

THE BETTY'S BAY MARINE PROTECTED AREA MANAGEMENT PLAN

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**For:
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Photograph on cover: *Photograph of Verwoerd Beach stretching into the distance taken by Janette du Toit*

SECTION A: BACKGROUND INFORMATION

1. Introduction

The coastal waters and oceans are an integral part of South Africa's culture and national identity. South Africa's oceans also act as an economic pillar by providing a wide variety of goods, services and opportunities. The Government of South Africa has committed to oceans management in a manner that encompasses an ecosystem-based approach; upon the principles of sustainable development, integrated management and the precautionary approach. Marine Protected Areas ("MPA") covering the full range of IUCN categories are widely recognised by coastal nations as flexible and valuable tools for science based, integrated area management supporting ecosystem-based management, because they can help conserve critical habitat, foster the recovery of overexploited and endangered species, maintain marine communities, and promote sustainable use.

The Government of South Africa recognises the value of this tool as part of its management approach, which is demonstrated within Section 43 of the Marine Living Resources Act, Act 18 of 1998 ("MLRA") (attached as Appendix 3 with other relevant legislation): Marine Protected Areas which allows the National Minister of Environmental Affairs and Tourism the authority to declare an area to be a Marine Protected Area. This is a fortunate situation in that fishing and marine conservation are not separate mandates, but rather managed in an integrated manner. Fishing regulations and permit conditions specify closed areas and MPAs where fishing may be limited or prohibited for resource management reasons, or to fulfil the objectives of the Biodiversity Act and commitments in terms of the Rio Convention.

Marine Protected Areas are the backbone of South Africa's marine conservation strategy, and play a vital role in fishery protection (Attwood *et al.* 1997). To this extent, South Africa's first MPA was created in 1964, but new areas are added as the need arises. In 1998 MPAs that were declared under previous legislation were carried over to the MLRA, after each MPA was motivated afresh and deliberated by the Consultative Advisory Forum. The Betty's Bay MPA was one of these.

The Betty's Bay Marine Protected Area, previously titled the H.F. Verwoerd marine reserve, was originally proclaimed in terms of the Sea Fisheries Act (1973) in order to address the progressively declining trends in the availability of line-caught fish and to protect abalone –*Haliotis Midiae* from over exploitation. In Government Notice No. 21948, 29 December 2000, the H.F. Verwoerd Marine Reserve was re-proclaimed in terms of the Marine Living Resources Act ("MLRA"), Act 18 of 1998. In the process the name was changed to the Betty's Bay Marine Protected Area, in line with the new practise of naming MPAs after geographical features.

The Betty's Bay Marine Protected Area furthermore forms part of the core zone of the United Nations Educational and Scientific Organisation ("UNESCO") designated Kogelberg Biosphere Reserve, with the adjacent marine area from Steenbras Mouth to the Bot River Vlei zoned as part of the buffer zone. A core zone of a Biosphere Reserve is intended for biodiversity and ecosystem conservation purposes, where no consumptive utilization should be allowed.

The MPA has undoubtedly played an important marine protection function, although this has been compromised by rampant poaching of abalone, one of the key species in the area, and continued legal capture of fish from the shore. Recent influxes of rock lobster has further changed the character of the

marine community here. The reserve could play a vital role in research into ecological shifts associated with climate change and overfishing. For abalone, stock recovery remains an important objective.

The Betty's Bay MPA is on the western end of the warm temperate south coast, one of South Africa's four major biogeographic provinces. It is a productive and biologically diverse area, supporting substantial fish, invertebrate and algal fisheries. The environment is diverse, with rocky headlands, wave-cut platforms, high energy sandy beaches, pocket beaches, kelp forests, estuaries, extensive sub-tidal reefs and pelagic habitat.

Revision of the MPA

The Kogelberg was proclaimed as South Africa's first Biosphere Reserve in 1998. Marine and Coastal Management was a signatory to the agreement, and pledged to include the marine area into the Biosphere Reserve. Preservation of natural resources and sustainable utilisation of those resources are the objectives around which Biosphere Reserves are designed. Biosphere Reserves are always zoned into areas of varying levels of human activity.

It seemed logical to use the existing marine reserve as the core area (zone of highest protection where no consumptive utilisation is allowed), while the other areas would be classed as buffer zones (zones where controlled exploitation would occur). However, it soon became apparent that this option might not be favoured by many. In particular, the existing MPA has not been supported by line-fishermen. In retrospect, it seems that this is a popular fishing area, from the boat and the shore, and that an alternative core area(s) should be considered, if it is to enjoy any measure of support among fishermen.

The Kogelberg Biosphere Reserve Sub-committee, and the Kleinmond Coastal Co-management Forum, together provided an opportunity to debate the incorporation of marine areas into the Kogelberg Biosphere Reserve, with input from government sectors (KBRS) and non-government interests (KCCF). The National Department of Environmental Affairs and Tourism: Branch Marine and Coastal Management (DEA&T: MCM) is the lead agency in the proclamation and designation of MPAs

On the 30 August 1999, a public participation process was initiated to redesign the MPA, to ensure that it conformed to the new designation of Biosphere Reserve, to ensure greater buy-in by stake-holders, and to provide better protection for resources in the light of the latest surveys and research. A revised plan was developed by the KCCF after much debate and compromise, under the chairmanship of Mr Geoff Starke. The revision carried much local support. Letters of support were obtained from the Rooiels Ratepayers Association, Betty's Bay Boat Club, Betty's Bay Residents Association, Hangklip/Kleinmond Federation of Ratepayers' Associations, KOBIO, Seawatch, Betty's Bay Ratepayers, and the Betty's Bay Ratepayers Association.

These supporters continue to engage with the current Betty's Bay MPA, despite its short-comings, through the Kogelberg Marine Working Group. The stakeholder engagement through this Working Group is uniquely strong, and it is imperative that this is maintained and encouraged. Without the revision of the MPA, however, it is feared that this support will dwindle.

The revised MPA was greatly expanded with two no-take zones in False Bay and a complicated zonation of fisheries around the existing MPA. The objectives were also wider, with a deliberate focus on enhancing livelihoods and tourism, as opposed to the existing plan, which has a strictly a protectionist agenda.

The Bettys Bay MPA has been at the centre of many discussions for at least a decade. No concrete actions have been taken by the Department to revise the MPA despite:

1. Presentations made to the Consultative Advisory Forum (2000), the Deputy Director-General (Pretoria, 2000), and the Director-General (Plein Street, 2003). The CAF endorsed the proposal;
2. A broad stakeholder meeting attended by the Provincial Minister of Economic Affairs, where MCM was represented by, among others, the Deputy Director-General to discuss the MPA and related problems (Kleinmond, May 2002);
3. A WWF-funded project to establish a Business Plan for a revised Bettys Bay MPA (2003-2004); and
4. Representations by commercial fishers to the Department to implement the revised plan as the existing MPA is detrimental to their operations.
5. Repeated proposals by concerned residents (A. Heydorn, R. Starke) through the coastal committee of the Cape Action for People and the Environment (CAPE) Programme.

These attempts did not come to fruition, primarily because of a lack of a suitable management agency and funding, but also because MCM focused on other priority areas.

These obstacles have now largely been removed. Funding is available and Cape Nature have agreed to manage the MPA. The Proposed Kogelberg Marine Park Business Plan (2003) attached as Appendix 1 should be revisited in the light of the new resources.

1.1 Purpose and Scope of the Management Plan

The purpose of this document is to describe the Betty's Bay MPA, its goals and objectives, how these will be reached, and how the success of the MPA will be measured. It has as its intention to protect and conserve the values of the MPA whilst simultaneously allowing for reasonable access and utilisation of the MPA by the different user groups. It is a living, public document subject to periodic review, which describes how the management authority and its partners intend to manage the Betty's Bay MPA in a sustainable manner.

1.2 Development of the Management Plan

Coastal & Marine Eco-Tourism Corporation, in collaboration with Dr. Colin Attwood was commissioned by the World Wildlife Fund ("WWF-SA") to compile the Betty's Bay MPA Management Plan. This management plan is therefore the product of a joint effort with CapeNature, WWF-SA, the Overstrand Municipality and SEAWATCH in collaboration with DEA&T: MCM, who provided the funding. The plan is based on similar management plans developed for De Hoop MPA, Goukamma MPA and Stilbaai MPA. It draws on international experience of marine protected area management and the relevant guideline published by the International Union for the Conservation of Nature and incorporates the national legal and institutional requirements.

It should also be noted that this management plan is aligned with other conservation planning documents such as the Kogelberg Marine Park Business Plan (2003). An annual review of the management plan must be undertaken for the first three years. Thereafter the management plan should be reviewed every five years.

1.3 Management Framework

The management of marine living resources in South Africa is a national responsibility, and MPAs are declared under the Marine Living Resources Act (No. 18 of 1988) (MLRA) (see Appendix 3). The delegated authority to manage MPAs is the Minister of Environmental Affairs and Tourism, through his/her Department of Environmental Affairs and Tourism: Marine and Coastal Management Branch ("DEAT: MCM"). A contractual agreement has been entered into between this Department, DEAT: MCM, and the Provincial Cape Nature Conservation Board ("CapeNature") to manage the MPA on their behalf. The contractual agreement sets in place key deliverables to monitor and ensure the sound management of the MPA, and has an annual as well as quarterly revised budget with a reporting structure associated to it. The agreement recognises that CapeNature, as the primary management agency on behalf of the Department of Environmental Affairs and Tourism: Marine and Coastal Management Branch, manages both the MPA and adjacent Kogelberg Biosphere Reserve, which is recognised in terms of the United Nations Educational, Scientific and Cultural Organization Man and the Biosphere Programme ("UNESCO: MAB Programme"), essentially as one unit in a cooperative manner with all the relevant stakeholders.

1.4 Structure of the Plan

This management plan outlines the framework for the management of the Betty's Bay MPA to assist its stakeholders in achieving the site's conservation and user-principle objectives. The plan is broken down into distinct sections with an introduction followed by a section on the background of the MPA. Ensuing sections provide guidance on site management and can be described as the "living" part of the document. The term "living" illustrates the expectation that this part of the management plan will evolve and change over time to suit the needs of the MPA and its stakeholders. This part includes the specific objectives set for the Betty's Bay MPA by DEAT: MCM and CapeNature in collaboration with the Kogelberg Marine Working Group ("KMWG"). It also provides guidance on governance, as well as management actions such as monitoring, compliance, education and awareness raising, all of which will be critical to the success of the MPA.

1.5 Goals and Objectives of the Betty's Bay MPA

Marine Living Resources Act main objectives:

1. For the protection of fauna and flora or a particular species of fauna or flora and the physical features on which they depend;
2. To facilitate fishery management by protecting spawning stock, allowing stock recovery, enhancing stock abundance in adjacent areas, and providing pristine communities for research or;
3. To diminish any conflict that may arise from competing uses in that area.

The management agency, CapeNature, have developed a set of over-arching goals based on the three main objectives of the MLRA associated to management of Marine Protected Areas, which relate to the Betty's Bay MPA and include:

Biophysical Goals

1. To protect the marine and estuarine ecosystems that are representative of the south coast zone and to maintain biodiversity and ecological functioning in these ecosystems;
2. To protect depleted, endangered and endemic species and populations and to protect habitats which are important for the survival and revival of these species and populations;
3. To contribute towards the long-term viability of marine fisheries

Socioeconomic Goals

1. To promote non-consumptive, ecotourism opportunities;
2. To provide opportunities for marine ecological research and monitoring of environmental effects of human activities on marine ecosystems;
3. To facilitate the interpretation of marine ecosystems for the promotion of conservation among scholars and tourists;

Governance Goals

1. To reduce conflicts between competing users in the MPA and surrounding areas;
2. To ensure that appropriate and effective legal structures are developed for protecting the biodiversity of the MPA and the activities that benefit from it;
3. To fulfil South Africa's international commitment to marine protection in terms of international protocols and conventions;

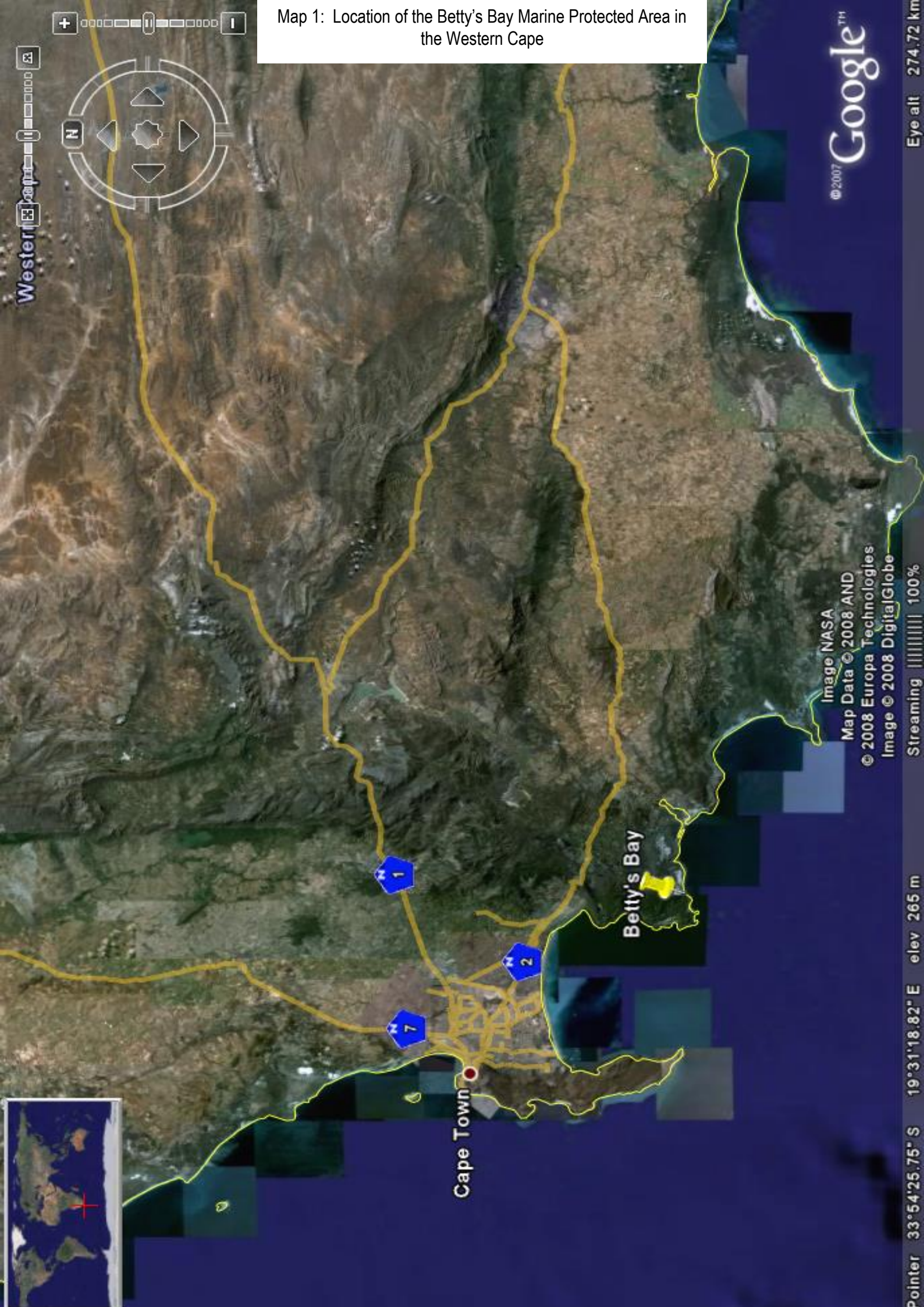
The development of related management actions further supports these objectives by identifying the activities which will be undertaken by CapeNature to reach the over-arching goals and ascertain the effectiveness of the MPA. These management actions are discussed in Section B onwards.

