

Aliwal Shoal Marine Protected Area Management Plan



Marine and Coastal Management
Private Bag X2
Roggebaai 8012

and

Ezemvelo KwaZulu-Natal Wildlife
Congella
Durban 4000

31 January 2006

Table of Contents

1.0	Introduction
1.1	Development of the Management Plan
1.2	Structure of the Plan
1.3	Goals of the Aliwal Shoal MPA
2.0	Description of the Area
2.1	Geography and Habitat
2.2	Marine Flora and Fauna
2.3	Human Settlements
2.4	History
3.0	Boundaries and Zoning
4.0	Regulations
5.0	Resource Use Plans
5.1	Overview
5.2	Fishing
5.3	SCUBA Diving
5.4	Use of Vessels/Launch Site Management
5.5	Tourist Programmes
5.6	Other Non-consumptive Activities
6.0	Compliance Plan
6.1	Objectives
6.2	Zone Demarcation
6.3	Community Involvement
6.4	Voluntary Compliance through Education
6.5	Enforcement Operations
	6.5.1 Patrol Schedules
	6.5.2 Staffing Requirements
	6.5.3 Equipment
7.0	Awareness Plan
7.1	Overview
7.2	Present State of MPA Awareness
7.3	Education Objectives and Strategies
	7.3.1 Protect Marine Biodiversity
	7.3.2 Provide opportunities for Multiple Use
	7.3.3 Address Conflict Between User Groups
	7.3.4 Promote Voluntary Compliance
	7.3.5 Opportunities for the Upliftment of Disadvantaged Communities
	7.3.6 Enhance MPA Management through Partnerships
	7.3.7 Encourage Public Participation
8.0	Scientific research and Monitoring
8.1	Overview
8.2	Objectives
8.3	Current Scientific research and Monitoring
	8.3.1 Biodiversity and ecological processes
	8.3.2 Fisheries management
	8.3.3 Non-consumptive activities
8.4	Evaluating management effectiveness
8.5	Management of Ancillary Scientific Research and Monitoring
9.0	Additional Recommendations

- 9.1 Fishing
- 9.2 SCUBA diving
- 9.3 Vessel Use/Launch Site Management
- 9.4 Tourist Programmes
- 9.5 Other Non-consumptive use
- 9.6 Scientific Research
- 9.7 Permit Types
- 10.0 Aliwal Shoal MPA Advisory Forum**
- 10.1 Overview
- 10.2 Current Activities
- 10.3 Future Activities

List of Appendices

- Appendix 1 Legislation
- Appendix 2 COMPARE
- Appendix 3 Consideration of management plan options
- Appendix 4 Definition of Terms Used in the Management Plan
- Appendix 5 Aliwal Shoal MPA Diver Code of Conduct
- Appendix 6 Permit Application Procedure
- Appendix 7 SCUBA diving organisations
- Appendix 8 Completed and ongoing scientific research and monitoring projects
- Appendix 9 Information required for scientific research applications
- Appendix 10 Equipment Required

List of Tables

- Table 1 Summary of Current Statutory Provisions for the Aliwal Shoal MPA
- Table 2 Summary of Additional Statutory Provisions for the Aliwal Shoal MPA

List of Figures

- Figure 1 Aliwal Shoal Marine Protected Area
- Figure 2 Boundary of Crown Area Restricted Zone and Produce Restricted Zone

Photograph on cover

Ragged-tooth sharks (Carcharias taurus) taken by Mieke van Tienhoven in Raggie Cave, Aliwal Shoal MPA in August 2003

1.0 INTRODUCTION

The Aliwal Shoal Marine Protected Area Management Plan describes how Ezemvelo KwaZulu-Natal Wildlife (EKZN Wildlife) and Marine and Coastal Management (MCM) intend to manage the Aliwal Shoal Marine Protected Area to ensure its conservation and sustainable use. The management of marine living resources in South Africa is a national responsibility, and marine protected areas (MPAs) are declared under the *Marine Living Resources Act (No. 18 of 1998)* (MLRA) (see Appendix 1). The application to create the Aliwal Shoal Marine Protected Area was considered in terms of objectives and criteria that were developed for the evaluation of MPAs. This system, known as COMPARE (Criteria and Objectives for Marine Protected Area Evaluation), considers many possible aspects of MPA functioning. The results of this evaluation indicate that the area qualifies for consideration as a MPA (see Appendix 2).

The development of a management plan for Aliwal Shoal MPA is a statutory requirement under *Government Notice 697 of 4 June 2004*. This document serves a very important function: it communicates to a variety of stakeholders (including the management agencies) the purpose and operational framework for the Aliwal Shoal MPA. It is a living, public document subject to periodic review. The management plan will also serve as the basis of a business plan for EKZN Wildlife, which manages the marine resources in that province on behalf of MCM. The “user-pays” principle will be applied, with the aim of covering part of the management costs. The financial sustainability of the MPA underlies the sustainability of the resource.

More so than any existing South African MPA, Aliwal Shoal MPA will have strong community involvement. This MPA was motivated by the Aliwal Shoal Forum, a group of publicly nominated representatives of concerned users that was established to resolve user conflicts in order to protect the shoal. The involvement of the community in an advisory capacity will be continued through the establishment of a new Advisory Forum.

The Aliwal Shoal MPA is situated along the KwaZulu-Natal coast about 45 kilometres south of Durban. Aliwal Shoal is a submerged reef that supports a rich mixture of tropical and subtropical species, including many species that are endemic to the south-east coast of Africa. For the last few decades Aliwal Shoal has attracted fishers, spear fishers and SCUBA divers. Unfortunately the intensity of harvesting in the area has exceeded the capacity of many of the fish species to replace themselves, and once-common reef-fish have virtually disappeared from Aliwal Shoal and nearby reefs. It now appears that it is no longer viable to fish the reef commercially. The degradation of the reef community has been a major cause of concern among all users of the reef, which in part prompted the public motivation for a marine protected area.

The decrease in reef-fish stocks, and thus commercial fishing, coincided with a rise in the popularity of SCUBA diving, which is a mostly non-consumptive recreational activity and also the basis of a substantial eco-tourism industry. Although exact figures are unavailable, estimates range between 40 and 80 thousand SCUBA dives per year on Aliwal Shoal. Even though the dominant use of the shoal has changed abruptly from fishing to SCUBA diving, there is still pressure on reef-fish as recreational fishers and spear fishers continue to target the reef. The economy of the nearest town, Umkomaas, has transformed with the hospitality trade now being the dominant employer, alongside the Sappi-Saiccor paper mill.

A notable focus of SCUBA divers is the ragged-tooth sharks and tiger sharks that frequent the shoal. For ragged-tooth sharks in particular, the reef provides important habitat during a key life stage as they aggregate at Aliwal Shoal for a few months each year for courtship and mating. The sharks may be impacted through excessive disturbance from diving and fishing activities and through degradation of the reef ecosystem, thereby disrupting the life cycle of these animals and spoiling one of the major attractions of the site. Although not normally considered to be a threat to divers, these predators can exhibit defensive or aggressive behaviour in response to inappropriate practices, such as the use of chum to lure sharks for viewing or photography, which may present a dangerous situation.

It is clear that the reef ecosystem needs not only to be protected from further degradation, but also given the chance to recover. The exploitation of over-fished

species must be reduced. Also, as an important source of employment and a major component of the tourism package offered by KwaZulu-Natal, the Aliwal Shoal MPA needs to be carefully managed to create an environment that is safe, sustainable, and rewarding for tourists.

1.1 DEVELOPMENT OF THE MANAGEMENT PLAN

This plan was initially developed from a document entitled '*Aliwal Shoal Marine Protected Area Management and Development Plan*' by G. Trebble and M. Schleyer of the Aliwal Shoal Forum, 11 February 1996 and revised October 1999. The document describes the agreements reached between competing users and outlines a preferred management option for the MPA. Upon presentation to MCM (a branch of the Department of Environmental Affairs and Tourism), the document was scrutinised by the Consultative Advisory Forum (a body of experts appointed under the MLRA that advises the Minister on marine management). This body approved the plan (and the MPA concept as a whole) with amendments.

The management plan was the focus of a three-week workshop that was held as part of the US/SA bi-national programme on MPAs. Eight U.S. delegates with experience in various aspects of MPA management attended the workshop to assist the staff of EKZN Wildlife and MCM with the development of the management plan.

The management plan was revised by Stephanie Lemm (stephanielemm@aol.com), consultant to MCM, in collaboration with EKZN Wildlife after the 4 June 2004 promulgation of Aliwal Shoal MPA.

The Aliwal Shoal Marine Protected Area Management Plan adds operational detail to its precursor, includes the amendments requested by the Consultative Advisory Forum, and incorporates legal and institutional requirements. Different management options were considered during the development of this Plan (see Appendix 3).

An annual review of the management plan and regulations must be undertaken for the first five years. Thereafter the management plan will be reviewed every two years. An external audit may be undertaken every five years.

1.2 STRUCTURE OF THE PLAN

The goals of Aliwal Shoal MPA are outlined in Chapter 1. Resource Use Plans have been outlined in Chapter 5 which are day-to-day requirements that managers must address to fulfil the goals. In many instances, the actions needed to achieve the goals require significant review of legislation and/or policy (governance issues). Therefore, Chapter 9 has been devoted to governance issues, i.e. the specific requirements needed in legislation/policy to fulfil the goals. There are also chapters devoted to Compliance, Education/Awareness and Research/Monitoring as it is considered these require specific information to ensure the goals are fulfilled. Appendix 4 outlines definitions of terms used in this management plan.

1.3 GOALS OF THE ALIWAL SHOAL MARINE PROTECTED AREA

1. Protect the biodiversity at Aliwal Shoal and the surrounding areas.
2. Promote and manage a popular SCUBA diving destination.
3. Reduce conflict between competing users on Aliwal Shoal and surrounding areas.
4. Allow over-exploited populations of reef-fish to recover at Aliwal Shoal.
5. Encourage economic opportunities for previously disadvantaged communities in the vicinity of Umkomaas.

2.0 DESCRIPTION OF THE AREA

2.1 GEOGRAPHY AND HABITAT

The Aliwal Shoal Marine Protected Area is 20.6 km in length and 5 km wide and is situated south of Durban off the coast of KwaZulu-Natal (Figure 1). Within the MPA, there are two main reef systems surrounded by soft sediment and other scattered reefs. The shore of the MPA is a mixture of high energy sand beach and rocky shores.

The offshore reef system of Aliwal Shoal (Crown Area) is situated five nautical miles off the Umkomaas River. The reef is approximately 3 kilometres in length and approximately 300 metres in width. The depth of the reef varies between four metres on the northeast pinnacle to 28 metres on its outer edges. The Crown area lies 2.6 nautical miles ESE of Greenpoint Lighthouse.

Aliwal Shoal is part of an offshore reef system running along much of the KwaZulu-Natal Coast, which had its origins in a line of coastal dunes formed during a period when the sea level was lower than current levels. These were submerged between 18 000 and 10 000 years ago and consist mainly of calcareous sandstone with many typical characteristics of cemented Pliocene coastal dune sand. Their elongated forms are attributed to river erosion on their landward sides and shoreline erosion on their seaward sides.

Aliwal Shoal lies inshore of the Agulhas Current, a warm southerly current, and the reefs are shallow enough for the penetration of natural light. The major benthos on Aliwal Shoal was surveyed by Schleyer and Kay (1998; Unpublished Report. Oceanographic Research Institute, No. 98/4: 1-16). However, very little is known about the invertebrate or fish communities of the soft sediment areas surrounding Aliwal Shoal.

The maximum tidal amplitude is two metres. The northern region of the Crown area is relatively shallow, and waves occasionally break there during low tides. Sea surface temperatures range between 21°C and 25 °C.

Average monthly precipitation ranges from 25 mm in winter, to 115 mm in summer. The Mkomazi River discharges large quantities of freshwater and silt loads into the MPA.

2.2 MARINE FLORA AND FAUNA

Being influenced by a southward tropical current and a northward temperate counter-current, the communities on Aliwal Shoal include a mix of tropical and warm-temperate marine species. Marine mammals, reptiles, fish, birds (bird breeding/roosting sites), invertebrates, plants and habitats could potentially be impacted in the MPA. These real and potential impacts need to be managed.

