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NATIONAL PARKS

ROBBEN ISLAND MARINE PROTECTED AREA STATE OF KNOWLEDGE REPORT 2026

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We would also like to thank Briege Williams from the South African Heritage Resources Agency (SAHRA) for providing the shipwreck information for Robben Island.

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ACRONYMS AND ABBREVIATIONS

BRUV	Baited Remote Underwater Video
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DFFE	Department of Forestry, Fisheries and the Environment
EBSA	Ecologically or Biologically Significant Area
FIAS	Fishery Independent Abalone Survey
HAB	Harmful Algal Bloom
IBA	Important Bird and Biodiversity Area
ICES	International Council for the Exploration of the Sea
ICMA	Integrated Coastal Management Act
IMMA	Important Marine Mammal Area
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
METT	Management Effectiveness Tracking Tool
MLRA	Marine Living Resources Act
MPA	Marine Protected Area
NBA	National Biodiversity Assessment
NEM:PAA	National Environmental Management: Protected Areas Act
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NGO	Non-Governmental Organisation
RIICZ	Robben Island Inner Controlled Zone
RIMCZ	Robben Island Middle Controlled Zone
RIOCZ	Robben Island Offshore Controlled Zone
RIRZ	Robben Island Restricted Zone
SAEON	South African Environmental Observation Network
SAIAB	South African Institute for Aquatic Biodiversity
SAM	Strategic Adaptive Management
SANBI	South African National Biodiversity Institute
SANCCOB	Southern African Foundation for the Conservation of Coastal Birds
SANParks	South African National Parks
SDG	Sustainable Development Goal
SOK	State of Knowledge
TAC	Total Allowable Catch
TMNP	Table Mountain National Park
TMNP MPA	Table Mountain National Park Marine Protected Area
UNESCO	United Nations Educational, Scientific and Cultural Organization
V&A	Victoria & Alfred (Waterfront)

1. INTRODUCTION

The Robben Island Marine Protected Area (Robben Island (RI) MPA herein) is a legally protected marine area located off the coast of Cape Town, within Table Bay in South Africa's Western Cape. Surrounding the historically significant Robben Island, a site of immense historical and cultural significance, the MPA forms part of South Africa's network of 42 MPAs. Managed by South African National Parks (SANParks), the MPA is dedicated to conserving the unique biodiversity and cultural heritage of the region while supporting sustainable use and marine stewardship.

Through its combination of physical oceanographic features, diverse habitats, and the presence of threatened and endangered species, its ecosystems are biophysically and biologically distinctive. The MPA encompasses a range of habitats, from rocky reefs and kelp forests to sandy seabeds and open ocean waters. These environments support a rich diversity of marine life, including seabirds, fish, and invertebrates, as well as migratory species that rely on the area for feeding and movement along the coast. More specifically, the island and its surrounding waters provide critical habitat for a variety of marine flora and fauna, including resident seabirds, fish, and invertebrates, as well as migratory species that use the area for feeding and breeding. The island itself is an important breeding site for African Penguin, Cape Gannet, and a range of tern species, while the surrounding waters support valuable nursery and spawning grounds for commercially and ecologically significant fish species.

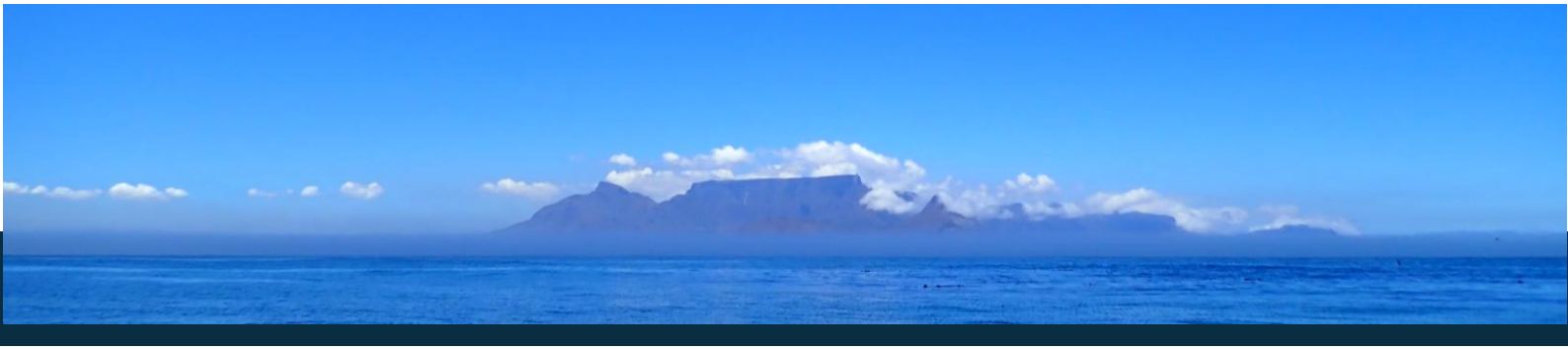
In addition to its ecological value, the area is deeply connected to South Africa's cultural and political history. Robben Island is internationally recognised as a UNESCO World Heritage Site and continues to play an important role in education, tourism, and heritage conservation.

Despite its protected status, the Robben Island MPA faces pressures common to coastal and nearshore systems near urban centres, including shipping traffic, pollution, tourism, and the effects of climate change, such as sea-level rise and ocean warming. Industrial activities, including trawling and mining, are prohibited within the MPA to safeguard sensitive habitats and vulnerable species.

This document seeks to provide a comprehensive state of knowledge of the area and focuses on the marine socio-ecological systems surrounding Robben Island. The report provides an overview of several keys components of the MPA including:

- Biotic and Abiotic characteristics
- History and Marine Cultural Heritage
- Pressures and Threats
- Management
- Research and Monitoring initiatives
- An inventory of key species

While this synthesis cannot capture all environmental, societal, and cultural aspects of the Robben Island MPA, it is intended to inform a wide-ranging audience and provide a foundation for future collaboration, research, and effective marine management, supporting both biodiversity conservation and the sustainable use of marine resources



2. ACCOUNT OF AREA

2.1 LOCATION

The MPA is located off the coast of Cape Town, approximately 12 km west of the Cape Town city centre. It covers 612 km² and includes the waters surrounding the island itself, protecting both inshore and offshore marine systems (Sink et al. 2019). The Robben Island MPA lies adjacent to the Table Mountain National Park (TMNP) MPA and the mainland coastline, forming part of the greater Table Bay marine area (Figure 2.1). The northeast edge of the Robben Island MPA is approximately 3.5 km offshore of Melkbosstrand, while the southeast boundary reaches the coast at Mouille Point. Its location at the entrance to Table Bay places it within one of South Africa's busiest coastal zones, where major shipping routes, port activities, tourism, recreation, and conservation interests converge.

Management of this MPA contributes to the proportion of the South African coastline designated as a 'no-take' or otherwise restricted marine area, helping to strengthen national marine conservation targets and protect sensitive ecosystems. (South African National Parks Board 2008, Field et al. 2025).

The MPA is located in a dynamic transition zone where colder waters from the Benguela Current Large Marine Ecosystem interact with warmer influences from the south. This mixing of water masses, together with seasonal upwelling, supports high productivity and contributes to the area's rich biodiversity. At the same time, the MPA lies within a highly active coastal seascape where shipping, fisheries, tourism, recreation, and urban-industrial activities intersect with important environmental and conservation priorities, creating both opportunities and management challenges.

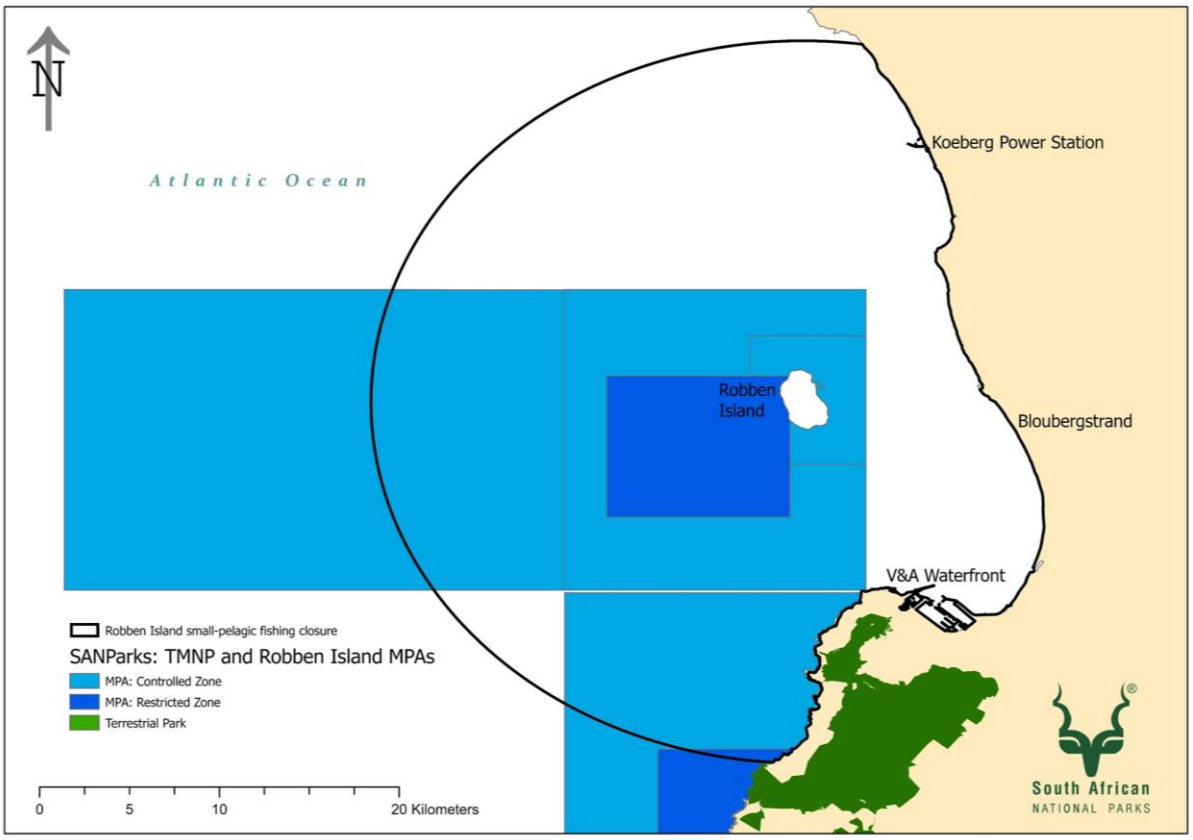


Figure 2.1 Location and zonation of the Robben Island Marine Protected Area

2.2 MONUMENT STATUS, MPA DECLARATION & OTHER LEGISLATION

Robben Island was declared a National Monument in 1996 under the National Monuments Act of South Africa before becoming a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site in 1999. Robben Island, and a buffer zone of one nautical mile, is legally protected as a National Heritage Site through the National Heritage Resources Act (No. 25 of 1999); the World Heritage Convention Act (Act No. 49 of 1999); the Cultural Institutions Act (Act No. 119 of 1998); the National Environmental Management Act (Act No. 107 of 1998); National Environmental Management: Biodiversity Act (Act No. 10 of 2004); and the National Environmental Management: Protected Areas Act (Act No. 57 of 2003).

The Robben Island MPA itself was formally declared by the Department of Forestry, Fisheries and Environmental (DFFE) in 2019 as part of 20 new MPAs declared under 'Operation Phakisa'[1]. It was declared under the Marine Spatial Planning and Biodiversity Conservation objectives of South Africa's Marine Protected Areas Network Expansion Strategy (DEA 2016), where 42 MPAs now represent habitats, ecosystems and species across South African territorial waters (proclaimed in Government Gazette No. 42479, No. R. 794, in terms of Section 22A of the National Environmental Management: Protected Areas Act (NEM:PAA), Act No. 57 of 2003).

The declaration of the Robben Island MPA forms part of South Africa's commitment to international conservation targets, including Aichi Target 11 of the Convention on Biological Diversity (CBD), which calls for the protection of at least 10% of coastal and marine areas. It also supports Sustainable Development Goal 14 (Life Below Water) by aiming to conserve marine ecosystems and promote sustainable use of marine resources.

The Robben Island MPA is subject to the MPA regulations (2019) and those set out in the Marine Living Resources Act (MLRA) (Act No. 18 of 1998) which outlines permitted and restricted activities, zonation, enforcement, and compliance mechanisms. The MPA therefore includes zones; each with varying levels of protection to balance biodiversity conservation with sustainable use.

Other pertinent legislation is the Integrated Coastal Management Act (Act No. 24 of 2008), dealing with coastal access, management and off-road vehicles and slipway regulations Sea Birds and Seals Protection Act (Act No. 46 of 1973), dealing with the management of seabirds and seals.

2.3 BOUNDARIES

The Robben Island MPA encompasses the waters surrounding Robben Island and is a single rectangular block with dimensions of about 16 km wide (north to south) and about 37 km east-west, with the exact boundary following coordinates defined in the Government Gazette proclamation. The area includes the substrata, seabed, subsoil and water column within these boundaries.

2.4 ZONES

Boundary points of the Robben Island MPA

POINT	X	Y
A	18	-33.75
B	18.4006	-33.75
C	18.4006	-33.9
D	18	-33.9
E	18.25	-33.75
F	18.25	-33.9
G	18.2717	-33.79305
H	18.343	-33.79305
I	18.343	-33.773
J	18.4006	-33.773
K	18.4006	-33.837
L	18.3633	-33.837
M	18.3633	-33.81525
N	18.3627	-33.79306
O	18.3633	-33.86333

[1] Operation Phakisa is a 2014 South African government initiative to accelerate implementation of priority economic and development programmes, including the sustainable growth of the ocean economy under the Oceans Economy programme.

In line with international trends in marine resource management, South Africa invested in establishing multiple-use MPA networks with different zones offering different levels of protection. The Robben Island MPA incorporates three Controlled zones (areas permitting limited extractive use), and one Restricted zone (no-take area), with strict limitations on fishing, diving, and other activities to safeguard biodiversity (Figure 2.1). The Controlled zones enable the regulated use of resources under specific conditions, including permitted recreational, commercial and research activities, while ensuring minimal impact on the ecosystem. Restricted zones are strictly no-take areas where extractive activities are prohibited and only non-invasive activities, such as scientific research and eco-tourism, are permitted. Restricted zones safeguard critical seabird breeding sites, fish nursery areas, and sensitive benthic habitats.

Bottom trawling and other destructive fishing methods are completely banned throughout the MPA. Additional restrictions apply to boating in sensitive habitats, including limits on speed and access in nearshore areas around the island.

Zones and their names:

- Robben Island Restricted Zone (RIRZ)
- Robben Island Offshore Controlled Zone (RIOCZ)
- Robben Island Middle Controlled Zone (RIMCZ)
- Robben Island Inner Controlled Zone (RIICZ)

2.5 MANAGEMENT AUTHORITY

SANParks is the designated management authority of the Robben Island MPA. Within SANParks, the Robben Island MPA is managed by the TMNP management structure. The TMNP is divided into several management sections that include two MPAs, the Robben Island MPA and the TMNP MPA. In terms of organisational structure, the TMNP has a dedicated Marine Department that covers the management of these MPAs. The MPA also receives direct support from the other departments in the TMNP management structure, e.g. Administration and Finance, Park Planning, Tourism, Conservation Services.

The DFFE is also involved in the management of Robben Island MPA, and is responsible for issuing permits, allocating fishing quotas, and enforcing fisheries-related legislation, while SANParks undertakes administrative management, coastal law enforcement, monitoring, and environmental education activities. Scientific services from both SANParks and DFFE conduct research and monitoring within the MPA. In addition, the South African Police Service, environmental officers, and DFFE fisheries authorities either collaborate with SANParks or operate independently along the coast to ensure compliance and effective law enforcement (Brill & Raemaekers 2013).

SANParks developed the first management plan for the Robben Island MPA during 2023 for 2025-2034. The management plan focuses on achieving the declared purposes of the MPA, while considering broader stakeholder inputs on the vision for the MPA, given that it is situated in a uniquely complex socio-economic and socio-ecological system. The management plan is awaiting sign off by DFFE.

2.6 ACCESS

Technically, the MPA has no municipal affiliations since it lies seaward of the high-water mark. However, the MPA surrounds Robben Island, which falls under the City of Cape Town Metropolitan Municipality, which plays a key role in general regional marine and coastal management. Due to its proximity to an urban centre and its rich ecological and cultural significance, the Robben Island MPA supports a range of tourism, recreation, research, and educational activities, while maintaining strict controls to protect sensitive habitats and heritage sites. The MPA's waters are popular for eco-tourism, guided boat tours, seabird and seal viewing, recreational diving, and educational excursions. Visitors can experience the area's unique marine and cultural heritage, including the historic prison site, natural habitats, and offshore reefs and wrecks. Access to the island itself is primarily via authorized ferry services departing from the V&A Waterfront in Cape Town. Small vessels mainly access the MPA from Oceana Power Boat Club near the V & A Waterfront, Hout Bay and Melkbosstrand.

3. HISTORY AND MARINE CULTURAL HERITAGE

3.1 CULTURAL HERITAGE

Robben Island MPA has a rich cultural landscape, encompassing both marine and coastal areas of national and international significance. The historical importance of Robben Island, from its role as a political prison during apartheid to its association with significant social and political events, gives it a unique historical significance. It was fortified and used as a prison from the late-seventeenth century until 1996, after the end of apartheid. During the late 20th century, it was used to imprison political prisoners who opposed the postwar apartheid state. Political activist and former president Nelson Mandela was imprisoned on the island for 18 years of the 27 years of his imprisonment before the fall of apartheid and the introduction of full, multi-racial democracy in South Africa (Soudien 2015).

The island and its surrounding waters form part of a cultural landscape of exceptional value leading to its global recognition as a UNESCO World Heritage Site. Beyond its historical value, Robben Island has profound social and spiritual significance. It symbolises the struggle for freedom and democracy in Southern African history, representing the resilience and triumph of the human spirit (Deacon 2004). The island holds a place of reverence and commemoration for those who fought against apartheid, serving as a reminder of the injustices of the past and the ongoing quest for equality and justice.

Since the end of apartheid, the island has become a popular tourist destination. It is managed by Robben Island Museum, and the island is considered a 'living museum'. Every year, thousands of visitors take the ferry from the Victoria & Alfred Waterfront in Cape Town for tours of the island and its former prison. Many of the guides are former prisoners (Shearing & Kempa 2004, Autry 2013).

3.2 MARITIME HERITAGE

The maritime heritage resources found within the Robben Island MPA contribute to its uniqueness. The island's history, marked by political imprisonment and the fight against oppression, is deeply intertwined with its maritime heritage. This heritage includes shipwrecks, navigational landmarks, and cultural practices associated with fishing and seafaring traditions (Werz 1993). Seagoing vessels must take great care when navigating near Robben Island and nearby Whale Rock as these areas pose a danger to shipping. A total of 31 vessels are known to have been wrecked around the island (Smith 1997) (Appendix A). Maritime wrecks around Robben Island and its surrounding waters include the 17th-century Dutch East Indiaman ships, the Yeanger van Horne (1611, the first recorded shipwreck), the Shaapejacht (1660), and the Dageraad (1694). Later 19th-century wrecks include several British brigs, including the Gondolier (1836), and the United States clipper, A.H. Stevens (1866) (Appendix B). Due to the maritime danger of Robben Island and its near waters, Jan van Riebeeck, the first Dutch colonial administrator in Cape Town in the 1650s, ordered that huge bonfires were to be lit at night on top of Fire Hill, the highest point on the island (now Minto Hill) to guide mariners. In 1865, the Robben Island lighthouse was completed on Minto Hill (Smith 1997). Today, some shipwrecks can still be seen on Robben Island's coastline.

3.3 MARINE GEOLOGY AND PALAEONTOLOGY

Beyond its historical associations, the area also contains important marine geological and palaeontological features that form part of this broader heritage. From a marine perspective, Table Bay is underlain by a relatively narrow continental shelf that slopes steeply offshore. The underlying bedrock of Table Bay forms part of the 'Tygerberg Formation' within the Malmesbury Group, and consists mainly of shales, slates, and sandstones (Quick & Roberts 1993, Robben Island Museum 2022). These rocks are influenced by the broader Cape Supergroup, a sequence of ancient sedimentary formations that make up much of the 'Cape Fold Belt'. Within this group, the Table Mountain Group, composed largely of hard quartzites and sandstones deposited around 450–510 million years ago, has played an important role in shaping the region's coastal and seafloor features. Around Robben Island, the seafloor is shaped by a mix of rocky reefs, sandy areas, and patches of coarse sediments, with kelp-dominated reef systems occurring in suitable areas (Karenyi 2014). In the shallow waters the seabed is dominated by rocky platforms, cobbles, and boulders, interspersed with sandy patches (Quick & Roberts 1993). Finer sediments tend to accumulate in deeper and more sheltered parts of Table Bay. These sediments originate from a combination of marine processes, limited river inputs from the Diep and Black Rivers, and coastal erosion (MacHutchon et al. 2020, Woodborne & Flemming 2021).