2 Description of the Area

2.1 Site Location

Betty's Bay MPA lies approximately 29km south east of the coastal town of Gordons Bay and approximately 37km north-west of the popular holiday town known as Hermanus on the south western coastline of the Western Cape Province of South Africa. The coastal town of Betty's Bay is situated directly adjacent to it, which falls within the Overstrand Municipal area.

The MPA covers 3 km of coastline and encompasses the inshore marine environment between two beacons, the western one of which is situated on a rocky promontory at Stony Point and the eastern one, just to the east of Jock's Bay. It furthermore forms part of the core zone of the Kogelberg Biosphere Reserve. See Map 1 below for a regional context, Map 2 for a more specific location and Map 3 for the MPA in relation to the Kogelberg Biosphere Reserve extent and zonation.



Map 1: Location of the Betty's Bay Marine Protected Area in the Western Cape

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Map Data © 2008 AND
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Streaming 100%

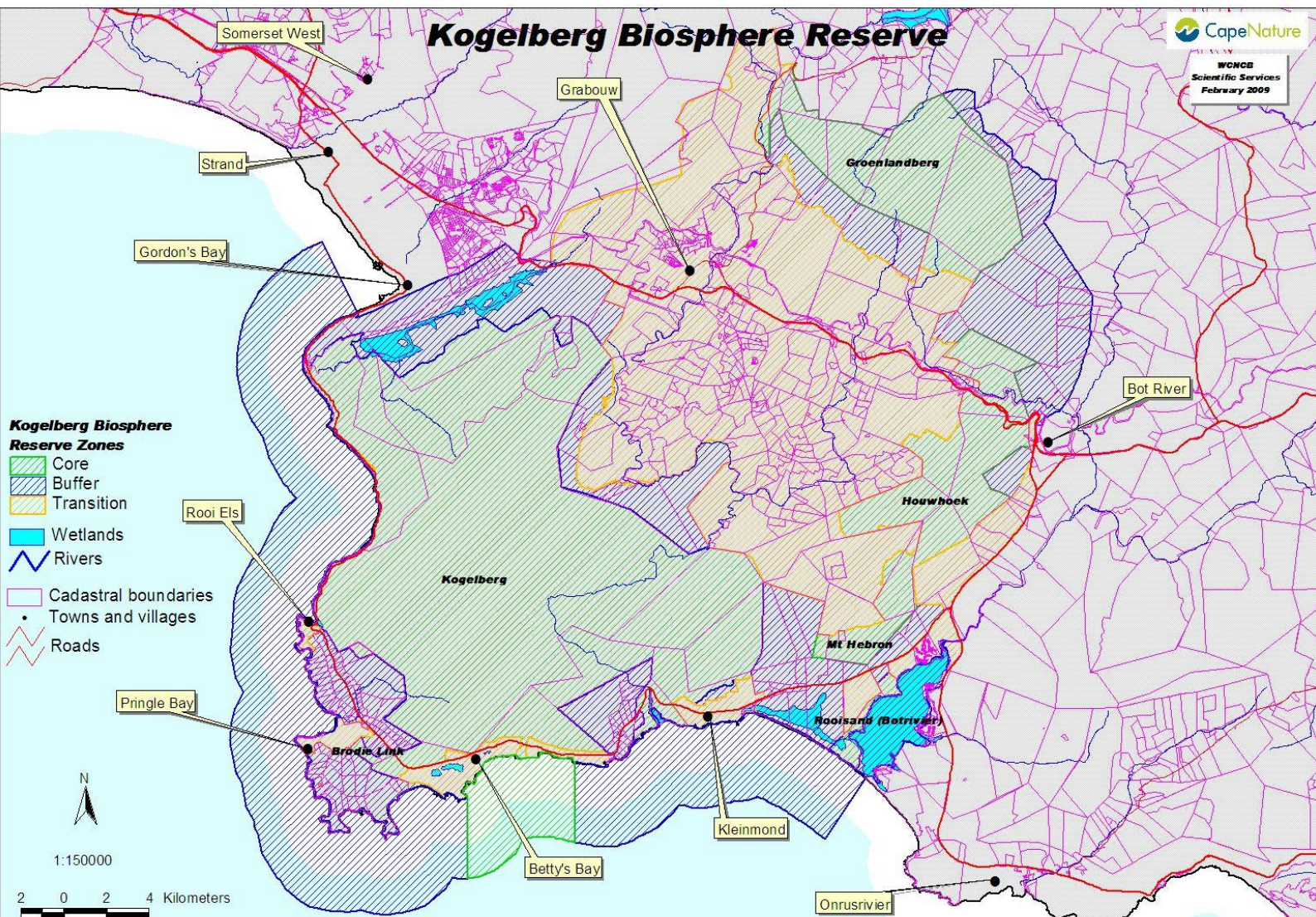
Pointer 33°54'25.75" S 19°31'18.82" E elev 265 m

Eye alt 274.72 km

Map 2: Specific Location and extent of the Betty's Bay MPA



Map 3: MPA in relation to the Kogelberg Biosphere Reserve extent and zonation



2.2 Geography and Habitat

The Betty's Bay area is influenced by the Table Mountain Sandstone sediments. The mountains enclosed in the Kogelberg Nature Reserve, in which Betty's Bay is encompassed, rises sharply from the ocean to form peaks, such as Voorberg (862 m above sea level) only 4 km inland; the resultant coastline is dramatic. During winter, prevailing northwest and southwest winds bring rain associated with subantarctic cold fronts. Although microclimates significantly affect local rainfall, in general the lower slopes receive approximately 800 mm p.a. while upper slopes and high peaks receive approximately 3 300mm p.a. The region suffers from summer drought. Temperatures are moderate and range from -5°C minimum in winter and 35°C maximum in summer. The annual average minimum and maximum temperatures are 11°C and 24°C respectively.

Although **Inland Water Lakes** are found in close proximity to the Betty's Bay MPA and are therefore addressed herein briefly, it must be noted that they do not form part of the MPA:

There are three small lake-lets, which lie a short distance inland from the Betty's Bay MPA coast: Grootvlei, Kleinvlei and Bass Lake, which forms a fragile black water lake system.

In accordance with a study completed in 1998 to analyse the quality of the groundwater, samples showed that the water is relatively uncontaminated during the winter season, with the lake being reasonably polluted at various times of the year. This evidence was in the form of medical reports, changes in the natural vegetation and incidences of algal blooms. Monitoring of the water quality was recommended through this study, but which does not fall within the ambit of this management plan. (Schachtschneider, K and Winter, K. 1998 African Journal of Aquatic Science 2000)

Fish species found herein include Bass and Karp. It is also home to rare species of microfrogs and marshfrogs.

The main habitats that can be found in the Betty's Bay MPA are;

a) Sandy beaches

The main beach within the Betty's Bay MPA, known as Verwoerd Beach (see Photograph 1), is one of the very few along this coast where paper nautilus shells are washed ashore in the winter months. A smaller beach set between the rocks at the eastern end of the reserve is known as Dawidskraal.

Betty's Bay sandy beach ecosystems include all three typical zones, namely the surf zone, the beach including the intertidal and backshore zones and the dunes.

The dune system in the area is considered a part of a mobile dune system - Both processes associated to sandy beaches is evident at Betty's Bay, namely the occurrence of littoral transport of sand in the surf zone as well as transport on the landward side, where the sand is then trapped by the plants growing near the driftline and which have resulted in the development of the foredunes. The mobile sand dunes in this area have resulted in huge development costs as sand has inundated local houses in the vicinity of Betty's Bay.

Typical meiofauna include nematodes, copepods and ostracods; zooplankton include small shrimps and prawns; the intertidal zone life includes sand mussels, mole and ghost crabs, plough snails, sandhoppers and the presence of Kelp gulls, African Black Oystercatchers, White-fronted Plovers and Sanderlings; and a variety of fish are found in the surf zone including baardman, mullet, steenbras, elf and sandsharks.

Threats to the sandy beach at Betty's Bay:

- Development in the littoral active zone, including buildings which result in sand inundation of buildings. Artificially stabilising the dunes with vegetation or removing the foredunes for development will remove the reservoir that supplies sand to the beach.
- Although the Betty's Bay beach is kept clean, pollution in the form of plastic and oil spills remains a permanent threat if left unchecked.
- No specific research regarding invertebrates has been completed for the Betty's Bay MPA, which makes clear recommendations and the identifying of specific threats difficult.

Photograph 1: Verwoerd beach stretching into the distance.



b) Rocky Shores

Betty's Bay MPA has all four intertidal zones and associated group of plants and animals present, namely the Littorina zone with animals such as Littorinid snails; the Upper Balanoid zone with winkles and limpets; lower Balanoid zones support brown mussels, coralline seaweeds and green zoanthids at mid-tide level and the infratidal zone supports anemones, sea urchins and starfish at low tide level.

Although four species of kelp occur in South Africa, the most familiar is the sea bamboo *Ecklonia maxima*, which is often found washed up in large quantities on the shore, or on the rocky shores. This is the dominant kelp on the south-western cape coast, but it gives way to the smaller split-fan kelp *Laminaria pallida*. The washed up kelp is a source of food and shelter for a variety of amphipods and isopods, better known as sand hoppers and sea lice, on both the sandy and rocky shores and forms an integral part of the associated ecosystem. These crustaceans are preyed upon by birds such as sand plovers and sanderlings. In addition, the crustaceans help to break down the kelp into fragments small enough to be consumed by filter-feeders in the surf zone, such as white mussels on the adjacent sandy beaches.

The most important group of animals that feed off kelp in the rocky shores are the filter feeders such as mussels, red bait and sea cucumbers. These typically comprise 70-90% of the animal community. The mucus released from kelp fronds is rich in organic compounds that encourage the growth of bacteria, which are in turn a food source for protozoans such as flagellates and ciliates. Filter-feeders consume these micro-organisms, as well as phytoplankton, kelp spores and tiny fragments eroded away from the tip of the kelp fronds.

Starfish, *Marthasterias glacialis*, and octopus *Octopus vulgaris*, are also present in the sub-tidal rock pools, which eat mussels.

Threats to the rocky shores:

- Overexploitation of the inter-tidal resources. The Betty's Bay MPA seeks to protect this habitat and the spawning stocks and seeds adjacent to it.
- Poaching is an ever-present threat.
- Damage to inter- and sub-tidal life through trampling and illegal removal of organisms for bait.
- Littering of beaches with fishing line, hooks, bait, plastic packets, glass bottles (often broken), and beer cans, occurring continuously. A direct threat in terms of aesthetics and detriment to wildlife such as seabirds and otters.

c) Dawidskraal River Mouth (See photograph 2)

The Dawidskraal River- and three stream outlets flow into this sheltered near-shore marine area, leading to fresh-water influx for extended periods. This is the probable explanation for the previous abundance in the MPA of fish species such as white steenbras, which have an affinity for estuarine environments in terms of their feeding and breeding requirements. The Betty's Bay MPA has been likened to an estuary because of the sheltered nature of the shore and the unusually productive water (Heydorn, A and Starke, R. 2007)

Threats to the coast adjacent to the River Mouth:

- Overexploitation through shore angling is a continuous threat.
- Accumulation of discarded fishing line creating risk of entanglement of free-swimming organisms and also undesirable scouring of underwater rock surfaces (Heydorn, A. and Starke, R. 2007).
- See Appendix 5 Table 2 for a list of exploited species found within the Betty's Bay MPA



Photograph 2: Picture of Dawidskraal River Mouth (towards the left of the photograph)

d) Sub-tidal reefs

Rocky reefs run parallel to the shores at Dawidskraal and to the west of the main beach, providing a sheltered lagoon-like condition in about a third of the Betty's Bay MPA. Kelp forests are found attached to the rocky substratum by a holdfast, providing a rich source of food and shelter for a variety of animals, the community exhibiting three distinct zones. Inshore, where light is abundant in the shallow waters, many other algal species live underneath the forest canopy formed by the *Ecklonia* kelps. In the intermediate

zone, *Laminaria* grows beneath the *Ecklonia* canopy, and immobile animals such as mussels. However, in the Betty's Bay MPA, animals dominate the quiet waters of the offshore zone. Here dense communities of mussels, sea urchins, rock lobster and abalone live in between patches of *Laminaria*, which replaces *Ecklonia* in deeper water. Herbivores present in the kelp forest include the kelp limpet, *Patella compressa*, abalone or perlemoen, *Haliotis midae*, and alikreukel or giant periwinkle, *Turbo sarmaticus*. The most important carnivore, at the top of the food chain within kelp forests, is the rock lobster, *Jasus lalandii*.

The release of drift cards at the seaward edge of the Dawidskraal kelp beds, as part of an abalone research initiative by the DEAT:MCM, formerly known as Sea Fisheries Research Institute in the 1960s, indicated that this area holds an exceptional larval dispersion potential. Drift cards were returned from as far afield as Quoin Point in the east and Simonstown in the west. This larval distribution mechanism is of particular importance as far as abalone are concerned, but it applies to many other marine organisms as well (Heydorn, A. and Starke, R. 2007).

Fish species found in the Betty's Bay MPA include Silver Kob *Argyrosomus inodorous*, Shad (Elf) *Pomatomus saltatrix*, Geelbek *Atractoscion aequidens*, Hottentot *Pachymetom blochii*, Bronze Bream *Pachymetopon grande*, Roman *Chrysoblephus laticeps*, Yellowtail *Seriola lalandi* (rarely), Galjoen *Dichistius capensis*, White Steenbras *Lithognathus lithognathus*, Harder *Liza richarsonii* Spotted gully shark *Triakis megalopterus* and Smooth hound shark *Mustelus mustelus*

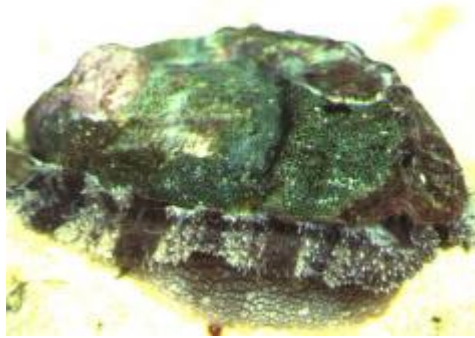
Threats to the sub-tidal reefs:

- Overexploitation by fishermen
- Accumulation of discarded fishing line creating risk of entanglement of free-swimming organisms and also undesirable scouring of underwater rock surfaces (Heydorn, A. and Starke, R. 2007).
- See Appendix 5 Table 2 for a list of exploited species found within the MPA

2.3 Key Marine fauna found in the Betty's Bay MPA

Bettys Bay is subjected to frequent summer upwelling events, during which water temperatures may drop to 11° C in summer. Although this area is part of the warm temperate west coast (Lombard and Strauss 2004), it is a transitional area between the warm and cool temperate regions. Recent invasions of rock lobster *Jasus lalandii* into the area from the west coast suggest strong affinities with the coast north of Cape Point. Bettys Bay supports rich kelp *Ecklonia maxima* beds, and a number of valuable fisheries resources. Historical records show many warm-water species were once abundant here, but because of a combination of over-fishing and environmental shifts, many of these have disappeared or declined substantially (Attwood & Farquhar 1999).

