



**EZEMVELO  
KZN WILDLIFE**  
Conservation, Partnerships & Ecotourism

**MBUMBAZI NATURE RESERVE**

*Integrated*

**MANAGEMENT PLAN**  
**2009 - 2013**



# **Mbumbazi Nature Reserve**

***KwaZulu-Natal  
South Africa***

## ***Integrated Management Plan: 2009-2013***

*Reviewed and edited by  
Ezemvelo KwaZulu-Natal Wildlife Management Planning Unit*

*Based on the Draft Integrated Management Plan (2008 – 2013) by  
David Totman and Associates*

### **Citation**

**Mbumbazi Nature Reserve: Integrated Management Plan: 2009–2013, Version 1.0. (2009). Ezemvelo KZN Wildlife, Pietermaritzburg 83 pp. and 8 maps.**



## **AUTHORISATION**

This **Integrated Management Plan (2009-2013)** for Mbumbazi Nature Reserve is recommended by the Reserve Planning Committee (PAMC), a multi-disciplinary team consisting of:

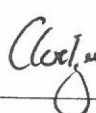
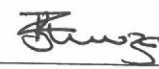
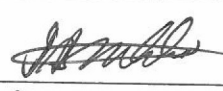
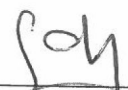

### **Ezemvelo KwaZulu Natal Wildlife, Coastal Region**

Cedric Coetzee	General Manager Coast (PAMC and Regional Operations Committee Chairperson)
Ken Morty	Biodiversity Conservation Co-ordinator Coast West
Craig Mulqueeny	Ecological Advice Co-ordinator Coast
Vumani Mthethwa	Regional Conservation Manager South Coast West
Alfred Gcabashe	Conservation Manager Oribi Gorge Nature Reserve
Roger Uys	Regional Ecologist South Coast
Scotty Kyle	Resource Use Ecologist

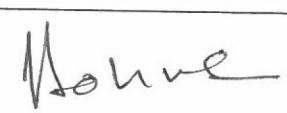
### **Key Stakeholder Representatives**

<b>National Government:</b>	Department of Water Affairs and Forestry, Department of Public Works, Department of Land Affairs
<b>Provincial Government:</b>	Ezemvelo KZN Wildlife, Department of Agriculture, Environmental Affairs and Rural Development
<b>Local Government:</b>	Izingolweni Municipality, Ugu District Municipality
<b>NGO's:</b>	Wildlife and Environment Society of South Africa, Birdlife South Africa, EKZNW Honorary Officers

RECOMMENDED:

DESIGNATION	NAME AND TITLE	SIGNATURE AND DATE
Chairperson: Coast Regional Operations Committee	MR. C. COETZEE: GENERAL MANAGER COAST	 03/02/2010
Chairperson: EKZNW, Biodiversity Conservation Operations Management Committee	MR. B. KHOZA	 16/02/2010
Chief Executive Officer: EKZNW (CHAIRPERSON: EXCO)	DR. I. B. MKHIZE	 12/03/2010
Chairperson: KZN Nature Conservation Board	MR ZC Ngidi	 16/07/2010
Head of Department: KZN Department of Agriculture, Environmental Affairs and Rural Development	DR SS MKHIZE	 21/11/2010

Approved:

DESIGNATION	NAME AND TITLE	SIGNATURE AND DATE
KwaZulu-Natal MEC: Agriculture, Environmental Affairs and Rural Development	LYDIA JOHNSON	 26.11.2010

Circulate To:

DESIGNATION	NAME AND TITLE	SIGNATURE AND DATE
Chairperson: Portfolio Environment & Conservation Committee		

Review Date: 2013
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## **PREFACE**

This Integrated Management Plan for MNR is the primary and overarching management document for the Nature Reserve for the period 2009-2013. It forms the framework within which the Nature Reserve will be managed and developed towards the achievement of its management objectives derived in collaboration with the Nature Reserve stakeholders during {insert month and year}.

The protected area management planning process and the resultant planning documents (elaborated on in the next few pages, has been designed to meet the statutory requirements of the National Environmental Management: Protected Areas Act and other relevant legislation.