The reef is home to 15 hard corals and four soft coral species, however, the reef itself is of geological origin and is not built of calcareous accumulations from coral growth. Nonetheless, the sessile benthic fauna form a spectacular cover to the reef. Numerous fish species attend the reef, including a few regional endemics. Among these reef-fish species are several that are targeted by the commercial and recreational line fishers and also spearfishers. The reef is also an aggregation site for several fish species, including some that are usually regarded as pelagic. Ragged-tooth sharks use the reef seasonally for courtship and mating. Tiger sharks are also frequent visitors. Passing migrants include turtles, cetaceans, manta rays and whale sharks.

2.3 HUMAN SETTLEMENTS

The town of Umkomaas was established in the early 1800's. The population increased abruptly in 1957 with the influx of Italian artisans who assisted in the construction of the South African Industrial Cellulose Corporation factory. Fishers frequently launched from the beach at Umkomaas, and harvested large quantities of fish from the offshore reefs. The decline of fishing success coincided with the increasing popularity of SCUBA diving on the same reefs. Today Umkomaas caters for large numbers of SCUBA divers, and has become a focal point for the hospitality trade.

In contrast to the development of Umkomaas, adjacent areas such as Umgababa have been poorly developed and the communities that live there are impoverished and have little access to employment or business opportunity. With little income, these

communities are heavily reliant on the natural resources, including fish and shellfish for their daily subsistence.

2.4 HISTORY

There are two shipwrecks in the MPA. The *MV Produce*, a molasses freighter, sank in 30 metres of water on 11 August 1974 and has created a magnificent dive site with a prominent feature being large shoals of kob and brindle bass. The *SS Nebo* was a small coastal freighter that sank on 20 May 1884, and this wreck provides a good dive site, lying at a depth of 24 to 27 metres.

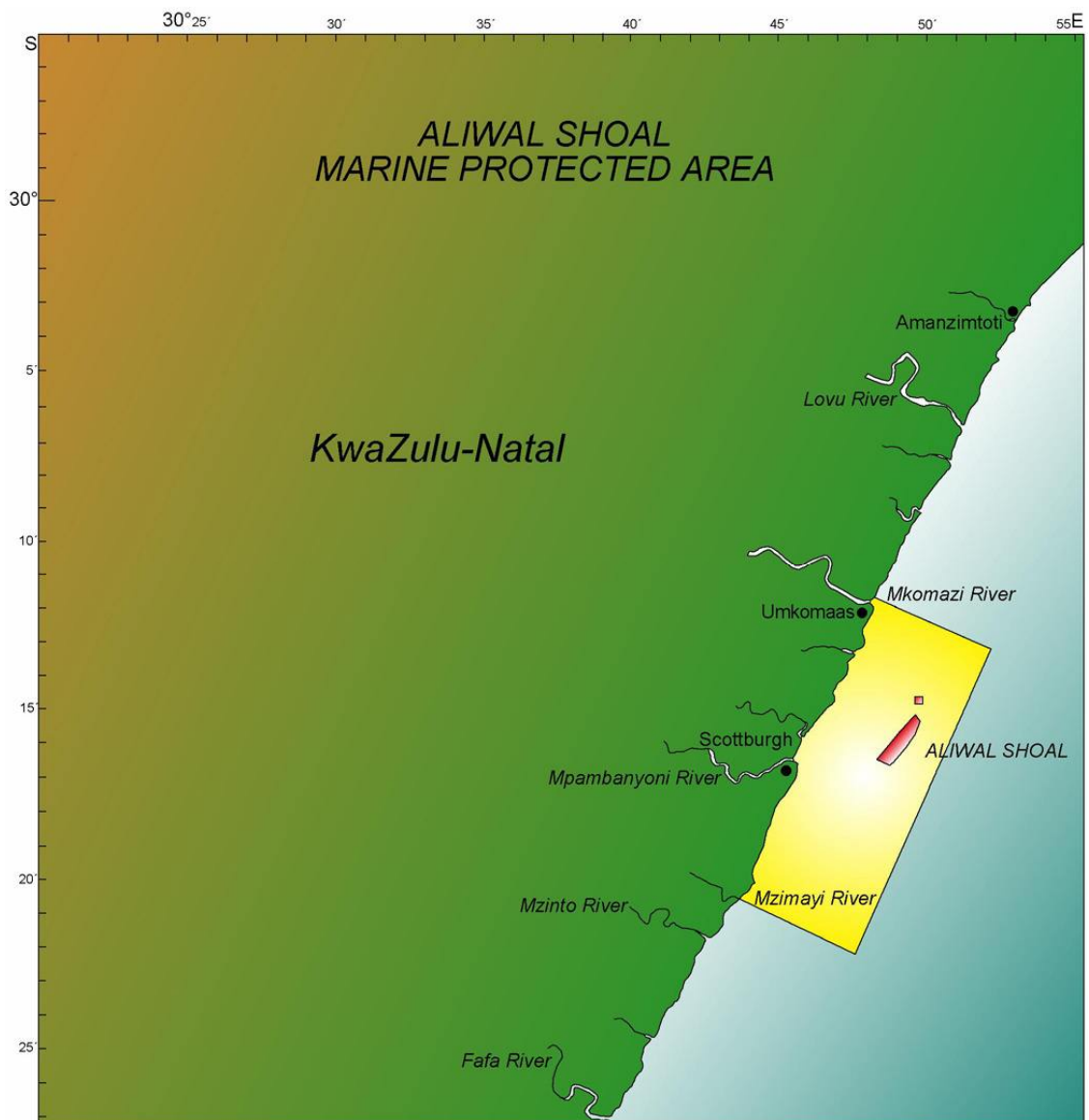


Figure 1 – The Aliwal Shoal Marine Protected Area

3.0 BOUNDARIES AND ZONATION

Boundaries

4. *The Marine Protected Area shall include the water, the seabed and the airspace to 500 metres above sea level in the area bounded by:*

- (1) the high water mark between the mouth of the Mkomazi River at position 30°11'.92S; 030°48'.29 E and the mouth of the Mzimayi River at position 30°20'.80S; 030°43'.60E;
- (2) a line drawn south-east (115° true bearing) from the north bank of the mouth of the Mkomazi River to a point 7 km off-shore at position 30°13'.478S; 030°52.246'E;
- (3) a line drawn south-east (115° true bearing) from the mouth of the Mzimayi River to a position 7 km off-shore at 30°22'.41S; 030°47'.53E; and
- (4) a straight line running parallel to the shore joining the two offshore positions.

Zonation

1. (1) The Aliwal Shoal Marine Protected Area is zoned into (2) two Restricted zones and (1) one Controlled zone.
- (2) The Restricted zones comprise the *Crown Area Restricted zone* and the *Produce Restricted zone*.
- (3) The *Crown Area Restricted zone* is enclosed by twelve points, which lie on the 25 metre isobath. The twelve points have the following coordinates:
 - (a) 30° 15',600 S; 30° 49',776 E
 - (b) 30° 15',791 S; 30° 49',714 E
 - (c) 30° 15',982 S; 30° 49',627 E
 - (d) 30° 16',270 S; 30° 49',409 E
 - (e) 30° 16',673 S; 30° 49',078 E
 - (f) 30° 16',926 S; 30° 48',835 E
 - (g) 30° 16',800 S; 30° 48',600 E
 - (h) 30° 16',680 S; 30° 48',376 E
 - (i) 30° 16',189 S; 30° 48',834 E
 - (j) 30° 15',908 S; 30° 49',143 E
 - (k) 30° 15',518 S; 30° 49',589 E
 - (l) 30° 15',474 S; 30° 49',671 E
- (4) The *Produce Restricted Zone* is enclosed by four points, defined by the following coordinates:
 - (a) 30° 14',968 S; 30° 49',723 E
 - (b) 30° 14',985 S; 30° 49',846 E
 - (c) 30° 15',093 S; 30° 49',827 E
 - (d) 30° 15',076 S; 30° 49',703 E
- (5) *The Controlled Zone forms the remainder of the Marine Protected Area.*

**Fig 2. Boundary of the Crown Area Restricted Zone and Produce Restricted Zone – MCM
TO PROVIDE**

4.0 REGULATIONS

As taken from *Government Notice 697 of 4 June 2004*.

Control of activities in Restricted zones

6. (1) No person may fish or attempt to fish within a Restricted zone.
 - (2) Fishing gear on board fishing vessels that enter a Restricted zone for the purpose of passage must be stowed.
 - (3) No person may undertake or attempt to undertake spearfishing in a Restricted zone or be in possession of an armed speargun in a Restricted zone.

Control of activities in the Controlled zone

7. (1) No person may fish or attempt to fish in the Controlled zone, unless authorised to do so by the Minister in terms of the Act.
 - (2) No person shall be entitled to fish or attempt to fish from a fishing vessel before 04h00 and after 18h00.
 - (3) The Minister may permit the use of beach seine nets within the Controlled zone, subject to conditions.
 - (4) No person may catch, transport or be in possession of any fish listed in Annexure A while in the Marine Protected Area.

SCUBA diving permit

8. (1) No person may SCUBA dive or attempt to SCUBA dive in the Marine Protected Area except on the authority of a SCUBA diving permit.
 - (2) The Minister shall determine the maximum number of SCUBA diving permits that may be issued for use in the Marine Protected Area.
 - (3) Applications for a SCUBA diving permit shall be made to the Manager on an application form and subject to an application fee determined by the Minister in terms of the Act.
 - (4) SCUBA diving permits shall be valid for maximum period of twelve months and shall be capable of being renewed at a fee determined by the Minister in terms of the Act.
 - (5) SCUBA diving permits may be issued subject to conditions.

SCUBA diving business permit

9. (1) No person may operate or attempt to operate a SCUBA diving business in the Marine Protected Area except on the authority of a SCUBA diving business permit.

- (2)The Minister shall determine the maximum number of SCUBA diving business permits that may be issued for use in the Marine Protected Area.
- (3)Applications for a SCUBA diving business permit shall be made to the Manager on an application form and subject to criteria and an application fee determined by the Minister in terms of the Act.
- (4)SCUBA diving business permits shall be valid for a maximum period of sixty months and shall be capable of being renewed at a fee determined by the Minister in terms of the Act.
- (5)SCUBA diving business permits may be issued subject to conditions.

Scientific research permit

- 10.(1) No person may undertake any scientific research within the Marine Protected Area except on the authority of a scientific research permit.
- (2) Applications for a scientific research permit shall be made to the Minister on an application form and subject to criteria and an application fee determined by the Minister in terms of the Act.
- (3) Scientific research permits shall be valid for a maximum period of twelve months and shall be capable of being renewed by the Minister.
- (4) Scientific research permits may be issued subject to conditions.

Use of vessels

- 11.(1) All vessels that have deployed divers within the Marine Protected Area must display an alpha flag.
- (2) No vessel may be attached to a demarcation buoy.
- (3) No person may use or attempt to use any type of personal watercraft or hovercraft within the marine protected area.
- (4) No person may moor or anchor any vessel within the Marine Protected Area.