The habitat includes predominantly rocky shores with one stretch of sandy beach. The subtidal habitat comprises predominantly of reef, and kelp beds can be seen extending in patches far out to sea. The area was once very rich in abalone *Haliotis midae*, and the Bettys Bay MPA protected healthy stocks of this species until approximately 1996, when poaching operations thinned these populations. The area still holds abalone, but it is questionable whether these stocks are now self-sustaining. Rampant, unchecked poaching denuded large areas completely. The removal of the dominant herbivore probably precipitated an ecological change. See Photograph 3 for a picture of *Haliotis midae*.



Photograph 3: *Haliotis midae*

Rock lobster invaded the area at approximately the same time, leading to much speculation on the cause of the shift in rock lobster, and the subsequent decline in urchin density (Tarr et al. 1996). A commensal relationship between urchin and juvenile abalone meant that the disappearance of the former led to a local crash in abalone recruitment, exacerbating the effects of poaching (Mayfield & Branch 2000). The area adjacent to the MPA now supports a modest rock lobster fishery, but the abalone fishery has been closed nationwide in 2008. Abalone is now listed on CITES III.

Long before the demise of abalone, and before the MPA was established, a number of coastal fish populations also succumbed to the effects of fishing. Linefishing from boats targeted geelbek *Atractoscion aequidens*, carpenter *Argyrozona argyrozona*, roman *Chrysoblephus laticeps*, dageraad *Chrysoblephus gibbiceps*, seventy four *Polysteganus undulosus*, snoek *Thysites atun*, hottentot *Pachymetopon blochii*, silver kob *Argyrosomus inodorus*, yellowtail *Seriola lalandii*, chub mackerel *Scomber japonicus* between 1897 and 1906. The catch rates of all of these except hottentot, snoek and yellowtail decreased substantially (between 70 and 100% declines) by 1987, indicating a massive loss of predators on the reef and in the pelagic zone. Those species that increased were either small, and less valuable (hottentot) or nomadic species (snoek and yellowtail). The decline in chub mackerel may represent an environmental shift. The present (2008) state of fish stocks in the MPA is uncertain owing to a lack of a monitoring programme. Catches in the region, however, are depressed.

Overfishing was not limited to offshore species. There is considerable evidence of a decline in surfzone fish, including galjoen *Dichistius capensis*, silver kob, blacktail *Diplodus sargus* white steenbras *Lithognathus lithognathus* (Attwood and Farquhar 1999). In the case of the latter, environmental degradation of the nursery ground (estuaries) is a likely contributing cause to the decline. The catch rates recorded in the present period are a mere fraction of earlier records, a situation that is mirrored throughout the region. The coastal fish have not been protected on the present MPA, which has prevented a recovery. Other MPAs which have stopped shore angling have seen recoveries in coastal fish (Bennett and Attwood 1991).

Present-day fishing still target these species, but shore angling has expanded to include a number of elasmobranch species which are targeted by sport anglers. These include the spotted sevengill shark *Notorynchus cepedianus*, smoothhound shark *Mustelus mustelus* and the spotted gulley shark *Triakis megalopterus*. Sharks are generally returned, but one can expect some mortality with these catch and release fisheries (Bartholomew & Bohnsack 2005).

The inter-tidal area is rich in herbivorous molluscs, including several species of limpets, periwinkles, chitons and giant periwinkles, which are exploited sporadically.

Two red-data listed species breed in the area, namely African penguin *Spheniscus demersus* (listed as vulnerable in 2006) and bank cormorant *Phalacrocorax neglectus* (listed as endangered in 2006) breed in the area. Both species have suffered food shortages as a result of fishing. Initial declines of penguins were due to egg collecting (now ceased). Penguins traditionally nest on islands, but the first penguin nest at Stony Point was noticed in 1982. This is now one of only two land-based penguin colonies. The Municipality erected a fence and a penguin-viewing platform. Visitors pay a small fee to visit the site.

The African Black Oystercatcher *Haematopus moquini* was listed as near threatened in 2006. It feeds on inter-tidal mollusks predominantly and nests in the coastal zone, where disturbance by man (and their pets) has threatened this species.

Southern right whales *Eubaelana australis* are seasonal visitors, whereas Brydes *Balaenoptera edeni* whales are coastal residents. Both species can be seen from the shore.

See Appendix 5 Table 2 for a list of exploited species within the MPA

2.4 Potential Climate Change Impacts

In accordance with the “Status Quo, Vulnerability and Adaptation Assessment of the Physical and Socio-economic Effects of Climate Change in the Western Cape” produced by the Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning in June 2005 (page 71), the potential impacts associated to the types of river mouths such as that found at Dawid’s Kraal is an increase in mouth closure, especially in spring and summer, which is the biological active period, with consequent decrease in effectiveness of its functioning as a healthy system.

2.5 Human Settlements

The main human settlement in the vicinity of the Betty’s Bay MPA is the town of Betty’s Bay, which is found adjacent to the Betty’s Bay MPA. This is predominantly a holiday community, where mostly holiday homes are scattered along the coast. There are also several small shops and a number of guesthouses. It is considered the longest village in South Africa at over 13km. Betty’s Bay contains the well-known Harold Porter Botanical Gardens as well as a Jackass Penguin colony.

The town of Kleinmond is within 10km of Betty’s Bay. This town has a much higher resident population, with many fishers, both local and transient emanating from it. The impact from fishers and shore-angling within the Betty’s Bay MPA is predominantly experienced from the Kleinmond and smaller surrounding towns.

Along much of the coast there are roads that run fairly close to the shore, allowing easy access to the coastline at a number of places. There are also a number of picnic spots offering braai facilities to day visitors. One of these picnic spots is found adjacent to the Dawidskraal River Mouth, where a boardwalk

leads from the picnic site to the coast and River Mouth. This site is heavily utilised by shore-anglers and for fishing competitions and requires defined management actions.

2.6 History and Archaeological sites

The area is named after Betty Youlden, daughter of the first developer of the area. During Colonial times Betty's Bay was a favourite place for runaway slaves, but in 1912 Betty's Bay became a formal whaling station running until the 1930s. Remains of the whaling station can still be seen at Stony Point and in the small bay adjacent to Stony Point - the skeletal wreck of an old whaling boat, the Una, protruding from the shallow water.

Open boats were used to row out to Southern Right Whales in the sheltered bays, and although numbers taken were small compared to the large-scale factory ship whaling, this practice was particularly damaging to the stock as it targeted adult females about to calve or with dependent young. As a result, Southern Right Whale numbers declined rapidly, and the whalers began targeting humpbacks instead. However, humpbacks fetched only £20-£200 compared to £400-£600 for Right Whales, so the industry became sub-economic and some stations, including Betty's Bay, were forced to close. In 1976 South Africa signed the treaty to ban whaling and the big mammals are making a comeback.

The History at Stony Point, Betty's Bay

The site at Stony Point, Betty's Bay is one of the only three land-based colonies of the African Jackass Penguin and for this reason it is treasured.

The first nest was noticed in 1982. The Municipality erected a fence around the site and allowed visitors to view the colony through the fence. This was then upgraded to become a viewing platform for the conservation of the penguins. The African Penguin is listed as Vulnerable in the Red Data book. Refer to Photograph 4 below for a view of Stony Point in the distance.

En route to the Penguin colony the path passes quite a distinct shell midden. The coast of South Africa is littered with these large mounds of shells. These build up through several agents: by storm, by seagulls and by humans. Shell middens are the accumulations of shells discarded where prehistoric people lived and fed for extended periods. Shell middens may contain stone tools, shards of pottery, and even bits of bone, fish hooks made of bone and stone sinkers. Some of the oldest shell middens in the world, dating back as much as 120 000 years, occur along the Cape coast. Middens can provide valuable information about changes in climate, animal and plant life and the lifestyles of Strandlopers.

Mention has been made of two graveyards in the vicinity of Stony Point, but not much is known of these as yet.



Photograph 4: Looking over Stony Point with the Whaling Station just outside and to the right.

3 Boundaries and zoning

All geographic co-ordinates are taken directly from the Proclaimed Regulations associated to the Betty's Bay MPA and determined in accordance with the *World Geodetic System ("WGS") 84 (G730)* datum. See Map 1 and 2 below for a visual representation.

Boundaries of the Marine Protected Area:

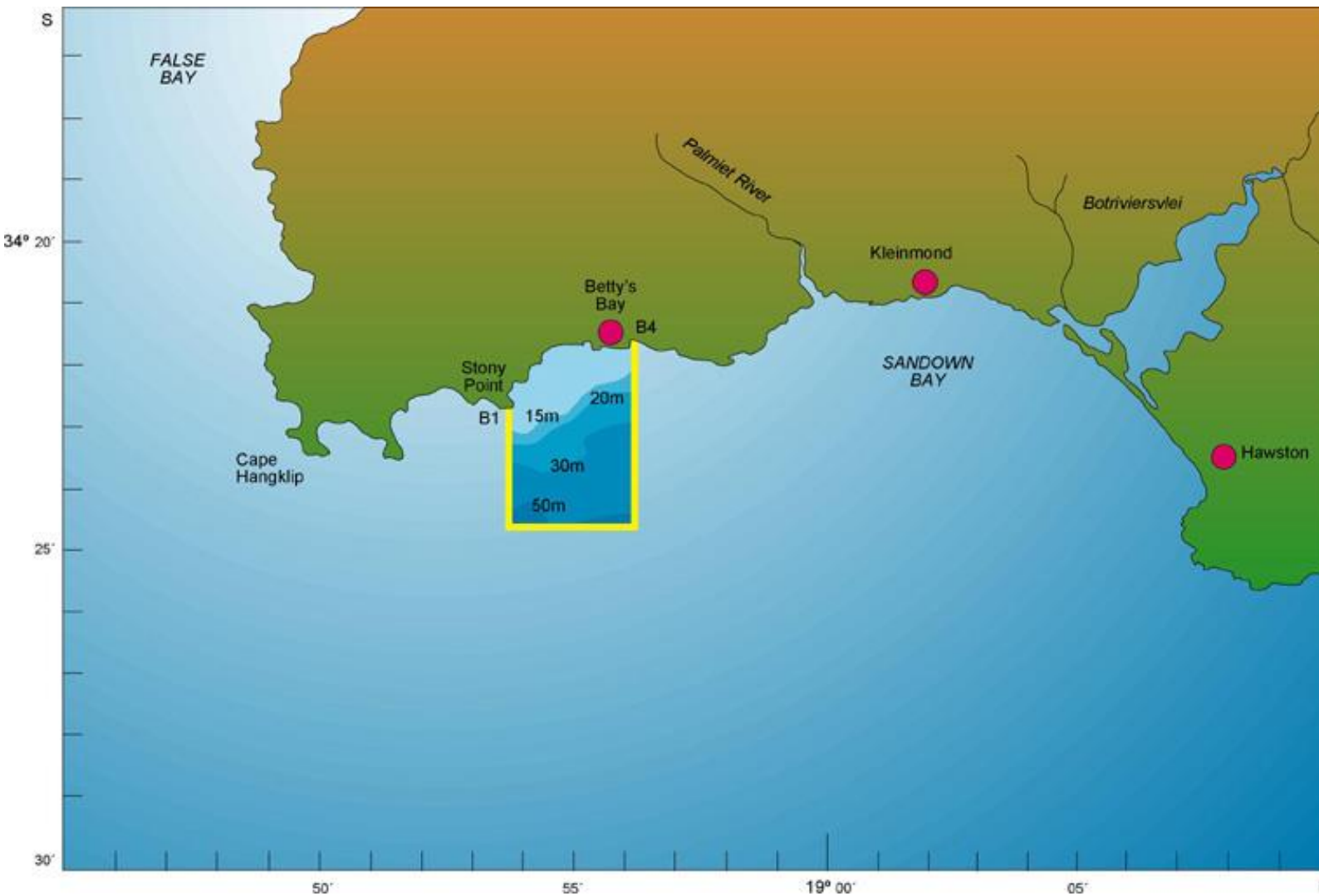
The Betty's Bay Marine Protected Area (previously known as the H. F. Verwoerd Marine Reserve) in the Western Cape Province is bounded by, as northern boundary, the high-mark, as western boundary, and a line (180° true bearing) drawn from the beacon marked B 1 (34°22'.45S; 018°53'.765E) situated at Stony Point, as eastern boundary, a line (180° true bearing) drawn from the beacon marked B4 (34°21'35.7S; 018°56'.240E) situated to the east of "Jock-se-baai", and as southern boundary the latitude 34° 24'.45S.

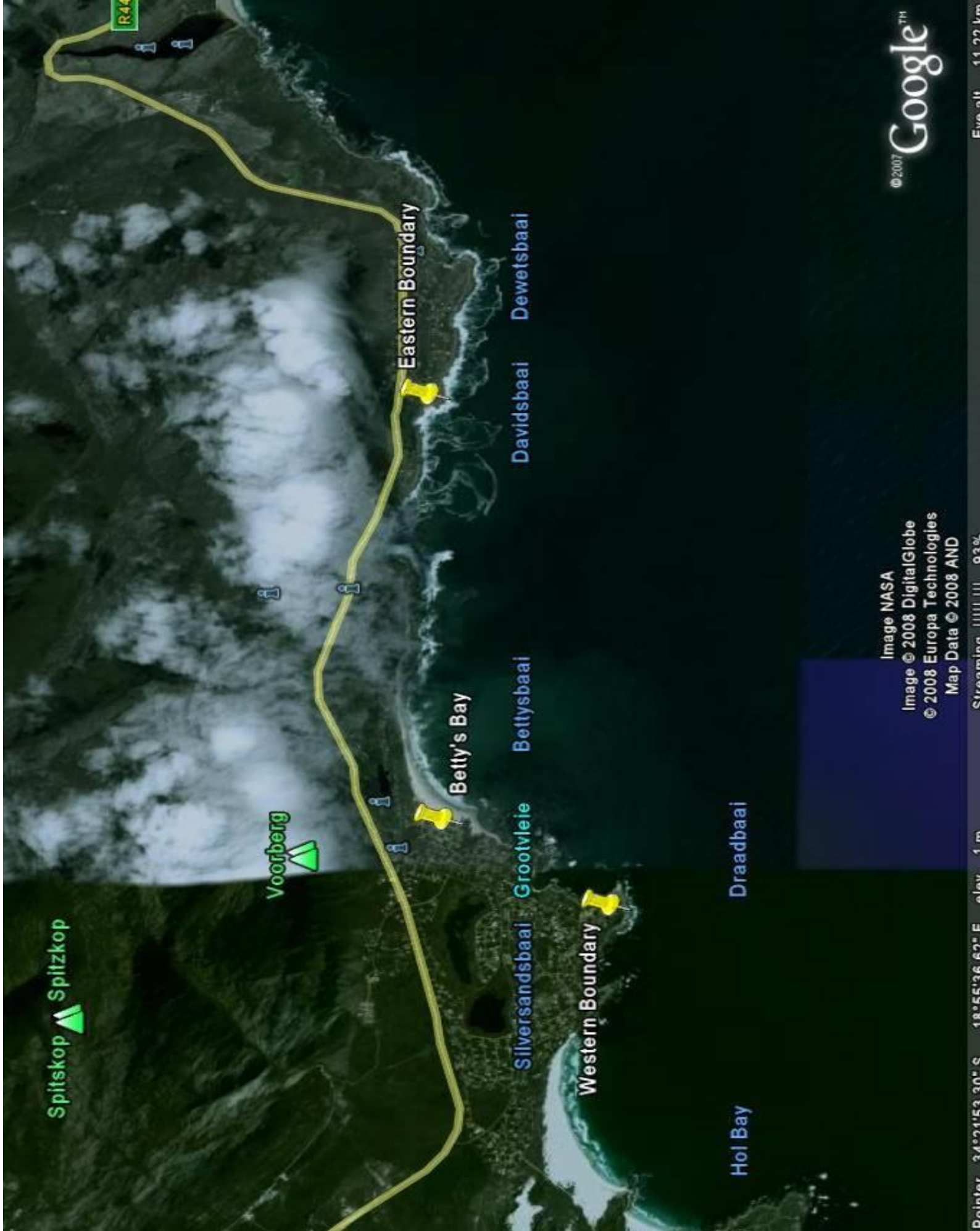
The MPA is not formally differentiated into zones, such as Restricted or Controlled Zones, which is a major concern for the MPA as shore-angling still continues unabated. A key recommendation is to amend the boundaries as well as the zones within the Betty's Bay MPA. The recommended boundaries and zonation is discussed in detail under Appendix 1 See Map 3 and 4 below for the boundaries of the Betty's Bay MPA.