The protected area management planning process requires participation from the Nature Reserve's stakeholders, the general public and specialists during the various stages of plan development and implementation. Although the Integrated Management Plan and its sub-components are five year planning documents, an annual review process will ensure an active adaptive management planning approach.

A long term business approach has also been introduced that ensures that the Nature Reserve's management objectives are operationalised and reflected through a Strategic Management Plan in the Park's operational budget over the next five years. A Business Plan will at the same time actively pursue additional and improved funding and income towards the achievement of the natural and cultural heritage conservation objectives of the Nature Reserve over the next five years.

Ezemvelo KwaZulu-Natal Wildlife as the appointed Management Authority for Mbumbazi Nature Reserve hereby commits itself to the implementation of this plan.

**Dr Bandile Mkhize**  
**Chief Executive Officer**

Date:

## **EXECUTIVE SUMMARY AND PURPOSE OF PLAN**

This Integrated Management Plan (IMP) includes the management as well as developmental guidelines for the Mbumbazi Nature Reserve (MNR). It forms the primary and overarching management document for the MNR for the period 2009 to 2013. The IMP forms the framework within which the protected area will be managed, aligned and developed in an endeavour to achieve the biodiversity conservation, ecotourism and partnership objectives as envisaged and set by the various stakeholders and refined by the Technical Task Team members during the consultative planning process.

The IMP is based on the Protected Area Reserve Management Planning Process, as required by the National Environmental Management Act (Act No.107 of 1998) and the National Environmental Management: Protected Areas Act (Act No. 57 of 2003), and will only be modified with Ezemvelo KZN Wildlife approval after consultation with all relevant stakeholders.

The IMP is based on the principles underlying sustainability, addressing biodiversity, natural and cultural resource management, ecotourism industry, benefit flow management and community involvement aspects by providing clarity regarding the attainment of key objectives and targets.

Guided by the Technical Task Team, the facilitators aimed at building understanding and support for conservation in the region through the alignment of the IMP with broader regional initiatives such as the Local Government's Integrated Development Plans for the Region.

Based on the principle of adaptive management, the IMP will be reviewed annually, providing timeous changes to the five year plan. Through the utilisation of the IMP as guide for the compilation of the protected area Strategic Management Plan and Operational Budget, it is envisaged that the Nature Reserve's management objectives will be operationalised.

As a document to guide the management of the MNR, based on the inputs of all stakeholders, the IMP also serves as the base document for monitoring both performance and compliance regarding the various management objectives of the reserve.

Recognising the important role the MNR plays in regional conservation initiatives, and the strategic role the reserve may play in linking neighbouring conservation initiatives, Ezemvelo KZN Wildlife, as the conservation management authority commits itself to the implementation of this plan.

## PROTECTED AREA MANAGEMENT PLANNING PROCESS FRAMEWORK

### The Integrated Management Plan, its components and authorisation

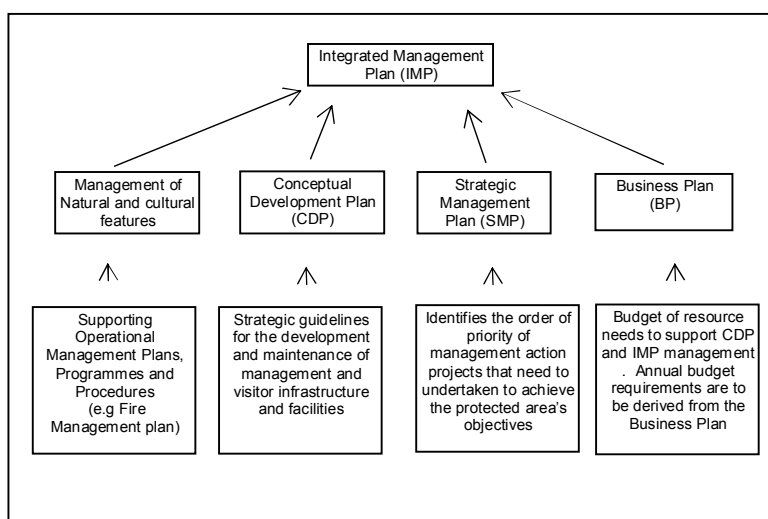
The **Integrated Management Plan (IMP)** is the overarching protected area integrated planning document that describes the administrative and legal framework, contextual background, public participation processes followed, vision / mission statements, management objectives, zonation as well as a management policy framework and guidelines, for a protected area, for a specific 5 year period. The **IMP** forms the framework within which all the other planning components, such as the **Conceptual Development Plan (CDP)**, **Strategic Management Plan (SMP)** and **Business Plan (BP)** are developed. The National Environmental Management: Protected Areas Act 57 of 2003 (NEMPA) considers these plans to be components of the **IMP**.