Annexure A

<u>Family or species name</u>	<u>Common name</u>
<i>Acanthuridae</i>	Surgeon fishes
<i>Antennariidae</i>	Angler fishes
<i>Anthiinae</i>	Goldies
<i>Apogonidae</i>	Cardinal fishes
<i>Aulostomidae</i>	Trumpet fishes
<i>Balistidae</i>	Trigger fishes
<i>Blenniidae</i>	Blennies
<i>Caesionidae</i>	Fusiliers
<i>Carcharodon carcharias</i>	White shark
<i>Carcharhinus leucas</i>	Zambezi shark
<i>Carcharias taurus</i>	Spotted ragged -tooth shark
<i>Centriscidae</i>	Shrimp fishes
<i>Chaetodontidae</i>	Butterfly fishes
<i>Cirrhitidae</i>	Hawk fishes
<i>Diodontidae</i>	Porcupine fishes
<i>Epinephelus lanceolatus</i>	Brindle bass
<i>Epinephelus tukula</i>	Potato bass
<i>Fistulariidae</i>	Flutemouths
<i>Galeocerdo cuvier</i>	Tiger shark
<i>Gobiidae</i>	Gobies
<i>Grammistidae</i>	Soap fishes
<i>Holocentridae</i>	Squirrel fishes
<i>Labridae</i>	Wrasses
<i>Latimeria chalumnae</i>	Coelacanth
<i>Malacanthidae</i>	Tile fishes
<i>Mobulidae</i>	Manta rays
<i>Molidae</i>	Sun fishes
<i>Monacanthidae</i>	Filefishes
<i>Monocentridae</i>	Pineapple fish
<i>Muraenidae</i>	Moray eels
<i>Myliobatidae</i>	Eagle rays
<i>Ostraciidae</i>	Box fishes
<i>Pempheridae</i>	Sweepers
<i>Polysteganus undulosus</i>	Seventy-four
<i>Pomacanthidae</i>	Angel fishes
<i>Pomacentridae</i>	Damsel fishes (incl. anemone fishes)
<i>Priacanthidae</i>	Big eyes
<i>Pristidae</i>	Saw fishes
<i>Pseudochromidae</i>	Dottybacks
<i>Rajidae</i>	Skates
<i>Rhincodon typus</i>	Whale shark
<i>Scaridae</i>	Parrot fishes
<i>Scorpaenidae</i>	Scorpion fishes
<i>Syngnathidae</i>	Seahorses and pipefish
<i>Tetraodontidae</i>	Puffer fishes
<i>Torpedinidae</i>	Electric rays
<i>Tripterygiidae</i>	Triple fins
<i>Zanclidae</i>	Moorish idol

5.0 RESOURCE-USE PLANS

5.1 OVERVIEW

The Aliwal Shoal Marine Protected Area includes a shallow reef system, which attracts large numbers of divers and fishers to the town of Umkomaas, KwaZulu-Natal Province. The shallow warm water, the high diversity and quantity of fish species, and the opportunity to dive among ragged-tooth and tiger sharks attracts approximately 40,000 dives annually. A large number of dive charters provide access to Aliwal Shoal and they contribute significantly to the economic viability of the town of Umkomaas and the adjacent communities. Accommodation, restaurants and dive-associated industries are dependent on the continued utilisation of this natural resource. This results in millions of tourist Rands being channelled through the town of Umkomaas. If present trends continue, the potential exists for an increase in utilisation of the main dive sites within the Aliwal Shoal MPA, including the *Produce* and the *Nebo* wrecks, as well as at other adjacent smaller, and at present, unidentified or less-utilised dive sites. An uncontrolled increase in activity and growth would have undesirable and unsustainable impacts on the reef.

Increased numbers of users have also resulted in increased conflicts among user groups. Poorly managed activities have led to over-utilisation and disturbance of the natural resources. It has become increasingly necessary to control the number of users and to manage their activities.

Many of the reef associated fish species within the MPA have been heavily exploited and reduced to a small fraction of their original abundance. Commercial fishing for these species is no longer a viable option and is rarely practiced. One of the functions of the MPA is to allow these stocks to recover. For this reason, fishing is prohibited in the Restricted Zones, and no aquarium species may be collected anywhere in the MPA.

A second function of the MPA is to provide a safe and rewarding experience for recreational users who wish to see the reef ecosystem in a near-pristine state. For this reason it is necessary to separate fishing and diving activities and other tourist activities spatially.

Activities that may require management in the future include motorised vessels and motorised watersports (e.g. para-flying), non-motorised vessels (e.g. sea kayaks and surf-kites), recreational users, and other tourist operations that are non-consumptive but may include marine animal watching, such as watching dolphins and whale sharks. The present situation is uncontrolled and not all boating sectors are managed. Current legislation is not designed for managing such impacts on the natural resources effectively.

Other non-consumptive activities include photography (commercial and recreational), off-road driving (except at designated launching sites) and human interaction with wildlife. Human interaction with wildlife may include, for example, swimming with whale sharks. At present these activities occur at relatively low frequency within the MPA and therefore minimal conflict has been reported. Irresponsible diving on ragged-tooth shark aggregations and with tiger sharks may impact on the sharks. With the growing number of user groups and activities, it is advisable to implement management strategies prior to the development of conflict and undesirable environmental impacts.

The Resource Use Plans in this chapter are considered the critical areas where management actions are required to ensure that Aliwal Shoal MPA meets the objectives.

Table 1 summarises the activities that currently can occur in the MPA either with a permit or without a permit and activities that are not permitted. Activities not included in Table 1 will be considered on application to MCM.

5.2 FISHING

1. At present, all forms of fishing are prohibited in the Restricted Zones, and the removal of aquarium fish and threatened fish species will be prohibited throughout the MPA (Annexure A of *Government Notice 697* outline fish species that may not be fished). The only exception for removal in the Restricted Zones or species listed under Annexure A would be under Scientific Research Permits. However, these applications will be subject to stringent assessment and only issued when

- appropriate. No person may be in possession of any fish listed in Annexure A while in the marine protected area.
2. At present, in the Controlled Zone, boat-based fishing is only allowed during daylight hours, however, fishing from shore is allowed all hours.
 3. At present, no person may undertake spearfishing in a Restricted Zone and may not be in possession of an armed speargun in the Restricted Zone.
 4. At present, the use of nets, longlines and traps is not allowed, except for beach seine used from the shore as authorised under permit. Exceptions may be made for strategically-placed shark-nets.
 5. The management of fishing competitions will be considered as this activity may impact on the values of the MPA. It may be considered that fishing competitions with indiscriminate entry that offer substantial prizes will not be allowed. EKZN Wildlife is currently working on a policy to manage fishing competitions.
 6. MCM is currently developing regulations for the management of Fishing Charter operations for all South African waters.
 7. Voluntary compliance with regulations will be encouraged through education and awareness programmes.

5.3 SCUBA DIVING

1. At present, SCUBA divers are required to hold a Marine Protected Area Permit for SCUBA Diving under *Government Notice 697 of 4 June 2004* (see Chapter 4 for specific Regulations and permits). Applications for SCUBA diving permits shall be made to the Minister on an application form and subject to an application fee determined by the Minister in terms of the MLRA. SCUBA diving permits will be valid for a maximum period of one year and can be renewed at a fee determined by the Minister in terms of the MLRA. SCUBA diving permits may be issued subject to conditions.
2. At present, SCUBA diving businesses are required to hold a Marine Protected Area Permit under *Government Notice 697 of 4 June 2004* (see Chapter 4 for specific Regulations and permits). Applications for a SCUBA diving business permit shall be made to the Minister on an application form and subject to criteria and an application fee determined by the Minister in terms of the MLRA. SCUBA diving business permits will be valid for a maximum period of 60 months and can be

- renewed at a fee determined by the Minister in terms of the MLRA. These regulations aim to control the pressure on Aliwal Shoal MPA, and to increase diver safety.
3. The money derived from the sale of these permits will be payable into the Marine Living Resources Fund.
 4. If necessary, further restrictions on times, days, and locations may be considered to reduce impacts on the values of the MPA. These measures may be necessary to “rest” the reef and the sharks.
 5. There will be consideration to restricting all Recreational SCUBA diving to daylight hours.
 6. There will be consideration to the inclusion of a permit condition on Marine Protected Area Permits issued for SCUBA Diving Businesses regarding diving between 18H00 and 05H00. The permit condition will state that an operator must apply to EKZWN before 15H00 on the day of the intended night dive and log all trips with EKZN Wildlife. SCUBA Dive Operators must also advise EKZN Wildlife as soon as possible if the intended night is cancelled.
 7. The “Aliwal Shoal MPA Diver Code of Conduct” will be promoted (see Appendix 5). This Code of Conduct has been developed based on discussions with the dive community and is designed to ensure that safe and low impact diving occurs. Specialised guidelines for diving with sharks have been developed.
 8. 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 purposes 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).
 9. If necessary, additional 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 ensure safety for all user groups.
 10. There will be consideration, through an Advisory Forum, of promoting additional and alternative dive sites. This strategy is proposed in order to relieve diving pressure on the Restricted Zones and more uniformly distribute diving activity in the MPA and surrounding areas.

11. The involvement of previously disadvantaged communities in the SCUBA diving sector will be encouraged. This measure is part of the national commitment to transformation.

5.4 USE OF VESSELS/LAUNCH SITE MANAGEMENT

1. Commercial boat based whale watching operations will be allowed under permit within the MPA under the MLRA. All Regulations under Section 58 of the MLRA (Regulation Gazette No 6284) will apply in this regard.
2. At present, no person may moor or anchor any vessel within the MPA.
3. At present, the use of personal watercraft is prohibited.
4. At present, the use of hovercraft is prohibited.
5. At present, no vessel may be attached to a demarcation buoy.
6. At present all vessels that deploy divers must display an alpha flag.
7. To ensure the safety of divers, all vessel operators should abide by the “Aliwal Shoal MPA Diver Code of Conduct” (see Appendix 5).
8. Launch sites are licenced under Section 7 of the *National Environmental Management Regulations*. The provincial authority responsible for this in KwaZulu-Natal is The Department of Agriculture and Environmental Affairs. There are four launch sites within the MPA that currently have a Record of Decision (R.O.D.) which allows them to operate, these launch sites are the Rocky Bay Launch, Umkomaas Launch, Umkomaas River Launch and Scottborough Launch. The Umkomaas Launch will need a new R.O.D. due to the fact that the boundary of the Ethekewini Municipality has recently extended to include this launch site. It is also proposed to close the Scottborough Launch due to its limited use. Recreational and Commercial Operators wish to launch at these sites during the night hours to traverse the MPA to fish outside of the MPA. Launching may only occur at these launch sites before 04h00 and after 18h00 upon application to EKZN Wildlife prior to 15h00 on the day of the proposed launch and operators must notify EKZN Wildlife if a night launch is cancelled on the day the launch is cancelled. Signage will be installed at these launch sites advising of this requirement and providing a phone number the operators may phone to notify EKZN Wildlife.
9. There will be consideration of the management of vessel interactions with whale sharks. The following will be considered - if a whale shark moves closer than 20

metres to a vessel that is underway, the person in control of the vessel must proceed immediately to a distance of at least 20 metres away from the whale shark at a speed not greater than 4 knots.

10. Consideration will be given to the designation of areas for motorised and non-motorised watersports. This measure is necessary in order to address potential user conflicts.

5.5 TOURIST PROGRAMMES

There is potential for many types of tourist programmes in the Aliwal Shoal MPA and also for conflict to occur between these activities. Potential tourist activities may involve, marine-animal-watching (e.g dolphins, sharks, seabirds), horse riding, watersports, sea-planes, helicopters, cruise-ship operations, hire operations, fishing charter etc. It will be necessary to manage these activities in relation to the resources of Aliwal Shoal.

At present, the whole MPA is open to all types of tourist programmes and tourist programmes may occur without a permit (excluding SCUBA Dive Business Operators who require a permit). The management of tourist programmes will be considered to manage the potential impacts on the values of Aliwal Shoal MPA and to avoid user-conflict. There will be consideration of all potential types of tourist programmes such as:

- (i) operators who have their own vessel(s);
- (ii) craftless operators (i.e. operate from beach, or charter a vessel);
- (iii) scenic tours;
- (iv) marine animal watching;
- (v) motorised watersports;
- (vi) non-motorised watersports;
- (vii) aircraft (e.g. sea planes);
- (viii) cruise ship operations;
- (ix) hire operations; and
- (x) fishing charter (as noted in Section 5.2, there will be national regulations developed by MCM to manage fisher charter operations).

1. The carrying capacity of the MPA for tourist programmes will be determined and, if necessary, tourist operator numbers will be limited, as well as times, days and locations of activities. This measure may be needed because of increasing tourist activities and their associated impacts. If necessary, additional 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 ensure safety for all user groups.
2. The involvement of previously disadvantaged communities in the tourist programme sector will be encouraged. This measure is necessary because of the national commitment to transformation.