The marine palaeontology of Robben Island offers insights into the geological and biological history of the area (Boylan 2008). Fossils found in the island's sedimentary rocks and coastal exposures provide evidence of ancient marine life, including invertebrates, such as shells, corals, and molluscs. These fossils help shed light on the evolution of marine organisms and past ecological changes. For example, the Tygerberg Formation, inferred to be latest Precambrian, has reports of simple invertebrate burrows preserved within sandstones on Robben Island that are potentially of great scientific interest as the first and only known macrofossils recorded from the entire Malmesbury Group. These possible trace fossils, if confirmed as biogenic, would provide rare evidence of early seabed activity and bioturbation in late Precambrian marine environments, offering important insights into the emergence of multicellular life prior to the Cambrian explosion (Tarhan et al. 2025). Their occurrence within the Malmesbury Group is particularly significant given the general scarcity of fossils in these metamorphosed sediments (Reimer 1978).

4. ABIOTIC CHARACTERISTICS

4.1 CLIMATE

Robben Island and the Table Bay region experiences a Mediterranean-type climate characterised by warm, dry summers (with average highs around 25–27 °C) and cool, wet winters (average highs around 17–19°C) (Grobler & Cowling 2021). Rainfall is concentrated in winter, influenced by frontal systems from the Southern Ocean, while summers are dominated by persistent southeasterly winds (Reason et al. 2002, Ndebele et al. 2020). The Bay forms part of the larger Cape Peninsula coastal system in the Western Cape of South Africa. The Bay is a semi-enclosed embayment (~25 km wide) with relatively shallow inshore areas (35 m maximum depth) (Quick & Roberts 1993).

The marine environment is strongly influenced by the Benguela Current, a cold ocean current that originates in the Southern Ocean and flows northwards along the west coast of southern Africa. This current brings nutrient-rich water to the surface through a process known as upwelling (Shannon & Nelson 1996, Hutchings et al. 2009). The Robben Island MPA is located towards the southern end of the cold water Benguela Current. In contrast, winter westerly and northwesterly winds reduce upwelling intensity and can generate large storm-driven swells that shape the coastline.

Upwelling plays a key role in supporting marine life by supplying nutrients that drive plankton growth, forming the base of the food web. Seasonal changes in wind and weather patterns influence the intensity of upwelling, resulting in natural variability in marine conditions. Sea mists, along with the occasional hot, dry berg winds from inland, further contribute to the variability of the local coastal climate (Daniels et al. 2022). These processes create dynamic marine conditions around Robben Island.

4.1 BIOGEOGRAPHY

The distribution of marine life along the South African coast is strongly influenced by large-scale oceanographic and biogeographic patterns. According to the most recent biogeographic divisions, Table Bay and the surrounding Atlantic-facing region of the Cape Peninsula fall within the cold 'Southern Benguela Ecoregion', and specifically the 'Southwestern Cape inner shelf' (Emanuel et al. 1992, Bustamante & Branch 1996, Turpie et al. 2000, Branch et al. 2010). This ecoregion extends from Cape Point northwards to the Olifants River, encompassing much of the productive Benguela upwelling system. It is defined by the dominance of the cold, nutrient-rich Benguela Current, which supports high levels of productivity and underpins some of South Africa's most important fisheries (Shannon 1985, Hutchings et al. 2009).

At a finer scale, the Southwestern Cape inner shelf ecozone is characterised by a mosaic of rocky reefs, sandy bottoms, kelp forests, and sheltered embayments (Sink et al. 2019), typical of Robben Islands surrounds. These features provide habitats for a wide range of organisms and contribute to high levels of biodiversity and endemism. The mixing of warm Agulhas waters that occasionally intrude around Cape Point with the cooler Benguela system further enhances this diversity, creating ecological transition zones important for species distributions and productivity.

4.2 OCEANOGRAPHY AND HYDROGRAPHY

As mentioned, the oceanography of the area is largely driven primarily by the cold Benguela Current. This system brings cold, nutrient-rich Antarctic Central Water to the surface due to upwelling. At a local level, southeasterly winds transport coastal waters offshore of the Cape Peninsula, resulting in these strong wind-induced upwelling events. Upwelling is the primary driving force behind the ecology of the Table Bay region. This phenomenon involves the displacement of nutrient-poor surface waters by cold, nutrient-rich deep water. This upwelling phenomenon is seasonal, occurring mainly during the

summer-autumn period (November-April) when strong southeasterly winds prevail. The temperatures in this area typically range between 9°C and 15.5°C (Velimirov et al. 1977). These water masses significantly impact the density and diversity of fauna and flora around Robben Island.

The cold Benguela Current is bordered at both northern and southern ends by warm water systems, namely the Angola Current in the north and Agulhas Current in the south. These northern and southern boundaries shift up and down the coast, playing an important role in the distribution of ecosystems and species, and ultimately the resources they support. The Angola-Benguela frontal zone marks the physical northern boundary of coastal upwelling at approximately the Angola/Namibian border, but this varies seasonally.

Secondary current systems that affect the water masses of the southwestern coast of the African continent and the Robben Island MPA are: i) the equatorward-flowing shelf-edge 'Good Hope' jet current, which is a powerful and semi-permanent feature of the upwelling system off the Cape Peninsula. The jet is biologically important because it transports eggs and larvae of various fish species from the spawning grounds on the Agulhas Bank to the food-rich inshore nursery north of Cape Columbine (Veitch & Penven 2017); ii) a very slow, deep, oxygen-deficient, poleward undercurrent that stretches from the coast to the shelf edge and even into the Cape Basin. This undercurrent plays a poorly understood role in the local ecosystems (Mohrholz et al. 2008). Table Bay also experiences nearshore currents primarily influenced by waves, with nearly all swell originating from the southwest to south direction. As a result, these swells generate a consistent northward flow in the Bay throughout the year.

4.3 BATHYMETRY

The seafloor in Table Bay is shaped by a relatively narrow continental shelf that becomes deeper further offshore. Close to Robben Island, the seabed is mostly rocky, forming a shallow inner shelf. Further out, the seabed slopes more gradually across a broader middle and outer shelf, before dropping off more steeply toward deeper ocean areas. These offshore regions are bordered by features such as the Cape Canyon to the north and the Cape Point Valley to the south.

Around the island itself, depth changes are generally gradual, with wide, shallow platforms extending from the shoreline. These areas support offshore reefs that add structural complexity to the seabed and provide important habitat for kelp forests and other marine life. This relatively gentle underwater landscape contrasts with the

steeper coastal profiles found along parts of the nearby mainland.

The only significant seafloor feature of the shelf, near the Robben Island MPA, is a 5 km wide, semi-circular depression about 20 m deep, situated on the middle shelf area directly west of Robben Island and about 60 km offshore (de Wet & Compton 2021). Sediments in the Robben Island MPA largely comprise fine and very fine sand with a small mud component between the 100 m and 200 m depths immediately west of Robben Island (MARISMA EBSA Workstream 2020).

4.4 COASTAL MORPHOLOGY

Robben Island is the exposed summit of an ancient, now-submerged landform, connected to the mainland by a shallow underwater ridge extending toward Blouberg. Its coastal geomorphology is shaped by the Tygerberg Formation. Dolerite dykes cut through this bedrock, adding further geological complexity. The island is relatively low-lying, with a maximum elevation of only 30–40 m above sea level, making it particularly vulnerable to the effects of rising sea levels and increasing storm intensity with storm surges already periodically inundating parts of the coastline (Dube et al. 2021, Vousdoukas et al. 2022, Kemgang Ghomsi et al. 2025).

The island's coastline, approximately 9 km in length, is dominated by rocky shores, which account for about 91% of its perimeter (Pulfrich 2021). A small sandy beach occurs on the eastern shore at Murray's Bay, where sandy deposits occur due to a reduction in wave energy, The western and southern shores are highly exposed to south-westerly swells from the South Atlantic, leading to steep cliffs, wave-cut platforms, and limited sediment deposition, as well as the creation of inshore reefs, tidal pools, and intertidal flats to contribute further to the island's habitat diversity. In contrast, much of the adjacent mainland coastline, especially along Table Bay, has been heavily modified by urban expansion and harbour development associated with the City of Cape Town. The rocky margins of Robben Island, together with its fringing reefs, support extensive kelp forests and provide critical habitat for many marine species, including a wide range of benthic organisms typical of the Benguela upwelling system. These diverse and productive habitats underpin both the ecological significance and the conservation importance of the Robben Island MPA.

5. BIOTIC CHARACTERISTICS

5.1 MARINE ECOSYSTEMS

Ecosystem types serve as the primary spatial units for assessing the status of biodiversity, as implemented in the National Biodiversity Assessment (Sink et al. 2019, Skowno et al. 2019). The Robben Island MPA protects nine benthic and coastal ecosystem types (Figure 5.1). Of these, two are classified as **Endangered** (Cape Bays and Cape Islands), five as **Vulnerable** (SANParks 2024) (Figure 5.1). The MPA therefore plays a critical role in safeguarding threatened habitats, which together cover significant portions of the area (SANParks 2024) .

The Cape Bays ecosystem type represents semi-enclosed, nutrient-rich bay environments such as Table Bay. These systems are characterised by high biological productivity, supporting dense plankton communities, diverse fish assemblages, and large populations of seabirds and seals. However, they are under intense pressure from coastal development, pollution, shipping, and overfishing. As a result, Cape Bays are nationally classified as Endangered, with Robben Island MPA providing rare formal protection for part of this habitat type (SANParks 2024).

The Cape Islands ecosystem type includes offshore islands and their surrounding waters, which serve as essential breeding and foraging habitats for numerous seabirds, including African penguins, cormorants, and gulls, as well as Cape fur seals. These island ecosystems are highly sensitive to disturbance, with populations declining due to food scarcity, predation, habitat degradation, and human disturbance. Their Endangered status reflects the urgent need to safeguard these sites, and Robben Island plays a central role as one of the most important seabird breeding localities on the West Coast. Current zoning within the Robben Island MPA includes a substantial portion of the Cape Islands ecosystem within the Restricted Zone (RIRZ) (SANParks 2024)

Broad type	Ecosystem Type	Ecosystem Status
Bay	Cape Bay	Endangered
Deep rocky shelf	Cape Rocky Mid Shelf Mosaic	Vulnerable
Deep rocky shelf	Southern Benguela Outer Shelf Mosaic	Least Concern
Deep soft shelf	Southern Benguela Sandy Outer Shelf	Least Concern
Shallow rocky shelf	Cape Rocky Inner Shelf	Vulnerable
Shallow soft shelf	Cape Sandy Inner Shelf	Vulnerable
Island	Cape Island	Endangered
Kelp forest	Cape Kelp Forest	Vulnerable

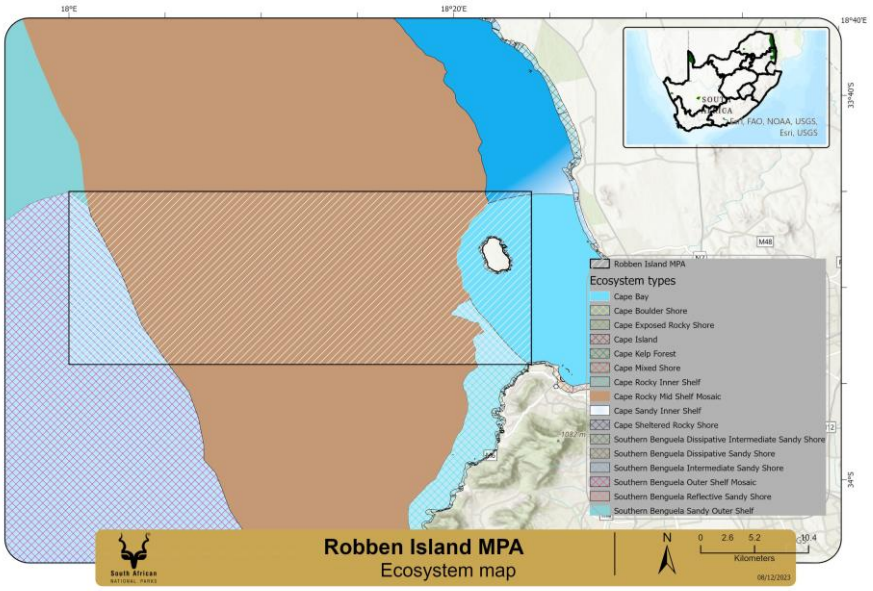


Figure 5.1 The Ecosystem types of Robben Island MPA (SANParks 2024). Classification and ecosystem threat status from the National Biodiversity Assessment 2018.

The Cape Rocky Mid-Shelf Mosaic represents a heterogeneous mix of rocky reefs, sandy patches, and benthic communities found across the continental shelf. This ecosystem type supports diverse fish populations, sponges, and corals, and provides key feeding grounds for top predators, including seabirds and marine mammals. Although classified as Vulnerable, it faces growing threats from trawling, resource extraction, and climate change, with many component species being slow to recover from disturbance. Protection of this habitat within the Robben Island MPA is vital for ensuring ecosystem resilience and the continued provision of fisheries and biodiversity benefits (SANParks 2024).

The protection of these habitats is crucial for meeting national biodiversity targets and maintaining the ecological integrity of the region.

5.2 KEY HABITATS

This section provides more detailed information on the intertidal, subtidal and pelagic marine habitats found specifically around Robben Island, and describes their key biotic characteristics, ecological communities, and representative species. It outlines the range of habitat types present, together with the typical flora and fauna associated with each, highlighting the ecological importance of these environments within the broader MPA.

5.2.1 INTERTIDAL (AREA BETWEEN THE HIGH- AND LOW-TIDE MARKS)

Rocky shores

Robben Island's small coastline is dominated (91%) by rocky shores, with only a small sandy beach occurring on the eastern side at Murray's Bay (Pulfrich 2021). The rocky shore creates structurally complex environments that support diverse intertidal and nearshore communities. Recent rocky shore surveys (SANParks, unpublished data) recorded 116 species across seven functional groups, with seaweeds being the most common. The types of organisms change around the island depending on how exposed the shore is to waves. The sheltered eastern areas tend to have more seaweed cover, while the more wave-exposed western shores have more mussels and barnacles and less seaweed. This reflects how stronger wave action makes it harder for seaweeds to dominate, allowing attached animals to become more abundant.

The intertidal and infratidal (extending from the shallow subtidal into deeper nearshore waters) zones host a rich array of animals and plants, structured by exposure, tidal cycles, and the intricacies of the rocky substrate. In the supralittoral (rarely submerged by seawater) and upper midlittoral (part of the intertidal shore between high and mid tide levels) zones, species such as the periwinkle *Afrolittorina knysnaensis*, limpets (*Scutellastra granularis, Siphonaria capensis*), red algae (*Porphyra capensis*), and barnacles (*Chthamalus dentatus, Tetraclita serrata*) are common, alongside patches of green algae (*Ulva* spp.) and the crustose red algae *Hildenbrandia rubra*. The lower midlittoral supports higher algal diversity, including foliose green algae (*Codium, Cladophora* spp.), brown algae (*Splachnidium rugosum, Chordariopsis capensis*), and red algae (*Nothogenia erinacea, Mazzaella capensis*, articulated coralline algae). Limpets (*Cymbula granatina*), whelks (*Burnupena* spp.), and starfish (*Parvulastra exigua*) are also typical (SANParks, unpublished data).

On the more exposed western shores, filter-feeding species dominate, with extensive beds of the invasive Mediterranean mussel *Mytilus galloprovincialis*, which has largely displaced native mussels (*Choromytilus meridionalis, Aulacomya ater*). Other alien species, including the acorn barnacle *Balanus glandula* and the Chilean mussel *Semimytilus algosus*, have also established and may be present around the island. In the infratidal fringe, large limpets (*Scutellastra argenvillei*) and kelps (*Ecklonia maxima, Laminaria pallida*) dominate, accompanied by whelks, the Cape urchin *Parechinus angulosus*, the strawberry anemone *Aulactinia reynaudii*, and 'red bait' or sea squirt *Pyura stolonifera* (SANParks, unpublished data).

5.2.2 SUBTIDAL (AREA BELOW THE LOW-TIDE MARK)

In addition to the intertidal fauna, subtidal habitats, including kelp beds and rocky reefs, provide critical refuge and foraging grounds for a range of fish, invertebrates, and other marine organisms. These habitats not only contribute to biodiversity but also support ecosystem services

such as nutrient cycling, fisheries productivity, and the resilience of the marine environment against human pressures and climate change.

Kelp forest

From the sublittoral (lower part of the shore) fringe to depths of about 5–10 m, the seabed is dominated by dense kelp forests. These underwater "forests" thrive in nutrient-rich waters and are made up mainly of large seaweeds. The main canopy-forming species, sea bamboo *Ecklonia maxima*, grows to around 10 m depth, while split-fan kelp *Laminaria pallida* typically grows beneath it in a lower layer (Velimirov et al. 1977, Anderson et al. 1989). Further north, murkier (more turbid) water limits kelp growth to shallower depths (Rothman 2015, Rothman et al. 2017). Kelp forests are important because they slow down wave energy, creating calmer conditions close to the shore. This shelter allows many other marine species to live, feed, and reproduce, making these habitats some of the most productive and diverse in the marine environment.

These habitats support a wide range of marine organisms, including commercially important species such as abalone *Haliotis midae* and West Coast rock lobster *Jasus lalandii*. The latter functions as a keystone predator, exerting strong top-down control on benthic community structure (Mayfield & Branch 2000). Other common kelp-associated species include *Aulacomya ater*, Cape reef worm *Gunnarea capensis*, and several species of sponge, anemone, echinoderm, and gastropod such as whelks (*Nucella* spp. and *Burnupena* spp.). Fish communities are also well represented, with the Cape bream[2] *Pachymetopon blochii* being among the most abundant and commercially important species. Smaller algae growing under and on the kelp add further structure and food resources, providing both food and shelter for a variety of grazers, filter feeders, and predators (Branch & Branch 2018).

[2] Cape bream has historically been referred to as "Hottentot". However, this term was originally used by European colonists to refer to the Khoekhoe, the indigenous pastoralists in South Africa, and use of the term is now considered deeply offensive (Hendrickson 1985). Cape bream is now generally accepted as a more appropriate name for *Pachymetopon blochii*.

Overall, Cape kelp forests are highly productive but are currently classified as Vulnerable in South Africa due to multiple environmental pressures. For more detailed information on kelp species and associated algal groups, see 5.4.1 below.

5.2.3 BENTHOS (SEAFLOOR)

The benthic zone supports a wide range of ecologically and economically important species and forms a key foundation of nearshore marine ecosystems. It provides habitat, refuge, and food resources for many commercially valuable species, linking intertidal and subtidal systems through complex food webs and life-history interactions. Monitoring fixed benthic communities (epibenthos) within MPAs is therefore essential for understanding how these ecosystems naturally change over time, and for distinguishing the effects of environmental variability from human pressures.

Using a non-destructive drop-camera system DFFE has established fine-scale long-term monitoring of macro-benthic marine invertebrates from 15 to 100 m depths. A total of 50 stations (30 drops in each station) were sampled in 2025 across depths of; 15–30 m, 31–65 m and 66–100 m (T. Haupt, DFFE, personal communication). Preliminary findings (DFFE, unpublished data) indicate that the MPA supports a rich and diverse array of benthic organisms across the sampling area. These are strongly driven by the mixed habitat types exist throughout, with rocks, boulders, patches of sand, and mud/silt covering boulders in the deeper reaches. Greater similarity exists between species composition occurring in the deeper reaches (31–100 m) compared to the shallows. The dominant species at all depths were the brachiopods (lamp shell bivalves) and molluscs (mussels) covering boulders with tiny winkles spread across sandy patches. Urchins account for the high numbers of echinoderms observed across all depths, along with aggregations of brittle stars and a diverse assortment of other starfish, feather stars and sea cucumbers. Cnidarians (e.g. jellyfish, anemones) are also amongst the dominant taxa at all depths, with two species of anemones, one occupying boulders and the other sandy patches, regularly seen along with sea pens.

Hard corals and solitary stony corals are also abundant throughout the MPA, along with various encrusting and ball sponges. Rock lobsters were observed between 16 and 49 m (T. Haupt 2025 pers. comms.). Future surveys will look to resample these same areas every 2–3 years combined with a ship-based survey to

target the full extent of the MPA as there is still much to discover. This standardised approach allows for repeatable monitoring efforts of seafloor communities in the MPA, while enabling results from elsewhere within the MPA network (e.g. TMNP MPA) to be compared.

5.2.4 PELAGIC HABITAT AND TABLE BAY

The open ocean, or pelagic environment, surrounding Robben Island is the expanse of water beyond the nearshore seabed, and it plays a critical role in the functioning of marine ecosystems. The Robben Island MPA helps safeguard key feeding and migratory areas in these waters for highly mobile species such as whales, dolphins, turtles, and seabirds (Reynolds 2012). The waters of Table Bay and the adjacent continental shelf provide important habitats for many wide-ranging marine animals (Melly et al. 2018).

Within this pelagic environment, plankton form the primary production that supports small pelagic fish, such as sardines *Sardinops sagax* and anchovies *Engraulis encrasicolus*. These fish are a critical food source for humans as well as key predators, including African penguins, Cape cormorants, Cape fur seals, and various shark species.

The pelagic waters around Robben Island are also important for cetaceans. Seasonal visitors include humpback whales *Megaptera novaeangliae* and southern right whales *Eubalaena australis*, which migrate along the west coast of South Africa during their breeding and calving seasons, plus resident and transient dolphin species, which are frequently observed in Table Bay, using the area for feeding, breeding, and social interactions.

Protection of these open-water habitats through the MPA ensures that these mobile species have access to critical foraging and breeding areas, helping to maintain biodiversity and the ecological integrity of Table Bay.