The **Conceptual Development Plan (CDP)** is an integrated planning document and provides a strategic guideline for the development and maintenance of conservation management infrastructure and visitor facilities / activities within the constraints of the protected area receiving environment. This component will be developed further during the IMP's five-year period. To ensure operational effectiveness, protected areas may require specific Operational plans, programmes and procedures such as Fire management Plans, Wilderness Areas Management Plans, Elephant Management Plans etc, that support the **IMP** and **CDP**. These will be compiled where they do not already exist.

The **Strategic Management Plan (SMP)** is an operational management component that identifies the order of priority of IMP action projects, activities and tasks that need to be undertaken in the achievement of the protected area objectives and attaches key performance areas, responsibilities, timeframes, budgets and resources to each activity. This plan usually takes the form of a Microsoft Access database that 'actions' the Reserve's management objectives and any projects identified by the **IMP**, **CDP** and **Business Plan (BP)**. The **SMP** is a key planning document that also informs the Annual Budgeting Estimates and provides information for Annual Reports.

The **Business Plan (BP)** is primarily aimed at describing the manner in which the **IMP** and **CDP** are to be both financially resourced as well as manpower and capacity needs. It may address issues of operational efficiency and the optimisation of income generated opportunities in order to bridge any possible shortfalls between required operational expenditure and committed provincial government budget allocations. Five year expenditure estimates will inform the development of the **Business Plan (BP)**.

Once the **BP** has been approved, the **SMP** is finalised according to the committed five-year provincial budget allocations for the protected area and other expected financial income.



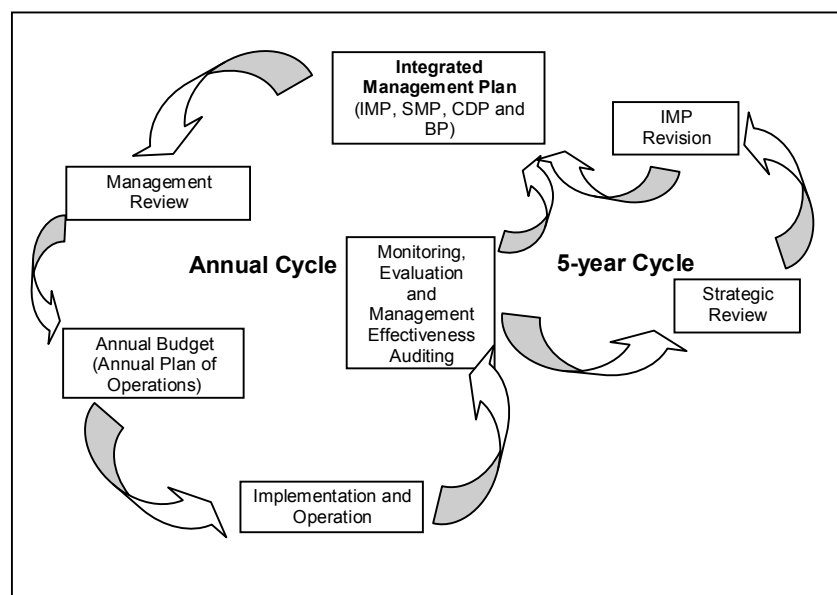
The process by which the **IMP** plans are developed is in accordance with the requirements of South Africa's environmental legislation, in particular the NEMPA, requiring public consultation and participation, as follows:

- The Protected Area Mission and Objectives contained in the **IMP** are derived in consultation at a Stakeholders' Workshop, the outcomes of which are advertised both regionally and provincially for comment in the next step.
- The **IMP** will be advertised provincially and regionally for public comment before being authorised.
- The **SMP** and **BP** will form the basis for regular progress reporting to the protected area Management Authority and its structures.