5.6 OTHER NON-CONSUMPTIVE ACTIVITIES

1. The *National Environmental Management Act 107/1998* (NEMA) and specifically Government Notice Number 22690 prohibit the general use of off-road vehicles along the entire shoreline of the MPA.
2. At present, the MPA includes airspace, 500 metres above sea level, but there are currently no restrictions for aircraft within this airspace. However, under Section 58(2) of the *Marine Living Resources Regulations*, a person must not approach closer than 300 metres to any whale by means of an aircraft. The management of aircraft will be considered as aircraft may impact on the values of the MPA, particularly breeding birds and amenity issues. Consideration will include the management of seaplanes landing in the MPA.
3. At present, commercial and recreational photography may occur in the MPA without a permit. There will be consideration to managing this activity.
4. Littering is not permitted in the MPA.
5. At present, organised events may occur in the MPA without a permit. There will be consideration to managing such activities.
6. There will be consideration regarding the management of human interactions with whale sharks.

Table 1

Summary of Current Statutory Provisions for the Aliwal Shoal Marine Protected Area

Activity	Restricted Zones	Controlled Zone
Fishing		
Fishing from a vessel between 04h00 and 18h00	No (a)	P ¹³ (b)
Fishing from a vessel before 04h00 and after 18h00	No (b)	No
Fishing from shore all hours	N/A	P ¹³ (b)
Spearfishing from a vessel between 04h00 and 18h00	No (c)	P ¹³ (b)
Spearfishing from a vessel before 04h00 and after 18h00	No (c)	No
Spearfishing from shore all hours	No	P ¹³ (b)
Beach Seine Net	No	P ¹³ (b)(d)
Trawl Net	No	No
Long-lines	No	No
Traps	No	No
Recreational/Tourist Activities		
Tourist Programmes (including marine animal watching, excluding motorised watersports)	Yes	Yes
Tourist Programmes involving motorised watersports and aircraft use below 500 metres	Yes(e)(f)	Yes (e)(f)
Recreational vessel use (excluding motorised watersports)	Yes (e)	Yes (e)
Recreational Motorised watersports (excluding Personal watercraft)	Yes(e)	Yes (e)
Recreational aircraft use below 500 metres	Yes(f)	Yes(f)
Commercial Boat-based whale watching	P ⁵⁸	P ⁵⁸
Use of Personal Watercraft	No	No
Use of Hovercraft	No	No
SCUBA diving and snorkelling		
Recreational diving all hours	P ⁶⁹⁷	P ⁶⁹⁷
SCUBA diving business all hours	P ⁶⁹⁷	P ⁶⁹⁷
Use of Diver Propulsion Vehicles	Yes	Yes
Use of underwater electro-discharging devices	Yes	Yes
Anchoring/Mooring		
All users	No	No
Competitions		
Fishing (including tag and release)	Yes	Yes
Organised Events	Yes	Yes
Photography		
Recreational	Yes	Yes
Commercial photography	Yes	Yes
Scientific Research	P ⁶⁹⁷	P ⁶⁹⁷
Vehicles	N/A	No (g)
Feeding fish or chumming	Yes	Yes

P¹³ Permit required under Section 13 of the MLRA (Fishing Permit)

P⁴³ Permit required under Section 43 of the MLRA (Marine Protected Area Permit)

P⁶⁹⁷ Permit required under *Government Notice 697 of 4 June 2004* (Aliwal Shoal MPA Permit)

P⁵⁸ Permit required under Section 58 of the Regulations in terms of the *MLRA* -(Aliwal Shoal Marine Protected Area falls within the Durban Area – 1 permit only

Yes Allowed without a Permit

No Prohibited

(a) Fishing gear on fishing vessels in a Restricted Zone for passage must be stowed (*Gov Notice 697*)

(b) Restrictions on species allowed to be caught/possessed are listed in Annex A (*Gov Notice 697*)

(c) No person may be in possession of an armed speargun in a Restricted Zone (*Gov Notice 697*)

(d) The Minister may permit the use of beach seine nets in Controlled Zone (Reg 7(3) of *Gov Notice 697*)

(e) Distance a vessel is permitted to travel offshore is determined by the “category” the vessel is defined as under the *SAMSA 1998 (Act No. 5 of 1998)*, *Government Notice No. 3206 of 2000*

(f) Under Section 58(2) of the MLR Regs, a person must not approach closer than 300 metres to any whale by means of an aircraft.

(g) Must only occur with a Permit issued in terms of the National Environmental Management Act

6.0 COMPLIANCE PLAN

6.1 OBJECTIVES

The law enforcement objective for the Aliwal Shoal 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.

The Compliance Plan recognises that compliance can be achieved partly through community involvement and education, in addition to traditional enforcement operations, including patrols, apprehension, confiscation and convictions for offences.

6.2 ZONE DEMARCATION

The Restricted Zones will be demarcated by buoys to enable users to clearly identify where activities are subject to greater restrictions. Buoys will be installed at intervals of 0.5 km to mark the Restricted Zones. The installation and maintenance of the buoys will be the responsibility of EKZN Wildlife. Markers and signage may also be installed on shore to facilitate zone demarcation.

6.3 COMMUNITY INVOLVEMENT

EKZN Wildlife will encourage *FISHCARE* volunteers, user groups and all members of the public to report offences of MPA regulations through an incident reporting system and through the existing Anti-Poaching Hotline. EKZN Wildlife intends to develop incident reporting forms to assist in proper reporting.

6.4 VOLUNTARY COMPLIANCE THROUGH EDUCATION

The Education Plan (Section 7.0) includes elements designed to help the public understand why it is important to comply with the MPA regulations. This will promote

voluntary compliance by the public through education and awareness programmes regarding MPA enforcement.

6.5 ENFORCEMENT OPERATIONS

6.5.1 Patrol Schedules

Compliance will require boat patrols in the MPA, diver patrols, resource inspections at launch sites, and shore patrols. The intention is to conduct patrols daily and to have an EKZN Wildlife Officer regularly based at the launch sites to check permits.

6.5.2 Staffing Requirements

To adequately implement the Compliance Plan, one officer post, five field ranger positions, one administrative assistant and one general assistant will be dedicated to the MPA.

Equipment required to carry out management effectively is outlined in Appendix 10.

7.0 AWARENESS PLAN

7.1 OVERVIEW

Marine and Coastal Management and EKZN Wildlife 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 and the role that the community may play in their care.

Marine protected area management has developed because of the growing recognition of the importance of marine ecosystems to our communities, economy and environment. Marine protected area management is emerging as a national priority due to undesirable and unsustainable 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 Aliwal Shoal MPA.

7.2 PRESENT STATE OF MPA AWARENESS

There is no awareness programme specific to Aliwal Shoal MPA. There are generic awareness programmes targeted at fisheries for the KwaZulu-Natal region, such as *COASTCARE* and *FISHCARE*.

The current objectives for education, training and awareness are established in the document "*FISHCARE*, Fisheries Management in Ezemvelo KwaZulu-Natal". These are:

- To ensure the adoption of positive behavior and attitudes towards the marine environment by KZN youth through an understanding of the marine environment and the threats, challenges and opportunities that the marine environment faces.
- To ensure the staff, permanent and volunteers are suitably trained to be competent and capable in carrying out their duties.
- To ensure the adoption of positive behavior and attitudes towards the marine environment by fishers and harvesters through an understanding of the marine environment and the threats, challenges and opportunities that the marine environment faces.

- To promote an understanding amongst the users, the reasons for the legislation as well as the interpretation of the legislation.

7.3 AWARENESS OBJECTIVES AND STRATEGIES:

7.3.1 Protect the marine biodiversity of Aliwal Shoal and the surrounding areas.

- Achieve market and public awareness of the Aliwal Shoal MPA and the values, services and products offered.
- Provide information on the benefits/importance of Aliwal Shoal MPA.
- Promote marine conservation through local, national and international media (Internet, newspapers, magazines, TV, etc.).
- Interpret and disseminate Aliwal Shoal MPA research for use by the non-research community.
- Ensure that staff, permanent and voluntary, are suitably trained to be competent and capable to carrying out their duties and have a complete knowledge of the Aliwal Shoal MPA environment and management issues.

7.3.2 Provide opportunities for the multiple use of the area that are consistent with the long term protection of natural resources.

- In consultation with user groups, develop user group guidelines, codes 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.
- Promote alternative non-consumptive activities in the Aliwal Shoal MPA.

7.3.3 Address conflict between user groups over access to, and use of, the MPA.

- In partnership with user groups, develop appropriate signage, information on zoning and resource information to reduce user conflicts and ensure protection of the marine environment.
- Facilitate communication between user groups to address user issues.

7.3.4 Promote voluntary compliance with Regulations and awareness of the marine ecosystem through education of interested and affected parties.

- Provide information on the Aliwal Shoal 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 Aliwal Shoal MPA rules and regulations.
- 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 in the Aliwal Shoal MPA through the Advisory Forum.

7.3.5 Encourage opportunities for the involvement and upliftment of previously disadvantaged communities in the vicinity of the Marine Protected Area.

- Promote the understanding of the benefits of the MPA to the local community.
- Encourage local representation in Aliwal Shoal Marine Protected Area Advisory Forum (ASMFAAF).
- Provide existing and future educational materials in a manner consistent with community educational backgrounds.

7.3.6 Enhance marine protected area management through partnerships at the local, provincial, national, and international levels.

- Consider development of a local MPA interpretative centre as a partnership opportunity.

7.3.7 Encourage public participation and voluntary compliance with Regulations through use of volunteers.

- Develop a volunteer training programme for the Aliwal Shoal MPA.

- 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 REEF (Reef Environmental Education Foundation).
- Develop recognition and benefits for volunteers (letter of reference, community recognition through media, hats, t-shirts, etc).

8.0 SCIENTIFIC RESEARCH AND MONITORING

8.1 OVERVIEW

Scientific research and monitoring are key components of MPA management. Scientific research is commissioned into specific fields to inform managers of biological or socio-economic processes that are important for the running of the MPA. Monitoring forms part of important feedback mechanisms that indicate the effectiveness of the MPA in achieving its defined goals. In addition, MPAs are used to support research projects of academic or commercial interest. All scientific research and monitoring should be compatible with MPA objectives. Existing and completed research and monitoring projects are listed in Appendix 8.

Two issues involving scientific research and monitoring in the Aliwal Shoal MPA are addressed here:

- 1) the research and monitoring requirements of the Manager (see 8.3); and
- 2) the management of other research and monitoring within the MPA (see 8.5).

8.2 OBJECTIVES

1. To provide information for management decisions and strategies.
2. To maintain a current understanding of the state of the values of the MPA, and to identify threats at an early stage.
3. To facilitate scientific research and understanding of the physical, biological and socio-economic systems of the Aliwal Shoal MPA.

8.3 SCIENTIFIC RESEARCH AND MONITORING PRIORITIES

The scientific research and monitoring requirements of the Manager may either be conducted by (a) the Manager, (b) a contractor or (c) the Manager may encourage separately-funded research institutions to conduct this work.

Scientific research and monitoring requirements are separated into three categories:

1. Biodiversity and ecological processes;

2. Fisheries; and
3. Non-consumptive activities.

8.3.1 Biodiversity and Ecological Processes

- Analyse and compile existing data to facilitate management of the MPA and to identify critical gaps in our information.
- Map the physical environment (bathymetry) to determine the distribution of ecosystems (e.g. reef vs sand).
- Survey the ecosystems of the MPA to determine habitat diversity and community structure (e.g. fish, corals, sponges).
- Identify and investigate ecological processes to gain an understanding of the MPA's ecosystem functioning.
- Conduct monitoring of episodic events (e.g. red tides, bleaching events).
- Identify biodiversity targets (e.g. rare and threatened species).
- Identify threats to biodiversity targets.
- Measure trends in the state of biodiversity and the magnitude of threats.
- Identify and establish benchmark areas for monitoring and scientific research and investigate the possibility of zoning to provide protection for research and monitoring sites.
- Measure impacts/change as a result of activities occurring in the MPA.
- Develop a spatial database that includes biodiversity information, threats and trends in their status (GIS system).
- Develop, implement and maintain databases of information relevant to the management of Aliwal Shoal MPA and develop a meta-database that will provide an interface capable of accessing information from all these databases.
- Interpret and feed research and monitoring data to management (compliance and educators) and the community.
- Establish protocols and methods to determine threshold limits of acceptable change on a site specific basis (related to zoning). In particular, determine acceptable levels of use by tourism, recreation and fishing.
- Develop collaborative research and monitoring arrangements with tertiary institutions and other research groups.

