provision of effective staff capacity to undertake the necessary management actions outlined in the MPA Management Plan is a critical requirement for effective governance. Sufficient well-trained staff, some with sea-going capacity, are particularly important for effective management, the collection and storage of evidence, and the implementation of the correct protocols for inspections, boarding and arrests. All of these activities are essential if prosecutions are to be successful (see Compliance). There are a number of organisations that can assist with various aspects of training relevant to the management of offshore protected areas. FishForce provides training in inspections, boarding and arrests protocols and evidence collection. Fish-I Africa and Global Fishing Watch provide training and mentoring in VMS and AIS data analysis, and the goal of the Southwest Indian Ocean Fisheries Commission (SWIOFC) EcoFish programme is to promote sustainable fisheries in the East Africa, Southern Africa and the Indian Ocean region.

A Protected Area Management Effectiveness audit like the METT-SA should be implemented annually for the first three years and thereafter every five years to monitor the implementation of the management plan. After each audit, a report on the status of implementation of the Management Plan should be compiled and submitted to the DDG Oceans and Coast. The report should be used to guide adaptive management strategies (Section 10 (i)).

The focus of Governance of the Amathole MPA is i) To establish and ensure the on-going involvement of a representative and functional MPA Stakeholder Forum to participate in and help implement management of the MPA, ii) To reduce conflict among stakeholders of the Amathole MPA, iii) To develop a staff capacity that is continually improving the effectiveness of an ecosystem based approach to management.

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| **Management actions and targets**  **Table 10.1.** | | | | | | | | | |
| **Key Management Theme 1: Governance** | | | | | | | | | |
| **Goal:** **To ensure effective governance and management of the MPA, in adherence with management principles.** | | | | | | | | | |
| **Objective 1.1: To establish and ensure the on-going involvement of a representative and functional MPA Stakeholder Forum to participate in and help in the management of the Amathole MPAs** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Establish a MPA Stakeholder Forum with representative members of stakeholder groups and government agencies |  | Functional Stakeholder Forum that meets at least twice a year (four times in first year) | Minutes and reports of meetings | ECPTA and MPA stakeholders |  |  |  |  |  |
| (ii) Establish formal terms of reference (TOR), and clarify institutional functioning of the Stakeholder Forum |  |  |  |  |  |  |
| (iii) Coordinate and attend regular Stakeholder Forum meetings |  |  |  |  |  |  |
| (iv) Provide logistical and resource support to the functioning of the Stakeholder Forum |  |  |  |  |  |  |
| (v) Develop and maintain effective mechanisms for on-going communication with stakeholder groups |  |  |  |  |  |  |
| (vi) Regularly update stakeholders on all monitoring and research findings and developments in the MPA |  |  |  |  |  |  |
| **Objective 1.2: To reduce conflict among stakeholders of the Amathole MPAs** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Provide all stakeholders with clear information on the conservation management measures in the area including compliance requirements as laid out in the regulations |  | Ensure well informed user groups through good signage and regular meetings. Develop codes of conduct for scuba diving, spearfishing and offshore linefishing with relevant stakeholders | Good signage erected at key areas. Regular consultative meetings held. Codes of conduct developed with relevant offshore user groups which ensure equitable use of resources and reduced user conflict | ECPTA and representative persons from each of the key user groups |  |  |  |  |  |
| (ii) Build stakeholder support through promoting development of codes of conduct or standard operating procedures and other non-regulatory approaches for all MPA users |  |  |  |  |  |  |
| **Objective 1.3: To ensure sufficient and effective staff capacity to achieve management objectives** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Review ECPTA’s administrative, enforcement and technical staff capacity for the management of the MPA (coastal and offshore) and identify needs and gaps |  | Appointment of senior manager and appropriately trained personnel sufficient to oversee implementation of the MPA management plan. | Senior manager appointed  Appointment of suitable personnel  with sufficient capacity  One fish identification and MPA regulations training course per year for compliance staff  One training course in law enforcement protocols and safety at sea every year | ECPTA |  |  |  |  |  |
| (ii) Appoint staff required to implement management plan |  |  |  |  |  |  |
| (iii) Identify effective and appropriate training interventions that align with international best practice to address needs and gaps |  |  |  |  |  |  |
| (iii) Implement ongoing capacity development in all aspects of the management of MPAs and fisheries through practical and theoretical training courses, workshops, technical skills development programs and cross-deployments |  |  |  |  |  |  |
| (iv) Approach other organisations like FishForce, Fish-i Africa, NSRI, SAPS and SA Navy for assistance in training and development of staff capacity |  |  |  |  |  |  |
| **Objective 1.4:** **To improve management effectiveness through appropriate monitoring and evaluation of management** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Implement and maintain the METT-SA |  | Annual METT-SA survey for 3 years thereafter every 5 years | Appropriate action plans put in place 3 months after the publication of METT reports | ECPTA |  |  |  |  |  |
| (ii) Improve management effectiveness through adaptive management and the development of action plans |  |  |  |  |  |  |
| (iii) Compile annual progress report on the status and implementation of the Management Plan |  |  |  |  |  |  |
| **Objective 1.5: To develop an ecosystem approach to management of the MPA** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) In the long term, develop an understanding of, and management protocols for, all the key links, ecological processes and energy pathways in the Amathole MPAs, as well as all the human activities and their impacts in order to implement an ecosystem approach to management |  | Identify regional institutions and stakeholders whose activities affect the  ocean in order to develop a legitimate process.  Identify Threats to the MPA | List of Stakeholders for EBM.  Diagnostic Threats analysis undertaken | ECPTA and Partners |  |  |  |  |  |

## Theme 2: Biodiversity and Conservation

**Goal: To conserve and protect the ecosystems, ecological processes and biodiversity of the Amathole MPA**

This Key Management Theme and its Goal are a principal requirement for the protection of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It is also a principal requirement if the gazetted purposes of the Amathole MPAs to protect and conserve the marine environment and its biodiversity and ecosystems, to reduce habitat degradation; to contribute to a national, regional and global representative system of MPAs by conserving and protecting coastal and offshore ecosystems and to conserve and protect the biodiversity and ecological processes associated with these ecosystems, including protected, threatened or overexploited species (Purposes (1) and (4) in Chapter 5a and Purposes (a) and (b) in Chapter 5b) are to be achieved. South Africa’s marine environment supports important economic activities including fishing, petroleum and gas extraction, diamond mining and shipping. All these activities have to a greater or lesser degree, negative impacts on biodiversity, ecosystem processes and the marine environment generally. The conservation of biodiversity is critical to the maintenance of stable ecosystems.