5.3 PLANKTON

Plankton communities form the foundation of the marine food web, sustaining a diverse array of fish, invertebrates, and higher predators (e.g. sharks, seabirds, etc.). Shaped by seasonal upwelling and freshwater inputs, plankton communities are highly productive and play a central role in nutrient cycling and ecosystem functioning. They are broadly divided into phytoplankton (microscopic plants) and zooplankton (microscopic animals).

Phytoplankton use sunlight and nutrients to produce energy through photosynthesis, supporting higher trophic levels. In temperate seas, their abundance follows pronounced seasonal cycles driven by nutrient availability, light, temperature, and oxygen conditions (McCombie 1953, Staehr & Sand-Jensen 2006). In Table Bay, phytoplankton productivity is strongly influenced by the intrusion of cold, nutrient-rich water associated with the broader Benguela current and upwelling. Around Robben Island, communities are typically dominated by large-celled diatoms and dinoflagellates, along with flagellates and cyanobacteria (Goschen et al. 2012). Common diatom species include *Chaetoceros, Nitzschia, Thalassiosira, Skeletonema, Rhizosolenia, Coscinodiscus* and *Asterionella,* while dinoflagellates such as *Prorocentrum, Ceratium* and *Peridinium* are also frequently recorded (Shannon & Pillar 1986). These therefore represent key components of the phytoplankton community, driving primary productivity. The plankton taxa recorded in the RI MPA are provided in Appendix I.

Around Robben Island, although intense local upwelling is limited, nutrient enrichment from surrounding waters helps maintain relatively stable oceanographic conditions, resulting in comparatively high and consistent phytoplankton biomass and productivity (Brown 1980). However, there is still a seasonal component to phytoplankton biomass (Shannon & Nelson 1996). In particular, at certain times on the western coast, the wind -induced upwelling, together with strong sunlight, can foster plankton blooms. A phytoplankton bloom is a rapid increase in the abundance (biomass) of phytoplankton. Blooms can fuel marine food webs by producing large amounts of organic matter and oxygen, supporting zooplankton, fish, and higher predators. However, if a bloom is too dense or consists of harmful species (harmful algal blooms (HABs)), it can lead to oxygen depletion (hypoxia), toxin production, or fish kills when the bloom collapses. Some of the dinoflagellate species which are known to cause harmful algal blooms (e.g. *Ceratium furca, C. lineatum, Prorocentrum micans, Dinophysis spp., Noctiluca scintillans, Gonyaulax tamarensis,*

G. polygramma, Alexandrium catanella, Mesodinium rubrum) also occur around Robben Island, and dense HABs have been observed in Table Bay (Pitcher & Calder 2000).

Zooplankton include tiny larvae of various marine species such as fish and crustaceans. Zooplankton feed on phytoplankton and, in turn, are eaten by fish, seabirds, and larger marine animals. These zooplankton, in turn, are preyed upon by larger marine animals. This makes plankton a critical link in the transfer of energy through the ecosystem (Hays et al. 2005). Several species comprise the zooplankton communities along Table Bay, predominantly including copepods (small planktonic crustaceans) (e.g. *Centropages, Calanoides, Metridia, Nannocalanus, Paracalanus, Ctenocalanus* and *Oithona* spp.) and euphausiids (shrimp-like plankton) (*Euphausia lucens* and *Nyctiphanes capensis*) (Shannon & Pillar 1986, Hutchings et al. 1991). These taxa can connect the surf zone phytoplankton blooms with higher trophic levels (Lomartire et al. 2021). See Appendix I for a full list of planktonic species recorded in the RI MPA.

Like phytoplankton, zooplankton dynamics in the southern Benguela are strongly linked to periodic upwelling and wind-driven ocean currents and can result in highly patchy distributions at small scales. Many taxa also exhibit diel vertical migration, remaining at depth during the day and moving into surface waters at night, which provides access to surface productivity while reducing exposure to visual predators (Bandara et al. 2021). This behaviour effectively transfers energy from surface phytoplankton production to higher trophic levels. As a result, these dense zooplankton aggregations represent a critical and highly concentrated food resource for juvenile fish, particularly within productive coastal and surf zone environments, including key estuarine and coastal species such as mullets, gobies, and white steenbras (Montoya-Maya & Strydom 2009, McGregor & Strydom 2020). Large swarms of krill have also been regularly recorded on Baited Remote Underwater Video (BRUV) surveys around Robben Island (SANParks, unpublished data), highlighting their local importance in nearshore food-web dynamics.

Ichthyoplankton in the southern Benguela area comprise mostly fish eggs and larvae, mainly from anchovy and pilchard, and to a lesser extent from hake and mackerel (Shannon & Pillar 1986). As Table Bay falls within the main recruitment areas for these commercially and ecologically important species, it is likely that relatively high densities of fish eggs and larvae could also be present here (Quick & Roberts 1993).

5.4 ALGAE

On the coast and in the shallows of Robben Island, marine algae play a key role in structuring the coastal ecosystem. Along the rocky intertidal zone, the algal community is dominated by foliose and ephemeral species that are well adapted to withstand wave action, heat stress, and fluctuating environmental conditions (SANParks, unpublished data). Algae are commonly classified as red (Rhodophyceae), brown (Phaeophyceae) or green (Chlorophyceae) algae, primarily based on their photosynthetic pigment. A full list of marine algal species recorded in the RI MPA is provided in Appendix H. Common red algae species found in the Robben Island MPA include the fleshy *Plocamium cornutum* and coralline algal species from the genus *Lithothamnion,* as well as *Gigartina radula, G. scabiosa, G. striata, Plocamium rigidum, P. maxillosum, Pachymenia carnosa* and *P. cornea*. Also common are various green algae, including *Codium fragile, Cladophora mirabilis* and species from the genus *Ulva* (Greenwood 1975). These inter- and subtidal algae species play important roles in coastal ecosystems, acting as foundational species that provide food, habitat and oxygen for marine life (Motshekga et al. 2023). As primary producers, along with microalgae, they serve as the energy base of food webs, converting sunlight into organic matter through photosynthesis.

Moving deeper into the subtidal zone, these communities give way to extensive macroalgal assemblages, with kelp forests forming the dominant feature. These kelp beds, made up of species such as *Ecklonia maxima, Laminaria pallida* and *Macrocystis pyrifera* (Greenwood 1975), provide habitat and shelter for a wide diversity of marine organisms, making algae an

important foundation for the island's nearshore ecological dynamics. These kelp forests support diverse biological communities and are central to nearshore ecosystem functioning. In addition to canopy-forming kelps, a diverse assemblage of understorey and epiphytic algae contributes to overall biodiversity and ecological resilience, reinforcing the importance of algae as foundational components of coastal marine systems. To read more about kelp forest' structure and associated fauna, refer back to Section 5.2.2.

5.5 MARINE INVERTEBRATES

Marine invertebrates form a diverse and functionally important component of the coastal ecosystems surrounding Robben Island. This group includes a wide range of taxa such as molluscs, crustaceans, echinoderms, cnidarians, and annelid worms, many of which are closely associated with rocky shores, kelp forests, and subtidal reef habitats described above. Many of these organisms fulfil key ecological roles, including grazing, predation, filter feeding, and bioturbation, thereby contributing to nutrient cycling, energy flow, and overall ecosystem stability. Many species are also habitat-forming or ecosystem engineers, enhancing structural complexity and providing refuge for other organisms.

5.5.1 MACROFAUNAL COMMUNITIES

As outlined in Sections 5.2.1 and 5.2.2, the shallow inshore environment surrounding Robben Island supports a diverse assemblage of marine invertebrates closely associated with hard substrata and macroalgal (kelp) habitats. These systems are characterised by high structural complexity and productivity, which underpin rich macrofaunal communities.

Many of the invertebrate groups occurring in these habitats have already been introduced in the context of intertidal and kelp forest ecosystems, including anemones (e.g. *Anthopleura michaelsoni, Bunodosoma spp.*), sponges, molluscs (e.g. limpets such as *Cymbula grantina* and *Scutellastra cochlear, and* pleurobranch *Berthellina granulata*), echinoderms (e.g. *Parechinus angulosus, Callopatiria granifera*) crustaceans (e.g. *Jasus lalandii, Guinusa chabrus*), and ascidians (e.g. red bait *Pyura stolonifera*) (see Appendix G for a full marine invertebrate species list). Together, these taxa contribute to ecosystem functioning through roles such as grazing, filter feeding, and predation, while also enhancing habitat complexity through encrusting and reef-building forms. Rocky reef habitats are typically dominated by sessile and slow-moving invertebrates, including sponges, including ascidians, soft corals (e.g. *Alcyonium fauri*), and hydrozoans (e.g. *Sertularella polyzonias*), which form a living matrix over the substrate. Mobile species such as chitons (*Callochiton* spp.), limpets, and sea urchins are also common, while

predatory species, including starfish (e.g. *Callopatiria granifera*) and gastropods (e.g. *Nucella squamosa*), contribute to trophic structuring. Sandy habitats, although less structurally complex and less prolific within the Robben Island MPA, still support distinct invertebrate assemblages, including burrowing polychaetes, bivalves (e.g. *Donax serra*, *Cuspidaria* spp.), and species such as the feathery sea pen *Virgularia schultzei*, which are adapted to softer sediments (Karenyi 2014).

While these broader community patterns provide important ecological context, particular attention is often given to larger and commercially significant macroinvertebrates, which play disproportionate ecological and economic roles within the system. These include species such as the West Coast rock lobster *Jasus lalandii* and abalone *Haliotis midae*, as well as other conspicuous taxa that influence community structure and are key to fisheries and conservation management. The following sections therefore focus in greater detail on these prominent macroinvertebrate species and their ecological roles within the Robben Island MPA.

5.5.2 WEST COAST ROCK LOBSTER

The West Coast rock lobster *Jasus lalandii* is a marine crustacean with a range extending from Walvis Bay, Namibia, to Gqeberha on the East Coast of South Africa (Jones 2008). They can reach 300 mm in carapace length and are slow-growing (Groeneveld & Branch 2002, Jones 2008). Found in groups, they feed on urchins, juvenile abalone, mussels and barnacles (Mayfield & Branch 2000, Mayfield et al. 2001a, Johnston S J & Butterworth 2018) and are preyed on by fish, small sharks, octopus, and seals (Jones 2008). Their life cycle is typical of spiny lobsters and includes a planktonic larval phase with at least 11 moults before the swimming post-larval stage that settles out of the plankton into kelp bed nursery areas in shallow waters (Dubber et al. 2004). The maximum lifespan of West Coast rock lobster is 30-40 years.

5.5.3 ABALONE

Haliotis midae, abalone, or commonly referred to by its Afrikaans name perlemoen, is a species of marine gastropod endemic to South Africa (Rhode et al. 2017). While endemic to South Africa, their distribution is patchy and concentrated along the south and west coasts. They have a disjunct distribution, extending from St Helena Bay on the West Coast to just north of Port St Johns on the East Coast of South Africa, divided into western and eastern stocks (DFFE 2025). They favour rocky reefs and kelp beds in water less than 5 m deep but occur down to 20 m (DFFE 2025) and therefore occur within the Robben Island MPA. This species is the largest of its South African counterparts, with a shell diameter of up to 230 mm (van der Merwe 2009). Abalone reach sexual maturity after seven years, the minimum legal size for harvest is only after eight to nine years, and they live up to 30 years (DFFE 2023). They feed on attached and drift algae and kelp (Jones 2008, Zeeman et al. 2014).

5.5.4 OTHER BENTHIC INVERTEBRATES

Although the southern Benguela ecosystem has been studied for many years, detailed knowledge of the distribution and diversity of its benthic invertebrate fauna remains limited. Recently identified priority areas within the southern Benguela, including the Robben Island MPA, have been sampled by the Oceans and Coasts, DFFE, in the hopes of contributing to baseline assessments for continuous long-term monitoring and determining species diversity of benthic invertebrate communities. Research efforts were mostly focussed on macro-epibenthic organisms- large organisms which are attached to or live on the seafloor. Sampling was conducted through visual assessments using various benthic camera systems and dredge and grab samples taken in non-priority areas. This assessment recorded a total of 72 species in and around the Robben Island and TMNP MPAs, with echinoderms (50%) (including sea stars and urchins) and cnidarians (19%) making up the majority of species observed in the Robben Island MPA (DFFE 2022).

Changes in depth and habitat or substrate type alters the distributions of these benthic invertebrates, with abundance and diversity declining in deeper waters. This has been linked to decreases in food availability and temperature in deeper waters compared to shallow waters (DFFE 2022). These data provide evidence that the establishment of the Robben Island MPA helps to ensure connectivity between coastal, inshore and offshore zones in Table Bay is maintained.

5.6 MARINE VERTEBRATES

The Bay and surrounding MPA support a rich and diverse marine vertebrate communities that are closely linked to its coastal and offshore habitats. The dominant marine vertebrate fauna include seabirds and marine megafauna, plus a highly diverse fish and shark community.

5.6.1 SEABIRDS

Of the fifteen species of seabirds that breed in southern Africa, nine are known to breed on Endangered Southwest Cape Island-associated habitat, including Robben Island's (Pulfrich 2021). Notable inhabitants include the African penguin Spheniscus demersus, bank cormorant *Phalacrocorax neglectus*, Cape cormorant *P. capensis*, crowned cormorant *Microcarbo coronatus,* African black oystercatcher *Haematopus moquini*, and the swift tern *Thalasseus bergii* (BirdLife South Africa 2015, see Appendix D for a full list of birds and shorebirds recorded in the RI MPA).

The offshore area surrounding the island hosts various albatross species, including the Atlantic yellow-nosed, black-browed, and Tristan albatrosses, along with the white-chinned petrel. Designated as an Important Bird Area (IBA), Robben Island plays a vital role in seabird conservation (BirdLife International, 2013) as well as a global Key Biodiversity Area (KBA) by IUCN.

Island habitats provide vital breeding, roosting, and feeding habitats for these seabirds. Many raise their chicks in burrows or on open ground, while African black oystercatchers nest and forage along the rocky shores. These islands are essential habitats for the survival of these vulnerable bird species.

However, many of these important seabirds are declining around South Africa. The African penguin is endemic to southern Africa (Whittington et al. 2005), and populations are facing critical declines (Sherley et al. 2024). African penguins re-colonised Robben Island in 1983 after an absence of about 180 years, and Robben Island is one of only seven remaining penguin breeding colonies. Overall, South Africa's African penguin population has dwindled to fewer than 10,000 breeding pairs, with projections indicating potential extinction in the wild by 2035 if current trends persist (Sherley et al. 2024). Robben Island numbers of breeding pairs peaked in 2004 at 8,524 but fell to only 1,000 in 2021 (for more details see the Species of Conservation Concern – Section 7.5). Recent GPS tracking research has shown that penguins forage mainly to the north and south of the island, making them particularly vulnerable to oil spills associated with vessel traffic in and out of the Port of Cape Town (http://penguin-tracks.blogspot.com) (SANParks 2024). However, declines documented by Crawford et al. (2011, 2014), Grémillet et al. (2016) and Sherley et al. (2020) link breeding failure and adult survival to reduced prey availability and increased predation pressures, while pollution (oil) and other forms of human disturbance (fishing, shipping) are considered as contributors to this species decline. A recent increase in protection for their foraging area around Robben Island has been implemented to further reduce competition with the small pelagic fishing activities[3].

Robben Island also holds the largest number of breeding bank cormorants in the Western Cape (120 pairs in 2000, but only 20 pairs today), which breed on the short arm of the breakwater of Murray's Harbour (Pulfrich 2021). A significant population of Cape cormorants (6,000 breeding pairs in 2020) also breed on the harbour wall as well as along the north-western side of the island. The Cape cormorant is currently listed as Endangered (BirdLife International 2025). Long-term monitoring shows that Cape cormorants in particular are highly sensitive to prey fluctuations and human disturbance, reinforcing the value of strict no-take zones around breeding islands (Crawford et al. 2016, Sherley et al. 2020). Small breeding clusters of crowned cormorants occur in alien vegetation, while African black oystercatchers (~250 breeding pairs in 2009), kelp gulls (>2,000 breeding pairs in 2020), and Hartlaub's gulls have also been recorded breeding on the island in recent years, as have majority of the Western Cape's breeding population of swift terns, with the bulk of the pairs nesting close to the western shoreline.

Historically, Robben Island supported huge numbers of seabirds. The high level of human-induced disturbance and activity has, however, resulted in several species abandoning breeding there (BirdLife South Africa 2015). Many of these seabirds forage within 20–40 km of their colonies, making the nearshore waters of the Robben Island MPA critical for chick provisioning, but this conflicts with human uses of Table Bay (Campbell et al. 2019). BirdLife International has identified a large area, which overlaps with the Cape Canyon Ecologically or Biologically Significant Areas (EBSA) area, as a potential marine International Bird Area for Atlantic yellow-nosed and black-browed albatrosses and Cory's shearwaters. Therefore, the island remains an extremely important conservation area for seabirds. If management measures are successful in directing tourism activities away from sensitive seabird areas, it is expected that more breeding seabirds will return (Campbell et al. 2019).

5.6.2 MARINE MEGAFAUNA

Cetaceans and seals

Thirty-three species of cetacean (dolphins and whales) are known to occur in the waters off the southwestern Cape with at least 10 recorded near Robben Island (Findlay 2014; see Appendix C for the full marine mammals species list for the RI MPA).

The most abundant baleen (filter-feeding) whales in the Benguela are humpback whales *Megaptera novaeangliae* and southern right whales *Eubalaena australis*. In the last decade, both species have been increasingly observed to remain in the Cape Columbine – Yzerfontein area and further south towards Robben Island and Cape Point well after the 'traditional' South

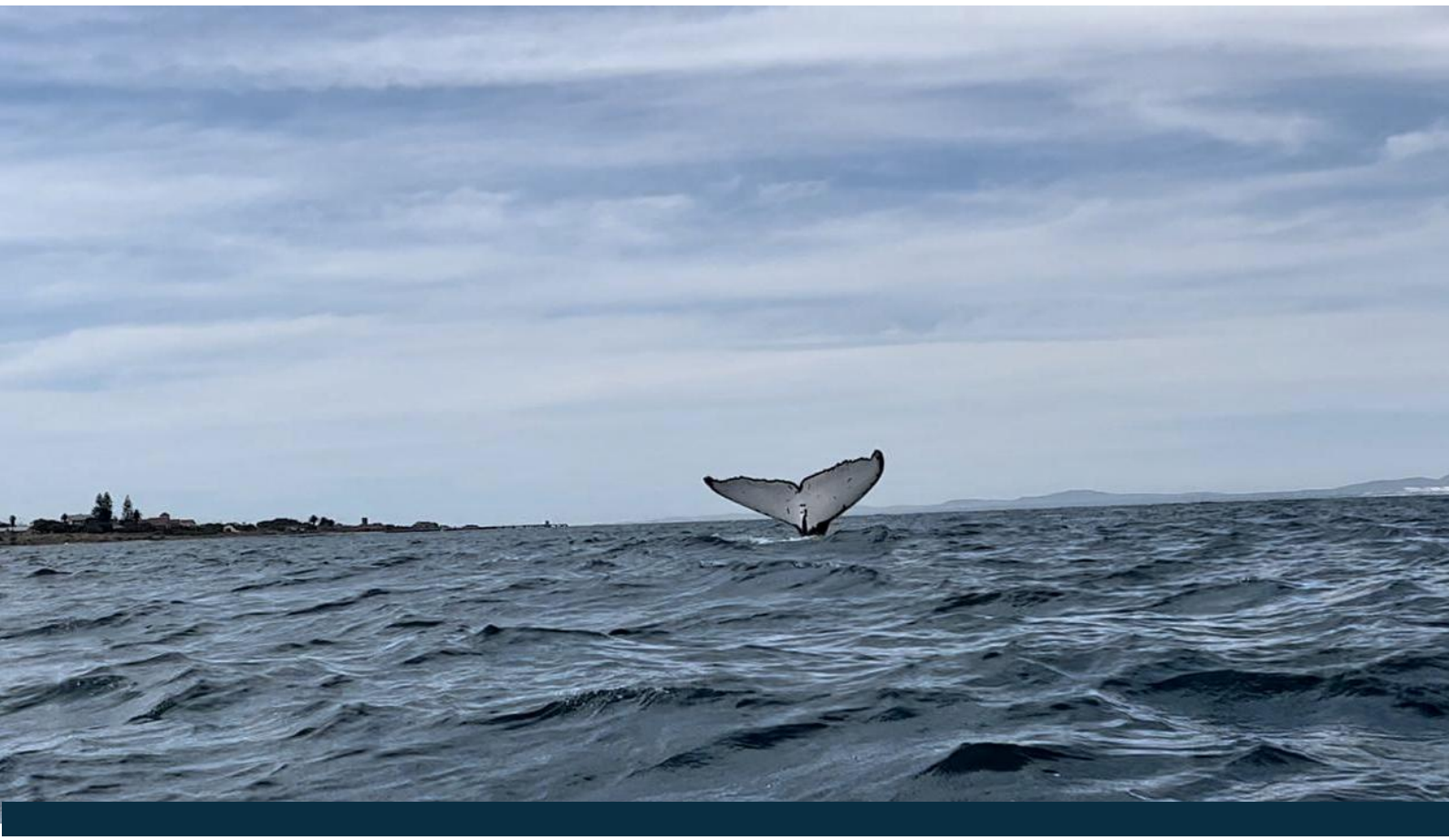
[3] https://www.dffe.gov.za/mediarelease/george_secureshistoricsettlement_penguins

African whale season (June–November) into spring and early summer (October–February) where they have been observed feeding in upwelling zones, especially off Robben Island, Cape Point, Saldanha and St Helena Bays (Barendse et al. 2010, Mate et al. 2011).