- Ensure information from stranded marine animals is collected, collated and interpreted.

8.3.2 Fisheries Management Actions

- Analyse and compile to existing data to facilitate management of fisheries in the MPA and to identify critical gaps in our information.
- Quantify and describe marine resource use and measure trends.
- Develop a specific MPA fisheries database incorporating the NMLS and invertebrate catch statistics (incorporate into meta-database).
- Assess impacts of fisheries on biodiversity and ecosystem functioning.
- Assess impacts of the subsistence fishery.
- Collect data on impacts of line fishing on non-target species, especially impacts on ragged-tooth sharks.

8.3.3 Non-consumptive user activities

- Analyse and compile existing data to facilitate management of the MPA and to identify critical gaps in our information.
- Identify and document activities occurring in the MPA.
- Quantify user activities and measure trends.
- Determine socio-economic profiles (e.g. questionnaires, value of the MPA, financial gain to the surrounding community), to target education and understand issues leading to the displacement of users.
- Develop a spatial database that collates user information (GIS system).

8.4 EVALUATING MANAGEMENT EFFECTIVENESS

Research and monitoring projects will be designed to determine whether the objectives of the MPA are being met. Monitoring will be designed to accurately reflect the changes that require a management response and must be integral to the biophysical management and management effectiveness process. The choice of indicators/monitoring must be scientifically credible, easy to understand, easy to regularly monitor, be cost effective, have relevance to policy and management needs

and purposely contribute to monitoring of the management plan towards its improvement.

8.5 MANAGEMENT OF ANCILLARY SCIENTIFIC RESEARCH AND MONITORING

Researchers wishing to conduct scientific research in the Aliwal Shoal area were previously issued *Exemptions* under Section 81 of the MLRA. This has now been superseded by Regulation 10 under *Government Notice 697 of 4 June 2004* which stipulates the permit requirements to undertake scientific research in Aliwal Shoal MPA.

Applications to undertake scientific research are assessed according to a set of criteria (Appendix 9). Research programmes are categorised as either Monitoring or Research Programmes. *Monitoring Programmes* include all repetitive biological or environmental data collection activities that have an expected duration of longer than three years. Shorter monitoring projects are considered *Research Projects*. Initial surveys that establish baseline information, which will then be updated by long-term monitoring, are also categorised as *Research Projects* (see Appendix 8). A database on research programmes is maintained by EKZN Wildlife.

In addition to the requirements for Scientific Research Permits under *Government Notice 697*, the following must be considered:

- The requirements outlined in Appendix 6.
- The criteria in Appendix 9.
- All permits will have standard conditions applicable to all researchers (see Section 9.6) whilst there will be very specific conditions determined on a case by case basis.

9.0 ADDITIONAL RECOMMENDATIONS

These requirements are based on the resource use plans described Chapter 5 and are considered necessary to adequately manage Aliwal Shoal MPA in addition to the MLRA and Regulations gazetted in *Government Notice 697 of 4 June 2004*. It has been indicated in each case whether it would be appropriate for this activity to be managed via “Permit conditions” or whether it should be considered for “Marine Protected Area Regulations” or should be considered for “Regulations under the MLRA” in the future.

Table 2 summarises the extra statutory provisions required to ensure the proper management of the MPA.

9.1 Fishing

- (a) The use of nets (excluding beach seine nets), long-lines and traps is prohibited in the MPA. [Marine Protected Area Regulation]

Justification – Government Notice 697 states that “The Minister may permit the use of beach seine nets within the Controlled zone, subject to conditions.” However, other nets, long-lines and traps are not addressed in this Government Notice. The definition of “fishing” under the MLRA includes searching for, catching, taking or harvesting fish or an attempt to any such activity and given that fishing is allowed in the Controlled Zone. Therefore, these other fishing methods could be used in the Controlled Zone unless they are excluded through a Regulation.

- (b) Shark-nets (as deployed by the Natal Sharks Board) may only be authorised under a Section 13 Fishing Permit endorsed for use in the MPA. [condition on Section 13 Permit]

Justification – These shark nets are limited to three popular bathing beaches and there is public pressure to ensure shark-nets are in place for bather safety.

- (c) No person may organize or conduct, or attempt to organize or conduct a fishing competition in the Marine Protected Area except on the authority of a fishing competition permit. [Marine Protected Area Regulation].

Justification – Fishing competitions are considered to have a significant impact on the natural values of the MPA and are in most instances not compatible with the objectives of Aliwal Shoal MPA. Permit applications to conduct fishing competitions will be subject to a stringent assessment process. EKZN Wildlife is currently developing a policy for the management of fishing competitions.

9.2 SCUBA diving

- (a) Recreational diving is prohibited between 18H00 and 05H00 in the MPA. [a standard permit condition included in recreational SCUBA permits]

Justification – Codes of Conduct are in place to ensure that only low impact diving occurs and in many instances the presence of an experienced dive master is necessary, this would be difficult to manage during the night hours with recreational dive groups. Ragged-tooth sharks are more active at night (feeding) and it is essential that only well managed dive groups are present during this time.

- (b) The following should be included as standard conditions on SCUBA Diving Business Operators permits:
- The permittee is permitted to operate between 18H00 and 05H00 upon application to EKZN Wildlife prior to 15H00 on the day of the proposed night dive.
 - The permittee must notify EKZN Wildlife if a night dive is cancelled on the day that the night dive is cancelled.
 - The permittee must submit to MCM the previous month's data on the "Monthly Data Return Sheet" by the 7th day of the subsequent month.

Justification – Many illegal activities occur in MPAs during the night hours so it is essential that EKZN Wildlife is aware of legitimate activities occurring during the night hours through a notification process. Government Notice 697 states that a person shall

not be entitled to fish or attempt to fish from a fishing vessel before 04h00 and after 18h00 in the Controlled Zone. To enable compliance of this regulation, EKZN Wildlife must be notified of vessels that are likely to be traversing the MPA during the night hours.

- (c) The following must be included as standard conditions on all SCUBA Diving Permits (Recreational and SCUBA Diving Business Operators):
- The permittee must not conduct fish feeding, chumming or dump any material, or discharge any attractants in the MPA.
 - The permittee must not use cages for the purposes of cage diving in the MPA.
 - The permittee must not use or possess any electro/acoustic-discharging devices in the MPA.
 - The permittee must not use or possess a Diver Propulsion Vehicle in the Restricted Zones of the MPA.
 - The permittee must not remove or attempt to remove any historical artefact.
 - The permittee must operate in accordance with the “Aliwal Shoal Diver Code of Conduct”.

Justification – These conditions are considered necessary to ensure that only low impact diving occurs reducing impacts on the values of the MPA.

9.3 Use of Vessels/Launch Site Management

- (a) If a whale shark moves closer than 20 metres to a vessel that is underway, the person in control of the vessel must proceed immediately to a distance of at least 20 metres away from the whale shark at a speed not greater than 4 knots.[Should be a Regulation under the MLRA or at least a Marine Protected Area Regulation.]

Justification – Whale sharks are slow moving and there have been reported instances where whale shark behaviour has been significantly altered due to vessels accessing these animals too closely.

- (b) The following activities are prohibited:
- Removal, moving, possessing, damaging or interfering with a demarcation buoy or sign in the MPA
 - Placing any buoy or sign in the MPA except under a Scientific Research Permit. [Marine Protected Area Regulation]

Justification – Indiscriminate placing of buoys or signs in the MPA can create amenity issues and become navigation hazards.

- (c) Launching may only occur at the following launch sites before 04h00 and after 18h00 after notifying EKZN Wildlife prior to 15h00 on the day of the proposed launch:
- Umkomaas Launch;
 - Umkomaas River Launch;
 - Rocky Bay Launch; and
 - Scottborough Launch,
- and operators must notify EKZN Wildlife if a night launch is cancelled on the day the launch is cancelled. [MPA Regulation]

Justification – Government Notice 697 states that a person shall not be entitled to fish or attempt to fish from a fishing vessel before 04h00 and after 18h00 in the Controlled Zone. To enable compliance of this regulation, EKZN Wildlife must be notified of vessels that are likely to be traversing the MPA during the night hours.

9.4 Tourist Programmes

- (a) No person may operate or attempt to operate a Tourist Programme in the Marine Protected Area except on the authority of a Tourist Programme permit. [MPA Regulation]

Justification – There is the potential for many tourist programmes to occur in the MPA apart from the SCUBA Dive Business Operations. This regulation is required to adequately manage all activities and to ensure equity among commercial user groups.

9.5 Non-consumptive activities

- (a) A person must not enter the water any closer than 20 metres to a whale shark and must not touch a whale shark. [This should be a Regulation under the MLRA or at least a Marine Protected Area Regulation]

Justification – It is considered that whale sharks need to be afforded greater protection as there have been reported and documented instances of people holding on to the fins and sitting on the backs of whale sharks.

- (b) No person may conduct commercial photography or attempt to conduct commercial photography in the Marine Protected Area except on the authority of a commercial photography permit [Marine Protected Area Regulation].

Justification – Commercial photography regularly occurs within the MPA. This regulation is required to ensure equity among commercial user groups and to adequately manage this activity.

The following should be included as standard conditions on MPA Permits issued for Commercial Photography:

- Commercial photography will be levied at a daily charge for:
 - (a) Documentary;
 - (b) Feature or advertising; or
 - (c) Filming with assistance of EKZN Wildlife staff or facilities.
 - The holder of the MPA Permit for Commercial Photography must ensure EKZN Wildlife has free access to any footage/photographs collected in the MPA for non-commercial purposes.
 - No object or equipment may be fixed to or rest upon any part of the substrata during filming activities in the Restricted zones.
- (c) No person may use aircraft or attempt to use aircraft in the Marine Protected Area except on the authority of a permit to use aircraft in the Marine Protected Area [Marine Protected Area Regulation].

Justification – There is the potential for user conflict regarding low flying aircraft, including amenity issues and impacts on natural values.

- (d) No person may conduct an organised event or attempt to conduct an organised event in the Marine Protected Area except on the authority of a permit [Marine Protected Area Regulation].

Justification – Events involving concentrated groups of people can have undesirable impacts on the MPA which must be managed.

9.6 Scientific Research

The following must be included as standard conditions on Scientific Research Permits:

- The permittee must submit annual reports and final reports to EKZN Wildlife and MCM at the completion of their scientific research programmes.
- 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 OIC of their arrival one week in advance.
- 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, EKZN Wildlife 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.

Justification – These conditions are necessary to adequately manage Scientific Research. Section 44 of the MLRA states that no person may use, permit to be used, or attempt to use any poison or other noxious substance for the purpose of killing, stunning, disabling or catching fish, or of in any way rendering fish to be caught more easily. However, holders of Section 81 Exemptions under the MLRA (now superseded by Government Notice 697 where there is a requirement to hold a Scientific Research permit) may be excluded from this so this standard condition may be required. The use of these chemicals is indiscriminate and not compatible with the goals of the MPA.

9.7 Permit Types

A summary of the activities that are generally permitted in each zone is outlined in Table 1. Activities not included in Table 1 will be considered on application to MCM and assessed according to criteria (see Appendix 6).

Three types of permits will be issued for activities in Aliwal Shoal Marine Protected Area:

(a) Fishing Permits

Fishing Permits issued under Section 13 of the *Marine Living Resources Act (No. 18 of 1998)* are necessary for any form of marine fishing in South African waters, including recreational, subsistence, fishing charters and commercial fishing. Where appropriate, Fishing Permits will be endorsed for access to the Aliwal Shoal Marine Protected Area.

(b) Marine Protected Area Permits

Marine Protected Area Permits are issued under Section 43 of the *Marine Living Resources Act (No. 18 of 1998)*. Until specific permit requirements are promulgated, these permits will authorise activities such as tourist programmes and commercial photography.

(c) Aliwal Shoal MPA Permits (*Government Notice 697 Permits*)

Aliwal Shoal MPA Permits are issued under *Government Notice 697 of June 2004* and will authorise activities including SCUBA diving, SCUBA diving business permits and scientific research.