The **IMP** and its subsidiary plans are required to be authorised by the Provincial Minister for the Department of Agriculture, Environmental Affairs and Rural Development, in terms of the National Environmental Management: Protected Areas Act 57 of 2003. The IMP and any subsidiary plan is to be forwarded to the MEC on recommendation from the EKZNW Board.

### IMP Planning & Review

The IMP requires both annual and five year revision cycles to ensure that the management objectives remain relevant and that management actions are continually improved. The figure below illustrates how the annual and five year planning and review cycles are to be integrated.



**Figure 1: Integrated Management Plans: Aligning Annual and Five year Cycles**

## DEFINITIONS

### **Alien Species**

Means species or genotypes, which are not indigenous to Mbumbazi Nature Reserve and the surrounding area including hybrids and genetically altered organisms.

### **Amafa:**

Amafa aKwaZulu-Natali (KwaZulu-Natal Provincial Heritage Agency)

### **Biodiversity / Biological Diversity:**

Means the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004]).

### **Bioprospecting:**

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

The systematic search, collection or gathering of such resources or making extractions from such resources for purposes of such research, development or application (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004]).

### **Board:**

Means the KwaZulu-Natal Nature Conservation Board as defined by the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No.9 of 1997).

### **Buffer Zone:**

Means an area surrounding Mbumbazi Nature Reserve that has restrictions placed on its use or where collaborative projects and programmes are undertaken to afford additional protection to the Nature Reserve.

### **Co-management:**

The term 'Co-management' must be understood within the context of Section 42 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

### **Cultural Heritage:**

As defined in Article 1 of the World Heritage Convention (UNESCO) 1972<sup>1</sup>, 'cultural heritage' is considered as "monuments, architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of value from the point of view of history, art or science, groups of buildings, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of significance from the point of view of history, art or science, sites, works of man or the combined works of nature and man, and areas including archaeological sites which are of value from the historical, aesthetic, ethnological or anthropological point of view." For the purpose of this IMP, living heritage features such as mountains, pools, rivers, boulders, etc. as well as palaeontological features are included under this definition.

### **Eco-cultural Tourism (ecotourism):**

Means the travel to natural areas to learn about the way of life and cultural history of people, the natural history of the environment, while taking care not to change the environment and contributing to the economic welfare of the local people (*adapted from a definition of ecotourism by Hecto Ceballos Lascurain*).

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<sup>1</sup> Convention concerning the protection of the World Cultural and Natural Heritage. UNESCO. Adopted by the General Conference at its seventeenth session, Paris, 16 November 1972. Paris, France.

**Ecological Integrity**

Means the sum of the biological, physical and chemical components of an ecosystem and its products, functions and attributes (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Ecosystem:**

Means a dynamic complex of animal, plant and micro-organism communities and their non-living environment interacting as a functional unit (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Ecosystem Services:**

As defined in Section 1 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) as “environmental goods and services” meaning:

- a. benefits obtained from ecosystems such as food, fuel and fibre and genetic resources;
- b. benefits from the regulation of ecosystem processes such as climate regulation, disease and flood control and detoxification; and
- c. cultural non-material benefits obtained from ecosystems such as benefits of a spiritual, recreational, aesthetic, inspirational, educational, community and symbolic nature;”

For the purposes of this IMP, sustainable water production is also specifically included under this definition.

**Environmental Degradation:**

Means the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the loss of species or undesirable reduction of species population numbers from a specific area from an environmental health perspective.

**Indigenous Species:**

In relation to a specific protected area, means a species that occurs, or has historically occurred, naturally in a free state of nature within that specific protected area, but excludes a species introduced in that protected area as a result of human activity (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Invasive Species:**

Means any species whose establishment and spread outside of its natural distribution range –threaten ecosystems, habitats or other species or have a demonstrable potential to threaten ecosystems, habitats or other species; and

- a. may result in economic and environmental harm or harm to human health.