Zonation:

The Betty's Bay MPA has no defined zones such as Restricted or Controlled zones in terms of Marine Protected Area legislation; however it is managed as a Controlled zone by definition in that certain activities are allowed, whilst others are prohibited. In this case shore-angling is allowed.

Map 4: Betty's Bay showing the boundaries of the MPA





Map 5 showing detailed Betty's Bay MPA

4. Regulations (see Appendix 3 for a list of appropriate legislation)

Section 43 of the MLRA states that-

“(2) No person shall in any marine protected area, without permission in terms of subsection (3)—

- (a) fish or attempt to fish;
- (b) take or destroy any fauna and flora other than fish;
- (c) dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter, or in any way disturb, alter or destroy the natural environment;
- (d) construct or erect any building or other structure on or over any land or water within such a marine protected area; or
- (e) carry on any activity which may adversely impact on the ecosystems of that area.”

The regulations associated with the Betty’s Bay MPA are incorporated below as proclaimed in the Government Notice No. 21948, 29 December 2000:

“STIPULATIONS: MARINE PROTECTED AREAS

3, (1) *The provisions of section 43(2)(a) of the Act shall not apply to*

- (a) *The catching of line fish by recreational shore-angling in the **Betty’s Bay**, Goukamma and Robberg Marine Protected Areas;”*

Within the boundaries of the MPA, all marine organisms are protected and no fishing is allowed, with the exception of shore angling between beacon B1 at Stony Point and beacon B4, to the east of Jock-se-baai, extending two nautical miles seawards from the high-water mark. The latter includes shore angling competitions which are held on a regular basis in the Betty’s Bay MPA.

There is a need for Betty’s Bay MPA to have its own set of regulations. The current situation, in terms of both its existing boundaries, as well as the regulations pertaining to the site is seriously impacting the effectiveness of this MPA. It is strongly recommended that regulations are proclaimed in accordance with the proposed Kogelberg Business Plan attached Appendix 1.

SECTION B: MANAGEMENT OF THE MPA, ITS USER GROUPS AND KEY SPECIES FOUND WITHIN

1. Strategic Plan

The CapeNature Strategic Plan is attached as Appendix 2 and should be read in conjunction with the management plan. It sets out key actions and roles and responsibilities of both CapeNature as well as for DEAT-MCM. The Key Performance Areas in this plan are considered the critical areas where management interventions are required to ensure that the Betty's Bay MPA meets its objectives. To this end DEAT-MCM has entered into an agreement with CapeNature to manage 5 (five) MPAs including Betty's Bay. This agreement provides core funding for activities including compliance, monitoring and awareness. It requires quarterly and annual reporting.

It should be noted however that the Betty's Bay MPA as it currently exists is not proclaimed in a manner that can ensure its objectives. A key performance area will be to support a new set of regulations and zonation plan for the MPA.

2. Key Performance Areas

2.1 Overview

Many living marine resources have been depleted over the last century (eg certain linefish species, abalone). Steps need to be taken to allow such populations to recover to the point at which they may once again provide rich yields. The Betty's Bay MPA must seek to address this as far as possible. Furthermore, all South Africans can expect access to marine resources, however, such access must be controlled in a fair manner to ensure that no person or group compromises the opportunities of others, present or future. The termination of illegal harvesting (poaching) in this respect is a priority.

The Kogelberg Biosphere Reserve serves as a focus for tourist activity. The coastal environment, and in this respect, the Betty's Bay MPA must be managed in such a manner as to maximise tourist opportunities, whilst minimising the impact thereof on the marine and coastal resources.

The future of our natural assets is in the hands of present and future generations. People need to be shown the wealth of resources in the Overstrand coastal area and made aware of those human activities that threaten it. From an early age, people must be taught to respect the environment on which they depend, and there is no better way than hands-on education. Education, awareness raising and capacity building must be a key component of this Management Plan (Attwood, CA. 1999)

To ensure more effective management of fishing resources in the Overstrand, the following steps were recommended by the Chairperson of the Kogelberg Marine Working Group and Chairperson of SEAWATCH in 2007:

- **Support** the initiative to establish a Kogelberg Marine Park, stretching from the Steenbras River Mouth to Botrivierlei, as part of the Kogelberg Biosphere Reserve, as recommended by Colin Attwood in 2000 in a document prepared under the auspices of the Marine and Coastal Management section of the Department of Environmental Affairs and Tourism.

- **Support** the principle of controlled recreational and commercial fishing in designated areas of the Kogelberg Marine Park.
- **Support** the principle of establishment of carefully selected “no take zones” where all marine life is totally protected, to allow unhindered reproduction of marine organisms and hence recruitment into surrounding areas exploited by various forms of fishing.
- **Recommend** declaration of the BBMR as a “no take zone”, which could be incorporated in the core area of the Kogelberg Biosphere Reserve.
- **Encourage wide consultation.** It can be expected that there will be opposition from anglers who regard this Reserve as a favourite fishing spot. They need to be convinced that properly managed “no take zones” are of immense benefit to the sustainability of both recreational and commercial fishing. (It is interesting to note that about 90% of recreational anglers in the BBMR come from outside the Overstrand, i.e. areas such as Cape Town, Worcester and Paarl and that they have little interest in wider conservation issues relevant to the Overstrand area).
- **Consider** establishment of a coastal reserve linked to the Harold Porter National Botanical Gardens, with terrestrial and marine components stretching from fynbos dominated mountain tops, down the forested Disa and Leopard River gorges, through the Harold Porter National Botanical Garden, across the coastal plain, to the dune and beach environments, into the sea.
- **Consider** protection of other areas as recruitment nodes. The BBMR occupies only 3 km of the 58 km of coastline envisaged for the Kogelberg Marine Park between the mouth of the Steenbras River and Botrivierlei. Careful selection of other “no take zones” is therefore important.
- **Promote** the tourism-, environmental education- and research opportunities offered by a completely protected BBMR as part of the Kogelberg Biosphere Reserve. This will be of substantial benefit to the local and regional economy.
- **Ensure** that the BBMR is properly managed. A management plan for this Marine Reserve as part of the business plan for the Kogelberg Biosphere Reserve as a whole, needs to be compiled. (Heydorn, A. and Starke, R. 2007)

The primary issues being addressed through this management plan include stemming the decline of reef fish populations and various species of shellfish; the decline in habitat destruction within the river mouth; reducing the impacts on rocky reef habitat; reducing pollution; maintaining water quality and ensure sound management of the penguin colony.

2.2 Management of Key species within the Betty's Bay MPA

Species of interest	Reason	Conservation action
Southern right whale	Iconic species, red data listed	No MPA-specific regulation. Already well protected
African Black Oyster catcher	Near threatened, red data listed	No MPA specific regulation. Nesting sites may require protection from dogs, pedestrians.
African penguin	Red data-listed (vulnerable)	Stony Point site protected from visitors and mammalian predators. Purse-seining not allowed in MPA
Bank cormorant	Red data listing	Nesting site at Stony Point

		protected from visitors and mammalian predators. Purse-seining not allowed in MPA
Reef fish: roman, red stumpnose, galjoen, red steenbras	Heavily depleted	MPA excludes fishing
White steenbras	Heavily depleted (Threatened, according to IUCN listing)	MPA excludes fishing
Silver kob	Heavily depleted	MPA excludes fishing
Belman	Heavily depleted	MPA excludes fishing
Abalone	Heavily depleted, CITES listed	Fishery has been closed, diving banned in MPA, regular monitoring
Rock lobster	Keystone predator	Protected in MPA
Sea urchin (Parechinus)	Shelters juvenile abalone	No action required – not harvested

2.3 Demarcation of Boundaries and Signage of the Betty's Bay MPA

- The Naval Hydrographic Office located in Simon's Town must be notified of the boundaries and zones pertaining to the Betty's Bay MPA to include the required information in the updated SAN Charts
- Where necessary and feasible, offshore marker bouys will be installed (optional depending on budget) to demarcate the outer (seaward) boundaries of the MPA. Installation and maintenance of the bouys will be the responsibility of CapeNature. South African Maritime Safety Authority ("SAMSA") approval is required.
- The boundaries will be demarcated with beacons with sector lights attached to them. These will be placed on the shore boundaries so that they are clearly visible both from the land and (within reason) from the sea. The current demarcation beacons are inadequate and must be changed. See Photograph 5 below with the arrow pointing to the existing beacons.
- As far as possible an additional beacon should be placed on the shore immediately above the high water mark at each boundary in such a manner that when both beacons are directly behind the other, this line so formed will coincide with the boundary in question.
- As far as possible, all landward entries to the MPA as well as at the Betty's Bay Boat Launching Site will be signposted in English and Afrikaans and clearly indicate the boundaries, its coastal and offshore extent, activities permitted/not permitted in the area, a map as well as a contact telephone number for reporting of incidents.
- All signage will comply with both DEAT and CapeNature policy guidelines as far as possible.



Photograph 5: Current inadequate beacons demarcating the boundaries

2.4 Management of Fishing Activities

- Fishing is authorised by commercial, recreational, and subsistence permits issued under Section 13 of the *Marine Living Resources Act (No. 18 of 1998)*. Commercial fishing is fishing for any species subject to the allowable commercial catch or total applied effort. Recreational fishing is any fishing done for leisure or sport and not for sale, barter, earnings or gain. Fishing is defined as searching for, catching, taking or harvesting fish or any other activity which can reasonably be expected to result in the locating, catching, taking or harvesting of fish. Where any of the conditions associated to the MLRA or MPA regulations are contravened, a fine must be issued by the Fisheries Control, or other Authorised, Officer (“FCO”). Where commercial fishers transgress MPA regulations, they can also put their fishing rights in jeopardy.

a) Commercial

- All commercial fishing is prohibited within the Betty’s Bay MPA.
- All fishing gear on vessels that are in, or enter the MPA for the purposes of passage, must be stowed

b) Recreational Fishing

- All recreational fishing from a boat is prohibited in the MPA
- All fishing gear on vessels that are in, or enter the MPA for the purposes of passage, must be stowed
- Recreational shore angling is allowed in the MPA, subject to a valid permit for the fishing activity taking place and fishers are required to present such permit to any fisheries compliance officer on request
- Bait or any invertebrate species collection is prohibited throughout the MPA
- Additional zoning may be implemented to manage different user groups in order to avoid conflict and to protect environmental integrity.
- At present the most popular sites for fishing from the rocks– and therefore necessary locations for monitoring for the health of the ecosystem on the eastern side include:

-
- Jock se Baai (for kob, sharks and geelbek in summer) and
 - Dawidskraal River Mouth (for geelbek and kob in summer, galjoen and white steenbras in winter)
 - and on the western side include:
 - a rock formation known as Boskop;
 - the rocks from Boskop to Stony Point (galjoen in winter, white steenbras during summer, kob and occasionally geelbek)
 - the island next to the whaling station is one of the few spots where geelbek are still caught quite regularly
 - Die Been is another popular spot
 - Beach fishing is also popular and must be closely monitored
 - Voluntary compliance with regulations will be encouraged through education and awareness programmes
 - It is highly recommended that shore-angling be prohibited in future amendments to the Betty's Bay MPA regulations (See Photograph 6 for Fishing Pressures within the MPA)



Photograph 6: Fishing Pressures within the MPA (Photo credited to SEAWATCH)

c) Spearfishing

- All spearfishing is prohibited within the Betty's Bay MPA.
- All spearfishing gear on vessels that are in, or enter the controlled or restricted area for the purposes of passage, must be stowed

d) Invertebrate and Bait Collection

- All invertebrate and bait collection is prohibited within the Betty's Bay MPA

e) Aquarium Collection

- Collection of any marine species for the purposes of aquarium usage may only take place under the authority of a valid permit issued under the MLRA. Where such collection is taking place, a valid permit must be presented to the Fisheries Control, or other Authorised, Officer at his/her request. The permit should specify the species as well as the amounts permitted for extraction

f) Fishing Charter Programmes

- No Fishing Charter boats are allowed within the MPA

g) Angling Competitions

- Shore-angling fishing competitions are allowed within the MPA
- Such competitions, although allowed by law, are not recommended and should not be encouraged or supported as far as possible.
- It is recommended that angling competitions be prohibited in future amendments to the Betty's Bay MPA regulations
- The current management of fishing competitions should be that prior approval to host a fishing competition within the Betty's Bay MPA be obtained from the MPA management authority. This is likely to become mandatory in terms of a new policy on fishing competitions.
- Voluntary compliance with regulations will be encouraged through education and awareness programmes.
- It is recommended that when an angling competition is applied for, that this be discussed at the Kogelberg Marine Working Group as well as MCM in Cape Town so that conditions can be determined within which the angling competition can take place.
- The presence of monitors throughout the angling competition will be necessary to continually check adherence to the conditions of the approval as well as all other marine legislation compliance. Where conditions are not complied with, the organizer of the angling competition should be approached and the matter discussed as an immediate action in addition to the FCO issuing a fine to the person who contravened the legislation.

h) Extractive use in the MPA

- The only exception for extractive use in the restricted zones would be under a section 81 Exemption for Scientific Research. However, these applications will be subject to stringent assessment and only issued when appropriate.

i) Kelp Harvesting

- The activity of Kelp harvesting requires a permit in terms of the MLRA, Act 18 of 1998.
- No application for a permit to harvest kelp should be approved within the boundaries of the Betty's Bay MPA as kelp plays a key role in the health and functioning of its associated ecosystem
- The health and effective functioning of the Betty's Bay MPA ecosystems must take priority over and above economic gain that can be achieved through kelp harvesting.

2.5 Scuba Diving/Snorkelling

Recreational and Commercial Scuba Diving as well as free-diving/snorkelling is allowed within the Betty's Bay MPA. No permit is required to undertake these activities. It is strongly recommended that this be amended to ensure consistency with other South African MPA legislation. There are however some management activities that can be implemented to ensure that these activities occur in a sustainable manner:

a) Recreational Scuba Diving and Snorkelling

- The carrying capacity of SCUBA diving/snorkelling within the Betty's Bay MPA may be determined through appropriate research and managed in accordance with ensuing recommendations
- All scuba divers are subject to Naui and Padi "Codes of Conduct" including safety requirements.
- All vessels with divers deployed within the Betty's Bay MPA must display an alpha flag
- Restrictions on activities associated with diving that may have an impact on the values of the MPA will be considered including the use of cages for the purpose of cage diving, the use of electro/acoustic – discharging devices, the use of diver propulsion vehicles, chumming and fish feeding and the removal of historical artefacts from shipwrecks (artefacts from shipwrecks are defined as "archaeological" under the national Heritage Resources Act 1999 once they are 60 years old).
- If necessary, additional zones will be created for resource protection or to separate user groups to ensure that the natural resources are protected, user – conflicts are reduced, and to ensure safety for all user groups.
- Also see Appendix 2 Actions 5.1.2, 5.1.4(a), 5.1.7(a), 5.2.2(c) 5.3.2 (a) and 5.3.2 (b).
- See Appendix 8 for a recommended Divers Code of Conduct for MPA's

b) Commercial Scuba Diving and Scuba Diving Tour Businesses

- The involvement of previously disadvantaged communities in the SCUBA diving sector will be encouraged. This measure is necessary because of a national commitment to transformation.