The majority of humpback whales passing through the Benguela are migrating to breeding grounds off the tropical west coast of Africa, between Angola and the Gulf of Guinea (Rosenbaum et al. 2009, Barendse et al. 2010). Animals migrating north encounter the West Coast at varying places, while on the southward migration, many humpback whales follow the Walvis Ridge offshore, then head directly to high latitude feeding grounds, while others follow a more coastal route, possibly lingering in the feeding grounds off western South Africa in summer (Elwen et al. 2014, Seyboth et al. 2025). Abundance estimates in 2005 put the number of animals in the west African breeding population to be in excess of 9,000 individuals (IWC 2012), and it is likely to have increased by about 5% per annum since this (IWC 2012). Humpback whales are therefore likely to be frequently encountered in Table Bay and Robben Island MPA, with numbers peaking in July–February.

The southern African population of southern right whales are also seen regularly in the nearshore waters of the West Coast (<3 km from shore), extending north into southern Namibia (Roux et al. 2011, 2020). Right whales have been recorded off the West Coast in all months of the year, but with numbers peaking in winter (June-September). Bryde's whales *Balaenoptera edeni* are also present year-round, taking advantage of the rich feeding grounds created by upwelling and plankton blooms.

Killer whales *Orcinus orca* have a circum-global distribution, being found in all oceans from the equator to the ice edge (Best 2007). They occur year-round in low densities off the western coast of South Africa. Killer whales are found from the coast to deep open ocean environments and may occasionally be encountered at low levels in Table Bay. Two highly identifiable killer whales (nicknamed Port and Starboard) have been seen fairly regularly around Robben Island, and even inside Murray Harbour a few times (as documented on various social media groups and platforms). It is believed that they may be targeting broadnose sevengill sharks *Notorynchus cepedianus* that are common in the area.



The bottlenose dolphin *Tursiops truncatus*, dusky dolphin *Lagenorhynchus delphis* and Heaviside's dolphin *Cephalorhynchus heavisidii* are all known to occur offshore in West Coast waters (Findlay et al. 1992, Best 2007). Dusky dolphins are the most frequently encountered small cetacean in Table Bay, as they are very "boat friendly" and often approach vessels to bowride. The species is resident year-round throughout the Benguela ecosystem in waters from the coast to at least 500 m deep (Findlay et al. 1992). Although no information is available on the size of the population, they are regularly encountered in near shore waters between Cape Town and Lamberts Bay (Elwen et al. 2010), with group of up to 800 individuals having been reported (Findlay et al. 1992). Dusky dolphins are regularly seen in the waters around Robben Island.

Heaviside's dolphins are relatively abundant in the Benguela ecosystem, with approximately 10,000 animals estimated to live in the 400 km of coast between Cape Town and Lamberts Bay (Elwen et al. 2010). This species inhabits waters from the coast to depths of at least 200 m (Elwen et al. 2006, Best 2007). Heaviside's dolphins are resident year-round and seen regularly in Table Bay, near Granger Bay.

Table Bay and Robben Island MPA are also commonly used by Cape fur seals *Arctocephalus pusillus pusillus*, which is the only species of seal resident along the west coast of Africa. A non-breeding population has established itself in the Port of Cape Town, and the northern shores of Robben Island are occasionally used as a haul-out site. The nearest breeding colonies are located at Seal Island in False Bay and at Robbensteen between Koeberg and Bok Punt just to the north of Table Bay (Wickens 1994). Seals are highly mobile animals with a general foraging area covering the continental shelf up to 120 nautical miles offshore (Shaughnessy 1979), with bulls ranging further out to sea than females.

Fish and sharks

The structure of the nearshore and surf zone fish community varies greatly with the degree of wave exposure. Fish species commonly found in kelp beds off the West Coast include Cape bream *Pachymetopon blochii*, two-tone fingerfin *Chirodactylus brachydactylus*, red fingers *Cheilodactylus fasciatus*, galjoen *Dichistius capensis*, and several other Sparid and elasmobranch species (Branch & Branch 2018).

Recent BRUV surveys of reef associated fish around the Robben Island MPA (controlled and restricted zones) carried out by SANParks recorded 22 species across 18 genera, including 16 fish species from 15 families inside the general MPA (SANParks, unpublished data). These surveys also provide further evidence of the high frequency of Cape bream found around Robben Island, appearing in 49 of 52 deployments. Cape bream total lengths were similar in the controlled and restricted zones; however, MaxN (maximum number of individuals of a specific species visible in a single frame at any one time) was higher in the restricted zone. White stumpnose *Rhabdosargus globiceps* and dark shyshark *Haploblepharus pictus* were also relatively common, while all other species occurred infrequently and in low numbers. Broadnose sevengill sharks *Notorynchus cepedianus* are common top predators around Robben Island (SANParks, unpublished data). Overall, fish diversity was higher in the controlled zone, but not significantly different between zones. Habitat and depth were significant predictors of diversity, with diversity highest on the reef and lowest on the kelp and reef and declining with depth (Kock et al., in prep).

Small pelagic shoaling species include the sardine/pilchard *Sardinops sagax*, anchovy *Engraulis capensis*, chub mackerel *Scomber japonicus*, horse mackerel *Trachurus capensis* and round herring *Etrumeus whiteheadi*. These species typically occur in mixed shoals of various sizes within the 200 m contour and are found in Table Bay and Robben Island, with the small pelagic fishing industry operating nearby to target many of these species. As suggested earlier, these species play an important role in marine food webs and transfer energy up the food chain to top level predators.

6. PRESSURES AND THREATS

6.1 EXPLOITATION AND OVERFISHING

Robben Island MPA lies near a highly urbanized and heavily fished coastal area. Commercial and recreational fisheries operate in adjacent waters, although the MPA itself has restrictions to protect key species and habitats. Commercial fisheries in the region include line fisheries targeting reef-associated species (e.g. seabreams (e.g. Cape bream *Pachymetopon blochii*, santer *Cheimerius nufar* and slinger *Chrysoblephus puniceus*), coastal migrants (e.g. geelbek *Atractoscion aequidens* and kob *Argyrosomus* spp.) and nomads (e.g. snoek *Thyrsites atun* and yellowtail *Seriola lalandi*) and small-scale inshore species (Parker et al. 2018). Historically, abalone and West Coast rock lobster were heavily exploited, but the area now falls within the Table Bay Rock Lobster Sanctuary. Abalone fishing is allowed in the inshore controlled zone of the MPA. Illegal harvesting of both these species remains a pervasive threat (Brill & Raemaekers 2013).

The area also supports a culturally and recreationally important shore- and boat-based angling sector. Popular fishing activities target linefish species such as kabeljou, geelbek, as well as the species listed above. To balance sustainable use and ecological protection, the MPA is zoned into restricted and controlled-use areas. Fishing is prohibited in fully protected Restricted zones, while recreational fishing is permitted in Controlled zones under strict permit conditions. Despite these protections, slow-growing reef species remain vulnerable to overexploitation, and illegal or unregulated fishing may compromise conservation outcomes.

6.2 INDUSTRIAL DEVELOPMENT AND SHIPPING

The Robben Island MPA is situated near Cape Town Harbour and the Port of Cape Town, one of South Africa's busiest ports, with significant shipping, dredging, and coastal development activities (Quick & Roberts 1993). Table Bay itself serves as a safe anchorage for tankers and container vessels waiting to enter the Port of Cape Town. Industrial and port activities, including ship movements, dredging, and cargo handling, can degrade habitat, alter sediment dynamics, and introduce pollution. The high density of vessels (including cargo, fishing, and recreational vessels) poses risks through habitat disturbance (light, noise), cetacean strikes, oil and fuel spills (e.g. as a result of ship-to-ship bunkering), and general pollution e.g. (marine litter through bilge discharges and litter thrown overboard).

Robben Island is critical for breeding seabirds, including African penguins and Cape gannets, which are vulnerable to oil contamination. The proximity of shipping lanes increases the risk of accidental spills affecting the MPA (Quick & Roberts 1993). Heavy metal contamination is a potential concern due to urban runoff, port operations, and industrial discharges into Table Bay. Metals such as lead, mercury, and cadmium can accumulate in sediments and biota, posing risks to benthic communities, fish, and seabirds, as well as human consumers of seafood from adjacent areas. Shipping also presents a pathway for invasive alien species via ballast water or hull fouling (see Section 6.4 below). Estuarine and nearshore environments, such as the nearby Table Bay estuary system, are particularly vulnerable (Quick & Roberts 1993). Data on invasive species within the Robben Island MPA are limited, highlighting the need for monitoring, early detection, and management strategies. A R4.3 billion investment by Transnet Port Terminals to upgrade equipment within the Port is aimed at expanding container capacity so these threats are predicted to continue and potentially worsen.

6.3 MICROPLASTICS AND PLASTIC POLLUTION

Plastic pollution, particularly microplastics and nurdles (small plastic pellets used in manufacturing), represents a growing threat to marine ecosystems (Wright et al. 2013). These materials enter the ocean via stormwater runoff, riverine discharge, and shipping incidents, and are ingested by a wide range of marine organisms, from zooplankton to seabirds. Their

persistence and the bioaccumulation can cause physical harm, disrupt feeding behaviour, and introduce toxic substances into marine food webs (Awe et al. 2025).

Cape Town's urban environment generates high levels of land-based waste that enters Table Bay through stormwater drains and rivers. Microplastics, nurdles, and larger debris are ingested by fish, seabirds, and marine mammals, causing physical harm and potential contamination of the food web. Long-term monitoring is needed to assess accumulation and ecological effects.

The Diep and Black Rivers discharge into Table Bay, transporting large volumes of solid waste, litter, and plastic debris that eventually reach the waters surrounding Robben Island. Strengthening waste management and pollution control within these catchments is critical to reducing the inflow of pollutants into the marine environment and safeguarding the ecological integrity of the Bay and adjacent MPA. The frequent presence of the invasive water hyacinth *Pontederia crassipes* among the floating debris further indicates that the Diep River is the primary source of this pollution, as it is heavily infested with the species (City of Cape Town pers. comms).

6.3 SEWAGE AND MARINE OUTFALLS

Table Bay receives large volumes of wastewater and other discharges (Pulfrich 2021). These include treated and untreated sewage, stormwater run-off, and effluent from the port and industries along the coast. The Green Point outfall alone has historically released large quantities of sewage into the Bay each day, and industrial pipelines have added trace metals, oil, and grease (Overy 2020). While studies suggest that strong wave action and currents help to disperse much of this pollution, reducing the build-up of contaminants in sediments, the continuous inputs remain a concern (Petrik et al.

2017). Pollutants carried out of Table Bay can reach Robben Island, where they may affect water quality, marine life, and sensitive habitats. There is also a marine outfall located on the eastern shore of Robben Island, and which is administered by the Robben Island Museum. Effluent, which is currently macerated, is discharged 465 m offshore from Robben Island into Table Bay (Pulfrich 2021). There is also a seawater reverse osmosis desalination plant installed on the island. The feedwater intake pipe for the plant is located near Ladies' Rock on the southeast side of the island. The produced brine is currently being discharged through a pipeline routed along the old Faure Jetty, with the only co-pollutants in the brine being an organic, and readily biodegradable, scale inhibitor.

As the city of Cape Town grows, the pressure from sewage and outfalls is expected to increase, making ongoing monitoring and improved wastewater treatment essential for protecting the Robben Island MPA.

6.4 ALIEN SPECIES

Several alien and cryptogenic marine species are now firmly established along the west coast of South Africa and, given their broad distributions in Table Bay and affinity for both natural and artificial hard substrates, are highly likely to occur in the vicinity of Robben Island (Robinson et al. 2005). Well-established species include a sea vase *Ciona intestinalis*, colonial sea squirt *Diplosoma listerianum*, frilled anemone *Metridium senile*, European green crab *Carcinus maenas*, Mediterranean mussel *Mytilus galloprovincialis*, and the elegant red seaweed *Schimmelmannia elegans*. These taxa span a range of functional groups such as sessile filter feeders (ascidians and mussels), habitat-forming anemones, mobile predators (crabs), and macroalgae, and are characteristic of invasion assemblages associated with shipping, harbour infrastructure, and secondary spread along the coastline (Robinson et al. 2005). These species are among the most widespread and ecologically influential non-native taxa in South Africa. Alien invasive species often dominate space, and can become widespread or established which can alter native community structure, and compete with (often outcompete) indigenous species (Robinson et al. 2005).

Robben Island, although more exposed than mainland harbour environments, lies within Table Bay and is therefore subject to similar propagule pressure from shipping and coastal currents. Its combination of rocky shores, subtidal reefs, and artificial structures provides suitable habitat for many of these established invaders. In addition to the species listed above, a broader suite of alien and cryptogenic taxa, particularly fouling organisms such as mussels, barnacles, and algae, occur but remain under-documented in this locality.

6.5 CLIMATE CHANGE

Climate change represents a pervasive and long-term threat to the ecological integrity of the Robben Island MPA. Southern Africa is considered particularly vulnerable due to its geographic position and socio-economic context, with the region already characterised by warm, semi-arid conditions that are projected to become increasingly hotter and drier under future climate scenarios (Ranasinghe et al. 2021). Freshwater availability, already limited, is expected to decline further as a result of reduced rainfall and increased evaporation, while the frequency, intensity, and duration of heatwaves are projected to increase substantially. In addition, the risk of extreme weather events, including intense storms and coastal flooding, is expected to rise. These changes are likely to be acutely experienced in the Cape Town region and along the Cape Peninsula, where terrestrial and marine systems are closely linked (Scholes & Engelbrecht 2021). In the marine environment, climate change is driving shifts in species distributions by exposing organisms to potentially adverse temperature conditions (Laubscher 2018). However, the extent and persistence of these shifts, particularly within dynamic systems such as the Benguela Current, remain uncertain. A good example is the importance for the MPA for foraging areas for the Critically Endangered African penguin, whose population dynamics are closely linked to the availability of small pelagic prey. Climate-driven shifts in the distribution and abundance of sardine and anchovy have been theorised as this resource remains at historically low levels (Brinkman et al. 2025).

As a major source of food, shifts in the prey species has been associated with increased foraging effort and reduced breeding success in the African penguin as the resource dwindles locally (Weller et al. 2014, Campbell et al. 2019). Similar trophic dependencies exist for other seabirds breeding on the island, including Cape cormorant.

Ocean warming, including an increasing frequency and intensity of marine heatwaves (prolonged period of abnormally high sea surface temperatures), is likely to drive shifts in rocky reef communities. Intertidal and shallow subtidal habitats are already exposed to highly variable temperatures due to daily air exposure, making them particularly sensitive to additional heat stress. These changes may result in episodic impacts on kelp forests, as well as other key habitats that are vulnerable to elevated temperatures (Oliver et al. 2018, Atkinson et al. 2020, Starko et al. 2024). Ocean acidification (a reduction in pH, an increase in ambient acidity) also presents an additional stressor for calcifying organisms (e.g. shell building organisms) within the MPA, particularly in a system naturally exposed to low pH conditions associated with upwelling (Thomas et al. 2022).

Sea-level rise and increased storm intensity are expected to effect the island environment (Dube et al. 2021), have direct impacts on intertidal habitats and low-lying areas of Robben Island, with implications for habitat availability and coastal stability (Midgley et al. 2005). These climate-driven pressures are likely to interact with existing stressors, including the historical overexploitation of forage fish, thereby reducing ecosystem resilience and increasing ecological variability within the MPA.

Although many of the anticipated climate change related impacts are not well understood, adaptive, ecosystem-based management strategies will be essential to enhance resilience and support the persistence of key species and ecological processes under changing climatic conditions.

7. SOCIAL ECOLOGY

7.1 RECREATION AND TOURISM

Robben Island MPA lies between two World Heritage Sites, the terrestrial TMNP and Robben Island itself. This affords Robben Island a unique sense of place that encompasses natural beauty, historical significance, educational experiences, marine life, stunning coastal landscapes, and cultural heritage.

Currently, tourism on Robben Island remains largely focused on its historical and political heritage. The island's historical and cultural significance attracts tourists who can learn about its role in South Africa's struggle for freedom and democracy. Expanding tourism to include the marine environment has strong potential and is already being offered by several private operators based out of Cape Town Harbour, however, any future expansion would need to be carefully planned and managed to minimise disturbance to sensitive wildlife, particularly seabirds and penguins, while also ensuring that visitor safety is maintained and that carrying capacity limits are not exceeded. Scenic rocky shores, kelp forests, seabird colonies, and marine mammals such as whales, dolphins and Cape fur seals create strong foundations for nature-based tourism and marine education. Additional recreational and tourism activities in the area include birdwatching, recreational sailing and boating, and SCUBA diving, all of which further highlight the MPA's value as a multi-use seascape where conservation, education, and sustainable recreation intersect. Future opportunities lie in partnerships between SANParks, the Robben Island Museum, local tourism operators, NGOs, and community organisations to develop low-impact, conservation-aligned tourism offerings.

The MPA's proximity to the city also attracts many users engaging in water sports, recreational activities, and commercial fishing. This influx of users presents both opportunities and challenges for the MPA, and these activities are managed within the defined management zones.

7.2 EDUCATION AND AWARENESS

Education and awareness are central to the purpose of the Island and the MPA, which seeks not only to safeguard biodiversity but also to promote environmental learning and responsible tourism. The Robben Island MPA provides unique educational opportunities, promoting conservation awareness and sustainable tourism practices.

Targeted education and outreach programmes can strengthen responsible behaviour among MPA users, encouraging a culture of environmental stewardship and shared custodianship of Robben Island's marine environment. Such programmes may include guided activities, interpretive materials, and collaborations with schools and universities to expand knowledge of marine conservation, sustainable fishing, and climate change.

The island's historical significance adds a powerful dimension to its educational value. However, there remains a lack of integration between cultural history and marine conservation in the visitor experience. Improved interpretation through signage, exhibitions, and multimedia storytelling would help communicate the island's dual significance, highlighting the interconnection between its cultural legacy and its natural environment.

Initiatives that combine heritage tourism with marine education, such as eco-tours and citizen science programmes, would enhance the efficacy of the Robben Island MPA and help meet its objectives under NEM:PAA; 'To protect and provide an appropriate environment for research and monitoring and to promote and contribute to environmental education'.

7.3 ECOSYSTEM SERVICES AND SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic context of the Robben Island MPA is strongly shaped by its proximity to Cape Town and its UNESCO designation. As one of South Africa's most iconic cultural attractions, tourism contributes significantly to the local and national economy. The Robben Island Museum received over 300,000 visitors annually in pre-pandemic years, generating substantial income and providing employment opportunities for both island-based and Cape Town–based communities (Shackley 2001). Beyond direct employment, Robben Island's heritage status drives a wide range of secondary economic activities in transport, hospitality, and guiding services, positioning it as an important driver of inclusive economic growth (Robben Island Museum, 2022).

While the heritage component dominates visitation, there is growing recognition that the surrounding marine and coastal environment holds potential for expanding sustainable tourism offerings (see above). Diversifying income streams and increasing the resilience of the island's tourism economy (Ramoupi et al. 2021).

At the same time, the MPA faces socio-economic risks associated with marine resource use and urban pressures. The illegal extraction of high-value species such as abalone and West Coast rock lobster is a persistent problem in Table Bay and around Robben Island, undermining both conservation goals and the potential for long-term sustainable resource use. Pollution from Cape Town's stormwater outlets, wastewater effluent, and shipping activities within Table Bay can degrade water quality, threatening marine biodiversity and tourism opportunities.

Recognising that successful conservation depends on strong partnerships with neighbouring communities, SANParks has implemented the Marine Economy Small-Scale Fisheries Support Programme in communities surrounding Table Mountain National Park and Robben Island MPA. Through the SANParks Corporate Social Investment (CSI) Programme, the initiative supports more than 370 local fishers by providing essential fishing equipment,

training and capacity development, while promoting sustainable fishing practices and responsible resource use. The programme is founded on a co-learning approach that brings together indigenous knowledge, traditional fishing practices and scientific resource management to strengthen collaboration, improve livelihoods and support the long-term sustainability of marine resources. Delivered in partnership with government departments, NGOs and local stakeholders, the programme reflects SANParks' commitment to ensuring that conservation delivers tangible benefits for communities living alongside protected areas.

Managing these socio-economic challenges requires integrated approaches that link heritage conservation with biodiversity protection. This includes collaboration between the Robben Island Museum, SANParks, DFFE, local communities, and tourism operators to create opportunities where economic benefits support both cultural and ecological stewardship.

7.4 MPA DESIGN AND EFFECTIVENESS

MPAs are globally and nationally recognised as essential tools for conserving marine biodiversity and supporting sustainable fisheries management (Ballantine 2014). While the primary purpose of MPAs is the protection of ecosystems, this goal can be compatible with resource use activities such as fishing, tourism, and cultural purposes, provided they are ecologically sustainable and effectively managed (Day et al. 2019, Mann-Lang et al. 2021). Global syntheses have demonstrated that well-designed and enforced MPAs can enhance biomass, biodiversity, and fisheries spillover benefits, particularly when no-take zones are respected (Edgar et al. 2014). The effectiveness of an MPA, therefore, depends not only on its ecological features but also on the governance systems and management capacity in place.