(as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Local Community:**

Means any community of people living or having rights or interests in a distinct geographical area (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Management:**

In relation to a protected area, includes control, protection, conservation, maintenance and rehabilitation of the protected area with due regard to the use and extraction of biological resources, community-based practices and benefit sharing activities in the area in a manner consistent with the Biodiversity Act (as per the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

**Management Authority:**

In relation to a protected area, means the organ of state or other institution or person in which the authority to manage the protected area is vested (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

**Nature Conservation:**

Means the conservation of naturally occurring ecological systems, the sustainable utilisation of indigenous plants and animals therein, and the promotion and maintenance of biological diversity (as per the KwaZulu-Natal Nature Conservation Management Act, 1997 [Act No.9 of 1997]).

**Nature Reserve**

Means Mbumbazi Nature Reserve

**Neighbouring Community:**

Means the communities and people permanently living in the local municipal area / s bordering onto the Nature Reserve.

**Natural Heritage:**

As defined in Article 2 of the World Heritage Convention (UNESCO) 1972<sup>2</sup> 'natural heritage' is considered as: "natural features consisting of physical and biological formations or groups of such formations, which are of value from the aesthetic or scientific point of view, geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of value from the point of view of science or conservation, natural sites or precisely delineated natural areas of value from the point of view of science, conservation or natural beauty." For the purposes of this IMP, this would include the required ecological integrity of the protected area for the production of ecosystem services.

**Partnership/s:**

Means a co-operative and / or collaborative arrangement between the Nature Reserve management / EKZNW and a third party that supports the achievement of the Nature Reserve management objectives.

**Protected Area:**

- Means any area declared or proclaimed as such in terms of section 3 or listed in the Second Schedule to the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997); or
- Means any of the protected areas referred to in section 9 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

**Stakeholders / Interested Parties<sup>3</sup>:**

These are interested individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, consumers, environmental interest groups and the general public. According to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), "stakeholder" means a person, an organ of state or a community contemplated in section 82 (1) (a), or an indigenous community contemplated in section 82(1) (b).

**Sustainable:**

In relation to the use of a biological resource, means the use of such resource in a way and at a rate that would not lead to its long-term decline; would not disrupt the ecological integrity of the ecosystem in which it occurs; and would ensure its continued use to meet the needs and aspirations of present and future generations of people (as per National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

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<sup>2</sup> UNESCO 1972 *Convention concerning the Protection of the World Cultural and Natural Heritage*. Adopted by the General Conference at its seventeenth session, Paris, 16 November 1972. UNESCO, Paris, France

<sup>3</sup> Defined in Guideline Document EIA Regulations, National Department of Environmental Affairs and Tourism, April 1998

## ABBREVIATIONS

A.S.L.	Above sea level
BP	Business Plan (Component of EKZNW protected area management planning process)
CCA	Community Conservation Area
CDP	Concept Development Plan (Component of EKZNW protected area management planning process)
CPLAN	Biodiversity Spatial Framework
DAE&RD	KwaZulu-Natal Provincial Department Of Agriculture and Environmental Affairs
DC	District Council
DoT	Department of Transport
DTLGA	Department of Traditional and Local Government Affairs
DWEA	National Department of Water and Environmental Affairs
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EXMANCO	Executive Management Committee
FAM	Features-Activities Matrix
FPA	Fire Protection Association in terms of the National Veld and Forest Fire Act, 1998 (Act No.101 of 1998)
GIS	Geographical Information Systems
I & AP	Interested and Affected Parties
IDP	Municipal Integrated Development Plan
IEM	Integrated Environmental Management
IMP	Integrated Management Plan
IUCN	International Union for Conservation of Nature <u>or</u> The World Conservation Union (as commonly referenced)
KZN	KwaZulu-Natal Province of the Republic of South Africa
LAC	Limits of Acceptable Change
MCM	National Department of Marine and Coastal Management
MEC	Member of the Executive Council for DAEA&RD, KwaZulu-Natal Provincial Government
MNR	Mbumbazi Nature Reserve
MNR	Mbumbazi Nature Reserve
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
NGO	Non-Government Organisation
NPS	National Reserve Service
PAMC	Protected Area Management Committee/Reserve Planning Committee
PPP	Public Private Partnership
RLCC	Regional Land Claims Commission
ROC	EKZNW Regional Operations Committee
RoD	Record of Decision
ROS	Recreational Opportunity Spectrum
SA	Republic of South Africa
SAHRA	South African Heritage Resources Agency
SDF	Municipal Spatial Development Framework
SDI	Spatial Development Initiative
SMME	Small, Micro and Medium Enterprises
SMP	Strategic Management Plan (Component of EKZNW protected area management planning process)
SWOT	Strengths, Weaknesses, Opportunities and Threats
TCA	Transfrontier Conservation Area
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VEO	Visitor Experience Opportunity