The Amathole MPAs protect threatened and endangered ecosystem types whose biodiversity is not well protected in the South African marine environment at present. The offshore reef systems in particular play a key role in providing a refuge and recovery area for over-exploited linefish species, as well as supporting key ecological processes like spawning, recruitment, connectivity and the provision of foraging areas for many marine mammals, birds, reptiles, fish and invertebrate species (Purpose (2) in Chapter 5a and Purposes (c), (d) and (e); in Chapter 5b). There are crosscutting issues relating to the Biodiversity and Conservation Theme that are addressed in the Theme for Research, Monitoring and Information management

Indirectly this Key Management Theme is also necessary to achieve Purposes (f) and (g) in Chapter 5b, in that the success of nature-based tourism in the Amathole MPA depends on the conservation of the biodiversity and ecosystems of the area.

The long term focus of this Key Management Theme is to i) Conserve and manage the ecosystems and ecological processes within the MPA to ensure their long-term persistence, ii) To protect and restore populations of vulnerable, depleted, threatened, rare, and endemic species and iii) To contribute to the enhancement and long-term viability of fisheries by providing refuges for exploited species and through enhancing resource abundance in adjacent exploited areas and iv) To facilitate species management by protecting areas of importance for migratory species including turtles, sharks, seabirds and a range of fish species

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| **Management actions and targets**  **Table 10.2.** | | | | | | | | | |
| **Key Management Theme 2: Biodiversity and Conservation** | | | | | | | | | |
| **Goal: To conserve and protect the ecosystems, ecological processes and biodiversity of the Amathole MPA** | | | | | | | | | |
| **Objective 2.1: To conserve and manage ecosystems and ecological processes in the Amathole MPA to ensure their long-term persistence** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Develop a prioritised list of the MPAs’ baseline information and biodiversity research and monitoring requirements (See Monitoring and Research) |  | Development of a state of knowledge report for the MPA including all bio-physical information | State of knowledge report for Amathole MPAs stored on central data archive | ECPTA and partner research institutions |  |  |  |  |  |
| (ii) Compile updated lists of the Amathole MPAs’ biodiversity with a focus on fish and macro-invertebrates |  |  |  |  |  |  |
| (iii) Identify and map ecosystem processes and areas of importance with a focus on understanding land-sea connectivity, marine circulation patterns, spawning, recruitment and feeding processes |  |  |  |  |  |  |
| (iv) Develop formal research partnerships (underwritten by MoAs) with important research institutions, NGOs, and industries operating in the area |  | Ongoing research in the MPAs | Number of registered research projects and signed MoAs |  |  |  |  |  |
| **Objective 2.2: To protect and restore populations of vulnerable, depleted, threatened, rare and endemic species** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Identify species of special concern (depleted, rare, threatened, endemic) and the threats facing them |  | Improvement of stocks of species of concern (including sparids and sciaenids)  Improved understanding of cold water corals and coelacanth status in the MPAs | Species-specific CPUE of linefish (sparids and scaenids)  Number of ROV research cruises in the Amathole MPAs | ECPTA and partner research institutions |  |  |  |  |  |
| (ii) Promote research to improve understanding of the role the MPA plays in the protection and restoration of species of concern |  |  |  |  |  |  |
| (iii) Develop a dedicated monitoring programme for species of concern |  |  |  |  |  |  |
| (iv) Incorporate improved understanding in the management of the MPA |  |  |  |  |  |  |
| **Objective 2.3** **To contribute to the enhancement and long-term viability of economically and recreationally important fisheries by providing refuges for exploited species and through enhancing resource abundance in adjacent exploited areas.** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Promote research to understand key fisheries population dynamics, related ecological processes and threats |  | Stable CPUE in key fishery species. Evidence of improved resource abundance in areas adjacent to the MPAs | Stable CPUE in key fishery species. Evidence of spill-over | ECPTA and partner research institutions |  |  |  |  |  |
| (ii) Liaise with fisheries management authorities to incorporate improved understanding in the management of key fisheries |  |  |  |  |  |  |
| (iii) Implement monitoring programmes to evaluate sustainability of key fisheries |  |  |  |  |  |  |
| (iv) Implement a fish tagging project to monitor the level of spill-over |  |  |  |  |  |  |
| **Objective 2.4 To facilitate species management by protecting areas of importance for migratory species including turtles, sharks, seabirds and a range of fish species** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| (i) Identify migratory species dependent on the MPA for life history stages, and the threats facing them |  | Registered research programmes for migratory species of concern | Registered research programmes for migratory species of concern  Relevant monitoring data for migratory species of concern | ECPTA and partner research institutions |  |  |  |  |  |
| (ii) Promote research to improve understanding of the role the MPA plays in the life cycles of identified migratory species of concern |  |  |  |  |  |  |
| (iii). Develop a dedicated prioritised monitoring programme for migratory species of concern |  |  |  |  |  |  |
| (iv) Develop agreements with recreational and commercial line fishers and provide basic training to collect structured sighting data to improve knowledge and understanding of migratory species of concern |  |  |  |  |  |  |
| (v) Implement focused management actions to reduce threats |  |  |  |  |  |  |

Theme 3: Socio-economic benefits - Natural Resource use, Recreation, Tourism, Heritage and Culture