Regulation 8(3) of *Government Notice 697* stipulates the requirement for a fee to obtain a SCUBA diving permit, Regulation 9(3) stipulates the requirement for a fee to obtain a SCUBA diving business permit and Regulation 10(2) stipulates the requirement for a fee to obtain a Scientific Research permit. All other permits will be subject to a fee under Section 25 of the *Marine Living Resources Act (No. 18 of 1998)*.

Table 2

Summary of Additional Statutory Provisions Required for the Aliwal Shoal Marine Protected Area

Activity	Restricted Zones	Controlled Zone
Fishing		
Fishing from a vessel between 04h00 and 18h00	No (a)	P ¹³ (b)
Fishing from a vessel before 04h00 and after 18h00	No (a)	No
Fishing from shore all hours	N/A	P ¹³ (b)
Spearfishing from a vessel between 04h00 and 18h00	No (c)	P ¹³ (b)
Spearfishing from a vessel before 04h00 and after 18h00	No (c)	No
Spearfishing from shore all hours	No	P ¹³ (b)
Beach Seine Net	No	P ¹³ (d)
Trawl Net	No	No
Long-lines	No	No
Traps	No	No
Recreational/Tourist Activities		
Tourist Programmes (including marine animal watching, excluding motorised watersports)	P ⁴³	P ⁴³
Tourist Programmes involving motorised watersports and aircraft use below 500 metres	No	P ⁴³ (e)
Recreational vessel use (excluding motorised watersports)	Yes (e)	Yes (e)
Recreational Motorised watersports (excluding Personal watercraft)	No	Yes (e)
Recreational aircraft use below 500 metres	No	P ⁴³
Commercial Boat-based whale watching	P ⁵⁸	P ⁵⁸
Use of Personal Watercraft	No	No
Use of Hovercraft	No	No
SCUBA diving and snorkelling		
Recreational diving	P ⁶⁹⁷ (f)	P ⁶⁹⁷ (f)
SCUBA diving businesss	P ⁶⁹⁷ (f)	P ⁶⁹⁷ (f)
Use of Diver Propulsion Vehicles	No	Yes
Use of underwater electro-discharging devices	No	No
Anchoring/Mooring		
All users	No	No
Competitions		
Fishing (including tag and release)	No	P ⁴³
Organised events	P ⁴³	P ⁴³
Photography		
Recreational	Yes	Yes
Commercial photography	P ⁴³	P ⁴³
Scientific Research	P ⁶⁹⁷	P ⁶⁹⁷
Vehicles	N/A	No (g)
Feeding fish or chumming	No	No

P¹³ Permit required under Section 13 of the MLRA (**Fishing Permit**)

P⁴³ Permit required under Section 43 of the MLRA (**Marine Protected Area Permit**)

P⁶⁹⁷ Permit required under *Government Notice 697 of 4 June 2004* (**Aliwal Shoal MPA Permit**)

P⁵⁸ Permit required under Section 58 of the Regs under the *MLRA - Aliwal Shoal MPA - within the Durban Area* for boat based whale watching and limited to one permit

Yes Allowed without a Permit

No Prohibited

(a) Fishing gear on vessels that enter a Restricted Zone for passage must be stowed (*Gov Notice 697*)

(b) Restrictions on species allowed to be caught/possessed in the MPA (Annex A of *Gov Notice 697*)

(c) No person may be in possession of an armed speargun in a Restricted Zone (under *Gov Notice 697*)

(d) The Minister may permit the use of beach seine nets in Controlled Zone (*Gov Notice 697*)

(e) Distance a vessel is permitted to travel offshore is determined by the “category” the vessel is defined as under *SAMSA 1998 (Act No. 5 of 1998)*, *Gov Notice No. 3206 of 2000*

(f) The Aliwal Shoal Management Plan states that all SCUBA diving will be restricted to certain time periods.

(g) Must only occur with a Permit issued in terms of the National Environmental Management Act.

10.0 ALIWAL SHOAL MARINE PROTECTED AREA ADVISORY FORUM

10.1 OVERVIEW

The Aliwal Shoal Forum was established on 11 February 1996 to assist in resolving increasing user conflict in the area. The Forum tried through a voluntary agreement between user groups to address the problems. Prior to the implementation of the MLRA, little legislation existed to afford Aliwal Shoal the protection that it required. With the implementation of the MLRA, EKZN Wildlife was handed the responsibility of management of the area on behalf of Marine and Coastal Management.

There is no statutory requirement to convene an Advisory Forum, however, to ensure community involvement in managing the MPA, it is recommended that an Advisory Forum be established. The Aliwal Shoal Marine Protected Area Advisory Forum (ASMPAAF) will involve all stakeholders associated with the Aliwal Shoal MPA.

10.2 IMPLEMENTATION PROCESS FOR AN ADVISORY FORUM

The EKZN Wildlife recognises the importance of co-management of our marine resources. The current Forum will be dissolved and replaced by an Advisory Forum representative of the current stakeholders.

- **Composition of the Advisory Forum**

The Advisory Forum will be formalised as soon as possible. A formal letter of invitation and advertisements placed in local newspapers calling for nominations to participate will be forwarded to appropriate groups. Each group will nominate in writing a representative and also an alternative representative, who will represent their constituency only when the nominee is unavailable, and forward this name to EKZN Wildlife. Representatives will include:

- Marine and Coastal Management (MCM);
- EKZN Wildlife (MPA manager, management representative);
- Recreational diving community;
- SCUBA Dive Business Operators;

- Spearfishers;
 - Commercial line fishers;
 - Recreational line fishers;
 - Fishing charter operators;
 - Commerce;
 - Hospitality industry;
 - Tourism industry;
 - Mnini Community;
 - Rate payers association of Umkomaas;
 - Department of Transportation;
 - SAPS Coast Patrol;
 - Municipality of Umkomanzi;
 - Industry;
 - NGO research institute;
 - Education;
 - Conservation NGO; and
 - FISHCARE volunteer.
- **Duration/Role of Advisory Forum members/Office Bearers**
Members will serve for a term of two years, and may be reappointed for a maximum of two terms.

The Advisory Forum may elect its own Office Bearers to include Vice-Chair, Treasurer, and Public Relations Officer. Officers will be elected on a one-year term, with a potential of being re-elected for a maximum of three terms.

Chair's role: The Chair will be an EKZN Wildlife staff member. The Chair schedules and sets agendas for the Advisory Forum meetings and presides over all meetings of the Advisory Forum, and ensures that meetings are run according to accepted meeting practices, signs all correspondence and documents authorised by the Forum, and generally represents the Forum's interests and concerns to the public.

Vice-Chair: The Vice-Chair serves as Chair in the absence of the Chair and assists as necessary in performing executive duties of the Forum.

Secretary: Prepares and convenes meetings, circulates notices and takes minutes. The secretariat (secretary plus resources will be supplied by EKZN Wildlife)

Public Relations Officer: Facilitates liaison between the Forum and the community. Responsible for submissions to local news media after ratification by the Chair.

Roles of the Advisory Forum:

1. Provide advice to EKZN Wildlife on Aliwal Shoal MPA plans and proposals.
2. Help identify and resolve issues and conflicts, including emerging issues.
3. Serve as a liaison between the Advisory Forum and the community, disseminates information about Aliwal Shoal MPA to the various stakeholders and brings the concerns of stakeholders and the public to the EKZN Wildlife staff.
4. Assist in identifying potential partners and stakeholders with which the Aliwal Shoal MPA should be working.
5. Assist in identifying and securing priority partnerships, with special reference to previously disadvantaged communities.
6. Provide technical and background information on issues facing the Aliwal Shoal MPA.

- **Fora meetings**

It is anticipated that the Advisory Forum may meet every second month and, at a minimum, twice per year after the Advisory Forum is functioning. The Chair will develop meeting agendas and make those available to Advisory Forum members in advance. Meetings will be open to the public, and a time slot will be allocated for public comment. Meeting notes will be taken by an EKZN Wildlife staff member, and be available to the public through a variety of media (website, and hard copy upon requests, distribution to a mailing list of interested public).

- **Financing of the Advisory Forum**

The cost of the secretary, the hiring of venues, paper postage, and miscellaneous items required for meetings will be covered by EKZN Wildlife.

APPENDIX 1

LEGISLATION

Authority for the establishment of MPAs is provided by Section 43 of the *Marine Living Resources Act 18 of 1998*, (hereinafter described as the Act), as follows:

- (1) The Minister may, by notice published in the Gazette, declare an area to be a marine protected area--
 - (a) for the protection of fauna and flora or a particular species of fauna or flora and the physical features on which they depend;
 - (b) to facilitate fishery management by protecting spawning stock, allowing stock recovery, enhancing stock abundance in adjacent areas, and providing pristine communities for research; or
 - (c) to diminish any conflict that may arise from competing uses in that area.

- (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 or 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.

- (3) The Minister may, after consultation with the Forum, give permission in writing that any activity prohibited in terms of this section may be undertaken, where such activity is required for proper management of the Marine Protected Area.

APPENDIX 2
COMPARE

MCM TO PROVIDE

APPENDIX 3

CONSIDERATION OF MANAGEMENT PLAN OPTIONS

Overview

The Department of Environmental Affairs and Tourism, Marine and Coastal Management considered several options in selecting a proposed management regime for the Aliwal Shoal Marine Protected Area. The different options and the reasons for selecting the proposed management plan are described below. Each option was reviewed for its ability to achieve the following goals: (1) conserve the marine ecosystem of Aliwal Shoal; (2) provide for multiple use activities consistent with long-term resource protection; (3) address user conflicts; (4) promote voluntary compliance and awareness through education; (5) encourage opportunities for involvement and upliftment of local previously disadvantaged communities; and (6) enhance management through partnerships at local, provincial, national and international levels.

Option 1: Take No Action

Under this option, the Minister would not declare a marine protected area at Aliwal Shoal and resources and activities would continue to be managed under existing laws and regulations, such as the *Marine Living Resources Act 1998*. By maintaining the status quo, this option would not achieve any of the above goals. It is likely that this option would lead to further resource degradation and increased user conflict as access and use of Aliwal Shoal increases.

This option was rejected by the Minister because of the need to provide greater protection to the resources of Aliwal Shoal, to resolve user conflict, and to create opportunities for previously disadvantaged groups. Aliwal Shoal is a unique area possessing exceptional resources that offer important visitor use, research and education values and maintaining the status quo is not an acceptable option.

Option 2: Adopt the Plan Recommended by the Aliwal Shoal Forum with some modification for ease of implementation

The Management and Development Plan adopted by the Aliwal Shoal Forum on 11 February 1996, and revised in October 1996, contains many useful concepts including establishing a marine protected area that would extend seaward from the Mnini River approximately five nautical miles, paralleling the shoreline down to the Mzimayi River. The Forum's Plan also recognises the need to restrict certain uses in the crown area and proposes that fishing within a zone around the upper portion of the crown area be allowed prior to 08H00 from 1 December until 30 April. Fishing would then stop in favour of diving. Additionally, only bait and gamefish could be taken in the crown area zone. The Forum's Plan also proposes that certain species be prohibited from capture anywhere in the marine protected area.

The Forum's Plan also recommended development of the Northern Bank of the Umkomaas River west of the railway line to promote marine ecotourism in the area. Services would include additional accommodation, development of dive operation facilities, parking and jetties. Other provisions of the Forum's Plan include a self-policing enforcement programme that would rely on user groups and local

communities. These groups and communities would implement regulation of use of the marine protected area and would be responsible for apprehending and sanctioning offenders. Punishable offences would remain subject to normal prosecution.

The Forum's Plan could improve conservation of resources within the crown area and throughout the area if the self-policing enforcement programme is successful and voluntary compliance is largely achieved. User conflict would diminish significantly if anglers and divers adhere to the temporal zoning proposed by the Forum. Some improved awareness of Aliwal Shoal resources would result from the actions of the Management Board and the Marine Watch programme.