## **ABBREVIATIONS USED FOR STATUTES**

CARA	Conservation of Agriculture Resources Act, (Act No. 43 of 1983)
ECA	Environment Conservation Act, (Act No. 73 of 1989)
KZNHRA	Kwa-Zulu Heritage Resources Act, (Act No. 10 of 1997)
KZNNCMA	KwaZulu-Natal Nature Conservation Management Act, (Act No. 9 of 1997)
NEMA	National Environmental Management Act, (Act No.107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)
PFMA	Public Finance Management Act, (Act No. 1 of 1999)
NHRA	National Heritage Resources Act, (Act No. 25 of 1999)



## **1. PURPOSE AND SIGNIFICANCE OF THE MBUMBAZI NATURE RESERVE**

### **1.1 Purpose**

The purpose of Mbumbazi Nature Reserve (MNR) is to:

- Contribute towards the achievement of Provincial and National conservation targets by conserving ecologically viable areas of Forest and Coastal Grassland veld types with their associated biodiversity;
- Protect endangered, rare and endemic species indigenous to the area;
- Contribute towards good quality water production and other life support systems of the largely untransformed Vungu river, with 40 % of the catchment river system being protected within the protected area;
- Promote awareness of the natural beauty and outstanding aesthetic value of the area; and,
- Provide enjoyment of the Nature Reserve and its spiritual values by members of the South African Republic.

### **1.2 Significance**

The significant values of MNR include:

#### **Biodiversity:**

- Conserves a section of the IUCN Pondoland Centre of plant Endemism.
- Protects the following important vegetation types South Coast Grassland, Pondoland Scarp Forest, Pondoland-KwaZulu Natal Sandstone Coastal Sourveld and KwaZulu-Natal Coastal Forest and their associated biodiversity.
- Protect several endemic, rare and endangered plant and animal species.
- Is one of only four public nature reserves with an area of over 1000 hectares on the KZN South Coast.

#### **Cultural Heritage:**

- Settlement history of the area.
- History of the KwaXolo and Mavundla Traditional Authorities as well as the Elim Mission and community.
- Graves and homestead sites.

#### **Business:**

- Conservation and ecotourism is potentially a viable and sustainable land use option for this area whose agricultural value is limited.
- Opportunity to provide employment.

#### **Partnerships (benefits):**

- Catalyst for biodiversity conservation and cultural heritage management.
- Stakeholder in planning initiatives that include local and district Municipalities and private and communal initiatives.
- Benefit flow to neighbouring community's from sustainable resource (consumptive and non-consumptive) use and employment in various poverty alleviation projects include alien plant control programmes.

## 2. ADMINISTRATIVE AND LEGAL FRAMEWORK

### 2.1 Institutional Arrangements

#### 2.1.1 MNR Management Authority

Ezemvelo KwaZulu-Natal Wildlife is the appointed Management Authority responsible and accountable for the Mbumbazi Nature Reserve (MNR). This will to be confirmed in terms of Section 38(2) of the National Environment Management: Protected Areas, 2003 [Act No. 57 of 2003] (NEMPAA) which requires that the provincial MEC assign the management authority for a Protected Area.

**Action Project 2.1.1 (i):** Obtain written assignment from the MEC re-appointing EKZNW as the management authority for MNR in terms of Section 38(2) of NEMPAA.