The Robben Island MPA plays a critical role in conserving the biodiversity and ecological processes of Table Bay and the broader Benguela ecoregion. Protecting the MPA and its habitats is particularly important given the cumulative pressures of shipping, coastal development, and pollution in Table Bay. The MPA's zoning framework (Section 2.2) seeks to balance the protection of biodiversity with opportunities for sustainable use.

Effective enforcement, monitoring, and collaboration are central to the MPA's success. Challenges remain, including illegal fishing, gear violations, and limited capacity to monitor seabirds, marine mammals, and fish. Similar issues occur in other South African MPAs, where enforcement, funding, and local support are critical (Sowman et al. 2011).

A dedicated Management Plan is being developed to improve zoning, compliance, ecological monitoring, and the management of land-based impacts, while also creating opportunities for heritage tourism and community partnerships. Its effectiveness will be tracked using tools such as the Monitoring Effectiveness Tracking Tool (METT), which has already been applied across South African MPAs (SANParks 2006, Sink et al. 2012, DEA 2016). Management will follow a Strategic Adaptive Management (SAM) approach, as used by SANParks to address the complexity of social-ecological systems. SAM is strategic (planning with foresight), adaptive (learning while doing), and participatory (involving stakeholders in decisions) (SANParks 2006).

7.5 SPECIES OF CONSERVATION CONCERN

Abalone

Haliotis midae, abalone, or commonly referred to by its Afrikaans name perlemoen, is a species of marine gastropod endemic to South Africa (Rhode et al. 2017). While endemic to South Africa, their distribution is patchy and concentrated along the south and west coasts. They favour rocky reefs and kelp beds and therefore occur within the Robben Island MPA. The habitats within the Robben Island MPA support relatively high densities of abalone compared to other similar areas (mean = 0.311 ±0.379 per m² in 2020 and 0.308 ±0.349 per m² in 2023), but overall densities are still considered to be low (Kock et al., in prep). In 2023, dive surveys by Anchor Environmental Consultants and SANParks, using Fishery Independent Abalone Survey methods, counted abalone within the Robben Island MPA and around the TMNP MPA. Comparisons between these two MPAs showed the average number of abalone in the Robben Island MPA were much higher than the number on either side of the TMNP MPA. Within the Robben Island MPA, abalone abundance was significantly higher in the harvested zone, while shell lengths were significantly larger in the restricted (no-take) zone (Kock et al., prep). Interestingly, more abalone occur in False Bay than on the Atlantic coast in the TMNP MPA, in part due to more suitable conditions (SANParks, unpublished data). The more severe depletion in the TMNP MPA is likely a result of over harvesting (illegal and commercial) and the greater effectiveness of compliance actions at Robben Island (see Section 5.5.3 for more about the ecology of abalone).

Of the five species of abalone found in South Africa, *H. midae* is one of two edible species and targeted for commercial harvest (Steinberg 2005). Abalone meat is an expensive delicacy and is currently the most exported species in South African aquaculture, contributing considerably to the country's international trade (DFFE 2025). The total annual catch remained stable until the mid-1990s, after which abalone poaching and the illegal trade boomed in South Africa, causing continuous declines in commercial catches and Total Allowable Catch (TAC) (Steinberg 2005, Raemaekers et al. 2011, DFFE 2025). The illegal trade is driven by demand from East-Asian markets, with Hong Kong receiving 90% of exports (Okes et al. 2018, DFFE 2025). During the 1990s, the species was threatened with commercial extinction, and in 2001, an estimated 10% of the pre-exploited population remained (Mayfield et al. 2001b). All recreational harvesting was banned in 2004 (DFFE 2025). In 2004, *H. midae* was internationally listed on the CITES protected species list and in South Africa's National Environmental Management: Biodiversity Act 10 (NEMBA). The commercial TAC continued to decrease until 2008, until a complete and controversial fishery closure was implemented (Raemaekers et al. 2011, DFFE 2025). However, due to pressure from the fishing industry and the CITES listing having little effect on the illegal trade, they were removed from CITES in 2010, and the commercial fishery was reopened. Research shows that he abalone population around the Cape Peninsula decreased by 87% from 2000 to 2016 (DAFF 2016). Illegal harvesting and southern migration of West Coast rock lobster (which reduce abalone recruitment by predating on both juvenile abalone and the sea urchins under which juvenile abalone escape predation) were identified as the cause of this (Plagányi & Butterworth 2010, Raemaekers et al. 2011).

Although recreational harvesting is still prohibited, illegal harvesting today continues to an extent far greater than historical levels (and peak quotas) (Raemaekers et al. 2011, Okes et al. 2018). An average of 2,174 tonnes of abalone were poached annually between 2000 and 2016, estimated to be worth R628 million each year (Okes et al. 2018). Poaching is increasing, with a 47% increase in illegal catches from 2017-2018 (DEFF 2020).

The combined effect of poaching and ecological changes has resulted in severe declines in the abalone resource. As a result, *H. midae* is now classified as **Endangered** on the IUCN Red List of Threatened Species (Peters et al. 2024). Their presence in the Robben Island MPA highlights the need for strict enforcement and monitoring, as MPAs are critical refuges for rebuilding depleted abalone populations.

West Coast rock lobster

The West Coast rock lobster *Jasus lalandii*, is a slow-growing, overexploited species (Jones 2008, Groeneveld et al. 2010) (see Section 5.5.2 for more about its ecology). They are under heavy harvesting pressure in South Africa, and their population is considered severely depleted, with catches declining to 1,500 tonnes/annum in 1996 and not recovering since (DFFE 2025). The most recent West Coast rock lobster stock assessment, conducted in 2022, found that the resource is substantially more depleted than estimated in previous assessments. The harvestable portion (males) of the West Coast rock lobster population is estimated to be only 1.2% of "pristine" levels (DFFE 2025). Despite this, the species continues to support a fishing industry worth R500 million per annum (DFFE 2025). The current minimum legal size for harvesting West Coast rock lobster is a carapace length of 80 mm in the recreational sector and 75 mm in the commercial sector (DFFE 2025). Females are particularly slow growing and due to the imposition of minimum size limits since 1933, the catch is almost entirely males (DFFE 2025).

Two West Coast rock lobster sanctuaries were established along the Cape Peninsula before 1976 to mitigate declining stocks: namely Table Bay Rock Lobster Sanctuary and Kommetjie Rock Lobster Sanctuary (MLRA Act No. 18 of 1998). Robben Island is situated within the West Coast Rock Lobster Sanctuary (MLRA Act No. 18 of 1998), from Melkbos Point to "Die Josie" near Chapmans Peak. The sanctuary extends 12 nautical miles out to sea from the highwater mark, encompassing a significant area for protecting and conserving rock lobsters in that region. However, their efficacy has been questioned (Mayfield et al. 2001b).

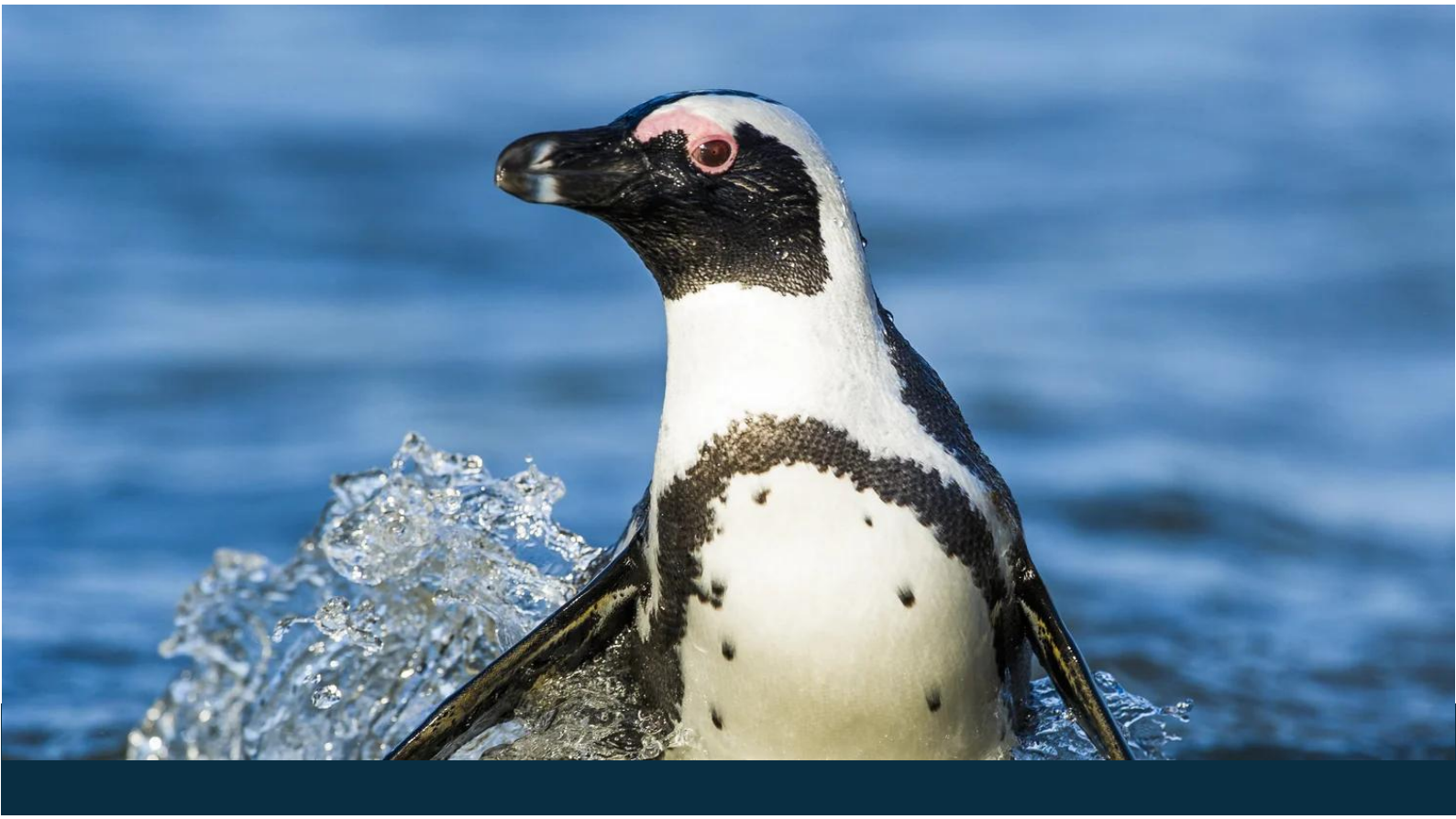
Like abalone, recent dive surveys by Anchor Environmental Consultants and SANParks counted rock lobster within the MPA and around the TMNP MPA. Comparisons between these two MPAs showed the average density of rock lobster around Robben Island recently (0.19 per m^2) to be much lower than the average observed on the Atlantic side of TMNP (0.49 per m^2) (Gardener et al. in prep). Higher densities were found in the Robben Island MPA than on the False Bay side of the TMNP MPA, which mirrors the differences between the Atlantic and False Bay sides of the TMNP MPA (Hutchings et al. 2024). The rock lobster populations in the TMNP MPA have experienced a sharp decline over the last five years and are currently at densities of 0.2

individuals per m^2 or less within both MPAs (Gardner et al., in prep), which mirrors the wider picture for this species.

African penguin

The African penguin *Spheniscus demersus* is endemic to southern Africa, and breeds in three regions: central to southern Namibia, the Western Cape and the Eastern Cape in South Africa (Whittington et al. 2005). The African penguin population is facing a critical decline, with projections indicating potential extinction in the wild by 2035 if current trends persist (SANCCOB 2025). Various factors, including pollution from oil spills, changes in the abundance and distribution of small pelagic fish populations, competition with commercial fisheries and seals for food, predation pressure, as well as potential exposure to conservation-significant pathogens, have been theorised to contribute to these declines (David et al. 2003, Crawford 2009, Pichegru et al. 2009, Weller et al. 2014, de Moor & Butterworth 2015, Grémillet et al. 2016, Parsons et al. 2016)

The IUCN uplisted the species to **Critically Endangered** in 2024, reflecting these ongoing declines (BirdLife International 2024, Sherley et al. 2024). Nevertheless, numbers continued decreasing, and this has led to several revisions of the updated national Biodiversity Management Plan for this species (Government Gazette No. 42775, 18 October 2019, Government Gazette No. 47061, 22 July 2022). These revisions still consider a decline of food availability as a major driver of African penguin population decline and recommend fishery closures around colonies. In September 2022, the DFFE announced closures for small pelagic fishing around the major penguin breeding colonies on the west and south coast (www.gov.za/speeches/forestry-fisheries-and-environment). These measures aim to protect foraging areas for penguins, ensuring access to essential prey like sardines and anchovies over the next decade (McInnes et al. 2024). In March 2025, a landmark settlement was reached between conservation organisations (BirdLife South Africa and SANCCOB), the fishing industry, and the DFFE to extend the purse seine fishing limitations in the waters around important penguin colonies for a minimum of 10 years, with a review after 6 years of implementation and data collection.



There is currently a small-pelagic fisheries closure around Robben Island (Figure 2.1).

While there have been tremendous efforts towards African penguin conservation, the drastic and rapid decline of the species (Sherley et al. 2024) and its recent uplisting to Critically Endangered status calls for urgent unlocking of political will, increased capacity and funding to prevent its extinction in the wild. Without substantial interventions to restore prey availability and address cumulative threats (oil pollution, predation, disease, and disturbance), extinction in the wild within the next decade remains a realistic possibility (BirdLife International 2024, Sherley et al. 2024).

Cape cormorant

Cape cormorants *Phalacrocorax capensis* are endemic to southern Africa, where they were historically abundant on the West Coast but less common on the East Coast, occurring as far east as Algoa Bay, where they also breed. They generally feed within 10–15 km of the shore, preying on pelagic goby *Sufflogobius bibarbatus*, Cape anchovy, pilchard and Cape horse mackerel *Trachurus trachurus* (Crawford et al. 2016b, Masiko et al. 2021). A significant population of Cape cormorants breed on Robben Island.

Key colonies of the Cape cormorant in South Africa and Namibia have undergone rapid population declines over the past three generations, and the Cape cormorant has therefore been up listed to **Endangered** (BirdLife International 2018a). Nationally, the species has declined by ~50% since the late 1970s, and breeding has shifted south-east (Crawford et al. 2007, 2016a). Declines are primarily believed to have been driven by collapsing pelagic fish stocks (Crawford et al. 2015). However, pelagic fish stocks increased greatly in the late 1990s and early 2000s, and although sardine biomass subsequently crashed, anchovy biomass remained relatively high until 2020. This suggests that other factors are also involved in declining Cape cormorant numbers. Overall, the number of Cape cormorant breeding in South Africa decreased from ~107,000 pairs in 1977–1981 to 57,000 pairs in 2010–2014 (Crawford et al. 2016a).

In addition, Cape cormorants are also vulnerable to oiling and are difficult to catch and clean. Discarded fishing gear and marine debris also entangles and kills many birds. Kelp gulls prey on Cape cormorant eggs and chicks, and this is exacerbated by human disturbance, especially during the early stages of breeding, as well as the increase in gull numbers (Crawford et al. 2016b). Avian influenza outbreaks have more recently emerged as an additional threat, causing large-scale mortality events in coastal seabird colonies since 2018 (Hirschinger et al. 2025).

Bank cormorant

Bank cormorants *Phalacrocorax neglectus* are endemic to the Benguela upwelling region of southern Africa, breeding from Hollamsbird Island, Namibia, to Quoin Rock, South Africa. Robben Island holds the largest number of breeding bank cormorants in the Western Cape (120 pairs in 2000, but only 20 pairs today), which breed on the short arm of the breakwater of Murray's Harbour (Sherley et al. 2011).

They seldom range farther than 10 km offshore, with a distribution roughly matching that of *Ecklonia maxima* kelp beds. They prey on various species of fish such as the pelagic goby, crustaceans and cephalopods, feeding mainly amongst kelp where they catch West Coast rock lobster (Ludynia et al. 2010, Dyer et al. 2019). The total population decreased from about 9,000 breeding pairs in 1975 to fewer than 5,000 pairs in 1991–1997 to 2,500 pairs in 2015 (Kemper et al. 2007, BirdLife International 2018). The South African population approximately halved from 1,500 pairs in 1978–1980 to 800 pairs in 2011–2013 (Crawford et al. 2015). One of the main contributing factors to the decrease in the Northern and Western Cape colonies was a major shift in the availability of the West Coast rock lobster from the West Coast to the more southern regions, observed between the late 1980s and early 1990s to the turn of the century (Cockcroft et al. 2008). Ongoing population declines led to the bank cormorant's status being changed from Vulnerable to **Endangered** (BirdLife International 2018)

Bank cormorants are also very susceptible to human disturbance, and eggs and chicks are taken by kelp gulls and some other birds.

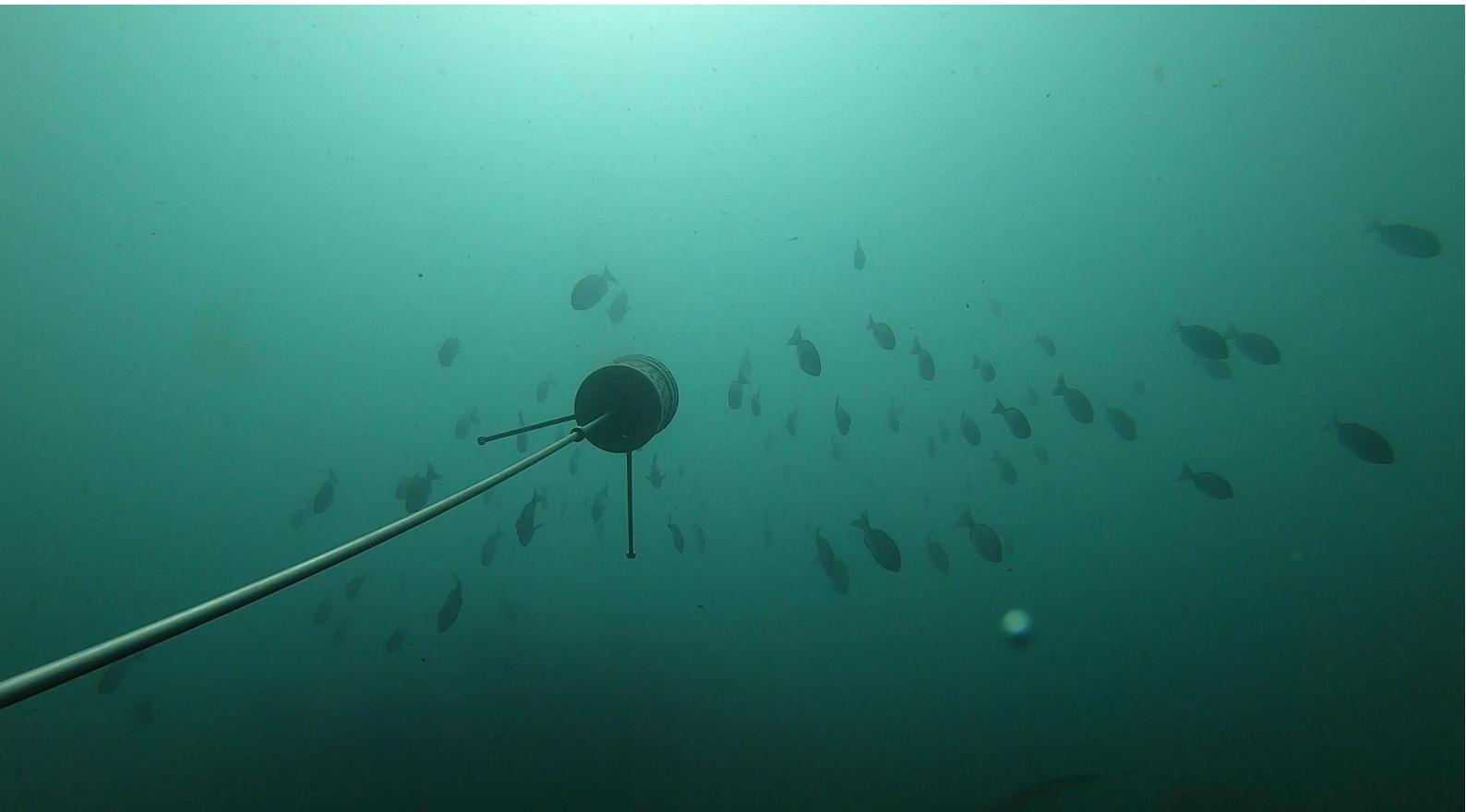
Increased predation has been attributed to the loss of four colonies in other parts of South Africa and Namibia (Hockey et al. 2005). Smaller breeding colonies are more vulnerable to predation, which would further accelerate their decline (Sherley et al. 2012, BirdLife International 2018).

Cape bream

Several seabreams (family Sparidae) occurring on and around Robben Island, Table Bay, and the Cape Peninsula have undergone severe population declines due to historical and ongoing fishing pressure, alongside degradation of coastal and estuarine habitats. In this region, key species of concern include Cape bream, white steenbras *Lithognathus lithognathus*, red roman *Chrysoblephus laticeps*, and dageraad *Chrysoblephus cristiceps*, all of which are important components of shallow reef and nearshore ecosystems.