Overall, however, the Forum's Plan would realise only partial success at achieving some of the goals outlined above. Marine and Coastal Management believes that better resource conservation would be accomplished with professional law enforcement staff that are properly trained and equipped to handle marine resource issues instead of the community self-policing programme recommended by the Forum. In addition, the seaward boundary recommended in the Forum's Plan for demarcating the restricted fishing zone in the crown area would be difficult to enforce; fish communities and habitats would be better protected by creating a permanent Restricted Zone around the crown area. The Forum Plan also makes no provision for the installation and maintenance of buoys to demarcate the crown area, which would be essential for successful enforcement.

The Forum's Plan also does not recommend any specific education efforts related to the area or opportunities for uplifting previously disadvantaged communities. Marine and Coastal Management regards both of these elements as critical to the success of a MPA at Aliwal Shoal and additional reasons why the Forum's Plan is not being adopted.

Option 3: Revised Management Plan

The revised management plan proposed by MCM would create a marine protected area consisting of the same boundaries as that proposed by the Aliwal Shoal Forum, but with a slightly enlarged Restricted Zone. The MPA extends seaward from the Mnini River approximately 7 km, paralleling the shoreline down to the Mzimayi River. The plan contains elements designed to accomplish all of the goals described above.

In order to resolve user conflicts and adequately protect fish communities and habitats associated with the crown area, MCM is also proposing to establish Restricted Zones that would include the northeastern portion of the crown area, the wreck of the *Produce* and the northern pinnacles. The Controlled Zone (the remaining area of the MPA) would be subject to fishing restrictions including capture of only gamefish and restricting gear to hook and line and spearguns. The plan would also create research and monitoring plans to improve understanding and management of resources throughout the MPA.

The enforcement programme recognises the need for a permanent, professional enforcement staff for the MPA, equipped with a boat suitable for the conditions at the Aliwal Shoal MPA. MCM believes that adequate resource protection requires that offences be handled by trained EKZN Wildlife staff and referred to state prosecutors.

The plan would also incorporate a comprehensive education plan to promote greater understanding and appreciation of the Aliwal Shoal MPA and its resources. An

important aspect of the education plan includes instruction and learning opportunities for school children, especially children in previously disadvantaged local communities. MCM believes that establishing opportunities for the previously disadvantaged communities adjacent to the MPA is critically important, and has included measures in the management plan. By carefully managing the resources at the Aliwal Shoal MPA, it is also likely that the management plan would benefit increased tourism to the area and to adjacent communities.

Option 4: Create a No-Take Zone Throughout the Marine Protected Area

Under this option, the entire area described in Options 2 and 3 would be designated as a no-take zone, and the capture or removal of any resources would be prohibited. This option would provide the greatest protection to the marine resources of the crown area and the surrounding waters and would provide the best opportunity for research by creating an undisturbed site. It would, by definition, end all user conflicts by prohibiting almost all of the consumptive uses that currently take place within the Aliwal Shoal area.

This option would not provide multiple use opportunities and would deny some user groups, particularly anglers, the opportunity to use and appreciate the exceptional resources at Aliwal Shoal. Although this option could contain an education component, it is likely that educational opportunities would be diminished because many of the uses and participants who currently visit the area would be excluded. This option could also diminish tourism opportunities for communities adjacent to the MPA.

MCM believes that this option is unnecessarily restrictive and that resource protection and the other goals can be achieved with sustainable use that is consistent with resource protection. The goals of the MPA identified in the Proposed Plan, including educational outreach and opportunities for previously disadvantaged communities, can be achieved without closing the area to many user groups.

APPENDIX 4

DEFINITIONS OF TERMS USED IN THE MANAGEMENT PLAN

AIRCRAFT – Any craft capable of self-sustained movement through the atmosphere, excluding hovercraft.

ALPHA FLAG - means the ‘diver down flag’ used to indicate that diving operations are in progress and other vessels must keep clear (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

BEACH SEINE NET – Any net used for fishing with or without a cod-end or bag, deployed from the shore whether by hand or from a vessel, and then hauled onto the shore.

BIOPROSPECTING – In relation to indigenous resources, means any research on, or development or application of, indigenous biological resources for commercial or industrial exploitation, and includes:

- (a) the systematic search, collection or gathering of such resources or making extractions from such resources for purposes or such research, development or application;
- (b) the utilisation for purposes of such research or development of any information regarding any traditional uses of indigenous biological resources by indigenous communities; or
- (c) research on, or the application, development or modification of, any such traditional uses, for commercial or industrial exploitation (as taken from *National Environmental Management: Biodiversity Act 2004*).

CAGE – Equipment that has been submerged in the water for the purpose of protection from marine animals.

CAGE DIVING – Diving in a cage for the purpose of viewing marine animals.

CAST NET – Any net that is cast from the shore for the purpose of fishing.

CHUMMING – Depositing organic material or products into the environment for the purpose of attract marine animals, but not including the baiting of hooks for linefishing.

COASTCARE – An educational programme developed by Marine and Coastal Management to promote voluntary compliance and public awareness.

COMMERCIAL ACTIVITY – An activity conducted for financial gain.

COMMERCIAL BOAT BASED WHALE WATCHING – May only occur with a permit issued under Section 58 of the Regulations in terms of the *Marine Living Resources Act 1998*. The Aliwal Shoal Marine Protected Area falls within the *Durban Area* for boat based whale watching and is limited to one permit only.

COMMERCIAL FISHING – Fishing for any of the species that have been determined by the Minister in terms of section 14 to be subject to the allowable commercial catch or total applied effort or parts of both. (as taken from the MLRA, 1998).

COMMERCIAL LINE FISHING – Fishing conducted in terms of a linefishing right granted by the Department of Environmental Affairs and Tourism (under Section 21 of the MLRA).

COMMERCIAL PHOTOGRAPHY – The use of still, video or cine camera equipment for the recording of images and these images are used for financial gain.

COMPARE – Criteria and objectives for Marine Protected Area Evaluation. This is a set of criteria with which an area is evaluated to decide if the area warrants protection.

CONTROLLED ZONE - means that zone established under regulation 5(5) of *Government Notice 697 of 4 June 2004* in which some fishing is allowed (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

DEMARCATIION BUOY - means a buoy installed to mark the boundaries of the Marine Protected Area and its zones (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

DIVER PROPULSION VEHICLE – A motorised unit that is used to assist or propel divers.

EDUCATION PROGRAMME – An activity that is:

- (i) a component of a course conducted by a school or tertiary institution that is recognised by a provincial or national department responsible for education; or
- (ii) conducted by an overseas institution that is accredited by the national body responsible for education in the country in which the institution is established and is recognised in South Africa by a provincial or national department responsible for education.

ELECTRO-ACOUSTIC DISCHARGING DEVICE - means any device that emits electrical or sonic pulses intended to stun, paralyse, disorientate, repel or kill any form of marine life (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

FISH – The marine living resources of the sea and the seashore, including any aquatic plant or animal whether piscine or not, and any mollusc, crustacean, coral, sponge, holothurian or other echinoderm, reptile and marine mammal and includes their eggs, larvae and all juvenile stages, but does not include sea birds and seals. (MLRA, 1998)

FISHCARE – educational programme developed by Ezemvelo KwaZulu-Natal Wildlife to promote voluntary compliance and public awareness.

FISH FEEDING – Intentionally providing food to attract fish.

FISHING CHARTER - A commercial operation that provides transport, leads or guides fishers for financial gain.

FISHING COMPETITION – A fishing competition that is open to the public for a fee and/or one in which prizes are offered.

HOVERCRAFT – means a vehicle that travels on a cushion of air (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

LONGLINE – Any line or connected lines or fishing gear to which a total of more than ten fishing hooks is attached (MLRA, 1998).

the Manager – Ezemvelo KwaZulu-Natal Wildlife (EKZN Wildlife).

MARINE LIFE – includes any aquatic plant or animal whether piscine or not, and any mollusc, crustacean, coral, sponge, holothurian, echinoderm, reptile and marine mammal and includes their eggs, larvae and all juvenile stages, and includes sea birds and seals.

the MINISTER - means the Minister of Environmental Affairs and Tourism (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

MOTORISED WATERSPORTS – The operation of motorised vessels to tow recreational equipment (e.g. paraflaying, water skiing).

NETS – Includes beach-seine net, bottom trawl-net, cast-net, drag-net, hoop-net, purse-seine-net, shove-net and set-net.

NON-MOTORISED WATERSPORTS – The operation of vessels that are not motorised (e.g. sea kayaks, surf kites)

ORGANISED EVENT - An organised event, including competitions but excluding fishing competitions.

PERSONAL WATERCRAFT - means a power driven vessel that has a fully enclosed hull and that is designed to be operated by a person standing, crouching or kneeling on it or sitting astride it (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

POWERHEAD – means a device by means of which a fish may be taken and may be attached to a spear or speargun and that consists of or contains an explosive charge (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

RECREATIONAL DIVING - An individual or group who undertake scuba diving activities without financial gain.

RECREATIONAL FISHING – means any fishing done for leisure or sport and not for sale, barter, earnings, or gain. (MLRA, 1998).

RECREATIONAL LINE FISHING – Fishing in terms of a recreational fishing permit using a line with less than ten fishing hooks.

RECREATIONAL PHOTOGRAPHY - The use of still, video or cine camera equipment for the recording of images and these images are not used for financial gain.

RESTRICTED ZONES – means those Restricted Zones described in Regulations 5(3) and 5(4) (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SCIENTIFIC RESEARCH - means research carried out by a recognised institute established for the purposes of research, or research carried on by a recognised institute of higher learning, provided that to undertake such scientific research the recognised institute requires its staff, students or contractors to enter the Marine Protected Area (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SCUBA DIVING - means swimming below the surface of the sea with the aid of compressed or pumped air or other gases (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SCUBA DIVING BUSINESS - means a commercial enterprise which involves transporting, guiding or providing SCUBA gear to SCUBA divers (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SHARK NET – A net installed by the Natal Sharks Board for the purpose of bather protection.

SPEARFISHER – means a person who undertakes fishing with the use of a speargun (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SPEARFISHING – Fishing by means of a speargun.

SPEARGUN - means a device by which a spear is projected by mechanical or pneumatic means (as taken from *Government Notice 697 of 4 June 2004 Declaring the Aliwal Shoal Marine Protected Area Under Section 43 of the MLRA*).

SUBSISTENCE FISHER - A natural person who regularly catches fish for personal consumption or for the consumption of his/her dependents, including one who engages from time to time in the local sale or barter of excess catch, but does not include a person who engages on a substantial scale in the sale of fish on a commercial basis (MLRA, 1998).

TOP MAN – A person who remains on a vessel from which divers have alighted. A top man must hold a commercial skipper's licence when operating a SCUBA diving business and must hold at least a sport and recreational Skipper's Licence when conducting recreational diving.

TOURIST - A person who is in the marine protected area for recreation, including, for example, recreational fishing or sight seeing.

TOURIST PROGRAMME – An activity conducted for financial gain that includes the provision of transport, accommodation or services for tourists, advertising or promoting the use of a marine protected area as part of the programme, advertising or promoting the use of a marine protected area as a feature associated with a resort or tourist facility on land adjoining the area and includes traversing the Aliwal Shoal Marine Protected Area to conduct tourist programmes outside of the MPA.

TRAP – An enclosure, other than a net, that may be used to take fish.

APPENDIX 5

ALIWAL SHOAL DIVER CODE OF CONDUCT

This Divers Code of Conduct was based on the EKZN Wildlife brochure entitled “Sodwana Bay Diver’s Guide” prepared by Jone Porter in 1999 and was further refined with EKZN Wildlife through the development of the Aliwal Shoal Management Plan. Modifications have also been made to be in accordance with current legislation.

Vessels

1. Skippers should familiarise themselves with the local conditions and rules before launching.
2. A top man must be present at all times on the dive vessel. The top man must be a registered skipper.
3. Vessels must fly an Alpha flag if there are divers in the water. [Government Notice 697 states that “*All vessels that have deployed divers within the Marine Protected Area must display an alpha flag*”].
4. Each dive vessel must remain within 50 metres of its surface marker.
5. A person in control of a vessel must not bring a boat closer than 30 metres to a dive vessel displaying an alpha flag.
6. No anchoring may take place within the Marine Protected Area, except in cases of emergency. [Government Notice 697 of 4 June 2004 state that “*No person may moor or anchor any vessel within the Marine Protected Area.*”]
7. Skippers may only beach within the demarcated area and must be on the look out for snorkellers and tourists on the shore.