-
- Commercial scuba diving for the purposes of diving on wrecks and/or working on the breakwater or other is subject to a different set of legal requirements and could include any or all of the following: a permit issued in terms of the MLRA; the Amended Occupational Health and Safety Act, No. 85 of 1993 and associated Diving Regulations, 2001 (Regulation Gazette 7243, 11 Jan 2001); a permit or exemption issued under the National Heritage Resources Act, No 25 of 1999; the Department of Labour: Diver Code of Practice and Scientific and/or Archaeological Approved Code of Practice published by the Scientific Diving Supervisory Committee
 - All vessels with divers deployed within the Betty's Bay MPA must display an alpha flag.

2.6 Boat Launch Site Management

Three sets of legislation are applicable to the management of Boat Launch sites (slipways) and Jetties:

- Section 7 of the National Environmental regulations (National Environmental Management Act),
- The Control of Vehicles in the Coastal Zone (Gov. Notice No. 1399, 21 December 2001 as amended in Gov. Notice No. R1426, 7 December 2004) and
- The Seashore Act (Act no. 21 of 1935). In the Western Cape, CapeNature is responsible for the compliance to the Seashore Act. Management of structures associated to this act should continue as before.

One (1) public boat launch site is located within the Betty's Bay MPA, at Stony Point.

Betty's Bay Boat Launching Site

- Signposted off the R44, access is via Wallers Way
- Controlled and managed by the Betty's Bay Boat Club through a Memorandum of Agreement with the Overstrand Municipality (who are the owners of the Erf 2411).
- There is a small breakwater and a floating platform, allowing boats to check engines before heading seaward. (See Photograph 7)
- Fishing, Kayaking/canoeing, and power boating/rubber ducks are allowed from this launch site.
- Although application has been made to the Department of Environmental Affairs and Development Planning for a licence, this site has as yet not been issued a licence. This must be pursued in order to ensure meeting legal requirements in terms of the Control of Vehicles in the Coastal Zone (Government Notice No. 1399 of 21 December 2001 as amended in Government Notice No. R.1426 of 7 December 2004)
- In terms of the regulations associated to the Betty's Bay MPA, motorised vessels may only launch at registered launch sites posing an immediate problem for such launching at this site until it is registered and licensed appropriately
- The Boat Launching Site is strictly managed by the Betty's Bay Boat Club and enforcement associated activities in terms of the MLRA are performed by the Fisheries Control Officers as well as by CapeNature personnel and MPA manager.
- A DRAFT detailed Operational Management Plan for the Betty's Bay Boat Launching Site is attached as Appendix 6.

2.7 Anchoring within the Betty's Bay MPA

- At present, all users may anchor within the MPA.
- This activity should be monitored to ascertain potential impacts thereof and, if impacts are noticed, appropriate management actions must be considered for implementation.

2.8 Private Moorings

- At present, under the MLRA, users may install a private mooring via an application process
- CapeNature is generally not supportive of allowing private moorings within the Betty's Bay MPA.
- Refer to Appendix 2: Action 6.4.5 and 5.3.2(a)

Photograph 7: Betty's Bay Boat Launching site and Breakwater



2.9 User and Vessel Safety Requirements

- The category of vessels applicable to the Betty's Bay MPA and discussed herein include category B to E (category A is not valid within the scope of this Management Plan)
- Category B refers to vessels operating more than 15 but not more than 40 nautical miles from shore (this category will only be applicable from the Betty's Bay Harbour and will be managed by DEAT:MCM. Catch records and launch site registers will however be recorded and monitored for the Betty's Bay MPA purposes.
- Category C refers to vessels operating more than 5 but not more than 15 nautical miles from shore
- Category D refers to vessels operating more than 1 but not more than 5 nautical miles from shore (most vessels launching from the Betty's Bay Launch Site and operating in its vicinity are category D and E)
- Category E refers to vessels operating not more than 1 nautical mile from shore
- Most of the requirements are clearly discussed through documentation compiled by the South African Maritime Safety Authority ("SAMSA") and the following documentation is attached as appendices under Appendix 7: SAMSA Requirements:
 - Merchant Shipping (National Small Vessel Safety) Regulations, 2007, as amended.
 - Marine Notice No. 22 of 2008.
 - small vessel safety pamphlets
 - Safety requirements for Category B, C, D, and E vessels for preparation of safety surveys.
- Any queries relating to user and vessel safety should be sent to the SAMSA e-mail address: info@samsa.org.za
- SAMSA requirements must be managed within the context of the Betty's Bay MPA and the FCO's will need to regularly monitor vessels to ensure these requirements are met. This activity should be built into the weekly patrols emanating from the compliance workplan
- List of safety equipment required for small boats includes:
 - Suitable buoyancy (referred to in Appendix 7)
 - Sufficient fuel for the intended voyage (+25% extra)
 - A life jacket for each person
 - Distress flares (stored in a waterproof container)
 - For signaling: a mirror, a waterproof torch, spare batteries, a spare bulb and a sound device
 - Compass
 - Bailing device
 - Paddles or oars
 - Grabline
 - Anchors and ropes
 - Knife
 - Survival blanket for each person
 - Identification sheet of highly visible material – for identification from the air
 - First aid kit (including bandages, plaster, antiseptic ointment, seasickness pills, sunburn lotion)
 - Fresh water
 - Tool kit suitable for the boat

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- Air-bellows for inflatable boats
 - Radio (in larger boats)
 - CapeNature staff managing the Betty's Bay MPA should undergo St. Johns first aid course.

2.10 Tourist Programmes (additional to those mentioned above)

a) Existing Tourist Programmes

At present the MPA is open to all types of tourist programmes and tourist programmes (with the exception of scuba diving and extractive use) may occur without a permit. The following tourist programmes are known to occur in the MPA:

- Various land based tourist activities that involve the MPA, including watching marine mammals and birds that frequent the MPA
- Surfing and Kite-surfing
- Recreational Shore-angling and competitions (discussed above)
- Swimming and bathing
- Traditional and cultural users (for baptism and sea-water extraction/drinking)
- Day hikers on the coastal zone
- Activities associated to vessels such as speed and power boating
- Penguin Colony Visitor Programme (managed by the Overstrand Municipality)
- Whaling Station visitors
- Dawidskraal Picnic Site
- Agulhas Power Boat Event

The management of tourist programmes will include both determining as well as mitigating the potential impacts on the values of the MPA and to avoid user conflict. Management actions include:

- Monitoring the different user groups to determine when and where there is a conflict arising
- Determine the reason for the conflict
- Act upon the conflict as an immediate intervention where appropriate, or, submit the conflict for discussion at the following Kogelberg Marine Working Group for resolution
- Identify points elevated above high use areas as well as environmentally sensitive areas for the use of fixed point photography. Photograph intervals should be determined (recommended interval to be not more than six monthly) within high season as well as post high season. Keep records of such photographs and where changes such as erosion (on fishing paths etc.) or other problem becomes apparent, this must be presented and discussed at the Kogelberg Marine Working Group for action.

Other activities

- In accordance with Municipal by-laws, no dogs are permitted within the coastal zone. Appropriate signage informing the public of this must be available at landward entry points to the coastal zone. The active management of this will be considered due to the potential impact on birds within the MPA. Refer to Appendix 2 Actions 5.3.2 (a) and 5.3.2 (b).
- The lighting of fires in the MPA may only take place at designated places where the appropriate facilities occur.

b) Penguin Colony Management

- Refer to Section B2.2 for specific management recommendations
- Although visitor management to the Penguin Colony does not fall within the ambit of this management plan, visitor management impacts directly on the penguin colony as a marine resource. Threats to the Penguin Colony must be managed
- To determine what threats arise that are impacting upon the Penguin Colony, appropriate monitoring must take place. This is discussed in more detail under Section G
- Where threats are determined, recommended solutions should be sought from the appropriate institution (the Avian Demography Unit at UCT; DEAT: MCM; etc. as examples).
- Where solutions can be sought and implemented through the management agency, this must be done immediately.
- Where solutions/recommendations require other agencies actions or responsibilities, these should be brought to the Kogelberg Marine Working Group for resolution or discussed directly with the appropriate authority.

c) Potential Tourism Programmes

There is potential for different types of tourist programmes. Opportunities to support and/or encourage such tourist programmes for the socio-economic benefit of the community as well as to increase the financial sustainability of the Betty's Bay MPA should be considered. Potential programmes include:

- Craftless operators (i.e. operate from the beach, or charter a vessel)
- Scenic tours
- Marine animal watching
- Motorised watersports
- Non - motorised watersports
- Hire operations

Where tourist programmes are visibly impacting the integrity of the Betty's Bay MPA, the carrying capacity of the MPA for such tourist programmes must be determined and, if necessary, capping or limiting tourist/tour operator numbers, as well as times, days and locations of activities where appropriate. If necessary, zones will be created for resource protection or to separate user groups. This strategy is essential to ensure that the natural resources are protected; user conflicts are reduced, and safety for all user groups is ensured. If or when required, the carrying capacity will be determined through appropriate research. Refer also to Appendix 2 Action 5.3.2 (b).

d) Public Events

There are a few public events that take place within the Betty's Bay MPA, including angling competitions and the Agulhas Power Boat Event. Angling competitions are discussed under 2.4 (g).

- It is recommended that where public events take place within the Betty's Bay MPA that could possibly impact or cause environmental degradation that such event be discussed at the Kogelberg Marine Working Group to determine conditions for the event in question.

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- Monitoring of the proposed site for the event should include the taking of a photograph of the site from an elevated point prior to the event, during setting up of the event (where appropriate) or during the event itself (to determine visitor numbers and distribution within the site under discussion) and post the event (to determine changes in the environment).
 - Where negative impacts are determined appropriate action must be either immediately taken, or discussed at the following Kogelberg Marine Working Group meeting and the solution implemented where appropriate.
 - Due consideration for allowing the activity the following year must be made at the Kogelberg Marine Working Group Meetings.

2.11 Emergency Events such as Flooding

- When floods occur, there is often associated flotsam, which poses a danger to users within the Betty's Bay MPA.
- The Management Authority, and/or where possible with the assistance of volunteers, must traverse the Betty's Bay MPA as soon after the flooding has occurred to identify any dangerous flotsam or environmental degradation.
- Where dangerous flotsam is identified, this should be removed where possible, or a warning informing Betty's Bay MPA users of the type and location of the danger be communicated (via broadcasting, through a message distributed by the Betty's Bay Boat Club and Overberg Boat Club -if appropriate-, posters at the launch site or newspaper articles, as some examples)
- A budget line for the costs associated to such communication should be built into the budget for the Betty's Bay MPA.

2.12 Appropriate Boating and Sailing Organisations and Clubs

- Further/updated information might be required in the future to ensure effective management of the Betty's Bay MPA.
- Interaction with such associations and organisations may be required to ensure improved awareness and/or compliance of certain members into the future.
- Partnerships with these organisations/associations is encouraged
- The Association names and headquarters details are available for such interaction below. This section would require updating of contact details as and when changes occur:
 - South African Sailing: P.O. Box 519, Paarden Eiland, 7420. Tel: 021-5110929 Fax: 021-511 0965. E-mail: mail@sailing.org.za
 - South African Deep Sea Angling Association ("SADSAA"): P.O. box 73486, Lynnwood Ridge, 0040. Tel: 082 578 4851 Fax: 012-809 0978. E-mail: buyskes@iafrica.com
 - South African Jetsport Boating Association: Tel: 011-425 3499
 - South African Inflatable Boat Association: Tel: 012-914 7737. E-mail: hanliflack@worldonline.co.za
 - South African Power Boat Association: Tel: 011-425 3499. E-mail: powerboat@mweb.co.za
 - South African Water Ski Federation: P.O. Box 7896, Centurion, 0046. Tel: 011-634 0430. Fax: 011-634 0500
 - Betty's Bay Boat Club

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- Overberg Boat Club: P.O. Box 485, Onrus River, 7201

SECTION C: MANAGEMENT OF INFRASTRUCTURE AND EQUIPMENT

1. Equipment required for the management of the Betty's Bay MPA

Item	Unit	Priority	Partnership/funder
50hp outboards	2	10/10	WWF/Honda/MCM/Other
Appropriate trailer	1	10/10	WWF/Honda/MCM/Other
Sonar/GPS Combo	1	10/10	MCM
Motorbike 200cc or Quad bike	1	10/10	MCM/WWF/Other
Diving gear / hard set	1	5/10	MCM
Lap top computer	1	5/10	CapeNature/MCM
Digital camera with underwater casing	1	7/10	CapeNature/MCM
Binoculars	1	5/10	CapeNature/MCM
First aid kit	2	9/10	CapeNature/MCM
Mask & Snorkels	20	4/10	CapeNature/MCM
Compass boat	1	10/10	WWF/Honda/MCM
Fire Extinguisher	2	10/10	CapeNature/Other
Radio's	3	10/10	CapeNature/Other
Measuring instruments	2	7/10	CapeNature/MCM/Other
Fine Books	5	10/10	CapeNature/MCM

2. Machinery safety and marking requirements in terms of SAMSA

- Fire extinguishers must be serviced annually by an approved fire appliance servicing Agent
- All equipment belonging to the vessel must be permanently marked with the vessel's name or approved marking
- The trailer bearing the vessel must be marked in a conspicuous position with the vessel's name or approved marking and with the management authority name and telephone number visible.

3. Use of Equipment

a) Capacity Requirements

- All staff associated to the marine component must obtain the correct training and experience to utilise the necessary equipment.
- A skippers licence (under the new regulations) must be obtained by each marine staff member
- Boat crew should undertake regular practices for launching and other activities to ensure reliability
- All staff must undertake training in a first aid course including CPR and must be proficient with the use of the first aid kit

b) Equipment register

- A register must be available for each piece of equipment so that when required for use, the staff member utilising the equipment can sign the equipment out as well as on its return

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- The register should include a table with the item in question on, a column for the name of the staff member utilising the equipment, date and time it was taken for use, date and time it was returned and a column for comments where the staff member must state the condition of the piece of equipment on its return. This should preferably be done in the presence of another staff member such as the supervisor to ensure that the comments are correct.
 - In the case of motorised transport (the vehicle/motorbike or boat), the register must include kilometres travelled, estimated fuel used and odometer reading (in the case of the vehicle/motorbike). The supervisor should check the motorised transport register frequently to determine service requirements of the equipment as per the manufacturer's servicing requirements. (e.g. new diesel vehicle requires a service between every 10 000-20 000kms)
 - Fine books should be ordered in advance so that there is always stock available.

c) Equipment Maintenance and Insurance

- All equipment must be maintained in accordance with its manufacturers servicing requirements
- Tyres of motorised and trailer transport should be checked for legal standards at each service/ or annually (at minimum for new tyres and at least quarterly for older tyres)
- A budget item must be made available for costs associated to maintenance of equipment (amount determined by costs of servicing etc.)
- All equipment should be insured and a budget item provided therefore.
- Outboard Engine maintenance before it is used (noting that this is more specific than what normally takes place practically) if it has been standing for some time:
 - Put in a fresh water tank. Do not use the flushing device as the engine will not reach running temperature and the thermostat will not open.
 - Remove the air filters; run the engine until it warms up. Check the water is flowing strongly. Remove the fuel line without switching off
 - Spray 'storage seal' into the carburettors until the engine runs out of the fuel in the carburettors and stops. Ensure each one received a good quantity. Switch off the ignition
 - Make sure the carburettors have no fuel left. Undo the drain screws to allow drainage.
 - Replace air filters and fuel line etc. and tighten
 - Spray the engine with a mixture of paraffin and light machine oil. Assemble the spray cover. Wash the outer surface of the engine with fresh water
 - Grease all linkages with marine grease, including the steering linkages
 - Remove the propeller, check and clean and grease the splines.
- After use of the vessel and engine:
 - Rinse the vessel, trailer and engine with freshwater. Take care to not pollute the surrounding environment
 - Let freshwater circulate inside the engine until the engine is well flushed.