**Goal: To ensure sustainable social and economic benefits from the Amathole MPAs**

This Key Management Theme and its Goal provide for the sustainable use of natural and biological resources and the development of sustainable social and economic benefits associated with the existence of the MPA. These social benefits include promoting the protection of heritage assets and the Theme directly addresses Purposes (f) in Chapter 5b and indirectly Purpose (4) in Chapter 5b. In the case of the Amathole MPAs, the MPAs are zoned to allow harvesting of fish and invertebrate resources in some areas and not in others. Zoning allows commercial and recreational extractive resource use in Controlled areas which creates clear economic benefits but it also allows resident species to increase in biomass in no-take areas. Spill over into adjacent fished areas as a result of increased biomass improves catches of commercial fishers which has direct economic benefits. Spill over also improves catches of recreational fishers which boosts site popularity and results in multiple indirect economic spin-offs. Limiting fishing activities to pelagic fish only in pelagic controlled areas serves the dual function of protecting benthic ecosystems and species and allowing some extractive resource use which reduces user conflict between sectors, increases stakeholder support, achieves conservation objectives and contributes to economic benefits. The protection of the maritime and palaeontological sites and the active management of the East London Coast Reserves will help to put Amathole on the national tourist map as a desirable holiday and heritage destination. The MPAs also have good potential for other tourism opportunities such boat-based dolphin and whale watching and seabird cruises.

The MPAs are part of an important spawning area for several valuable linefish species, they provide a critical refuge for over-exploited but economically important linefish species and the productive reef ecosystems provides an important attraction for migratory gamefish species. These functions all contribute indirectly to economic benefits associated with the fishing industry. The focus of this Key Management Theme is i) To allow for controlled resource use in a manner and in areas permitted by the regulations in a way that does not compromise the biological integrity of the MPA and ii) To promote the Amathole MPAs as key eco-tourism destination in the Eastern Cape and iii) To support food and job security for fishers and maintain opportunities for recreational fisheries in the long term.

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| **Management actions and targets**  **Table 10.3.** | | | | | | | | | |
| **Key Management Theme 3: Socio-economic benefits - Natural Resource use, Recreation, Tourism, Heritage and Culture** | | | | | | | | | |
| **Goal: To ensure sustainable social and economic benefits from the Amathole MPA** | | | | | | | | | |
| **Objective 3.1: To allow for controlled resource use in a manner and in areas permitted by the regulations and in a way that does not compromise the biological integrity of the MPA** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Ensure resource users are provided with clear information on the conservation management measures in the area including compliance requirements as laid out in the regulations |  | No illegal fishing and related activities in the MPA | Record of number of illegal fishing activities detected in the MPA  Record of number of illegal activities reported by fishermen | ECPTA and representative fishing bodies |  |  |  |  |  |
| (ii) Enforce regulations and monitor implementation of regulations (see Compliance). Establish a database of repeat compliance offenders |  |  |  |  |  |  |
| iii) Develop relationships that encourage fishermen to respect the MPA regulations and to promote self-policing (see Governance) |  |  |  |  |  |  |
| **Objective 3.2: To promote and support the Amathole MPAs as a key eco-tourism destination in the Eastern Cape** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Improve understanding of tourism/recreation /culture heritage potential, preferences and requirements in the MPAs. |  | Tourism/recreational activity/ cultural heritage inventory and management plan  High levels of tourism on Amathole coast | Tourism/recreational activity/ cultural heritage inventory and management plan developed  Number of bookings in ECPTA accommodation in Amathole region | ECPTA and relevant stakeholders |  |  |  |  |  |
| (ii) Develop a tourism/recreational activity/ cultural heritage inventory and management plan that includes safety and security details, SAHRA approvals, staffing and training needs |  |  |  |  |  |  |
| iii) Investigate activities that would broaden tourism/recreational/ cultural heritage base |  |  |  |  |  |  |
| (iv) Market Amathole MPA as a prime tourist destination through the appropriate marketing initiatives. Improve coastal informative signage. |  |  |  |  |  |  |
| (v) Develop standard operating procedures and codes of conduct with whale/dolphin/ sardine watching industries to ensure best practice |  |  |  |  |  |  |

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| **Objective 1.6: To support food and job security for fishers and maintain opportunities for recreational fisheries in the long term** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| (i) Establish a database of current resource utilisation and extent of resource use |  | Stable catch rates in commercial and recreational fishing sectors | CPUE of key angling species along Amathole coastline | ECPTA and DEFF |  |  |  |  |  |
| (ii) Evaluate status of exploited species |  |  |  |  |  |  |
| (iii) Evaluate further resource use opportunities |  |  |  |  |  |  |
| (iv) Ensure resource users are provided with clear information on the conservation management measures in the area including compliance requirements as laid out in the regulations |  |  |  |  |  |  |
| (v) Implement effective catch data collection (creel surveys/ ski boat catch monitoring |  |  |  |  |  |  |

## Theme 4: Compliance and Enforcement

**Goal: To ensure adherence to the regulations of the MPA**

This Key Management Theme and its Goal relate directly to the effective management of the Amathole MPAs. Without effective compliance and enforcement that control illegal activities and ensure general adherence to the regulations relating to the MPAs, the MPAs will not meet any of the purposes for which it was declared (Purposes (1) – (4) in Chapter 5a and Purposes (a) – (g) in Chapter 5b). The Marine Protection Services and Ocean Governance workstream of Operation Phakisa undertook to develop an overarching, integrated ocean governance plan that entailed the protection of the ocean environment from all illegal activities. To date there has been a review of oceans related legislation and development of a Marine Spatial Planning Act (Act 16 of 2018).

Non-compliance threats to the Amathole MPA are most likely to come from the consumptive resource users including recreational and commercial line-fishers, and to a small extent from invertebrate harvesters and bait collectors. There are also threats of pollution from the poor waste management capacity in the BCMM, offshore mining, and shipping. The effective implementation of compliance and enforcement will require high visibility of compliance staff with regular and frequent inspections and patrolling of the area, both on land and at sea. Visible, clear signage will also assist in this regard, particularly at boat launch sites and major public access points along the coast. It is essential that the responsible management agency (ECPTA) develops a good working relationship with stakeholders, both through the establishment of the MPA Forum and on an individual basis, to establish trust and improved cooperation.