Many of these species are long-lived, slow-growing, and late-maturing, with behaviourally predictable spawning and, in some cases, partial dependence on estuarine environments during early life stages. These life-history traits make them highly vulnerable to exploitation, particularly under sustained recreational and small-scale fishing pressure historically concentrated along the Cape Peninsula and Table Bay coastline (Attwood & Farquhar 1999). White steenbras, in particular, is strongly associated with estuarine and surf-zone habitats and has experienced pronounced depletion across its range, while reef-associated species such as Cape bream and red roman remain ecologically important but locally reduced in abundance and size structure (DFFE 2025).

Despite spatial protection provided by the TMNP MPA network, including no-take zones around Robben Island and parts of the Peninsula, recovery has been uneven. Continued pressure outside protected areas, combined with habitat degradation and weak compliance in some sectors, limits rebuilding potential. Effective recovery of these seabreams depends on strengthened enforcement, improved connectivity between protected reef and nursery habitats, and sustained protection of remaining spawning biomass.



8. RESEARCH AND MONITORING

8.1 LONG-TERM ECOLOGICAL MONITORING

Effective conservation relies on integrating sound management actions and robust scientific research. Research and monitoring are critical for the implementation and good governance of MPAs. SANParks monitoring and research are guided by an overarching Research Strategy (SANParks Research Strategy 2020 (Freitag et al. 2020)), national and internal policies and priorities, gazetted objectives of protected areas and management plans. Long-term ecological monitoring is essential to inform our understanding of the factors driving changes in biodiversity and the impacts of pressures on ecosystem function. It provides a critical reference point for detecting natural variability, assessing human impacts, and evaluating the effectiveness of management measures.

The Robben Island MPA initially lacked baseline biodiversity data when it was declared, particularly for inshore areas. In response, SANParks initiated or expanded several long-term ecological monitoring programs, including rocky shore surveys (2023), Fisheries-independent abalone surveys (FIAS) that also recorded other macro-invertebrates, including West Coast rock lobster, giant periwinkle, and urchins, as well as kelp density (2020 and 2023), and fish and shark surveys using mono- and stereo-BRUVs in 2022, 2023, and 2024.

A key principle is the importance of encompassing whole ecosystems within MPAs in order to effectively meet conservation objectives, inform robust management plans, and provide a sound scientific basis for decision-making. This extends to benthic habitats and gaining a better understanding of non-commercial or non-focal biota like sessile seabed invertebrates. Therefore, establishing monitoring programmes targeting benthic communities within MPAs will enable better

understanding of the role of natural processes on changing community assemblages.

Using a non-destructive drop camera system DFFE established fine-scale long-term monitoring of macro-benthic marine invertebrates within the Robben Island MPA. A total of 50 stations were sampled in 2025.

Other long-term monitoring programs, led by DFFE, include fisheries-independent longline surveys in the area that have been conducted for several years. These surveys generate essential data on the abundance, distribution, and size structure of demersal linefish species, many of which are important both ecologically and economically. Data from the commercial linefishery, which provide insights into fishing effort, catch composition, and trends in target species such as snoek and yellowtail, have been routinely collected. This information helps to track the effectiveness of the MPA, its regulations and identify shifts in fishing pressure that may affect the MPA. Finally, long-term seabird monitoring programmes, including population counts, breeding success, and foraging studies of species such as African penguins, have been implemented. These data are vital for assessing population health, understanding at-sea threats, and guiding conservation actions both inside and outside the MPA.

Baseline studies provide a foundation for tracking changes, assessing the effectiveness of the MPA and its zonation, and informing future management. Species lists have been updated accordingly.

8.2 RESEARCH PRIORITIES

Several key research gaps have been identified for the Robben Island MPA. While some ecological monitoring and baseline studies have been initiated, significant knowledge gaps remain across ecological, social, heritage, and governance domains. Addressing these gaps is essential to ensure that the MPA achieves its conservation, cultural, and socio-economic objectives.

8.2.1 BIODIVERSITY AND ECOSYSTEM SERVICES

Despite the presence of long-term ecological monitoring programmes, the spatial extent, condition, and trends of many benthic and pelagic communities remain incompletely documented. Key knowledge gaps include:

- The population status, recovery potential, and fishery dynamics of exploited species such as abalone and west coast rock lobster.
- The foraging ecology of seabirds, particularly the African penguin, including the distribution of prey resources and overlap with fisheries.
- Comprehensive habitat mapping of endangered and vulnerable ecosystem types within the Robben Island MPA, particularly offshore and deeper habitats that remain poorly characterised.
- Evaluation of the MPA's contributions to fisheries recovery, coastal protection, recreation, and integrate these findings into management planning.

8.2.2 SOCIO-ECOLOGICAL RESEARCH

- Studies on stakeholder use, compliance, and perceptions, and assessment of the social and economic benefits derived from the MPA.

8.2.3 HERITAGE, TOURISM AND RECREATION

The Robben Island MPA encompasses sites of high cultural, archaeological, and recreational importance. However, their ecological and heritage values are at risk from increasing tourism, vessel activity, and visitor use. Current research gaps include:

- The impacts of tourism and recreation on sensitive habitats and species including disturbance of shorebirds and marine mammals, trampling of rocky shores, and anchor damage to benthic communities.
- The socio-economic benefits and costs of tourism, particularly in relation to local community perceptions, expectations, and equitable benefit sharing.
- Carrying capacity thresholds for visitor use, including both ecological and cultural limits.

8.2.4 CO-GOVERNANCE AND STAKEHOLDER COLLABORATION

Effective MPA management depends on cooperation between SANParks, partner agencies, and stakeholders. Knowledge gaps include:

- The effectiveness of current co-management and stakeholder engagement mechanisms in supporting compliance and collaboration.
- The distribution of socio-economic benefits and costs of the MPA, and their influence on community support and enforcement.
- Institutional capacity and inter-agency coordination gaps.

A key priority is to encourage partnerships between natural scientists, social scientists, local communities, and government agencies to co-develop sustainable management strategies and address potential trade-offs.

8.2.5 OTHER KEY AREAS OF INTEREST

- Development of indicators and data systems to support monitoring and adaptive management.
- Climate change vulnerability assessments, to inform long-term resilience planning.
- Implementation of integrated monitoring programs that couple ecological indicators (e.g. fish stocks, seabird foraging, habitat condition) with social and governance metrics (e.g. access, compliance, benefit-sharing), ensuring that management decisions are evidence-based and adaptive.

8.3 RESEARCH PERMITS

Research within the Robben Island MPA requires a permit from SANParks. Proposals are submitted through the SANParks online portal and reviewed by an internal committee, the Cape Research Centre, and the Robben Island Museum, with additional ethical review where animal handling is involved. Approved projects must provide reports, data and publications to SANParks to support adaptive management, with researchers encouraged to share datasets through the SANParks Data Repository.

9. CONCLUSIONS AND LOOKING AHEAD

SUMMARY

The Robben Island MPA protects one of South Africa's most iconic marine landscapes, where exceptional marine biodiversity and globally significant cultural heritage coexist.

The MPA supports diverse rocky reefs, kelp forests, sandy seabeds and pelagic habitats that sustain rich marine communities and some of South Africa's most important fisheries and food webs.

It makes a nationally important contribution to biodiversity conservation, protecting nine marine ecosystems and providing critical habitat for threatened species such as the African penguin, Cape cormorant, West Coast rock lobster and abalone.

Robben Island is internationally recognised for both its natural and cultural heritage, with its rich maritime history, shipwrecks and political history add to the unique value of the MPA.

The MPA faces growing pressures from the continued expansion of Cape Town and its port, together with associated pressures including shipping, pollution, fisheries, invasive species introduction and tourism/ recreational use.

The MPA demonstrates the importance of protecting biodiversity within an urban-marine environment, where conservation, cultural heritage, research, education and sustainable use must be carefully balanced.

EMERGING PRIORITIES

As understanding of the MPA continues to develop, several priorities emerge to support effective long-term management:

- Expand long-term marine ecological monitoring across its diverse ecosystems, to detect environmental change and evaluate management effectiveness.
- Strengthen monitoring and recovery efforts for species of conservation concern, particularly African penguins, seabirds, kelp-associated communities and commercially important invertebrates.
- Improve understanding of cumulative pressures, including pollution, invasive species, fisheries interactions, shipping and climate change, to support proactive management.
- Integrate cultural heritage, biodiversity and socio-economic research to better understand ecosystem services, heritage values and the role of the MPA within the broader Table Bay social-ecological system.
- Strengthen collaboration between SANParks, DFFE, researchers, heritage managers, local communities and other stakeholders.
- Build on this State of Knowledge Report as a foundation for future research and management, recognising the Robben Island MPA as both a nationally important conservation area and a globally significant natural and cultural landscape.

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11. **APPENDIX 1**

SPECIES LISTS

Compiled species lists for the Robben Island MPA. Species lists were compiled from multiple sources, including published literature, regional field guides, biodiversity databases and expert knowledge. In some cases, species were included based on their documented regional distribution, and their presence within the study area has not yet been verified through targeted field surveys. These lists should therefore be considered preliminary and subject to refinement as additional information becomes available.

Appendix C Marine Mammals

Phylum	Scientific Name	Common Name	Source
Balaenidae	*Eubalaena australis*	Southern Right Whale	Obs.org, OBIS_SrSA, iNat
Balaenopteridae	*Megaptera novaeangliae*	Humpback Whale	iNat
Balaenopteridae	*Balaenoptera edeni*	Bryde's Whale	iNat
Delphinidae	*Cephalorhynchus heavisidii*	Heaviside's Dolphin	BIMS
Delphinidae	*Delphinus delphis*	Short-beaked Common Dolphin	iNat
Delphinidae	*Grampus griseus*	Risso's Dolphin	(Purdon et al. 2020)
Delphinidae	*Lagenorhynchus obscurus*	Dusky Dolphin	FBIP_Sea, iNat
Delphinidae	*Orcinus orca*	Killer Whale	Purdon et al. 2020
Delphinidae	*Tursiops aduncus*	Indo-Pacific Bottlenose Dolphin	Findlay et al. 1992, Best 2007
Otariidae	*Arctocephalus pusillus pusillus*	Cape Fur Seal	Obs.org, iNat, FBIF

Appendix D Birds and Shorebirds

Family	Scientific Name	Common Name	Source
Anatidae	*Alopochen aegyptiaca*	Egyptian Goose	SABAP2, EOD, iNat
Anatidae	*Anas erythrorhyncha*	Red-billed Teal	SABAP2, SABAP
Anatidae	*Anas platyrhynchos*	Mallard	SABAP2, SABAP
Anatidae	*Plectropterus* spp.	Spur-winged Goose	SABAP2, SABAP
Anatidae	*Spatula smithii*	Cape Shoveler	SABAP2, SABAP
Anatidae	*Tadorna* spp.	Shelducks	SABAP2, SABAP
Ardeidae	*Ardea melanocephala*	Black-headed Heron	SABAP2, SABAP
Ardeidae	*Ardea purpurea*	Purple Heron	SABAP2, SABAP
Ardeidae	*Bubulcus ibis*	Cattle Egret	SABAP2
Ardeidae	*Egretta garzetta*	Little Egret	iNat
Ardeidae	*Ixobrychus minutus*	Little Bittern	SABAP2, SABAP
Ardeidae	*Nycticorax nycticorax*	Black-crowned Night Heron	SABAP2, SABAP
Burhinidae	*Burhinus vermiculatus*	Water Thick-knee	SABAP2, SABAP
Charadriidae	*Charadrius hiaticula*	Common Ringed Plover	SABAP2, SABAP

Family	Scientific Name	Common Name	Source
Charadriidae	*Charadrius marginatus*	White-fronted Plover	SABAP2, SAFRING, SABAP
Charadriidae	*Charadrius pecuarius*	Kittlitz's Plover	SABAP2, SAFRING, SABAP
Charadriidae	*Pluvialis squatarola*	Grey Plover	SABAP2, SAFRING, SABAP
Charadriidae	*Vanellus armatus*	Blacksmith Lapwing	SABAP2, SAFRING, SABAP
Diomedeidae	*Diomedea exulans*	Wandering Albatross	AntTrack_SCAR, SABAP
Diomedeidae	*Diomedea sanfordi*	Northern Royal Albatross	EOD
Diomedeidae	*Phoebetria* spp.	Sooty Albatrosses	SAFRING, SABAP
Diomedeidae	*Thalassarche carteri*	Indian Yellow-nosed Albatross	EOD
Diomedeidae	*Thalassarche cauta*	Shy Albatross	SABAP2, EOD, SABAP
Diomedeidae	*Thalassarche melanophris*	Black-browed Albatross	SABAP2, EOD, SABAP
Haematopodidae	*Haematopus moquini*	African Oystercatcher	EOD, Natural History Museum (London) Collection Specimens, Obs.org, SAFRING, SABAP, SABAP2, iNat
Hydrobatidae	*Oceanites oceanicus*	Wilson's Storm Petrel	EOD, SABAP
Laridae	*Chroicocephalus cirrocephalus*	Grey-headed Gull	SABAP2, EOD
Laridae	*Chroicocephalus hartlaubii*	Hartlaub's Gull	EOD, Obs.org, SABAP2, iNat, FBIF
Laridae	*Hydroprogne* caspia	Caspian Tern	SABAP2, iNat, EOD, SABAP
Laridae	*Larus dominicanus*	Kelp Gull	EOD
Laridae	*Sterna hirundo*	Common Tern	EOD, Obs.org, SABAP, SABAP2, FBIF_TIPU, iNat, FBIF
Laridae	*Sterna paradisaea*	Arctic Tern	SABAP2, EOD, SABAP
Laridae	*Sterna vittata*	Antarctic Tern	SABAP2, SABAP
Laridae	*Thalasseus bergii*	Greater Crested Tern	EOD
Laridae	*Xema* spp.	Sabine's Gull	SABAP2, iNat, EOD, SABAP
Pelecanidae	*Pelecanus* spp.	Pelicans	SABAP2, SAFRING, SABAP
Phaethontidae	*Phaethon* spp.	Tropicbirds	SABAP2
Phalacrocoracidae	*Microcarbo coronatus*	Crowned Cormorant	EOD, Obs.org, SAFRING, SABAP, SABAP2, iNat
Phalacrocoracidae	*Phalacrocorax capensis*	Cape Cormorant	EOD
Phalacrocoracidae	*Phalacrocorax carbo*	Great Cormorant	SAFRING, EOD
Phalacrocoracidae	*Phalacrocorax carbo lucidus*	White-breasted Cormorant	Obs.org
Phalacrocoracidae	*Phalacrocorax neglectus*	Bank Cormorant	EOD, Obs.org, SAFRING, SABAP, SABAP2, iNat, FBIF
Podicipedidae	*Podiceps* spp.	Grebes	SAFRING, SABAP
Procellariidae	*Calonectris* spp.	Shearwater	iNat, SABAP, SAFRING, EOD
Procellariidae	*Macronectes halli*	Hall's Giant petrel	SABAP2, EOD
Procellariidae	*Pterodroma macroptera*	Great-winged Petrel	SABAP2, EOD, SABAP
Procellariidae	*Puffinus* spp.	Shearwaters	SABAP2
Procellariidae	*Puffinus gravis*	Great Shearwater	SABAP2, SABAP
Procellariidae	*Puffinus griseus*	Sooty Shearwater	SABAP2, iNat, EOD, SABAP

Family	Scientific Name	Common Name	Source
Procellariidae	*Puffinus puffinus*	Manx Shearwater	EOD
Rallidae	*Amaurornis flavirostra*	Black Crake	SABAP2, SABAP
Rallidae	*Fulica* spp.	Coots	SABAP2, SABAP
Rallidae	*Gallinula* spp.	Moorhens	SABAP2, SABAP
Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt	SABAP2, SABAP
Recurvirostridae	*Recurvirostra* spp.	Avocet	SABAP2, SABAP
Scolopacidae	*Tringa hypoleucos*	Common Sandpiper	SABAP2, SABAP
Scolopacidae	*Arenaria interpres*	Ruddy Turnstone	SABAP2, SABAP
Scolopacidae	*Numenius phaeopus*	Eurasian Whimbrel	SABAP2, Obs.org, iNat, SABAP
Scolopacidae	*Tringa nebularia*	Common Greenshank	SABAP2, SABAP
Spheniscidae	*Eudyptes* spp.	Crested Penguins	SAFRING
Spheniscidae	*Spheniscus demersus*	African Penguin	EOD, Obs.org, SABAP, SABAP2, iNat, FBIF
Stercorariidae	*Stercorarius antarcticus*	Brown Skua	SABAP2
Stercorariidae	*Stercorarius parasiticus*	Arctic Skua	SABAP2, EOD, SABAP
Stercorariidae	*Stercorarius pomarinus*	Pomarine Jaeger	SABAP2
Sulidae	*Morus capensis*	Cape Gannet	SABAP2
Threskiornithidae	*Platalea alba*	African Spoonbill	SABAP2, SABAP
Threskiornithidae	*Plegadis falcinellus*	Glossy Ibis	SABAP2, SABAP
Threskiornithidae	*Threskiornis aethiopicus*	African Sacred Ibis	EOD, Obs.org, SAFRING, SABAP, SABAP2, iNat, FBIF

Appendix E Chondrichthyans

Family	Scientific Name	Common Name	Source
Carcharhinidae	Carcharhinus brachyurus	Bronze Whaler	Branch et al. 2010
Carcharhinidae	Carcharhinus obscurus	Dusky Shark	Branch et al. 2010
Carchariidae	Carcharias taurus	Spotted Ragged-tooth Shark	Branch et al. 2010
Dasyatidae	Dasyatis chrysonota	Blue Stingray	Branch et al. 2010
Hexanchidae	*Notorynchus cepedianus*	Broadnose Sevengill Shark	Branch et al. 2010
Lamnidae	*Carcharodon carcharias*	Great White Shark	Branch et al. 2010
Myliobatidae	*Myliobatis aquila*	Eagle Ray	Branch et al. 2010
Rhinobatidae	*Acroteriobatus annulatus*	Lesser Sandshark	Branch et al. 2010
Scyliorhinidae	*Haploblepharus pictus*	Dark Shyshark	RIMPAStereo
Scyliorhinidae	*Poroderma pantherinum*	Leopard Catshark	FBIP_SAEON
Squalidae	*Squalus megalops*	Bluntnose spiny dogfish	FBIP_SAEON
Triakidae	*Mustelus canis*	Dusky Smooth-hound Shark	FBIP_SAEON

Appendix F Teleosts

Family	Scientific Name	Common Name	Source
Ariidae	*Galeichthys ater*	Black Seacatfish	RIMPAStereo
Blenniidae	*Parablennius cornutus*	Horned Blenny	RIMPAStereo
Cheilodactylidae	*Cheilodactylus fasciatus*	Redfingers	RIMPAStereo
Clinidae	*Cancelloxus burrelli*	Slender Platanna-klipvis	IZIKOmarine_bnyFish

Family	Scientific Name	Common Name	Source
Clinidae	*Clinus heterodon*	Westcoast Klipvis	IZIKOmarine_bnyFish
Clinidae	*Muraenoclinus dorsalis*	Nosestripe Klipvis	IZIKOmarine_bnyFish
Clupeidae	*Sardinops sagax*	South African Sardine/pilchard	Branch et al. 2010
Congiopodidae	*Congiopodus spinifer*	Spinenose Horsefish	SAIAB, IZIKOmarine_bnyFish
Congiopodidae	*Congiopodus torvus*	Smooth Horsefish	FBIP_SAEON
Cynoglossidae	*Cynoglossus* spp.	Tonguesoles	FBIP_SAEON
Dichistiidae	*Dichistius capensis*	Galjoen	Branch et al. 2010
Dussumieriidae	*Etrumeus whiteheadi*	Whitehead's Round Herring	Branch et al. 2010
Engraulidae	*Engraulis capensis*	South African Anchovy	Branch et al. 2010
Gobiidae	*Caffrogobius saldanha*	Commafin Goby	RIMPAStereo
Haemulidae	*Pomadasys olivaceus*	Pinky	Branch et al. 2010
Latridae	*Chirodactylus brachydactylus*	Two-tone Fingerfin	Branch et al. 2010
Lophiidae	*Lophius* spp.	Monkfishes	FBIP_SAEON
Macrouridae	*Coelorinchus fasciatus*	Banded Rattail	FBIP_SAEON
Merlucciidae	*Merluccius capensis*	Cape Hake	FBIP_SAEON
Molidae	*Mola mola*	Ocean Sunfish	iNat, IZIKOmarine_bnyFish
Mugilidae	*Chelon richardsonii*	South African Mullet/harder	RIMPAStereo
Mugilidae	*Mugil cephalus*	Flathead Mullet	Branch et al. 2010
Mugilidae	*Mugilidae* spp.	Mullets	RIMPAStereo
Ophidiidae	*Genypterus* spp.	Cusk-eels	FBIP_SAEON
Pomatomidae	*Pomatomus saltatrix*	Shad	Branch et al. 2010
Sciaenidae	*Argyrosomus japonicus*	Dusky Kob	Branch et al. 2010
Sciaenidae	*Atractoscion aequidens*	Geelbek	RIMPAStereo
Sciaenidae	*Sciaenidae* spp.	Croakers/Drums	RIMPAStereo
Scombridae	*Scomber japonicus*	Chub Mackerel	Branch et al. 2010
Sebastidae	*Helicolenus dactylopterus*	Jacopever	FBIP_SAEON
Sebastidae	*Sebastes capensis*	False Jacopever	FBIP_SAEON
Sebastidae	*Trachyscorpia* spp.	Scorpionfishes/Thornyheads	FBIP_SAEON
Sparidae	*Chrysoblephus laticeps*	Red Roman	Branch et al. 2010
Sparidae	*Diplodus capensis*	Blacktail	Branch et al. 2010
Sparidae	*Diplodus hottentotus*	Zebra	Branch et al. 2010
Sparidae	*Lithognathus mormyrus*	Sand Steenbras	Branch et al. 2010
Sparidae	*Pachymetopon aeneum*	Blue Seabream	Branch et al. 2010
Sparidae	*Pachymetopon blochii*	Cape bream	RIMPAStereo, FBIP_Sea
Sparidae	*Petrus rupestris*	Red Steenbras	Branch et al. 2010
Sparidae	*Rhabdosargus globiceps*	White Stumpnose	RIMPAStereo
Sparidae	*Sarpa salpa*	Strepie	Branch et al. 2010
Syngnathidae	*Syngnathus temminckii*	Longsnout Pipefish	RIMPAStereo
Triglidae	*Chelidonichthys* spp.	Smallscaled Gurnards	FBIP_SAEON
Xiphiidae	*Xiphias gladius*	Swordfish	IZIKOmarine_bnyFish
Zeidae	*Zeus capensis*	Cape John Dory	FBIP_SAEON