4. Maintenance of Infrastructure

- Signage should be checked on each patrol for wear and tear, as well as for graffiti or other damage.
- A budget line must be created to restore, replace or upgrade signage as and when required
- Launching site: this should be checked on each patrol and/or after heavy storms or heavy use (high season) for damages and maintenance discussed with the Betty's Bay Boat Club for action as required.

SECTION D: COMPLIANCE

1. Background

The Betty's Bay MPA is intertwined with the town of Betty's Bay and is situated in close proximity to Kleinmond, Rooi-Elis and Pringle Bay. All these towns are within utilisation distance of the MPA. The surrounding area is intensively utilised for recreational rock and surf fishing, rock lobster fishing, boat fishing and bait collecting. The area is also a very popular holiday area and experiences increased fishing pressure during long weekends, school holidays and public holidays. Fish stocks have been heavily exploited by continuous angling with little regard for size and bag limits.

The largest danger to the Betty's Bay MPA and surrounding area is however, through poaching of abalone. This poses not only a threat to the marine resource, but also endangers the local communities who wish to protect their resource. An enforcement strategy has been implemented in the past, but this needs to continue as intensively into the future.

"Intensive and blatant poaching of abalone has taken place unrelentingly within the MPA for years. This is unacceptable, *firstly*, because it represents a criminal activity, *secondly*, because intensive exploitation of organisms at one level of the food chain is ecologically disruptive, and *thirdly*, because the severe thinning out of abalone stocks cannot but lead to impairment of their reproductive potential and hence also of their exploitation potential in surrounding areas.... Important inshore fish species such as galjoen, bellman, white and red steenbras, blacktail, zebra, hottentot, red roman and John Brown have become rare in the Reserve and some have disappeared. Bottom-living sharks have become a dominant component of catches...Disturbance of the ecological equilibrium of the BBMR is detrimental to the penguins of the Stony Point colony who forage in the reserve. Over the past few years the numbers of penguins in the colony have declined by an estimated 50%" (Heydorn A. and Starke R. 2007).

Other compliance issues such as pollution and habitat destruction can be viewed in Appendix 5: Table 1, which is a summary of the major compliance and enforcement issues and how the individual issues can be addressed. This table must be read in conjunction with Section D.

2. Objectives

The compliance objective for the Betty's Bay Marine Protected Area is to achieve resource protection through compliance with the declaration as a MPA and the related Regulations, and other applicable laws. The Compliance Plan is intended to contribute to resource protection, facilitate fishery management, and reduce user conflict arising from competing uses in the MPA. It is intended to complement other elements of the Management Plan and lead to an increased level of success. High-profile, visible enforcement will require proper funding, supervision, staffing, and equipment.

3. Compliance Methodologies

Compliance can be achieved through a range of methods and is best achieved through the use of many tools and methods, including:

- Through community involvement and education,
- Traditional enforcement operations, including patrols, apprehension of offenders, confiscation of equipment and convictions for offences.
- Signage used to advise the community of the MPA and what activity may or may not occur in the area.
- Communication by Field Rangers when a member of the public is encountered during a patrol as he/she is combing the rocks to advise him/her of the regulations pertaining to the MPA before an offence is committed.
- Distribution of materials such as the DEAT brochure “Recreational Fishing Information Brochure December 2008” (and later editions).
- Planned poaching syndicates and commercial enterprises knowingly commit offences for financial gain. When these culprits are apprehended (if at all possible and with good evidence), admission of guilt fines should not be accepted and rather charge laid with the possibility of Section 28 action appearance in court.
- Refer to Appendix 2 Action 5.3.1 (a).

4. Community Involvement

- CapeNature to encourage user groups and all members of the public to report offences of MPA regulations through an incident reporting system.
- CapeNature to encourage honorary ranger involvement.
- Support Seawatch, a local organization of volunteers which assists the authorities in coastal management, including the combating of poaching.
- SEAWATCH has been an enormous support in terms of voluntary activities to the Betty’s Bay MPA (see Photograph 8 for an example of monitoring type footage that is made available through this organisation)
- The Kogelberg Marine Working Group is very involved in terms of active management by the members. This must be encouraged and facilitated as far as possible. Co-ordination of the support groups could improve their functioning enormously.
- Refer to Appendix 2 Action 5.3.3(a).



Photograph 8: Monitoring of the beach fishers by SEAWATCH members (photo credit: SEAWATCH)

5. Voluntary Compliance Through Education

- The Awareness Plan (Section F) includes elements designed to help the public understand the conservation significance of marine protected areas and why it is important to comply with the MPA regulations.
- This promotes voluntary compliance by the public through education and awareness programmes.
- This must therefore be read in conjunction with Section F

6. Enforcement Operations

a) Patrol Schedules

- At present there is only 1 MPA Manager and the use of a Field Ranger (as only part of his job description). This is severely understaffed at present. This impacts directly on the enforcement type activities that are available to implement.
- Co-ordination of volunteers and enforcement officers is necessary to maximise the efficiency of each support group
- Enforcement/compliance priorities must be determined for each week.

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- Compliance requires vessel patrols, diver patrols, inspections at the launch site and shore patrols as far as possible, however, within the current constraints, vessel and vehicle patrols will predominantly be required.
 - Conduct patrols with logbooks daily with night patrols taking place as needed.
 - Random patrols should be implemented.
 - Conduct mountain stake-outs if and when necessary
 - Patrols conducted on foot must include the beaches;
 - Vehicle patrols must be conducted on town and management roads to cover larger areas quickly (motorcycle or quad bike and 4x4 vehicle).
 - Regular vessel patrols must be conducted – this can be done with the assistance of the Betty's Bay Boat Club as far as possible. The MCM vessels, "Victoria Mxenge", "Ruth First" and "Lilian Ngoyi" conduct roving patrols along the coastline and these can be accessed for compliance in certain situations.
 - Establish working relationships with the police, MCM Inspectorate and SEAWATCH
 - Weekends, public and school holidays are heavy utilisation periods and extra patrols should be implemented.
 - All aspects of the MLRA and Betty's Bay MPA regulations are to be enforced during patrols
 - A short report (which will provide necessary information for the compiling of the Quarterly reports) should be completed after patrols which must include information such as:
 - Number of persons encountered and interacted with, and in what manner
 - Number of persons contravening the law and actions taken
 - Distance, duration and route travelled
 - Any changes or impacts relative to environmental degradation noted and at what location (preferably GPS reading to be taken at site of degradation)
 - Whether any materials/brochures were distributed, if so which ones, how many, and to what type of visitor (i.e. tourist, fisher, etc.)
 - Arrange prosecutor's day (once every two years) to inform them of procedures, laws, consequences.
 - Establish a reliable procedure to establish position at sea, from a boat (gps) and from the shore (triangulation with sighting compass and GPS).
 - Disseminate regulatory information on site and in shops.
 - General approach: High profile, preventative enforcement.

b) Other Enforcement Operations:

- On occasion, it may be necessary to carry out "high impact operations" to ensure high law enforcement visibility and presence.
- Additional staff from the nearest Cape Nature office, local Police and SEAWATCH should be utilised during such operations.

c) SEAWATCH as Enforcement Support (taken from Starke, R. and Tannet, M. 2007):

- Seawatch is a public organization, with a membership of about 150 local residents, privately funded by a nominal membership fee. Seawatch has been closely involved in the curbing of poaching and in the protection of the coast line in this area, for ten years. Seawatch has an

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- extremely good understanding of the problems precipitated by abalone and rock lobster poaching and other acts of desecration of the marine environment.
 - The Seawatch organisation, in collaboration with the relevant compliance authorities, initiated the actions that resulted in 6800 suspects being arrested, fined or prevented from poaching and the recovery of 69000 Abalone and 2800 Rock Lobster.
 - Seawatch members act as eyes and ears for the Seawatch communications officer who then contacts the compliance authority and assists in bringing them to the scene of any unlawful activity on the coast. All the Seawatch efforts the committee and members are on a *pro bono* basis. Seawatch and a number of other prominent persons in the area have contributed to the concept management proposal set out below.
 - Seawatch enjoys sponsorship from Vodacom for communications equipment and signage.
 - Seawatch is a strong support group to the management and enforcement agencies that should be involved in enforcement operations on a continual basis

d) Database of Offenses and Offenders:

- In order to maintain efficient compliance it will be a necessity to develop and maintain a photographic database of the commercial and recreational fishing boats so as to try and assist with identification of vessels fishing illegally within the MPA.
- A database of all illegal activities and suspicious vessels/vehicles/persons must be kept up to date at all times and reviewed on a quarterly basis.
- An electronic database must be maintained by CapeNature to ensure easy access to compliance information (e.g. repeat offenders) and for easy forwarding to necessary partners.
- Keep photo-id of suspects, offenders.
- For successful enforcement to take place it is imperative to liaise and work with other Law Enforcement Agencies & the judicial system. Prosecutors should also be informed about the MPA.
- Regular training exercises and meetings should be held with all parties.

e) Compliance and Legal Proceedings

- In serious cases, confiscation of equipment and marine organisms takes place and even arrest. In most instances, confiscated organisms should be returned to the intertidal zone after being photographed or registered and counted at the relevant South African Police Services station.
- All admission of guilt fines and court appearance cases must be registered at the Betty's Bay Police station.
- Police contact at district level must be maintained through the CapeNature Conservation Services Office at Overstrand and through the Kogelberg Marine Working Group meetings
- Legal proceedings as per the MLRA must be adhered to, in order to ensure positive convictions and fines
- Photographs and GPS positioning must be taken at, and of the site, offender and exploited resource
- Accurate reports/dockets must be compiled with all evidence well marked, recorded and stored (as appropriate)
- Dockets must be submitted to the court with evidence
- Court proceedings follow

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- If positive conviction – ensure that the fine relates to the MLRA and that such income returns to the Marine Living Resources Fund as per the Act.

SECTION E: CAPACITY

1. Staff

- Currently there is only one MPA Manager and one field ranger (who only has a small component of his job description dedicated to MPA activities) employed to manage the MPA. **This document should therefore be read with the severe shortage of staff in mind.**
- The MoA with DEAT could provide for another ranger, however a total of three (3) Field Rangers would ideally be required to do foot patrols along the beach, vehicle patrols along the management roads along the coast and to operate a patrol boat at sea.
- This complement will allow for staff to take leave, sick leave and attend courses.

2. Skill Requirements

- An MPA Manager with at least a B-tech Degree in Nature Conservation or Oceanography and additional qualifications in MPA management would be advisable, but a certificate in MPA Management should be achieved within the first year in order to manage the MPA and staff effectively
- The staff required to patrol/manage the MPA and conduct monitoring programmes are Field Rangers who have passed a recognised Field Ranger course (THETA-approved National Certificate in Natural Resource Guardianship). Field Rangers would also require environmental education and capacity building skills as they would run environmental education programmes in quiet periods. MPA Field Rangers should have at least a Grade 12 pass with a Code 08 vehicle licence or a Code 02 motorbike licence.
- Peace officers Certification, Fisheries Inspectorate and First Aid are vital for all staff members
- It is highly advised that all Staff must be qualified in further specialist courses such as Personnel Management Courses (pending budget allocations and prioritisation through management), but also including:
 - Marine & MPA Legislation
 - Skippers license and boat maintenance
 - Visitor control and compliance
 - Marine Education.
 - Investigating Crime Scenes and Docket Handling
 - Court Procedures.
 - Commercial Diving Ticket
- Staff must attend various workshops and short courses as required for the station.
- Staff, permanent and voluntary, must be suitably trained to execute their functions in terms of awareness raising and education. They would require a complete knowledge of the Betty's Bay MPA environment and management issues. There is a two-week certificate course "Introductory Field Ranger Course" through the Nature College near Riversdale, which is accredited through THETA. However, this course is terrestrial oriented but still has significant value for any protected area manager.
- Records should be kept of all courses attended
- Personnel should be given opportunities to practice new skills attained
- Personnel should be monitored in terms of improved efficiency post the course.

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- A budget line must be made available for capacity building in order to achieve the above.
 - A six-month part-time MPA management course for staff with some experience is offered periodically, co-ordinated by the WWF-SA and funded mainly by DEAT-MCM.

3. Equipment Requirements

- This is discussed in detail under Section C.

SECTION F: AWARENESS

1. Background

CapeNature and Marine and Coastal Management recognise that their proficiency as managers of South Africa's marine resources depends on their ability to inspire public support and participation through awareness. The focus of this awareness plan is to promote an understanding of the importance of healthy ocean ecosystems; the importance of MPAs and the role that the community may play in their care (see Appendix 2: Actions 5.2.1, 5.2.2 and 5.2.3). This plan also recognizes the need to align the marine conservation awareness programme with the corporate Youth Development Programme of CapeNature where appropriate.

Marine protected area management is emerging as a national priority due to undesirable impacts on the marine ecosystem. An important management tool to protect marine resources will be to implement an awareness programme that improves understanding of the Betty's Bay MPA within its surrounding communities and amongst visitors.

2. Objectives

- Protection of marine biodiversity of Betty's Bay MPA and the surrounding areas through achieving market and public awareness of the Betty's Bay MPA and the values, services and products offered.
- Provide information on the benefits/importance of the Betty's Bay MPA to all user groups and visitors through a range of communication strategies.

3. Awareness Methodologies

- The Betty's Bay MPA forms an integral part of the Kogelberg Biosphere Reserve ("KBR") and should therefore seek to link to existing programmes such as the KBR awareness project, information pamphlets and the school programmes offered by the Harold Porter Botanical Garden. The KBR has also developed specific signage that could be expanded to reflect the MPA as part of the biosphere reserve and so reduce costs and ensure alignment with the KBR.
- Appropriate Signage at key predetermined sites that are highly visible and relevant to the user group in question (see Photograph 9 for existing signage and photograph 10 for signage consistent with CapeNature brand)
- Compiling and distribution of information and compliance pamphlets,
- Implementation of School programmes,
- Broadcasting over radio programmes, articles in the newspaper and local magazines, presenting at events when requested
- Interacting positively with the Betty's Bay Boat and Overstrand fishing clubs (see Section B.2.13),
- Participating and driving local and national events such as Marine Week activities, beach clean ups, diving events to promote the area, fish watch activities etc.
- Interpret and disseminate Betty's Bay MPA research outputs for use by the non-research community.
- Compiling appropriate "Codes of Conduct" for the different user groups as required

Photograph 9: Existing Signage at Verwoerd Beach



4. Programme Activities

All staff will be utilised for formal awareness programmes with local children and adults throughout the year, with the exception of the December-January school holidays. On-going environmental awareness must be conducted in conjunction with patrols. The DEAT contract also provides funding for this.