Offshore patrols will require a suitable vessel and well-trained staff capable of operating such a vessel at sea. Strong collaboration with the SA Navy, DEFF Fisheries Patrol and SAPS Marine Unit will greatly enhance this offshore capability. Cooperation with DEFF-Ops in surveillance and monitoring of commercial fishing vessels through their Vessel Monitoring System (VMS) will be essential. This is particularly important for monitoring the large Amathole Offshore Restricted Zones (KORZ and GORZ), and for tracking fishing vessel activities, especially at night.

Pollution will need to be monitored in collaboration with the Department of Water and Sanitation (DWS) for land-based sources. Oil and ship borne pollution will require collaboration with the Department of Mineral Resources (DMR) and the Department of Transport (DoT), respectively (see Theme 5 – Disaster management).

The focus of this Key Management Theme and Goal is to develop, implement and maintain effective enforcement capacity that minimizes illegal activities and negative impacts in the MPA, by developing an effective system of compliance monitoring and surveillance, and by encouraging the development of best practice guidelines, protocols and policies with resource users that reduce the necessity for enforcement activities.

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| **Management actions and targets**  **Table 10.4.** | | | | | | | | | |
| **Key Management Theme 4: Compliance and Enforcement** | | | | | | | | | |
| **Goal: To ensure adherence to the regulations of the MPA** | | | | | | | | | |
| **Objective 4.1: To develop, implement and maintain an effective enforcement capacity that minimizes illegal activities and negative impacts in the MPA and deters transgressors** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Evaluate the monitoring, control, and surveillance (MCS) needs, challenges and opportunities associated with the MPAs |  | No illegal activities in the MPAs | Monthly record of number of patrols, inspections, etc.  Monthly report on state of equipment.  Number of training events undertaken, and resources produced.  Monthly record of the number of illegal activities occurring in the MPAs | ECPTA |  |  |  |  |  |
| (ii) Conduct an audit of availability and functionality of the physical resources required to carry out MCS duties effectively |  |  |  |  |  |  |
| (iii) Develop a compliance and enforcement strategy for the MPAs ensuring funding and staffing requirements are outlined in the strategy, and cooperative arrangements prioritised (DEFF Fisheries Patrol, SA Navy, SAPS) |  |  |  |  |  |  |
| (iv) Ensure compliance and enforcement staff have sufficient resources to implement compliance strategy |  |  |  |  |  |  |
| (v) Procure, from suitable service providers, training to capacitate staff to undertake effective MCS and improve inter-agency cooperation in MCS |  |  |  |  |  |  |
| (vi) Implement a programme of inspections and patrols, with trained and formally designated compliance staff, optimising type of inspection and patrol (i.e. boat, vehicle, foot) |  |  |  |  |  |  |
| (vii) Develop and utilise Standard Operation Procedures for patrols, boarding and inspection procedures, evidence collection protocols and arrest (land and sea) that are aligned with the criminal procedure laws |  |  |  |  |  |  |
| (viii) Improve the efficiency of compliance and enforcement operations by developing quick reference field manuals for Field Officers that include fisheries and MPA regulations, fish identification guides, etc. |  |  |  |  |  |  |
| (ix) Establish and maintain collaborative working relationships with DEFF Fisheries Patrol vessels, SAPS Marine Unit and SA Navy to boost patrol capacity |  |  |  |  |  |  |
| (x) Establish good communication with DEFF-Ops aimed at identifying and reporting commercial vessel fishing activity and vessel movements into and out of MPA zones |  |  |  |  |  |  |
| (xi) Establish a relationship with responsible authorities (DWS, DMR & DoT) to ensure effective pollution monitoring and response |  | Effective pollution monitoring | Number of pollution events reported | ECPTA, DWS, DMR, DoT |  |  |  |  |  |
| (xii) Ensure that the MPA boundaries are incorporated in South African Naval charts by Naval Hydrographic Office and geo-reference data are incorporated into base maps for VMS operations |  | MPAs boundaries are incorporated in South African Naval charts | Updated SANHO charts | ECPTA, DEFF, SA Navy |  |  |  |  |  |
| (xiii) Work with GPS companies (Garmin, Lowrance, Furuno, etc.) to produce a cheap, downloadable zonation map of the MPA for inclusion into private GPS devices to facilitate greater awareness |  | Include MPAs boundaries and zones into a map for private GPS users | Map available for download by users | ECPTA, DEFF, GPS companies |  |  |  |  |  |
| **Objective 4.2: To promote compliance among stakeholders and resource users within and adjacent to the MPA** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| (i) Build public support for the MPAs through development of best practice guidelines, codes of conduct, promotion and development of stewardship initiatives and other non-regulatory approaches |  | Codes of conduct established for all user groups | Number of Codes of conduct established for user groups | ECPTA and user groups |  |  |  |  |  |
| (ii) Foster co-operative relationships with other national authorities, international agencies and stakeholders to improve compliance (see Governance) |  |  |  |  |  |  |
| (iii) Develop relationships with stakeholders to encourage self-policing and to report transgressions within the MPA |  | Reports of illegal activities from user groups reported to DEFF/ECPTA | Record of number of illegal activities reported by user groups | ECPTA |  |  |  |  |  |
| (v) Enforce regulations and monitor implementation of regulations |  | No illegal activities in the MPA | Record of number of illegal activities detected in the MPA |  |  |  |  |  |
| (vi) Develop suitable signage and erect signboards at key access points |  | Informative signage placed at all key access points | Number and state of informative signage | ECPTA |  |  |  |  |  |

## Theme 5: Disaster management

**Goal: To provide for the safety of the biodiversity and human elements, and the continued functioning of the ecological processes of the MPA in the face of any environmental crisis**

This Key Management Theme and its Goal relate directly to all the purposes for which the MPA was declared. If management does not address the threat of potential disaster or pollution events none of the purposes for which the MPA was declared will be achieved if the area is severely impacted by a pollution or disaster event (Purposes (1) – (4) in Chapter 5a and Purposes (a) – (g) in Chapter 5b).