Diving

8. Divers must adhere to training standards and guidelines developed by recognised national certifying organisations and should not dive beyond their qualification. Refer to Appendix 7 for a list of recognised SCUBA organisations.
9. Trainee’s first dives must be conducted over sand until buoyancy control has been mastered.
10. All Recreational dive groups and SCUBA diving business groups must tow a visible surface buoy.
11. Do not touch the reef areas - this causes breakages and infection of damaged areas due to the transmission of toxins and disease from one coral to another.
12. Divers are discouraged from wearing gloves-this prevents holding onto the reef. Holding onto the reef in a current or surge is particularly damaging and gloves can be a major vector of toxins and diseases between species.
13. Reef damage by diver’s fins is frequently caused by either kicking the reef or kicking up sand that can “choke” corals and other filter feeders. If you haven’t dived in a while your skills may need sharpening. Before heading to the reefs, spend some bottom time familiarising yourself with buoyancy and other techniques again.
14. Underwater photographers should exercise extreme caution when taking close-ups - no hanging on to marine life and no placement of equipment on the substrate.
15. Be careful with buoylines when going into caves next to large corals.
16. Do not harass fish, especially territorial ones like clownfish which expend a lot of energy trying to fend you off.

17. Do not collect souvenirs (dead or alive). Everybody must have the opportunity to see an untouched environment. [Government Notice 697 of 4 June 2004 states that “*No person may fish or attempt to fish within a Restricted zone*”, “*No person may fish or attempt to fish in the Controlled zone, unless authorised to do so by the Minister in terms of the Act*” and “*No person may catch, transport or be in possession of any fish listed in Annexure A while in the Marine Protected Area*”.]
18. Report environmental disturbances or destruction of your dive sites to EKZN Wildlife.
19. Never surround an animal/s. There should always be an area for the animal/s to move away from you.
20. Never touch marine animals. Don't hold onto turtles as they can drown easily.
21. Standard permit condition for Recreational SCUBA Divers and SCUBA Dive Business Operators will state that “*The permittee must not conduct fish feeding, chumming or dump any material, or discharge attractants in the MPA*”.
22. Do not interfere with scientific equipment or markers.

Diving with Sharks

(the Diving with Sharks Code of Conduct is based on open meetings held at Umkomaas on 19 July 2001 and 22 August 2001)

23. Divers should not enter recesses, caves, gullies, caverns, sandy patches or overhangs where sharks are likely to be resting (for example Raggie Cave, Quinton Cave, Cathedral, overhangs near Anvil Rock, Chunnel and North Sands Raggy, Northern Recess, nor the open areas as the Raggie Sands and Chunnel Sands).
24. No skills (specifically stationary Open Water Skills and Navigation skills) are to be performed in core areas. Core areas for sharks are: Raggie Cave and Raggie Sands, Cathedral and Chunnel.
25. During peak times (weekends and holidays) dive time in a core area should be limited to 15 minutes.
26. A maximum of five groups should be in a core area at a time.
27. Dive groups should be lead by a dive master who has undergone a standardized shark-diving awareness course. The dive charter would be responsible for ensuring that dive leaders/masters understand and abide by the recommendations in the course.
28. Divers should not go to nominated shark core areas, unless accompanied by a trained Dive-Master, who will conduct an in-depth shark diving briefing before the dive.
29. Avoid descending on top of the sharks.
30. Relax and remain out of the shark's own space or COMFORT ZONE (do not approach closer than 3 metres to a shark).
31. Sharks have right of way.
32. Avoid approaching a shark head on (at an angle less than 45 degrees) as the shark feels threatened.
33. In a current, pass over the top of, or around, a group of resting sharks.
34. Do not block the sharks' exits or wedge the sharks against the reef.
35. Do not TOUCH, CHASE or RIDE sharks.
36. Do not shine bright lights in the shark's eyes. Be aware that a strobe light from cameras can startle a shark. Strobe lights for photography should not be used at a distance of less than 5 metres from the shark. Divers should be considerate to both

- sharks and fellow divers and not chase off sharks as strobes do seem to affect the shark.
37. The sharks are often inquisitive. Should a shark approach, keep still, maintain buoyancy and breathe slowly, as a sudden exhalation will disturb a naturally inquisitive shark.

APPENDIX 6

PERMIT APPLICATION PROCEDURE

Applications need to be made in writing to the Deputy Director General, marked clearly application for a MPA Permit and forwarded to:

Marine and Coastal Management

Private Bag X2

Roggebaai 8012

The application should clearly state the nature and purpose of the activity, where and when the activity will take place.

The fee will be communicated to the applicant upon application.

The applicant will be contacted as necessary regarding specific details of their application.

APPENDIX 7

SCUBA DIVING ORGANISATIONS

The organisations listed below represent internationally recognized SCUBA training organisations. These organisations have developed standardised guidelines for training and safe diving practices to be followed during diving operations conducted in the Aliwal Shoals MPA.

PADI – Professional Association of Diving Instructors
NAUI – National Association of Diving Instructors
SSI – Scuba Schools International
NASDS – National Association of Scuba Diving Schools
BSAC – British Sub-Aqua Club
CMAS – Confederation Mondiale Des Activites Subaquatiques
SDI/TDI – Scuba Diving International/Technical Diving International

APPENDIX 8

COMPLETED AND ONGOING SCIENTIFIC RESEARCH AND MONITORING PROJECTS

EKZN Wildlife to update

(Each project has been assigned a unique number: ASMP = Aliwal Shoal Monitoring Project; ASRP = Aliwal Shoal Research Project)

MPA Permit Number	Project Title	Project leader	Duration
ASMP 1	Reef Surveys: Collecting spatial diversity information for GIS, and with a view to setting up permanent monitoring sites for diver damage, anchor damage, effluent, fishing activities etc.	Harris	
ASMP 2	Shoreline Ecosystem Mapping and Rocky Shore EKZN Wildlife	Lawrence	2000-
ASMP 3	Biodiversity and Marine Resource Surveys	EKZNW	1997-
ASMP 4	Determinants of Rocky Shore Community Structure and Development of a Biotope Classification System	Sink (UCT)	1996-2001
ASMP 5	National Marine Linefish System (NMLS) data collected by the EKZN Wildlife Officers. Information is collected on fish ¹ caught by recreational and commercial fishers and collectors	EKZNW & ORI	
ASMP 6	Fish eggs and larvae and spawning intensity	Connell 1987 (CSIR)	
ASMP 7	SAICCOR pipeline ecological impact monitoring	McClurg 1967 (CSIR)	
ASMP 8	Harmless marine animal catches	Dudley 1981 (NSB)	
ASMP 9	EKZN individual dolphin identification catalogue	Peddemors 1987 (NSB)	
ASMP 10	Environmental data associated with shark nets	Cliff 1980 (NSB)	
ASMP 11	Lobster confiscations	Fielding 1989 (ORI)	
ASMP 12	Diver interaction with ragged-tooth sharks	Peddemors 1999? (NSB)	
ASMP 13	East Coast Fishwatch		
ASMP 14	Sedgewicks tag and release programmeme.	Bullen (ORI)	
ASMP 15	ReefCheck	Payne (SAUES)	
ASMP 16	Topographic map of the Aliwal Shoal reef (not the entire MPA).	Aliwal Shoal Foundation (2001)	
ASMP 17	Marine Molluscs of the EKZN coast	Kilburn (1980). Natal Museum	
ASMP 18	Invertebrate Catch Statistics	Schleyer and Kruger (1975) ORI	
ASRP 1	Biodiversity Studies on seaweed and echinoderms	Bolton <i>et al</i> (1999) UCT & Free University	

		of Brussels	
ASRP 2:	OMP's for inshore invertebrate resources	Robertson (1998) ORI	
ASRP 3	Data is being collected by the local municipality on the numbers of vessels leaving the Rocky Bay launch site (includes information on activity being conducted e.g. diving or fishing activities and the number of people aboard the vessel).		
ASRP 4:	Biophysical impacts of off-road vehicles in the intertidal zone	Davey (2001) UND	
ASRP 5:	Evaluation of subtidal reef use	Mann (2002) ORI	
ASRP 6	Assessing potential for a dedicated whale shark diving industry in EKZN	Cliff & Peddemors (2002) Natal Sharks Board	
ASRP 7	Tiger shark diving on Aliwal Shoal	Peddemors (2002) Natal Sharks Board	
	Stock assessment and biology of rockcods	Fennessy (1994) ORI	
	Seaweeds of EKZN	Norris (1984) University of Natal	

APPENDIX 9

INFORMATION REQUIRED FOR SCIENTIFIC RESEARCH APPLICATIONS

Applicants must:

1. Submit qualifications and experience.
2. Submit information on which research/educational institute they are affiliated with.
3. If the scientific research involves the use of vertebrates, provide contact details of appropriate ethics committee. When the scientific research has ethical approval, forward any supporting documents that demonstrate that you have clearance for the proposed scientific research from the Ethics Officer (MPA Permits for Scientific research will not be issued unless ethics approval, where required, has been received).

General Requirements

1. A description of the proposed scientific research including:
 - the purpose of the proposed research (including a justification and need for the research);
 - details of the proposed procedure/methodology. Include details of the number and types of species to be targeted as part of the research (ie. number and types of species/sampling period and total number and types of species to be collected);
 - details of any related activities proposed, particularly within or adjacent to terrestrial areas declared under the MLRA (ie. national parks or nature reserves);
 - the proposed date of commencement of the scientific research including any timetable, the frequency and any seasonal variations;
 - details of any transport associated with the proposed activities including vessel capacity, size (length and draft), name, registration number and holding tank facilities.

2. A description of the location of the proposed scientific research including:
 - the exact location in relation to the Marine Protected Area using accurate charts/maps;
 - the existing use of the site and its location with relation to navigation channels;
 - the existing use of areas adjacent to the location of the proposed research.
3. Information on the likely and/or potential effects on natural resources of the proposed activity, any environmental management arrangements proposed (eg. rehabilitation of substrate, rubbish collection and disposal) and any water quality or other monitoring proposed to check the effects of the activity.
4. The number of research assistants involved in the research.
5. Methods proposed for reducing conflict with other users of the Marine Protected Area.
6. Details of safety issues and how these will be addressed.
7. Details of any public consultation which may have been conducted in relation to the proposal and the response of community groups, conservation groups and other interested parties (eg. has there been any support or objections for the current proposal?).
8. Details of any biological samples that are to be sent overseas.
9. Details of any commercial benefits that may result from the proposed scientific research.

Restricted Zones & Coral/Anemone Collection Requirements

In recognition of the conservation significance of the Restricted Zones and also the corals and anemones in this location, before any consideration is given to destructive scientific research or scientific research involving collection of coral or anemones, the proponent will be required to demonstrate that:

- a) there is a need for the proposed scientific research and/or coral/anemone collection;
- b) the scientific research and/or coral/anemone cannot reasonably be obtained outside the MPA; and

- c) the taking of coral/anemones and the associated research will contribute to the future management of the MPA and the long term conservation of marine resources; and
- d) the proposed scientific research and/or coral/anemone collections will not threaten the survival of species occurring within the Aliwal Shoal MPA.

Please note that the following approvals may also be required to conduct scientific research within the Aliwal Shoal MPA.

- Ethics approval.
- Export Licence.

Scientific Research Permits will not be issued until copies of the above two approvals have been received.

APPENDIX 10

EQUIPMENT REQUIRED TO MANAGE ALIWAL SHOAL MPA

The following represents the minimum equipment that must be provided for enforcement in the MPA:

- One seven-metre motorised semi-rigid inflatable boat equipped with GPS navigation equipment.
- One 4x4 vehicle and trailer.
- Marine radio, with EKZN Wildlife frequency, marine band, VHF, and ski boat frequency (29 mhz), echo sounder and cell phone.
- Office equipment includes desks, tills, chairs, computer stands, one desk top computer/screen/printers/software
- Torches, batteries, cleaning equipment, ammunition, pepper sprays, handcuffs etc.
- Evidence management requirements (deep freezer, camera, bags etc.)