In order to enhance MPA management through partnerships at the local, provincial, national and international levels, an MPA interpretative centre should be proposed for funding and construction at an appropriate location determined through the Kogelberg Marine Working Group and through due legal processes. This should be included in the broader Kogelberg Business Plan implementation. The Kogelberg Biosphere Reserve has an education and awareness raising component to the management thereof, and co-ordination with these activities should be encouraged.

a) School Programmes: (Examples of appropriate programmes to be considered for implementation.) These can be carried out on the coast or at schools.

- Poster competitions; “touch pools or tanks”; beach clean-ups and competitions; poster designing; informative video footage
- Children 10 years and older: above plus snorkelling in tidal pools (include safety module)
- Adopt-a-beach programme can be implemented

b) Scuba Divers and Snorkelling:

- Marine awareness SCUBA diving certificates can be introduced
- Under-water clean-ups and fishing line removal.
- Informative video presentations
- Pamphlets with a specific focus of what can be seen underwater within the Betty’s Bay MPA could be used to promote awareness.
- Snorkelling education would consist of environmentally friendly ways of snorkelling using underwater trails and information cards.

c) Fishers:

- For both ski boat and rock & surf fishers, waterproof packages of information brochures and pamphlets with bag limits/size limits etc. to be compiled and distributed to the fishermen by the MPA staff (Field Rangers) while on patrol.

d) General Visitors addressing all user groups:

- Interpretative boards for tourists, e.g. “MTN Whale boards” etc pamphlets, booklets, flyers.
- Promote marine conservation through local, national and international media (Internet, newspapers, magazines, TV, etc.)

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- Interpret and disseminate Betty's Bay MPA research for the information of and use by the non-research community.
 - Promote alternative non-consumptive activities within the Betty's Bay MPA with different user groups through opportunities as they arise.

e) Specific User Groups “Codes of Conduct”

- Guidelines and codes of conduct should be developed in consultation with the specific user groups (e.g. Divers Code of Conduct, Fishers Code of Conduct), and environmental briefing standards that allow for use in a manner that protects the environment.
- Periodic evaluations to monitor their effectiveness should be undertaken to recommend changes when necessary.

f) Betty's Bay and other Community awareness

- Provide information on the Betty's Bay MPA for inclusion in awareness at the community level, and provide support to educators to implement these materials.
- Conduct a public information campaign on the Betty's Bay MPA rules and regulations whilst simultaneously promoting the understanding of the benefits of the MPA to the local community.
- Meet with other education stakeholders and interested and affected parties to coordinate and plan education programmes and messages.
- Disseminate information and encourage individual and community participation and representation in and through the Kogelberg Biosphere Reserve and Kogelberg Marine Working Group.
- Provide existing and future educational materials in a manner consistent with community educational backgrounds (Additional “bridging” material).

g) Volunteers

- Develop/enhance the volunteer training programme for the Betty's Bay MPA. The Kogelberg Biosphere Reserve membership network could form part of such volunteering programmes
- Prioritise working with previously disadvantaged communities to encourage and support volunteer opportunities.
- Develop formal and informal education-based volunteer programmes.
- Introduce community-based volunteer research and monitoring programmes such as Fish in Reserves and ORI's catch-cards.
- Develop recognition and benefits for volunteers (letter of reference, community recognition through media, hats, t-shirts, etc).

5. Addressing conflict between user groups within the MPA.

- Appropriate signage, information on resources to reduce user conflicts and ensure protection of the marine environment must be developed in partnership with the different user groups (e.g. demarcate areas for certain activities).
- Facilitate communication between user groups to address user issues through meetings or invitations to attend the Kogelberg Marine Working Group.

SECTION G: SCIENTIFIC RESEARCH AND MONITORING

1. Background And Overview

Monitoring the environment and human activities in and around MPAs should be pursued for two reasons. The first is to provide reliable data for the assessment of the effectiveness of the MPA. Monitoring activities undertaken for this purpose will be designed around the specific objectives of the MPA. Typically, indicators are selected to represent key processes or resources. Successful indicators are easily measured.

The second reason is to provide baseline information against which other, potentially impacted, areas can be assessed, and which can be used to measure long-term changes in the environment. In South Africa, where there are a number of MPAs spread along the coast, the duplication of such monitoring activities can serve as an excellent network of monitoring sites to detect shifts that may be associated with climate change and range-changes of critical species.

MPA monitoring should be part of the process of adaptive management (Pomeroy et al. 2003). Monitoring in isolation is somewhat pointless. It needs to be included in negative feedback process. The results of monitoring need to be evaluated against pre-determined criteria or thresholds. Thresholds are designed to represent boundaries of acceptable variation. When indicators attain or cross threshold values, a set of actions aimed at addressing impacts, or mitigating unavoidable changes, should be triggered. Importantly, the thresholds and the actions need to be established *a priori*, along with the monitoring programme.

Whereas this structure should pertain also to environmental monitoring, the purpose of such monitoring transcends the MPA. In general the results of environmental monitoring are fed into national structures (e.g. working groups convened by SANBI or MCM), and the selection of appropriate thresholds and actions are beyond the scope of this plan. Environmental monitoring in MPAs should adopt indicators that are used at these higher levels. This management plan lists such indicators.

There are some general principles of monitoring in MPAs that should be considered. Experience in South Africa suggests that monitoring in MPAs is seldom maintained for long enough to be useful, and generally do not out-live the tenure of the official, or researcher, who instigated the programme. This is a common failing. One of the purposes of listing monitoring programmes in this plan is to ensure their continuity and consistency with respect to methods. It should also be noted that some monitoring programmes are by their nature unsustainable. This relates mostly, but not only to costs. It is clear now for example, that marine science was heavily funded in the 1980's and 1990's, and that research undertaken in that field was not sustained in the early 2000's. The situation might be rectifying itself now (2008), and the danger exists that over-investment in monitoring might mean that some programmes cannot be sustained when funding declines again. The termination of monitoring programmes is wasteful. The purpose of this section should be to develop sustainable and useful monitoring. Other factors that influence sustainability are: changing ethics (not all methods used now may be acceptable in future), changing technology (new technology may force changes in methods), shifting priorities (what is deemed an important indicator now, may be deemed irrelevant in future), and changes in legislation (for example, changes in diving regulations make it difficult to repeat work done two decades ago).

Another crucial challenge for monitoring programmes is the capture and storage of data. Many monitoring programmes in the past were effectively wasted because of a failure to ensure that the data were recorded (or published) in a form that was available for evaluation and comparison by later researchers. The advances in information technology is partly the reason for this failure, as the media of recording has changed several times in the last three decades and likely continue to change. Fortunately the South African Environmental Observation Network (SAEON) has been established to address exactly this problem, and it is likely that this agency will be the repository or co-repository for much of the data generated by monitoring in the MPA.

Each monitoring project is described below. Those marked with an asterisk will be needed for an expanded MPA, which aligns with the Biosphere Reserve, but probably not warranted by the existing designation which covers a small area, and is compromised by incomplete protection. In the section that follows, the various MPA monitoring projects are described under six sub-headings, the purpose of which are described here.

Indicator. The variable that has been chosen for monitoring is described and explained. Its usefulness as an indicator needs to be understood by MPA staff, but it also needs to be endorsed by those agencies that intend to use the indicator in revising management strategies. How this indicator is to be used will be described where appropriate.

Method. The method used to measure the indicator is described and referenced. Statistical rigour, and continuity with other similar projects, past projects and internationally accepted procedures are the key considerations, but cost is often the most important determinant.

Frequency. The frequency of monitoring is usually a trade-off between manpower costs and statistical power. Infrequent measurements of ecological and social indicators generally provide data sets in which signals are swamped by noise. This description also includes considerations related to randomness and stratification of sampling, details which could easily limit the power of the data sets.

Responsibility. Who is the primary lead agent? The primary distinction may relate to whether the monitoring is required for the evaluation of the MPA or for broader objectives, whether the MPA staff are trained or equipped to undertake the work, and whether there may be a conflict of duties (e.g. enforcement and monitoring of fishers). Responsibility also carries implications for funding sources, access to data and ownership of data.

Possible actions. This section lists the possible actions that could be taken when thresholds are attained or transgressed by indicators. These lists should be refined once agreement can be reached among managers, within co-management structures and representatives of affected parties, as appropriate.

Threshold values. Where appropriate and possible threshold values are listed. In most cases, these values will be determined in advance by consensus. In most cases this still needs to be done.

Data storage. Who will store the data? Where will it be stored? Who will have rights of access to data? In what form will it be stored?

There are a number of existing monitoring programmes taking place, and these are tabled in Appendix 4: Table 2 and should be read in conjunction with this section.

2. Objectives

- To provide information for management decisions and strategies.
- To maintain current understanding of the state of the values of the MPA, and to identify threats at an early stage.
- To facilitate scientific research and understanding of the physical, biological and socio-economic systems of the Betty's Bay MPA.

3. Scientific Research

- Researchers wishing to conduct scientific research in the Betty's Bay MPA are issued Exemptions under Section 81 of the MLRA which are issued by DEAT: MCM.
- CapeNature also requires a Research Agreement (MOU) with the researcher and a Register of Research Projects
- All applications to undertake scientific research are assessed according to a set of criteria.
- CapeNature maintains a database on research programs.
- Research applications/permits should also be discussed and addressed within the forum of the Kogelberg Marine Working Group for specific conditions that should be added to the permit through DEAT:MCM. Refer to Appendix 9 and 10.
- Researchers credibility should be discussed within the forum and under the guidance of DEAT:MCM

The following must be considered when research applications are assessed:

- The permittee must submit a report after each field visit.
 - The permittee must submit annual reports and final reports to CapeNature and MCM at the completion of their scientific research programs.
 - The permittee must ensure that all equipment deployed in the MPA is marked with the permit holder's name and their permit number.
 - The permittee must ensure that all equipment is removed at the end of the study and prior to the expiry of the Scientific Research Permit.
 - The permittee must inform the General Manager of their arrival date one month in advance and if feasible must advise the General Manager on their arrival to conduct activities.
 - The permittee must not use rotenone, poisons, or chemicals to catch fish in the MPA.
 - The permittee must ensure that where footage/photographs are collected, CapeNature has free access to these footage/photographs.
 - The permittee must ensure that any footage/photographs collected may only be used for financial gain with written permission from MCM/CapeNature.
- Research proposals must be presented to the Kogelberg Marine Working Group on completion with reports made available for the Betty's Bay MPA database

4. Physical environment

a) Sea Temperature

- **Indicator.** Sea temperature. Temperature of coastal waters is one of the variables most likely to respond to climate change, either through direct heat transfer or from changes in frequency and intensity of upwelling. Temperature in turn sets the physiological limits of many species. Limits are usually set, not by average temperature, but by minima or maxima, which implies that continuous recording (by implication remote, unmanned) will be preferred to manual discrete measurement.
- **Method.** A continuous underwater temperature recorder (UTR) will be installed on the outer wall of the harbour.
- **Frequency.** Recovery and downloading should be planned for every six months. A second UTR may need to be held in reserve for replacement, which will reduce the effort required for changing instruments.
- **Calibration.** The calibration of the instrument will be checked every six months, at the end of a series and start of a new one.
- **Responsibility.** MPA manager will need to coordinate instrument retrieval, change and download. If necessary, divers may need to be contracted from outside the agency to assist.
- **Threshold values.** The indicator will be summarised as an average with maxima and minima. Trends in temperature over the long run will be useful. Data will be analysed by oceanographers.
- **Possible actions.** MPA staff will unlikely be able to address the causes of changes in temperature, but it will certainly be useful when examining changes in biotic communities.
- **Data storage.** SAEON coastal node, Grahamstown and MCM-EUC. Data will be stored in electronic format. Temperature will be indexed hourly. Data will be available upon request to SAEON.

b) Weather*

- **Indicators:** Air temperature, wind speed and direction. The basic weather patterns influence local coastal conditions, such as sea temperature and stratification. Measurements need to be continuous, and consistent with elsewhere.
- **Method.** An automatic, dial-up weather station will be installed. (Exact location still to be determined).
- **Frequency.** Continuous recording. Monthly data downloading.
- **Responsibility.** MPA manager / MCM.
- **Threshold values.** The indicators will be summarised as an average with maxima and minima. Trends in temperature over the long run and the duration of upwelling-inducing winds will be useful statistics. Data will be analysed by oceanographers (MCM).
- **Possible actions.** MPA staff will not be able to address the causes of changes in weather. The information will need to be disseminated to researchers and coastal managers, at Municipal, provincial and national levels.
- **Data storage.** SAEON coastal node, Grahamstown co-stored. Data will be stored in electronic format. Temperature will be indexed hourly. Data will be available upon request to SAEON and MCM.

5. Biophysical Environment

a) Inter-tidal communities

- **Indicators.** Species community structure, keystone species abundance and alien species abundance. Changes in inter-tidal communities may reflect climate change, exploitation, a catastrophic pollution event or the effects of an alien invader. Multi-variate analysis can be used to determine the present community structure, which can serve as a standard. Specific target species include giant periwinkle, red-bait and siffie. Indicators of community change include space-occupies such as barnacles, mussels and limpets. Abundances of these should be monitored
- **Method.** A 0.5 m² quadrant should be used to quantify species abundance at alternate 0.5 m spacing along a randomly selected transect on the rocky shore at selected sites (e.g. Stony Point, Die Been), from the low shore to the high shore. Sessile species (mussels, algae) can be evaluated as percentage cover. Mobile species (e.g. limpets) will need to be counted. All organisms larger than 5 mm will need to be included in counts. The percentage of sand on the shore should be included as % cover.
- **Frequency.** Every full-moon, spring-low tide.
- **Responsibility.** MPA manager
- **Threshold.** Species abundance thresholds can be obtained from prior records, and published findings. Mostly, the community data will serve as benchmarks, Benchmarks could be useful in identifying the effects of catastrophic pollution, e.g. Oil-spills.
- **Possible actions.** Identify causes of significant impacts. If harvesting is the cause, investigate further possible restriction, or evaluate effectiveness of compliance.
- **Data storage.** MPA manager should store this information. Copies may be lodged with SAEON.

b) Surf-zone fish catches

- **Indicators.** Catch per unit effort and size structure of selected species. The catch per unit effort is an indication of fish abundance. The size structure is an indication of mortality rate. Targeted species that should be monitored include, galjoen, silver kob, white steenbras, belman, blacktail, spotted gully shark and spotted sevendill shark.
- **Method.** Roving creel census. Observers should walk along the shore and interview anglers. Recorded data will include hours fished and fish caught (number and size by species). Data could also be requested from the organisers of angling competitions, if these are allowed to continue.
- **Frequency.** Surveys should be stratified by week-day-week-end.
- **Responsibility.** MPA manager may need to dedicate a research officer, not associated with compliance, on to the task of creel surveys. The job could be outsourced, perhaps using university or technicon students.
- **Threshold values.** These values should be set at approximately 10% of values determined by research surveys in restricted zones, the closest and most similar is Cape of Good Hope Restricted Area in the Table Mountain MPA. Values below 10% indicate depressed populations. This survey should be able to identify a possible recovery as a result of the imposition of the restricted area(s). Signals may be observed in CPUE size structure and or effort. Severe declines in size structure may indicate sharp increases in mortality.