The poor sewage management capability of the BCMM with the regular sewage spills and an effluent pipeline whose outflow is directly into the marine environment poses a significant pollution risk to the biodiversity of the Gonubie section of the Amathole Coastal MPA. The poor marine and estuarine water quality in this section of the MPA has a negative impact on the tourism potential of the central coastal region since none of the main urban beaches can qualify for Blue Flag status. The sewage pollution risk escalates steadily with the continued inadequate maintenance of sewage infrastructure and the rapidly increasing population of the Metro.

The Amathole coast is subject to both high levels of marine traffic and frequent rough sea conditions which together pose a significant pollution risk in the event of a shipping disaster. The risk is exacerbated by the regular use of the port by shipping. Further offshore, exploration for oil and gas reserves and test well drilling is occurring on an increasing scale. All these activities pose potential environmental threats to the Amathole MPAs. Careful monitoring of effluent quality and quantity is required for all effluent outfalls. There is significant potential for major pollution events from the cargos of vessels traversing the waters of the Eastern Cape. Oil spills can have an extremely negative impact on marine biodiversity in both the pelagic and benthic environment and it is critical to be prepared for such contingencies. The National Oil Spill Contingency Strategy has been developed for oil spill situations but the vessels available to implement the strategy are not always functional or may be operating in another capacity. Surveillance capacity is limited and there may be administrative complications that hamper the effective implementation of the contingency strategy. It is important that an MPA-specific contingency plan is developed to ensure a rapid and effective response is possible in the event of any environmental disaster.

The focus of this Management Theme is to establish and maintain effective disaster/pollution management planning that provides for the safety of the biodiversity and human elements, and the continued functioning of the ecological processes of the Amathole MPAs in the event of any environmental crisis.

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| **Management actions and targets**  **Table 10.5.** | | | | | | | | | |
| **Key Management Theme 5: Disaster management** | | | | | | | | | |
| **Goal:** **To provide for the safety of the biodiversity and human elements and the continued functioning of the ecological processes of the MPAs in the face of any environmental crisis** | | | | | | | | | |
| **Objective 5.1: To establish and maintain effective disaster management planning to minimise risk of pollution and other disaster events in the MPA and its vicinity and ensure that the biodiversity and ecological processes of the MPA are sustained in the event of an environmental crisis** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Ensure that the MPAs and surrounds are adequately accommodated within the National Oil Spill Contingency Strategy (October 2019) |  | Pollution or Disaster impacts are mitigated by proactive planning | A MPA Contingency Plan developed with minimum details as specified in the management action  Oil spill trajectory model exists for the MPA  Annual record of Pollution/Disaster events with report that details lessons learned from any incidents | ECPTA and responsible government departments |  |  |  |  |  |
| (ii) Identify most likely disaster/pollution risks associated with the MPAs |  |  |  |  |  |  |
| (iii) Develop a MPA Contingency Plan that must include at a minimum communication lines, emergency contact details, maps and charts of the MPAs, identification of responsibilities, equipment availability and an assessment of training needs to effectively implement the Contingency Plan |  |  |  |  |  |  |
| (iv) Implement immediate reporting requirements of any pollution/ disaster events using formalised accident reporting protocols that ensure an early response and report on any incidents with key lessons learnt to inform future efforts |  |  |  |  |  |  |
| (v) Ensure that the disaster management plans of the MPAs align with the disaster management plans of adjacent municipalities |  |  |  |  |  |  |
| (vi) Where practical monitor areas/activities assessed as being high pollution or disaster risks and develop an oil spill trajectory model for pro-active management in the event of a spill |  |  |  |  |  |  |
| (vii) Ensure that vessels operating inside the MPA are in compliance with MARPOL |  |  |  |  |  |  |

## Theme 6: Planning

**Goal: To integrate the management of the MPA with external developments, processes and impacts to ensure that the MPA objectives are not compromised.**

This Key Management Theme and its Goal relate directly to the protection and conservation of the biodiversity and ecological processes of the Amathole MPAs as well as all the aspects associated with species management and recovery and the support of activities associated with the economic and cultural/spiritual potential associated with the MPAs (Purposes (1) – (4) in Chapter 5a and (a) – (g) in Chapter 5b). MPAs do not operate and cannot be managed in isolation. They have physical, ecological and social links to everything around them. Because of the interconnectedness and open access nature of coastal and marine systems, activities on land and in the sea can have a negative impact on ecosystems even if such ecosystems are a considerable distance from the source of a disturbance. Industrial practices, mariculture, waste disposal and even catchment erosion and river flow modification can change the chemical, physical and biological characteristics of coastal and offshore marine systems, often to their detriment. As a result, the MPA management agency must be aware of, and where necessary be proactively involved in any planning process involving the MPA and areas adjacent or close to the MPA where there is potential for negative or positive impacts on the MPA ecosystems. MPA management authorities should be actively engaged in the development and reviews of municipal IDP and SDFs.

Part of the management process should be the determination of a zone of influence for the MPAs. This is an is an area outside the boundary of the MPAs where activities of man or presence of other threatening influences may have a negative impact on the objectives and/or effective management of the protected area and/or continued delivery of societal benefits from the PA and consequently where park management seeks to influence land use and other human activities to prevent or mitigate these impacts. The process should include the development of a zone of influence policy which stipulates compliance with legal requirements and due process for the authorisation and operation of developments in the Zone of Influence.

The focus of this Key Management Theme is i) To identify activities, issues and developments in the marine and terrestrial environment that have the potential to impact in any way on the Amathole MPA and to make arrangements to be involved in the planning and management of these elements in order to mitigate any potential negative impacts and benefit from any positive impacts and ii) To develop and implement a zone of influence policy for the MPA.