Appendix G Marine Invertebrates

Phylum	Scientific Name	Common Name	Source
Annelida	*Spirorbis* spp.	Spiral Tubeworms	Anchor / SANParks Rocky Shore 2023
Annelida	*Gunnarea gaimardi*	Cape Reef-worm	Branch et al. 2010
Arthropoda	*Balanus glandula*	Acorn Barnacle	Natural History Museum (London) Collection Specimens, iBOL
Arthropoda	*Caprella equilibra*	Skeleton Shrimp	IZIKO_Survey
Arthropoda	*Chthamalus dentatus*	Toothed Barnacle	Branch et al. 2010
Arthropoda	*Cirolana* spp.	Cirolanid Isopod	FBIP_Invert
Arthropoda	*Cyathura carinata*	Slender Brackish-water Isopod	FBIP_Invert
Arthropoda	*Guinusia chabrus*	Red Rock Crab	FBIP_Sea
Arthropoda	*Jassa* spp.	Hitchhiker Amphipods	IZIKO_Survey
Arthropoda	*Jasus lalandii*	West Coast Rock Lobster	FBIP_Sea
Arthropoda	*Paramoera* spp.	Marine Amphipods	IZIKO_Survey
Arthropoda	*Parapagurus* spp.	Deep-water Hermit Crabs	FBIP_SAEON
Arthropoda	*Paridotea reticulata*	Reticulated Kelp Louse	IZIKO_Survey
Arthropoda	*Tetraclita serrata*	Grey Volcano Barnacle	Branch et al. 2010
Arthropoda	*Cyclograpsus punctatus*	Shore Crab	Anchor / SANParks Rocky Shore 2023
Arthropoda	*Amphibalanus amphitrite*	Striped Barnacle	Anchor / SANParks Rocky Shore 2023
Arthropoda	*Octomeris angulosa*	Eightshell Barnacle	Anchor / SANParks Rocky Shore 2023
Chordata	*Pyura stolonifera*	Red Bait Ascidian	Branch et al. 2010
Cnidaria	*Alcyonium fauri*	Purple Soft Coral	Branch et al. 2010
Cnidaria	*Anthopleura michaelseni*	Long-Tentacled Anemone	iNat
Cnidaria	*Anthothoe chilensis*	Striped Anemone	FBIP_Sea
Cnidaria	*Corynactis annulata*	Strawberry Anemone	iNat
Cnidaria	*Sertularella polyzonias*	Great Tooth Hydroid	FBIP_Invert, IZIKO_MarInv
Cnidaria	*Zyzzuzus* spp.	Sponge Hydroids	FBIP_Sea
Cnidaria	*Virgularia schultzei*	Feathery Sea Pen	Karenyi 2014
Cnidaria	*Actinia equina*	Beadlet Anemone	Anchor / SANParks Rocky Shore 2023
Cnidaria	*Bunodactis reynaudi*	Sandy Anemone	Anchor / SANParks Rocky Shore 2023
Cnidaria	*Bunodosoma capense*	Knobbly Anemone	Anchor / SANParks Rocky Shore 2023
Cnidaria	*Pseudactinia flagellifera*	False Plum Anemone	Anchor / SANParks Rocky Shore 2023
Echinodermata	*Callopatiria granifera*	Red Starfish	FBIP_Sea, iNat
Echinodermata	*Echinus* spp.	Sea Urchins	IZIKO_MarInv
Echinodermata	*Luidia sarsii africana*	Sand Starfishes	MCZ_Harv
Echinodermata	*Parechinus angulosus*	Cape Urchin	FBIP_Sea, iNat
Echinodermata	*Parvulastra exigua*	Dwarf Cushion Star	iNat
Echinodermata	*Henricia ornata*	Reticulated Starfish	Anchor / SANParks Rocky Shore 2023

Phylum	Scientific Name	Common Name	Source
Echinodermata	*Ophiuroidea* spp.	Brittle Stars	Anchor / SANParks Rocky Shore 2023
Mollusca	*Afrolittorina knysnaensis*	Southern Periwinkle	Branch et al. 2010
Mollusca	*Aulacomya atra*	Ribbed Mussel	Branch et al. 2010
Mollusca	*Berthellina granulata*	Lemon Pleurobranch	iNat
Mollusca	*Bullia* spp.	Plough Snails	Branch et al. 2010
Mollusca	*Callochiton* spp.	Chitons	MCZ_Harv, iNat
Mollusca	*Choromytilus meridionalis*	Black Mussel	FBIP_Sea, FBIP_Invert, IZIKO_Survey
Mollusca	*Cuspidaria* spp.	Dipper Clams	RBINS_MollCol, RBINS DaRWIN
Mollusca	*Cymbula granatina*	Granite Limpet	Branch et al. 2010
Mollusca	*Cypraeovula coronata*	Crowned Cowrie	SBMNH_Invert
Mollusca	*Donax serra*	White Mussel	Branch et al. 2010
Mollusca	*Haliotis midae*	Abalone / Perlemoen	Branch et al. 2010
Mollusca	*Haliotis spadicea*	Blood-spotted Abalone	Branch et al. 2010
Mollusca	*Helcion pruinosus*	Rayed Limpet	iNat
Mollusca	*Loligo vulgaris reynaudii*	Chokka Squid	FBIP_SAEON
Mollusca	*Mytilus galloprovincialis*	Mediterranean Mussel	Branch et al. 2010
Mollusca	*Nucella squamosa*	Scaly Dogwhelk	FBIP_Sea
Mollusca	*Pleurobranchaea* spp.	Side-gilled Sea Slug	FBIP_Sea
Mollusca	*Scissodesma spengleri*	Angular Surf Clam	Branch et al. 2010
Mollusca	*Scutellastra argenvillei*	Argenville's Limpet	iNat
Mollusca	*Scutellastra cochlear*	Pear Limpet	iNat
Mollusca	*Scutellastra granularis*	Granular Limpet	Branch et al. 2010
Mollusca	*Semimytilus algosus*	Dwarf Mussel	Branch et al. 2010
Mollusca	*Siphonaria capensis*	Cape False Limpet	Branch et al. 2010
Mollusca	*Tapes* spp.	Venus Clams	FBIP_Invert
Mollusca	*Trochia* spp.	Marine Gastropod	FBIP_Sea, iNat
Mollusca	*Turbo cidaris cidaris*	Crown Turban Shell	IZIKO_Survey
Mollusca	*Turbo sarmaticus*	Alikreukel	Branch et al. 2010
Mollusca	*Africofusus ocelliferus*	Long-siphoned Whelk	Anchor / SANParks Rocky Shore 2023
Mollusca	*Cymbula oculus*	Goat's Eye Limpet	Anchor / SANParks Rocky Shore 2023
Mollusca	*Fissurella mutabilis*	Cape Keyhole Limpet	Anchor / SANParks Rocky Shore 2023
Mollusca	*Gibbula zonata*	Top Snail	Anchor / SANParks Rocky Shore 2023
Mollusca	*Onchidella maculata*	Air-breathing Sea Slug	Anchor / SANParks Rocky Shore 2023
Mollusca	*Oxystele antoni*	Variegated Topshell	Anchor / SANParks Rocky Shore 2023
Mollusca	*Oxystele sinensis*	Rosy Base Topsnail	Anchor / SANParks Rocky Shore 2023
Mollusca	*Oxystele tigrina*	Tiger Top Shell	Anchor / SANParks Rocky Shore 2023
Mollusca	*Rhyssoplax polita*	Tulip Chiton	Anchor / SANParks Rocky Shore 2023

Phylum	Scientific Name	Common Name	Source
Mollusca	*Scutellastra barbara*	Bearded Limpet	Anchor / SANParks Rocky Shore 2023
Mollusca	*Siphonaria serrata*	Saw-edged False Limpet	Anchor / SANParks Rocky Shore 2023
Mollusca	*Burnupena* spp.	Burnupena Whelk	Anchor / SANParks Rocky Shore 2023
Mollusca	*Doriopsis granulosa*	Droid Nudibranch	Anchor / SANParks Rocky Shore 2023
Mollusca	*Nassarius capensis*	Cape Dogwhelk	Anchor / SANParks Rocky Shore 2023
Mollusca	*Nucella dubia*	Common Dogwhelk	Anchor / SANParks Rocky Shore 2023
Mollusca	*Nucella squamosa*	Scaly Dogwhelk	Anchor / SANParks Rocky Shore 2023
Mollusca	*Crepidula porcellana*	Slipper Limpet	Anchor / SANParks Rocky Shore 2023
Mollusca	*Dendropoma corallinaceum*	Colonial Marine Gastropod	Anchor / SANParks Rocky Shore 2023

Appendix H Algae

Family	Scientific Name	Common Name	Source
Acrochaetiaceae	*Acrochaetium* spp.	Red Algae	UNCAlgae
Adenocystaceae	*Chordariopsis capensis*	Cape Cord-weed (Brown algae)	UNCAlgae
Bangiaceae	*Porphyra capensis*	Cape Laver	UNCAlgae
Ceramiaceae	*Carpoblepharis flaccida*	Flaccid Kelp-weed (Red algae)	UNCAlgae
Ceramiaceae	*Ceramium* spp.	Red Hornweeds (Red algae)	UNCAlgae
Champiaceae	*Champia lumbricalis*	Earthworm Champia (Red algae)	UNCAlgae
Cladophoraceae	*Cladophora* spp.	Green Algae	FBIP_Sea, UNCAlgae
Codiaceae	*Codium fragile*	Fragile Upright Codium (Green algae)	iNat
Corallinaceae	*Jania* spp.	Coralline Algae (Red Algae)	Branch et al. 2010
Delesseriaceae	*Botryoglossum platycarpum*	Red Algae	UNCAlgae
Delesseriaceae	*Neuroglossum binderianum*	Veined Tongues (Red algae)	UNCAlgae
Gelidiaceae	*Chaetangium* spp.	Red Algae	UNCAlgae
Gelidiaceae	*Gelidium vittatum*	Red Algae	UNCAlgae
Gigartinaceae	*Gigartina* spp.	Red Algae	UNCAlgae
Gigartinaceae	*Mazzaella capensis*	Spotted Mazzaella (Red Algae)	UNCAlgae
Gigartinaceae	*Sarcothalia radula*	Tongue Weed (Red Algae)	UNCAlgae
Halymeniaceae	*Grateloupia filicina*	Red Algae	UNCAlgae
Hildenbrandiaceae	*Hildenbrandia rubra*	Red Algae	Branch et al. 2010
Laminariaceae	*Laminaria pallida*	Split-fan Kelp (Brown Algae)	FBIP_Sea
Laminariaceae	*Macrocystis pyrifera*	Bladder Kelp (Brown Algae)	iNat
Lessoniaceae	*Ecklonia maxima*	Sea Bamboo (Green Algae)	FBIP_Sea
Mesophyllumaceae	*Mesophyllum* spp.	Red Algae	UNCAlgae
Phyllophoraceae	*Gymnogongrus vermicularis*	Red Algae	UNCAlgae
Plocamiaceae	*Plocamium cornutum*	Horny Plocamium (Red Algae)	UNCAlgae
Rhodomelaceae	*Laurencia* spp.	Red Algae	Branch et al. 2010
Rhodomelaceae	*Polysiphonia* spp.	Red Algae	UNCAlgae
Rhodomelaceae	*Pterosiphonia cloiophylla*	Red-feather Weed (Red Algae)	UNCAlgae
Rhodymeniaceae	*Epymenia* spp.	Red Algae	UNCAlgae

Family	Scientific Name	Common Name	Source
Rhodymeniaceae	*Rhodymenia obtusa*	Red Algae	UNCAlgae
Schizymeniaceae	*Schizymenia apoda*	Red Algae	UNCAlgae
Scinaiaceae	*Nothogenia erinacea*	Hedgehog Weed (Red Algae)	UNCAlgae
Splachnidiaceae	*Splachnidium rugosum*	Deadman's Fingers (Brown Algae)	Branch et al. 2010
Ulvaceae	*Ulva capensis*	Green Algae	UNCAlgae
Ulvaceae	*Ulva intestinalis*	Gutweed (Green Algae)	UNCAlgae
Ulvaceae	*Ulva rigida*	Green Algae	FBIP_Sea

Appendix I Plankton

Family	Scientific Name	Common Name	Source
Calanidae	*Calanoides* spp.	Calanoid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991
Calanidae	*Nannocalanus* spp.	Small Calanoid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991
Centropagidae	*Centropages* spp.	Calanoid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991
Euphausiidae	*Euphausia lucens*	Krill	Shannon & Pillar 1986, Hutchings et al. 1991
Euphausiidae	*Nyctiphanes capensis*	Cape Krill	Shannon & Pillar 1986, Hutchings et al. 1991
Oithonidae	*Oithona* spp.	Oithonid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991
Paracalanidae	*Paracalanus* spp.	Paracalanoid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991
Paracalanidae	*Ctenocalanus* spp.	Calanoid Copepods	Shannon & Pillar 1986, Hutchings et al. 1991

APPENDIX 2

SHIPWRECKS

Appendix J Details of known shipwrecks around Robben Island. Information provided by the South African Heritage Resources Agency.

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
A H Stevens	-33.8016 18.3562	North-west coast / tip of Robben Island	Wood	Sailing Vessel	Clipper	England	American	1862/ 02/07	999	Wrecked	Departed Moulmein on 11 December 1861 bound for Falmouth via Cape Town. Experienced very heavy weather en route, and sprang a leak off Mauritius in a cyclone. The crew worked continually for two weeks, but could not pump the ship dry. On 7 February 1862 the captain tried to enter Cape Town harbour but missed the entrance to Table Bay due to heavy fog. The vessel got too close to the north-western coast of Robben Island, where lack of wind and a strong current pushed it towards the shore. An attempt to anchor the vessel failed, and she continued to drift, finally striking the island close to the wreck site of the Bernicia in Shell Bay. The ship struck stern first and lost her rudder. Talbot fired distress signals which were received by the Port Office at approx. 9.30 hours. The crew steamer Albatross was sent to assist the vessel. In the interim the masts of the AH Stevens had been cut down to facilitate pulling her off. The Albatross was not able to move the vessel however, and when it became clear that the vessel could not be saved attempts were made to save some of the cargo, which was transferred to the Albatross. By dusk the hull was full of water and began breaking up. 2 boats, compasses, 1 anchor and warp and miscellaneous items were recovered shortly after the wrecking and sold to R.D. Jones. "Mr Adams and several others conjointly" bought the wreck with cargo for 3500 pounds.	Cape Archives, CC vol 3/7/2/1, fo. 107, in dato 7 Feb 1862 Cape Archives, Shipping Register, CC 2/17 Cape Argus, 8 Feb 1862, pg 3 Cape Merchantile Advertiser, 10 Feb 1862, p 1 Cape Town Mail, 22 June 1850, SA Library, Cape Town Shipsbak Database Van der Bosch, Fedde - Database Werz, B.E.J.S., & Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library
Afrikaner	- 33.8336 18.3447	2.8 km (1.5 miles) south-west of Robben Island	Steel	Motor Vessel	Fishing Vessel	South Africa	South African	1993/ 10/11	806	Foundered	The vessel was an 806 ton (730 ton net?), 61metre long trawler built by Globe of Cape Town for Irvin & Johnson. She struck Whale Rock while returning from an eleven day fishing trip with full holds - the cargo valued at R400 000. She was refloated in good weather later the same day, but sank within 45 seconds shortly thereafter while being towed to deeper water. She sank 1.5 nautical miles south-west of Robben Island at a depth of 51,The 39 crewmen were all hauled to safety and no lives were lost.	Marsh, John - Database (SA Maritime Museum) Van der Bosch, Fedde - Database

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Bernicia	-33.8023 18.3565	Shell Bay - NW point of Robben Island	Wood	Sailing Vessel	Barque	South Africa	British	1861/ 06/16	548	Wrecked	Wrecked in north-westerly gale. Vessel broke up rapidly, 6 passengers and 1 seaman lost. 4 Victims taken to Wynberg. The vessel was sheated with yellow metal.	Cape Archives: AG 5674 CO vol. 4121, ref.14, 23 GH vol..1/25, ref.116; vol. 1/287,ref.15 Cape Argus, 20 June 1861, p.1 & 3 Cape Chronicle, 21 June, p.2 Cape Mercantile Advertiser, 22 June 1861, 26 June 1861 Lloyd's Register of British and Foreign Shipping, London 1861, no.175 South African Commercial Advertiser, 22 June 1861 p.3, 29 June 1861 p.3-4, 3 june 1861 p.3, 6 June 1861 p.3-4, 10 July 1861 p.4. Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library. Cape Argus, 22 June 1861, SA Library, Cape Town.
Boston Typhoon	- 33.8334 18.2785	9.1 KM WSW Robben Island	Steel	Motor Vessel	Fishing Vessel		South African	1978/ 11/04	425	Scuttled	On 24th April 1978 the Boston Typhoon experienced a fire in the engine room 56 NM NW of Saldanha Bay. She was then towed to Cape Town and declared a total loss. She was stripped of all equipment and scuttled 9km WSW of Robben Island.	Henderson, B & Graham, K. 2024, Wood, Iron and Steel;Shipwrecvks mapped off the Western Cape
Bittern	-33.7916 18.3597	North-west point of Robben Island	Wood	Sailing Vessel	Snow / Brig (?)	India	British	1848/ 01/18	348	Wrecked	Wrecked in a south-easterly gale on the north north-western point of Robben Island at about 1.30 am while trying to enter the bay from the north west. No lives lost.	Atlantic Underwater Club, Cape Town, 1978 Cape Archives CC Vol 2/17 Cape of Good Hope Almanac 1852 P. 105 Deacon, J & Werz, B, 1992 Operation Sea Eagle, SAHRA Library Durden, T. Maritime Archaeological Potential...Appendix II Lloyds Register of Shipping 1848 Rawe, J & Crabtree, A Shipwrecks of the Southern Cape S.A.C.A. 22/1/1848 Turner, M, 1988 Shipwrecks and Salvage C.Struik Cape Town
Chanson de la Mer	-33.8016 18.3588	West side of Robben Island	Fibreglass	Sailing Vessel	Yacht		South African	1987/ 12/20		Wrecked	Wrecked after navigational error. Still visible high and dry. No lives lost.	Van der Bosch, Fedde - Database
Daeyang Family	-33.8398 18.3855	Whale Rock	Steel	Motor Vessel	Cargo Ship - Bulk Carrier	South Korea	South Korean	1986/ 03/30	183583	Wrecked	Dragged its anchor in heavy weather and grounded on Whale Rock. All hands were taken off and the vessel slowly disintegrated. No sign of it left above the surface by the middle of 1990. It is said to have been the largest ship to have been lost in South Africa waters. It had a gross tonnage of 96760 tons, and a deadweight tonnage of 183,583 tons. Built as the Adria Maru in 1972, it was named the Emerald Transporter in 1983, and the next year became the Daeyang Family.	Cape Times, 31 March 1986, SA Library, Cape Town Koornhof, Anton, 1997, the Dive Sites of South Africa, Struik, Cape Town, pg 149 Lloyds Register of Shipping, 1986-1987, SA Library, Cape Town Marsh, John - Database Turner, M. Shipwrecks and Salvage, p.161 Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Dageraad	-33.7971 18.3560	West side of Robben Island	Wood	Sailing Vessel	Cape Packet	South Africa	Dutch	1694/ 01/20	140	Wrecked	Ran aground in thick mist on Robben Island in the early morning of 20 January 1694, it was en route to Cape Town after salvaging 17 chests of specie recovered from the Gouden Buys which wrecked in St Helena Bay. 16 lives were lost. Only 3 chests of specie were recovered at the time. The notable salvor John Lethbridge was employed by the VOC in 1728 to try and recover some of the coins using his diving barrel, but he had little success. The location of this wreck has been kept secret over the years, salvors illude to it's location but have never given an accurate co-ordinate, probably due to its cargo but also the sensitive location.	Bruijn, Gaastra et al., Dutch-Asiatic Shipping, 1595-1795, Cape Town Archives Dagboeke, VC 94, Cape Town Archives Knox-Johnson, R. 1989, The Cape of Good Hope: A Maritime History, pg 132 Marsh, John - Database Rawe, J. & Crabtree, A. Shipwrecks of the Southern Cape, No. 212 Turner, M. Shipwrecks and Salvage, p 161 Van der Bosch, Fedde - Database from www.vocsite.nl: Dam, Pieter van, 1927. Beschrijvinge van de Oostindische Compagnie, eerste boek, deel I. - 's-Gravenhage: Martinus Nijhoff, 1927. - 772 p., [nl]. From:www.vocshipwrecks.nl/out_voyages5/dageraad.html: Wilson, Derek. The World Atlas of Treasure. London, 1981
Flora	-33.8186 18.3788	South point of island (shallows)	Wood	Sailing Vessel	Schooner	Holland	Dutch	1854/ 12/30	700	Wrecked	On 16-11-1821, the vessel was seen at the entrance to Table Bay. During the early morning of 17-11, at about 01:00, the vessel hit the shallows near the SE point of the Island, while attempting to enter Cape Town harbour. Within a few hours, the vessel disintegrated. All the crew and passengers were saved, but only a small portion of the cargo was salvaged. The survivors were kept under quarantine on Robben Island; there had been a cholera epidemic in Batavia. They were later transported on the Perseverance.	Jobling, Jim - Database cape archives, commercial exchange shipping register cc 2/9 durden, t. maritime archaeological potential. port captain 3/1 arrivals, cape town archives. commercial exchange shipping register cc 2/10.
Fong Chung 11	-33.8197 18.3716	Southern end of island (Visible on shore		Motor Vessel	Fishing vessel		Taiwanese	1975/ 07/04	250	Wrecked	Tunny boat, struck Whale Rock in a fog, and was run aground on the southern tip of the island. Although the ship broke up rapidly in the winter seas, all 21 crew aboard survived. The remains of the hull are still visible on the Island.	Jobling, Jim - Database Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library
Forfarshire	-33.8357 18.3796	Whale Rock	Wood	Sailing Vessel	Transport	India	British	1864/ 09/15	611	Wrecked	The vessel was on voyage from Liverpool to Calcutta with a cargo of coal, was wrecked on Whale Rock, Robben Island. There were no casualties.	Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library M.turner, shipwrecks and salvage, p.161 durden, t. maritime archaeological potential...appendix ii shipping register, cc 3/7/2/1, cape town archives
Gamtoos	-33.8072 18.1318	21km 262 degrees of Robben Island	Steel	Motor Vessel	Cargo Ship			1976/ 06/10	797	Scuttled	The Gamtoos was built for Smith's Coasters (Pty) Ltd, Durban and used as a salvage vessel in WWII. After the war Smith sold her to the SA Government. She was used to transport supplies to Prince Edward and Marion Islands after they were annexed by South Africa in 1947. She was scuttled by South African Air Force, Shackleton and Buccaneer, aircraft. Capt. "Duchy" Brand served for 23 years aboard the Gamtoos. He made 12 voyages a year to collect 3000 tons of guano from 15 islands off the West Coast. Sunk by Shackleton A.C. of Maritime Command using depth charges.	Van der Bosch, Fedde - Database