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- **Possible actions.** Further restrictions on fishing effort (by way of bag limitation, seasonal closure, area closure, permit reduction)
 - **Data storage.** National Marine Linefish System.

c) Surf-zone fish community*

- **Indicator** Catch per unit effort and size structure of selected species. The catch per unit effort is an indication of fish abundance. The size structure is an indication of mortality rate. Targeted species that should be monitored include, galjoen, silver kob, white steenbras, belman, blacktail, spotted gulley shark and spotted sevenshark.
- **Method.** Fishery-independent survey. Anglers will be used to catch and release fish from the shore, using standardised methods (Attwood 2003). Volunteer anglers can be sourced through the Western Province Shore Angling Association. All fish will be measured and recorded. Fishing will take place under the leadership of a MPA official, and under permit from MCM. Fishing will take place inside and outside the restricted areas.
- **Frequency.** Surveys should be done on one day of each month.
- **Responsibility.** MPA manager. The job could involve university or technicon students.
- **Threshold values.** The restricted area will enjoy the maximum possible protection from harvesting, and the results of a survey here will serve as a benchmark for other areas. Threshold values will need to be determined at a national level (Linefish working group), as problems with resident species in restricted areas can only point to general recruitment failures. Data analyses should be facilitated through the Linefish Working Group.
- **Possible actions.** Further restrictions on fishing effort (by way of bag limitation, seasonal closure, area closure, permit reduction)
- **Data storage.** National Marine Linefish System and SAEON

d) Subtidal reef fish

- **Indicator.** Linefish density per species. The density of linefish species (threatened, keystone and top predator) will provide an indication of the health of the temperate reefs in the offshore Restricted area. Key species will include roman, silver kob, dageraad, and hottentot. Migratory and nomadic species such as geelbek, yellowtail and snoek will be less useful indicators.
- **Methods.** Baited Traps will be deployed from a small boat. This method has undergone preliminary tests by MCM, but requires further testing. It promises to give a reliable and repeatable indication of fish density, eliminating problems associated with fishing skill (controlled angling), poor visibility and diver influence (underwater visual census).
- **Frequency.** Unknown. The programme should begin with a minimum ten deployments per season.
- **Responsibility.** MPA manager. SAEON
- **Threshold values.** Unknown, due to the exploratory nature of the method. Threshold values will probably be cast in terms of relative trends.
- **Possible actions.** Further restrictions on fishing effort (by way of bag limitation, seasonal closure, permit reduction). The restricted area already enjoys the maximum degree of protection.
- **Data storage.** SAEON

e) **Abalone**

- **Indicator.** Abalone density and size structure.
- **Methods.** Divers swim along fixed transects and count and measure all abalone. Known at MCM as the fishery independent abalone survey (FIAS).
- **Frequency.** Annual survey done along several fixed transects.
- **Responsibility.** MCM and the abalone working group
- **Threshold values.** Data are analysed by size-structured production models. Trends are used to set regulations. Currently the entire fishery is closed. The data will mostly be used in the first period to detect a possible recovery, the strength of recruitment pulses, and the possibility of further poaching.
- **Possible actions.** The maximum restriction is already implemented. Further action will involve better enforcement. A recovery might indicate possible opening of the resource outside of MPAs.

f) **West Coast Rock Lobster**

- **Indicator.** West coast rock lobster density and size structure
- **Methods.** Trap surveys are used as a standardised capture method. The number of lobster per trap is used to compute a relative catch per unit effort index. Each lobster is measured. Lobsters are returned. Surveys will conform to MCM standards.
- **Frequency.** Annual surveys done on pre-selected reefs
- **Responsibility.** MCM or Reserve Manager
- **Threshold values.** Long term trends in size structure and density will be compared to previous years and adjacent areas. The stock is managed nationally in a series of zones. The values at BBMPA will influence the management 'East of Cape Hangklip'. The threshold values are interpreted in terms of an age-structure model used by MCM.
- **Possible actions.** The maximum restriction is already implemented. Deliberate *culling* of rock lobster, if deemed to be an impediment for abalone recruitment, is not advised.

g) **Seabirds**

- **Indicators.** Number of breeding pairs of penguins (see Photograph 11) and bank cormorants.
- **Method.** Count.
- **Frequency.** Bi-annual
- **Responsibility.** MCM
- **Threshold value.** Three years of successive decline.
- **Possible action.** Conduct research into causes. Additional predator control if necessary.
- **Data storage.** MCM (Dr R. Crawford)



h) **Cetaceans**

- **Indicators.** Number of individual sightings, and mother-calf pairs (southern right whale). The expansion of baleen whale populations is monitored by aerial sightings along the coast.
- **Methods.** Aerial counts.
- **Frequency.** Unknown.
- **Responsibility.** South African Museum, University of Pretoria.
- **Threshold values.** Rates of change will be used for management action, which will most likely involve regulation of boating activity and boat-based whale watching.
- **Possible action.** Regulation of boating activity and boat-based whale watching.
- **Data storage.** South African Museum, University of Pretoria.

6. The process of review

The process of review needs to be made clear, with threshold values established in advance if possible. In this draft document thresholds are not always available, as these need to be discussed and accepted by managers and other parties. Generally, people's acceptance of thresholds is determined more by the intended actions than by the ecological considerations. Who reviews the data and who determined what actions should follow are described here.

It is advised that MPA managers establish working groups, or use existing working groups, to review the results of monitoring projects. The composition of such groups and frequency of meetings need to be established for each monitoring project.

The following Guidebooks offer managers a process and methodology to evaluate the effectiveness of their MPA for the purposes of adaptive management:

- a)** *Pomeroy, Robert S., Parks, John E. and Watson, Lani M. (2004) How is your MPA doing? A Guidebook of Natural and Social Indicators for Evaluating MPA Management Effectiveness, IUCN, Gland, Switzerland & Cambridge, U.K.*
- b)** *Wells, Sue and Mangubhai, Sangeeta. (2004) Assessing Management Effectiveness of Marine Protected Areas: A Workbook for the Western Indian Ocean. IUCN Eastern African Regional Programme, Nairobi, Kenya*
 - A component of b) above is attached as Appendix 13.

SECTION H: KOGELBERG MARINE WORKING GROUP

1. Background

Through a history of various meetings and public participation processes and reports, including an on-site inspection by a World Bank Team under the auspices of CAPE of key sections of the Overstrand coastline, including Betty's Bay, there was a recommendation by Sea Watch that a Public/Private Partnership be established with involvement of a private risk management firm to overcome implementation problems of existing legislation. (Sea Watch is an interest group established by concerned residents, largely to counter rampant poaching activities and the holding of fishing competitions in sensitive Marine Reserve areas, in the coastal waters of the Overstrand (Heydorn A, 2008).

One important outcome of these various initiatives was the establishment of the Kogelberg Marine Working Group ("KMWG") as a joint initiative between CAPE, Cape Nature, WWF-SA, Overstrand Municipality, the Kogelberg Biosphere Reserve Company and Sea Watch. The first meeting of the KMWG took place in Kleinmond on 14 May 2007. This was followed by meetings on 8 August 2007 and 2 October 2007. These first three meetings took place under the chairmanship of Councilor Mike Walters of Overstrand Municipality. A fourth meeting was held on 14 March 2008 during which Dr Allan Heydorn, an independent marine biologist and coastal ecologist, was elected as chairman (Heydorn A, 2008).

There is no statutory requirement to convene a Working Group; however, to ensure community involvement in managing the MPA, it is recommended that this Working Group continue long into the future and aim to involve all stakeholders, with a focus on increased representativity of the different community groups and any new relevant associations that might be created in the future. This forms part of the Strategic Plan as attached as Appendix 2 Actions 5.2.1, 5.2.2, 5.2.3, 5.2.4 and 5.2.5.

CapeNature recognises the importance of co-management of our marine resources. The Committee will be representative of the current stakeholders. Refer to Appendix 2 Actions 5.1.7, 5.2.1 and 5.2.5 to support the process.

2. Objectives of the Kogelberg Marine Working Group (as taken from Heydorn, A. 2008)

- In collaboration with the responsible Authorities, to promote establishment of a properly managed MPA in the Overstrand region between the Steenbras River mouth and Botrivierlei, along lines as suggested in the Attwood report of 2000, with the primary objective of ensuring adequate protection and rational management of dwindling living marine resources.
- To assist with the determination of suitable localities within the MPA between the Steenbras River mouth and Botrivierlei, for the establishment of 'no take areas', which will serve as recruitment centres for the bulk of waters within the overall MPA, open to fishing. (The existing Betty's Bay

Marine Reserve, which covers 3km of coastline between Stony Point and Jocks Bay within the proposed wider MPA, has been mooted as one such 'no take area').

- To assist the Kogelberg Biosphere Reserve Company and the responsible governmental Authorities with the achievement of a fundamental requirement of Biosphere Reserve management, namely: 'ensuring sustainable conservation and protection of biodiversity, both terrestrial and marine and of the land- and seascapes which it contains, while promoting sustainable development and cultural growth for the benefit of local communities, all South Africans and visitors from around the world.' (See the vision statement for the Kogelberg Biosphere Reserve [KBR]).
- To promote public participation processes, as might be required to achieve the above aims.

3. Composition of the Working Group

Representatives will include:

- CapeNature (MPA manager, management representative);
- Marine and Coastal Management (MCM);
- SEAWATCH;
- Recreational diving community (if any in the area);
- Recreational fishers;
- Commercial fishers
- Fishing charter operators (if any in the area);
- Commerce;
- Tourism industry;
- Kogelberg Biosphere Reserve Representative
- Rate Payers Association of Betty's Bay;
- SAMSA;
- SAPS Betty's Bay;
- Overstrand Municipality; and
- WWF and other NGOs.

4. The Structure of the Working Group

Chair's role: The Chair will be a CapeNature staff member or other elected person as presumed fitting by the Working Group. The Chair schedules and sets agendas for the Committee meetings and presides over all meetings of the Committee, and ensures that meetings are run according to accepted meeting practices, signs all correspondence and documents authorised by the Committee, and generally represents the Committee's interests and concerns to the public.

Vice-Chair: The Vice-Chair will be a CapeNature staff member, or other elected person as presumed fitting by the Working Group, which will serve as Chair in the absence of the Chair and assist as necessary in performing executive duties of the Committee.

Secretary: Prepares and convenes meetings, circulates notices and takes minutes. CapeNature will supply the secretariat plus resources.

5. Roles of the Working Group

- Provide input to CapeNature on Betty's Bay MPA plans and proposals.
- Help identify and resolve issues and conflicts, including emerging issues.
- Serve as a liaison between the Working Group and the community, disseminates information about Betty's Bay MPA to the various stakeholders and brings the concerns of stakeholders and the public to the CapeNature staff.
- Assist in identifying potential partners and stakeholders with which the Betty's Bay MPA should be working.
- Assist in identifying and securing priority partnerships, with special reference to previously disadvantaged communities.
- Provide technical and background information on issues facing the Betty's Bay MPA.

6. Working Group meetings

- The Kogelberg Marine Working Group currently meets quarterly. This is a recommended time interval for such meetings.
- The Chair will develop meeting agendas, with the assistance of the Secretary and make the agenda as well as the minutes of the previous meeting available to Committee members in advance.
- Meeting notes will be taken by the Secretary or CapeNature staff member, and be available to the public upon request.

7. Financing of the Kogelberg Marine Working Group

The cost of the secretary, the hiring of venues, paper postage, and miscellaneous items required for meetings will be covered by CapeNature, in terms of the DEAT-MCM contract and for so long as the contract is valid unless otherwise decided and agreed upon.

SECTION I: FUNDING, RESPONSIBILITIES, AUDITING & CONCLUSION

1. Funding and Responsibility

The delegated authority to ensure the efficient management of the Betty's Bay MPA is DEAT: MCM. DEAT: MCM have in turn entered into a contractual agreement with a Management Agency, CapeNature, to implement management activities described herein on their behalf. The responsibility to implement the management activities herein have therefore become, through the contractual agreement, the responsibility of CapeNature. Where activities are addressed that fall under the mandate of the Overstrand Municipality or other authority (the Betty's Bay Boat Club with respect to the Betty's Bay Boat Launching Site), it is advised that such activities are facilitated and addressed through the Kogelberg Marine Working Group.

The Management Agency, through the MPA Manager, must ensure that the activities prescribed in the **Management of the MPA Section** (Section B-H) are carried out and that competent individuals and/or organisations are contracted to undertake the tasks where appropriate or that the staff component is adequately increased and capacitated. The annual management plan- and environmental audit (described in the next section) will determine if the management activities are being carried out adequately, and if adjustments to the Plan need to be made.

The delegated authority, contracted management agency, and where possible or appropriate other relevant parties, should allocate funding for the activities as necessary.

A budget to fund the implementation of the Betty's Bay MPA Management Plan must be compiled and approved before the start of each financial year in collaboration with the delegated authority and the contracted management agency by relevant personnel, which is in this case the MPA Manager and his/her staff.

The contractual agreement between DEAT: MCM and the Management Authority, CapeNature, requires that the MPA Manager compile and submit a quarterly report to DEAT: MCM. The contractual agreement with clear deliverables and the annual workplan must be read in conjunction with this management plan, which are attached as Appendix 11 and 12.

In addition, the MPA Manager and CapeNature are supported to raise additional funding, but should keep DEAT-MCM informed in order to avoid allegations of "double dipping" where the same item is requested/funded from different sources.

2. AUDITING OF MANAGEMENT ACTIVITIES AND EFFECTIVENESS

a) Objectives:

Auditing of the Management Plan should not be confused with monitoring of the MPA in accordance with Section G. The purpose of implementing an audit is to ascertain the relevance and effectiveness of the activities recommended within the framework of this Management Plan.

Determining management effectiveness through auditing is to ensure that environment is being maintained in a satisfactory condition. This is done by:

- ensuring that the accepted management plan is adhered to
- ensuring that utilization of resources, such as marine resources, is within acceptable and determined limits and that conflicts resolutions are facilitated
- determining if the condition of the environment is deteriorating or improving under current management regimes by measuring certain parameters and monitoring the changes over time

b) Implementation:

- A programme for annual environmental auditing must be designed/agreed upon with DEAT:MCM and the Kogelberg Marine Working Group, led by CapeNature
- The current M&E project within the CAPE Programme should be supported and may produce most of the required outputs
- There are a number of current MPA audit tools designed to manage the effectiveness of the MPA and these can be used to determine the health of the MPA and management strategies, however the effectiveness and/or relevance of this document to meeting the principles and objectives of the Betty's Bay MPA need to be audited and amended as required.
- It is recommended that audit sheets be drawn up to accurately evaluate the effectiveness of activities within this document
- It is recommended that an independent organisation/agency/individual carry out the audit. The CAPE utilize a simple system such as the METT system which is supported
- The audit must be undertaken in intervals as agreed upon between the delegated authority and the contracted management agency, but a recommended interval is annually for the first 3 years and thereafter every 5 years
- Amendments to improve the document should be made and incorporated where necessary.
- Some guideline/example parameters to consider in the audit include:

- **Marine and terrestrial Vegetation**

- i) changes in species diversity, composition and abundance
- ii) degree and rates of change in invasion of alien plant species
- iii) unnecessary destruction of vegetation
- iv) rate of success of rehabilitation of areas previously disturbed

- **Marine resources**

- i) Size and abundance of key species
- ii) Fecundity of large predatory fish as an indicator of healthy functioning ecosystem etc.
- iii) Good catch records relative to launches of fishing vessels

- **Dawidskraal water quality**

- i) Change in flow rate
- ii) changes in chemical composition

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- iii) pollution and pollutants

- **General**

- i) Condition of vehicles, equipment and signage
- ii) User group awareness of the Betty's Bay MPA and conduct relative to signage
- iii) Number of fines issued and are these reducing over time?
- iv) Number of successful convictions and rate versus failed convictions
- v) Rate and reduction of conflicts between users

3. CONCLUSION: AMENDMENTS AND UPDATING OF THE BETTY'S BAY MP

The Betty's Bay MPA Management Plan must be seen as a dynamic working document and should be revised every 5 years. It is however, important that changes to the Management Plan and reasons therefore, be documented as to reflect the history and development of this plan.

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