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| **Management actions and targets**  **Table 10.6.** | | | | | | | | | |
| **Key Management Theme 6: Planning** | | | | | | | | | |
| **Goal: To integrate the management of the MPA with external developments, processes and impacts to ensure that the MPA objectives are not compromised by these issues** | | | | | | | | | |
| **Objective 6.1: To co-operate with the relevant international and national government structures, industries, NGOs and communities insofar as their activities affect the MPA and to keep track of issues affecting the MPA and vicinity to ensure functional ecosystems, economic potential and cultural/spiritual resources are protected** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Identify factors and activities outside the MPA that could negatively or positively impact on the ecological integrity of the MPA |  | No negative impacts on the MPA from developments, processes and impacts external to the MPA | Registration as IAP in local and regional development/industrial planning  Attendance records at local and regional development stakeholder meetings | ECPTA and Partners |  |  |  |  |  |
| (ii) Cooperate with relevant structures to ensure planning related to such factors/activities protects functional ecosystems, preserves economic potential and guards cultural/spiritual resources in the MPA |  |  |  |  |  |  |
| (iii) Initiate discussions with stakeholders to evaluate any potential buffer areas adjacent to the MPA |  |  |  |  |  |  |
| **Objective 6.2: To identify and implement a zone of influence for the MPA** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| (i) Institute a programme to identify the Zone of Influence for the MPA |  | A Zone of influence policy developed | A Zone of influence policy developed and implemented | ECPTA |  |  |  |  |  |
| (ii) Develop and implement a Zone of Influence Policy to protect the integrity of the MPA |  |  |  |  |  |  |

## Theme 7: Engagement, Education and Public awareness

**Goal: To engage resource users, stakeholders and the general public on the attributes, functions and benefits of the MPAs including its contribution(s) to marine conservation and sustainable use**

This Key Management Theme and its Goal relate directly to Purpose (g) in Chapter 5b which requires that the MPA promotes and contributes to environmental education.

A key issue in the management of any protected area is the general lack of understanding by key stakeholders of the ecological and economic benefits generated by a protected area, its legal context, and the obligations generated by such legal context. Such lack of understanding complicates management and increases the need for expensive enforcement and compliance activities. Ongoing engagement that takes place at different levels of society (schools, general public, MPA user groups) can serve to build relationships and the development of a sense of care, ownership and responsibility across the different levels of society. Stakeholders contribute multiple forms of knowledge, can share ideas and potential solutions to emerging challenges and have a key role in disseminating information more broadly. It is thus important to direct resources to engaging with stakeholders.

Apart from improving legal contextual understanding and obligations, an education and awareness programme promotes an understanding of the importance of healthy ocean ecosystems, outlines the ecological benefits associated with the MPAs, and where relevant, can highlight the economic, recreational and cultural benefits that accrue to stakeholders from the existence of the MPAs. This increased awareness promotes public support for MPAs and often plays a key role in facilitating the management process and reducing the need for expensive enforcement and compliance activities.

The focus of this Key Management Theme is to build support for the Amathole MPAs by undertaking a range of engagement, awareness raising and educational activities with a focus on improving voluntary compliance with regulations and in the long-term, facilitating the interpretation of marine ecosystems and conservation for the promotion of the MPA and the marine environment generally amongst both stakeholders and the general public.

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| **Management actions and targets**  **Table 10.7.** | | | | | | | | | |
| **Key Management Theme 7: Engagement, Education and Public Awareness** | | | | | | | | | |
| **Goal:** **To engage resource users, stakeholders and the general public on the attributes, functions and benefits of the MPAs including their contribution(s) to marine conservation and sustainable use** | | | | | | | | | |
| **Objective 7.1: To raise the profile of MPAs and increase appreciation of their attributes, functions and benefits including theircontribution(s) to marine conservation and sustainable use, with a focus on improving voluntary compliance with regulations** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Develop an Awareness and Outreach plan and programme |  | Education and awareness plan developed | Plan developed | ECPTA and Partners |  |  |  |  |  |
| (ii) Source or develop awareness raising and educational materials that improve understanding of the attributes, functions and potential benefits of the MPAs for stakeholders and the general public as well as clarifying the legal context of the MPAs, the obligations of all stakeholders affected by the management of the MPAs, and the implications of poor compliance with regulations for ecosystems, biodiversity and fisheries |  | Outreach materials outlining benefits, opportunities, and legal and regulatory context of the MPA sourced or developed and effectively distributed  Presentations of research results creatively interpreted and documented for non-scientists | Outreach/Education Officer appointed  Educational materials exist and are shared with stakeholders including Ocean Literacy partners e.g. WWF or Two Oceans/ uShaka Aquarium  Number of education/ awareness raising/ Outreach meetings or workshops completed per year | ECPTA and Literacy Partners |  |  |  |  |  |
| (iii) Evaluate the most effective distribution and communication formats for different groups and implement |  |  |  |  |  |  |
| (iv) Interpret and disseminate relevant research outputs for use by the non-research community |  |  |  |  |  |  |
| (v) Appoint an Outreach/Education Officer to implement an Awareness and Education programme |  |  |  |  |  |  |
| (vi) Update information regularly |  |  |  |  |  |  |
| (vii) Include the details and description of the MPAs on official government communications and appropriate websites and collaborate with other awareness raising initiatives |  |  |  |  |  |  |

## Theme 8: Monitoring, Research and Information management

**Goal: To realise the potential of the Amathole MPA for enhancing scientific knowledge and increasing the evidence base to inform ecosystem-based management**

This Key Management Theme and its Goal directly addresses Purpose (3) in Chapter 5a and Purpose (g) in Chapter 5b of the declarations of the Amathole Coastal MPA and Amathole Offshore MPA respectively. Both these purposes require the protection and provision of an appropriate reference environment for research and monitoring of both biodiversity and ecosystems and the recovery of fish stocks. The Management Theme and its Goal are also implicit in the conservation and protection of the biodiversity and ecological processes associated with ecosystems within the MPAs and the facilitation of appropriate management (Purpose (1) and (2) in Chapter 5a and Purpose (b) in Chapter 5b. There are therefore crosscutting issues relating to this Theme that are addressed in the Theme 2 (Biodiversity and Conservation).