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Goel No 1	-33.8211 18.3761	Below lighthouse on south of island		Motor Vessel	Geophysical Research Vessel	South Africa	Canadian	1976/01/27	787	Wrecked	Position: (Jobling) 100m from shore in line with the Robben Island lighthouse and Rocklands Beach, Sea Point. The Goel No.1 was on charter either, to the Geophysical Offshore Exploration Ltd. (GOEL), or to the Paul Getty Organisation. She was being used to study offshore mineral deposits on the Cape coast and was fitted out with sophisticated electronic equipment for sampling the sea floor. She ran aground in clear weather on Whale Rock, one hour after leaving the harbour. The vessel went to pieces 100m from shore. All the crew were rescued by the NSRI. According to Werz and Deacon (1992), they left the harbour late on the night of 27-01, during a south-easterly gale. Apparently, there was an electrical fault with the ship's instruments. The vessel drifted onto Robben Island at about 23:15, parallel to the shore. The Port captain sent the tugs, Danie Hugo and Atlantic, to assist after receiving and observing distress signals. Two NSRI boats were launched at about 01:00 on 28-01 and they rescued the 19 crew members, who had abandoned ship, no lives were lost. During and after the foundering, large quantities of oil contaminated the sea and affected marine life. Fuel and lubricating oil was salvaged. Description of the wreck site: Werz and Deacon (1992) state the south coast of Robben Islands bathymetry is fairly featureless. The bottom is mostly sand and stone with some rocky outcrops. The water depth is about 7m. The vessel originally collided with the sea floor parallel to the coast. In 1992, the vessel was lying perpendicular to the shore, the stern facing seaward. The structure was still quite coherent. Werz and Deacon (1992) observed many parts of the vessel and a range of artefacts, including: workshop contents with work benches, vice, lathe, hand tools and spare parts, all neatly arranged as they were left at the time of the sinking.	Jobling, Jim - Database Van der Bosch, Fedde - Database Young, G. Ships that Pass, pg 126 - Photo rawe and crabtree, shipwrecks of the southern cape, no.225 turner, m. shipwrecks and salvage, p.161 argus, 28 january 1976, cape town archives lloyds register of shipping, 1976-1977, sa library, cape town
Golden Crown	-33.7908 18.3625	North-eastern side of island	Iron	Steamship	Coaster		British/SA	1923/07/18	66	Wrecked	The Golden Crown ran aground on the west coast of Robben Island in a fog, just north of the Rangatira. According to Werz and Deacon (1992), she was carrying guano. Upon impact, the lifeboat was carried away. The vessel settled rapidly and the crew took refuge on top of the deckhouse. They there for 6 hours before being rescued. Rockets were launched as distress signals and people gathered on the shore. In the early hours of the following morning the tug Ludwig Wiener rescued the crew suffering from cold and exposure. Description of the wreck site: Werz and Deacon (1992) state that this area is exposed to swells and currents and has a variable bathymetry and exposed rocks. Not much sediment is present, ergo there is not much accumulation of cultural artefacts. Werz identified the site conclusively in 1992 when he found the boiler close inshore, north of the Rangatira. Further identification was confirmed by the letters, 'D' and 'E' mounted on the hull or deckhouse of the wreck.	Jobling, Jim - Database Marsh, John - Database Van der Bosch, Fedde - Database
Han Cheng 2	-33.7987 18.3583	North western side of Robben Island		Motor Vessel	Fishing Vessel		Chinese	1998/04/30		Wrecked	Vessel ran aground in thick mist during the night. Spotted by a resident of the island at 5.30am, at which time all the lights were on and the engine still running. Rough seas and thick kelp in the area hampered rescue efforts from the shore, and only six of the 21-man crew were brought ashore that day. The remaining crew were lifted off by helicopter the next day. Subsequent to the grounding of this vessel, the salvage vessel - Sea Challenger - also grounded and was not refloated.	Argus and Cape Times Ilifa Labantu (Robben Island Museum publication) - vol 2 No 3, May 1998

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Hypatia	-33.8350 18.3805	Whale Rock	Steel	Steamship	Cargo Ship	America	British	1929/ 10/29	5728	Wrecked	The vessel was on its last voyage before demolition. She had been trading since the turn of the century. The vessel arrived in Table Bay at 4am in the morning and adopted the strange procedure of oscillating between the mainland and the island until the port opened in the morning. Unfortunately, the officer of the watch overran the northern leg and the Hypatia went up on Whale Rock. Attempts to get her off using reverse thrust were confounded by the swell which tended to push the vessel higher onto the rock, and with Nos. 1 and 2 holds flooded the ship was abandoned. No radio message was sent out, and the first intimation that the port authorities had of this wreck on their doorstep was when a boat rowed by Lascars showed up at the end of the breakwater. No attempt was made to tow the Hypatia off as she'd already settled on the rocks, and within hours she was tidal throughout. Her cargo of copper ore however was slowly salvaged by Tommy Martin, using the converted fishing vessel Epaty. One of the salvors died on the wreck - Steve Valentine has what may be his diving boot, found on the site wedged under a steel girder. The wreck eventually disappeared beneath the waves one night.	Marsh, John - Database Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library Young, G, 1975, Salt in my Blood - p 20-21 - (Photo on p 20) m. turner, shipwrecks and salvage, p. 161 j.rawe & a. crabtree, shipwrecks of the southern cape, no. 201 l.g. green, the coast of treasure, chap.13 l.g. green, something rich and strange, chap. 4 llyods register of shipping, 1929-1930, sa library cape times, 30 october 1929, sa library
Il Nazerino Savona	-33.7975 18.3575	Shell Bay (Reef)		Sailing Vessel	Barque	South Africa	Italian	1885/ 12/02	938	Wrecked	Ran onto a reef at the north-western point of the island, at Shell Bay. The vessel is listed in the 1880 Gov. Gazette as registered in Parona, Italy and skippered by Lamberts. She was then carrying a cargo of coals. Date may also be 12/1/1885	government gazette # 720 of 1880 (02/07/1880) - details of vessel in years before she was wrecked. van der bosch, fedde - database werz, b.e.j.s., and deacon, j., 1992, operation sea eagle: final report on a survey of the shipwrecks around robben island, unpublished report in nmc library rawe & crabtree, shipwrecks of the southern cape, no.220 turner, m. shipwrecks and salvage, p.161 cape argus, 3 december 1985, sa library, cape town shipping register, cc 3/7/2/3, cape town archives
James Pitcher	-33.8167 18.3617	Long Bay	Steel	Steamship	Fishing Vessel		British	1925/ 10/29		Wrecked	Vessel stranded in thick fog and became a total loss. No lives lost.	Marsh, John - Database
Kingston	-33.8196 18.3771	South / South Western point of island		Sailing Vessel	Barque		American	1852/ 12/23	214	Wrecked	Five lives lost - including the Captain's wife and children.	van der bosch, fedde - database werz, b.e.j.s., and deacon, j., 1992, operation sea eagle: final report on a survey of the shipwrecks around robben island, unpublished report in nmc library rawe & crabtree, shipwrecks of the southern cape, no. 200 turner, m. shipwrecks and salvage, p.161 cape monitor, 8 january 1853, sa library, cape town shipping register, cc 2/18, cape town archives

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Natal	-33.7891 18.3641	North side of island	Iron	Steamship	Fishing Vessel		Norwegian	1916/05/07	31	Wrecked	Ran aground and was wrecked on Robben Island while chasing whales in thick fog.	Marsh, John - Database
Oklahoman	-33.8080 18.3436	2.4 miles north west of Robben Island	Steel	Steamship	Freighter		American	1942/07/07	5700	Foundered	The vessel was a relic of the Hog Island types produced during World War I. She was en route to the Indian Ocean when she ran aground on Dassen Island in thick fog. Although successfully refloated by her master and crew, they mistook the island for Robben Island, and broke radio silence to broadcast their position. The tug T S Mcewen was dispatched from Cape Town, and when she didn't locate the vessel near Robben Island guessed what had happened and steamed north towards Dassen Island. She soon saw the Oklahoman, steaming for Cape Town at full speed, with her bows low in the water (due to flooded forward compartments) and the seas breaking over them. Eventually the bows got so low that her propellor lifted out of the water and she stopped. The crew (40 plus 11 gun crew) was taken off, and towing commenced. Shortly thereafter interior bulkheads gave way and the vessel sank about 2.4 miles north west of Robben Island. The vessel, lying intact on the seabed caused a number of submarine alarms, and was eventually blown up using depth charges. After the war, attempts were made to salvage some of the cargo, but without much success.	Marsh, John - Database Young, G. 1976, Ships that Pass, pg 106-110
Perseverance	-33.8346 18.3796	Whale Rock	Wood	Sailing Vessel	Ship	India	British	1826/03/12	353	Wrecked	Wrecked while leaving the bay in the evening. No lives lost.	van der bosch, fedde - database werz, b.e.j.s., and deacon, j., 1992, operation sea eagle: final report on a survey of the shipwrecks around robben island, unpublished report in nmc library rawe & crabtree, shipwrecks of the southern cape, no.223 turner, m. shipwrecks and salvage, p.162 durden, t. maritime archaeological potential? cape town gazette, 17, 24, 31 march 1826, sa library, cape town lloyds register of shipping, 1826, sa library, cape town sa commercial advertiser, 12, 15 march 1826, sa library cape town commercial exchange, shipping register, cc 2/11, cape town archives.

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Rangatira	-33.7930 18.3583	North-west coast (n of Tantallon Castle)		Steamship	Cargo Ship	Tasmania	British	1916/03/31	8948	Wrecked	At approximately 12.30 hrs the Rangatira (the second vessel of that name) ran onto the rocks near the west coast of the Island in dense fog and just before high tide. At the time of foundering the ship was going dead slow and the sea was calm. Because of the fog the lead had been going since 9.40am, and the last reading they got before she struck was 26 fathoms. The master put the loss down to a strong current and the north-easterly wind. When the news reached Cape Town the tugs J W Sauer and Sir Charles Elliot were sent to assist. However, because she was heavily laden and the tide was falling it was too risky to try and pull her off the rocks. The hull seemd to be intact, and at high tide in the small hours of the following morning attempts were made again to tow her off without success. Shortly thereafter the south-easter sprang up, causing a heavy swell which made salvage efforts more difficult. On 2 April lighters were towed to the wreck to salvage some of the cargo. Some 250 tons of goods and animals, including 2 brood mares, were saved that day. By this stage the hull had started to leak badly. The ship and its contents were valued at 112 000 pounds. Salvage operations continued, and by 6 April it was reported that some 1400 tons of cargo had been landed and stored in the dock warehouses. A further 700 tons were expected to arrive in port that evening. The wreck of the Rangatira may still be visible, and a large portion of the hull survives. Cargo has been observed in the hold. The vessel was built by Workman, Clark and Co of Belfast.	Cape Argus, 1 April 1916, p 5; 3 April 1916, p 5; 5 April 1916; 6 April 1916; 7 April 1916, p 5; 19 April 1916, SA Library, Cape Town Cape Times, 1 April 1916 Lloyds Register of Shipping, 1915-1916, No. 122, SA Library, Cape Town Marsh, John - Database Rawe & Crabtree, Shipwrecks of the Southern Cape, No. 222 Turner, M. 1988, Shipwrecks and salvage..., p 162 Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library
Sea Challenger	-33.7915 18.3640	North western side of island	Steel	Motor Vessel	Tug		South African	1998/05/09		Wrecked	The Sea Challenger was grounded at 01:00 while attempting to assist the Hang Cheng No. 2. The engine room, electronic equipment and heavy machinery was salvaged. Grounded while trying to pull the Han Cheng 2 off the rocks.	Argus and Cape Times Retrieved (04-04-2018): http://www.sahra.org.za/sahris/sites/default/files/heritagereports/NAS%20II%20Robben%20Island%20Report%202010%20(1).pdf
Sea Eagle	-33.8036 18.3805	Murray's Bay		Sailing Vessel	Barque	India	American	1856/11/14	625	Wrecked	Wrecked in a south-easterly gale. She was working up to anchorage between Robben Island and Blouberg but missed her stays during a violent SE and went ashore off Murrays Bay and remains firmly imbedded, became a total wreck. By 17 November she had 15 feet of water in her hold and was breaking up. People were saving as many stores and cargo as possible. Cargo tobacco and ice. Wreck sold by public auction on Friday 21 November. According to a sale notice in the Cape Argus, the cargo included: 2 boxes, containing Platform Scale, 535 « tons of Ice, 13 boxes, 1 bundle Sundries, 1 Garden Engine, 1 Seed Sower, 4 cases Merchandise, 1 case Tobacco, 94 boxes Tobacco, 301 Spars various sizes, 100 barrels of Rosin, 150 barrels Pitch, 60 carboys Spirits of Turpentine, 1 tin box and 8 boat? S Masts, Machinery, 34 boxes, 13 packages, 10 Iron pieces, 4 Fly wheels, 2 boards, 4 boxes Merchandise, 36 packages Merchandise.	RAWE & CRABTREE, SHIPWRECKS OF THE SOUTHERN CAPE, NO.218 M.TURNER, SHIPWRECKS & SALVAGE, P.162 cape of good hope shipping and mercantile gazette, 21 november 1856, sa library, cape town shipping register, cc 2/18, cape town archives van der bosch, fedde - database. cape of good hope government gazette, 18 november 1856, sa library, cape town. cape mercantile advertiser, 17 november 1856, sa library, cape town. cape monitor, 19 november 1856, sa library, cape town. cape argus 11, 20 february 1858, sa library, cape town.

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Solhagen	-33.8250 18.3708	Southern end of island	Steel	Steamship	Fishing Vessel	South Africa	British/SA	1936/09/11	58	Wrecked	The ship left Cape Town harbour, where she had been taking on supplies, in the small hours of the morning so as to be back in the whaling grounds by dawn. Instead of rounding the western side of the island however, she steamed full ahead into the breakers on the southern tip of the island, heeled onto her side and began to break up. The inquiry into the wrecking found evidence that the crew had been drunk. Six members of the crew drowned, and one washed ashore before the remainder (6) were rescued by rocket apparatus 14 hours later. Food was dropped to them by plane as they clung to the rigging. Earlier in her career, on 30 November 1928, the vessel ran aground in Hangklip Bay after her anchor fouled when being let go. Before it could be cleared the fresh prevailing wind carried the vessel further into the bay and she struck the bottom. Although two keel plates below the stokehold were buckled, she came out safely, and no lives were lost. Captained at that stage by N Pettersen with a crew of 10.	Marsh, John - Database Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library Young, G, 1975, Salt in my Blood - p 50-51
Tantallon Castle	-33.7980 18.3563	North-west point of the island	Steel	Steamship	Mailship	South Africa	British	1901/05/07	5636	Wrecked	The vessel left Southampton on 20 April 1901 bound for Cape Town with some 120 passengers on board. At approximately 15h20 on Tuesday 7 May, she ran aground on Robben Island in thick fog on a flat sea. The engines were immediately reversed but to no avail. The signal gun was fired and the inhabitants of the island informed the Port Office on the mainland. The ship soon started listing to starboard, and various tugs, lighters and steamers were put on standby. Due to the fog, the first vessels only reached the Tantallon Castle at 19h30. The passengers were all taken off without difficulty. During the night, the tugs TE Fuller and Alert tried to tow the vessel off the rocks without success. A second attempt was made at high tide to following afternoon, again without success. Two days later it was reported that it would be impossible to save the ship. The hold was full of water up to sea level, and attempts were made to recover luggage and some of the cargo. By 15 May the masts and funnel had disappeared, and very little of the hull was left to be seen. Her remains were sold by auction on 20 October 1901 for GBP250. This vessel has been salvaged in the past and items such as crockery and cutlery have been recovered.	Argus Weekly, 8 May 1901, p 3; 15 May 1901, p 21 Cape Times, 8 May 1901, p 7; 11 May 1901 Cape Times Weekly, 8 May 1901, p 22 Cape Argus, 8 May 1901, p 5; 10 May 1901, p 5; 11 May 1901, p 5; 15 May 1901, p 5; SA Libarary Cape Archives, AG 5586; CC, vol 3/7/2/6; CO vol 7892 ref. E/39, 42, 44, 47, 49 Lloyds Register of Shipping, 1901-1902 Marsh, John - Database Rawe & Crabtree, Shipwrecks of the Southern Cape, No. 216 South African News, 8 May 1901, p 3; 9 May 1901, pp 1-2; 10 May 1901, p 3; 15 May 1901, p 3; 29 May 1901, p 2 Turner, M. 1988, Shipwrecks and salvage..., p 162 Van der Bosch, Fedde - Database Werz, B.E.J.S., and Deacon, J., 1992, Operation Sea Eagle: Final report on a survey of the shipwrecks around Robben Island, Unpublished report in NMC library

Name	Lat Long	Place	Build Material	Vessel Category	Vessel Type	Dest	Nation	Date Wreck	Tonnage	Event Type	Notes	References
Timor	-33.8197 18.3777	Between Island & Whale Rock		Sailing Vessel	Barque		Dutch	1856/ 12/22	441	Wrecked	Wrecked in a south easter after missing her stays. Much of the tin was salvaged.	Rawe, J. & Crabtree, A. Shipwrecks of the Southern Cape, No. 202 m.turner, shipwrecks and salvage, p.162 cape argus, 7 january, 14 february 1857, sa library, cape town cape monitor, 24 january 1856, sa library, cape town cape of good hope shipping and mercantile gazette, 9 january 1857, sa library, cape town shipping register, cc 2/18, cape town archives van der bosch, fedde - database
Tristania I	-33.8478 18.3135	West of Robben Island		Motor Vessel	Fishing Vessel			1978/ 02/22		Scuttled	Scuttled. The Tristania was originally a minesweeper but was never employed as such. She was operated around Tristan da Cunha by the Tristan Development Corporation. In 1961, there was a volcanic eruption and she played a role in the evacuation of the Island's inhabitants. From 1973 - 8 she served as an oil pollution vessel off the South African coast.	Van der Bosch, Fedde - Database
TS McEwan	-33.8580 18.2734	9.7km west of Robben Island		Steamship	Tug	None	South African	1977/ 06/10		Scuttled	Scuttled after 52 years of service. Lies in 90 metres of water.	Van der Bosch, Fedde - Database


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