Monitoring and research in the marine environment is challenging because almost all monitoring requires specialized and expensive equipment, often including the operation of small vessels offshore. Such offshore research is also very weather dependent. To implement a successful monitoring programme, it will be necessary to establish cooperative arrangements with a range of parties such as NGOs, Universities, and other research organizations. Research and monitoring should be divided into three broad themes including: i) Biodiversity and ecological process; ii) Fisheries and iii) Non-consumptive activities. Initially an inventory of species communities, habitats and ecosystems protected within the MPAs should be compiled. A focus of monitoring and research should be on evaluating the effectiveness of the MPAs in enabling the recovery of overexploited linefish species and investigating the resource abundance in adjacent exploited areas. Use of appropriate methods such as research fishing, tagging, acoustic telemetry, underwater visual assessment and baited remote underwater videos (BRUVs) will be required to undertake such monitoring. ECPTA should continue to support the fisheries research undertaken by SAIAB using BRUVS and telemetry. Research should also focus on the importance of Amathole as an aggregation site for top marine predators such as sharks and the drone monitoring of the sardine run should be supported. Other research projects such as evaluating the socio-economic importance of the Amathole MPAs and determining the impacts of climate change should also be encouraged. In addition, research on the knowledge and attitudes of stakeholders and adjacent community members with respect to the MPA is required.

The focus of this Key Management Theme is as follows: i) To support research and monitoring that increases understanding of the ecosystems, biodiversity and benefits of the MPAs, including research on linefish stocks and the effectiveness of MPAs zonation; ii) To develop and maintain a monitoring programme that provides managers with accurate and timely information on the state of the MPAs, the potential threats to achieving the MPAs’ objectives, and which provides scientific reference points for management of ecosystems and iii) To collate and adequately manage data and information on the MPAs, ensuring ease of access to support research and management decisions

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| **Management actions and targets**  **Table 10.8.** | | | | | | | | | |
| **Key Management Theme 8: Monitoring, Research, and Information management** | | | | | | | | | |
| **Goal: To realise the potential of the Amathole MPAs for enhancing scientific knowledge and increasing the evidence base to inform ecosystem-based management** | | | | | | | | | |
| **Objective 8.1: To support research and monitoring that increases understanding of the ecosystems, biodiversity, and benefits of the MPA, including research on linefish stocks and the effectiveness of MPA zonation** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Collate relevant past and existing research and identify and communicate key knowledge gaps for the MPA |  | Research database and plan developed and approved | Research database and plan developed and approved  Register of MoAs with research institutions, Research Agreements and Collaboration Agreements | ECPTA and Research Partners |  |  |  |  |  |
| (ii) Develop research and monitoring partnerships underwritten by MoAs with important research institutions and NGOs |  |  |  |  |  |  |
| (iii) Address gaps in existing biodiversity knowledge. Monitor fish and invertebrate populations in different zoned areas of the MPA using appropriate methodology. Support current research on fish. Initiate/ support research on line fish abundance in areas adjacent to the MPAs, and aggregation of top predators within the MPAs. Initiate relevant socio-economic and climate change research projects. |  |  |  |  |  |  |
| (iv) Implement an efficient research permit application approval process |  | Active management orientated research programme | Annual research report that informs management | ECPTA and Research Partners |  |  |  |  |  |
| (v) Maintain a register of all past and current research projects being undertaken in the MPA to identify knowledge gaps |  |  |  |  |  |  |
| (vi) Assist with access, data collection and supervision for approved  research projects |  |  |  |  |  |  |
| (vii) Ensure all research results are fed back to management and relevant stakeholders |  |  |  |  |  |  |
| (viii) Ensure research results inform adaptive management |  |  |  |  |  |  |
| **Objective 8.2: To develop and maintain a monitoring programme that provides managers with accurate and timely information on the state of the MPAs, the potential threats to meeting the MPAs’ purposes, and which provides scientific reference points for management of ecosystems** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Review and prioritise monitoring needs for the MPAs with a focus on the effectiveness of the MPAs in enabling recovery of over-exploited fish stocks |  | Monitoring plan that informs management developed and implemented | Monitoring plan and baseline data | ECPTA and Research Partners |  |  |  |  |  |
| (ii) Identify and establish benchmark areas for monitoring |  |  |  |  |  |  |
| (iii) Establish other relevant and logistically pragmatic ecosystem health indicators for monitoring |  |  |  |  |  |  |
| (iv) Facilitate the collection of prioritised monitoring data |  |  |  |  |  |  |
| (v) Analyse monitoring data and apply appropriate management actions |  |  |  |  |  |  |
| **Objective 8.3: To collate and adequately manage data and information on the MPA, ensuring ease of access to support research and management decisions** | | | | | | | | | |
| **Management action** | **Priority** | **Management targets** | **Key performance indicators** | **Responsibility** | **Time frame (years)** | | | | |
| **2** | **4** | **6** | **8** | **10** |
| (i) Archive on a central data archive all biodiversity and resource use data for the MPAs that can inform and refine management. Include in archived data spatial biodiversity information, threats and trends in the status of biodiversity. Describe and map the physical environment (bathymetry) and identify the spatial distribution of habitats |  | Development of a central data archive of all biodiversity and resource use data | Development of a central data archive of all biodiversity and resource use data | ECPTA and Research Partners |  |  |  |  |  |
| (ii) Ensure appropriate access to information and its interpretation |  |  |  |  |  |  |

## Management Effectiveness

The date for the implementation of the Management Plan has not been determined. Meetings and discussions with stakeholders must take place before the Management Plan is finalised and implemented. An overview of the process followed in the development of the Management Plan will be completed by ECPTA in 2021.

The purpose of implementing a management effectiveness audit is to ascertain the relevance and effectiveness of the activities recommended within the framework of this Management Plan. ECPTA currently uses the Management Effectiveness Tracking Tool–South Africa (METT-SA) to evaluate their existing MPAs and thus this tool will be most relevant for this assessment. ). The METT-SA has been modified for South African protected areas and has been used to assess management effectiveness in South Africa’s MPAs (Tunley 2009; Chadwick et al. 2014). A key challenge to effectively undertaking a management assessment is to ensure that the correct indicators for the assessment are chosen. These indicators must be directly linked to the objectives of the MPA and the assessment must be undertaken at the strategic and operational levels. The METT-SA can be used as a baseline framework with adaptations being made so that MPA specific issues may be addressed.

It is recommended that the METT should be completed annually for the first three years and thereafter every five years to monitor the implementation of the management plan. After each audit, a report on the status of implementation of the Management Plan should be compiled and submitted by the manager to the ECPTA Head Office for signature and approval though the assigned chain of command, after which the approved audit is sent to DEFF. The report should be used to guide adaptive management strategies that should be implemented through the annual Operational Plan. The Management Plan itself should be reviewed and updated every ten years.

## Research and Monitoring Programme

It has been noted above that monitoring and research in the marine environment can be challenging because most monitoring requires specialized and expensive equipment and weather and sea conditions often limit such work. It is recommended that an initial meeting should be held between the management authority (ECPTA) and key research organisations to identify what past and current research and monitoring has/is being done in the MPA and what gaps need to be addressed to answer important management questions. From this meeting a research and monitoring plan can be developed, and relevant research organisations can be invited to undertake the necessary work. It should be a priority for ECPTA to establish cooperative arrangements with relevant NGOs and research organisations (e.g. Nelson Mandela University, Rhodes university, SAIAB, Oceanographic Research Institute, Wild Oceans, etc.). The focus of initial research should be on complementing existing baseline studies to acquire a better understanding of the biodiversity and ecology of the Amathole MPAs and surrounding areas. Once initial baseline/foundational information has been obtained and analysed, select key components of the MPA ecosystem should continue to be monitored at appropriate intervals to enable detection of changes to the system and to guide operational needs and priorities for the MPAs.

A research and monitoring plan could include:

* Collation of all relevant information about the MPAs and their surrounds
* A detailed bathymetric survey of the MPAs to identify the spatial distribution of habitats and ecosystems
* Further baseline sampling of benthic and fish communities, especially in deeper, poorly sampled habitats. Research work conducted by the ACEP Imida project team which supported the establishment of the Amathole Offshore MPA should be collated, interpreted for different audiences and made available to managers and the public
* Development of relevant species lists for the MPAs
* Research and monitoring that will clarify the role the MPA plays life history stages of migratory species (turtles, seabirds, sharks and a range of fish species)
* Study of the physical oceanography and water chemistry of the MPAs and development of a systematic monitoring program to measure key physical parameters that are required to assess ecosystem health and the potential impacts of climate change
* Ongoing monitoring of fish and invertebrate catch and effort within and adjacent to the MPAs through existing projects such as the National Marine Linefish System and DEFF limpet monitoring programs
* Establishment of a dedicated monitoring project to determine fish abundance and size structure within and adjacent to the different zones in the MPAs using appropriate methodology
* Initiation of a project to determine the socio-economic value of the MPA and how this can be enhanced
* Initiation of a project to understand the attitudes and knowledge of stakeholders and local communities adjacent to the MPAs. The results of this research can be used to improve engagement and build support

# Costing

Funding for the management of the Amathole MPAs is by way of National Government through the DEFF. DEFF has contracted ECPTA to manage the MPA on their behalf. The estimated costs for various components of a management programme are presented in Table 11.1. **These costs are based on preliminary budgets developed by Ezemvelo and should be modified by ECPTA** to reflect ECPTA determined costs. A budget to fund the implementation of the Amathole MPA Management Plan must be compiled and approved by DEFF and ECPTA before the start of each financial year.

**Table 11.1.** Estimated costs for some elements of a MPA management programme for the 2020/21 financial year. Costs in subsequent years will increase by the prevailing rate of inflation.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Deliverable** | **Purpose/Description** | **Cost (ZAR)** |
| Awareness | Management of Natural Resources | Signage, Brochures, Pamphlets, Stakeholder Liaison | 380 000 |
| Assets, Tools and Equipment | Management of Natural Resources | Motor vehicle, boat and trailer, tracker units, digital radios | 2 606 000 |
| Project Management | Management of Natural Resources | Manager Fees, expenses and administration office costs | 980 000 |
| Boat Inspections | Compliance and Enforcement | Boat inspections | 66 000 |
| Estuarine and Offshore patrols | Compliance and Enforcement | Estuary and offshore patrols  Boat Based Whale Watching Monitoring | 90 000 |
| Materials tools and equipment | Compliance and Enforcement | Software licenses, Computer equipment and other office equipment | 80 000 |
| Training and PPE | Compliance and Enforcement | Skipper training, Commercial Diving training, MPA compliance training | 100 000 |
| Research and Monitoring | Research and Monitoring | Recreational activities, rocky shore biodiversity monitoring, estuarine monitoring, marine animal standings response | 38 000 |

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**Appendix 1.** Pelagic fish species list for the Amathole Offshore MPA Controlled-Pelagic Line fish Zone. Family names are given as all species in these families may be caught or used as bait species.

Atherinidae – silversides

Belonidae – garfish

Carangidae – kingfish, Garrick/leervis, yellowtail, queenfish, etc.

Chirocentridae – wolf herring/slimy

Clupeidae – red-eye, sardines, etc.

Coryphaenidae – Dorado

Engraulidae – anchovies, glass-noses/bonies, etc.

Exocoetidae – flying fishes

Hemiramphidae – halfbeaks

Istiophoridae – Sailfish and marlin

Pomatomidae – Shad/elf

Rachycentridae – Prodigal son/Cobia

Scomberesocidae - sauries

Scombridae – Tunas, mackerels, wahoo, etc.

Sphyraenidae – Barracudas

1. [↑](#footnote-ref-1)