As the current Management Authority EKZNW is responsible for reporting on the management of the Nature Reserve to the designated KwaZulu-Natal Provincial Member of the Executive Committee and the Premier thus ensuring co-ordination of those matters that may affect MNR through the relevant provincial departments, District and Local Municipalities.

#### 2.1.2 Land Claims and Co-Management

The land claim against Mbumbazi has being gazetted and is being processed.

**Action Project 2.1.2 (i):** Finalise the settlement agreement pertaining to MNR.

#### 2.1.3 Separation of Authority Functions

Other public service providers within MNR include electricity provided by Eskom and telephone lines provided by Telkom.

**Action Project 2.1.3 (i):** Update and compile a list of all service providers in MNR.

### 2.2 Legislation Guiding the Administration of MNR.

**It is important to note that MNR is a protected area in terms of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003 [NEMPAA]). In terms of this Act, any conflicts with other legislation will be dealt with in accordance with Section 7 of NEMPAA.** In essence it stipulates that - where a provision of NEMPAA specifically concerns the management or development of protected areas, and there is conflict with other national legislation, the relevant section of NEMPAA prevails.

The operational administration and management of the Nature Reserve is subject to the following key statutes – it is acknowledged that this list is not exhaustive. Managers will familiarize themselves with the purpose and contents of these statutes as well as their subsequent amendments and regulations. Many of these statutes can be downloaded from the following SA Government Documents internet website:

<http://www.info.gov.za/view/DynamicAction?pageid=528>.

Not only do these Acts and Ordinances guide the specific decisions and actions, they also provide the framework for monitoring performance and compliance, and provide guidelines regarding contravention, offences and penalties.

Within the South African context, ensuring compliance to relevant legislation is a must. Therefore it is imperative that all actions undertaken by management are compliant with all relevant legislation such as:

#### **Natural and Cultural Heritage / Resource Management and Development:**

- Animals Protection Act, 1962 (Act No. 71 of 1962).
- Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965).
- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).
- Constitution of the Republic of South Africa, 1997 (Act No. 108 of 1997).
- Criminal Procedure Act, 1977 (Act No. 51 of 1977).
- Environment Conservation Act, 1989 (Act No. 73 of 1989).
- Forest Act, 1984 (Act No. 122 of 1984).
- Game Theft Act, 1991 (Act No. 105 of 1991).
- KwaZulu – Natal Heritage Management Act, 1997 (Act No. 10 of 1997)
- KwaZulu Animal Protection Act, 1987 (Act No. 4 of 1987)
- KwaZulu Nature Conservation Act, 1975 (Act No. 8 of 1975).
- KwaZulu-Natal Heritage Act, 2008 (Act No. 4 of 2008).
- KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997).
- National Environmental Management Act, 1998 (Act No. 107 of 1998).
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
- National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).
- National Forests Act, 1998 (Act No. 84 of 1998).
- National Heritage Resources Act, 1999 (Act No. 25 of 1999).
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998).
- National Water Act, 1998 (Act No. 36 of 1998).
- National Water Amendment Act, 1999 (Act No. 45 of 1999)
- Nature Conservation Ordinance, 1974 (Act No. 15 of 1974)
- Traditional Healers Act, 2004 (Act No. 10 of 2004)

#### **General Management:**

- Broad – Based black Economic Empowerment Act, 2003 (Act No. 53 of 2003)
- Communal Lands Rights Act, 2004 (Act No. 11 of 2004)
- Development Facilitation Act, 1995 (Act No. 67 of 1995).
- Disaster Management Act, 2002 (Act No. 57 of 2002).
- Fencing Act, 1963 (Act No. 13 of 1963)
- Fire Brigade Services Act, 1987 (Act No. 99 of 1987).
- Firearms Control Act, 2000 (Act No. 60 of 2000)
- Intergovernmental Relations Framework Act, 2005 (Act No. 13 of 2005).
- KwaZulu Ingonyama Trust Act, 1994 (Act No. 3 of 1994)
- KwaZulu-Natal Planning and Development Act, 1998 (Act No. 5 of 1998).
- Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998).
- Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000).
- Mineral Act, 1991 (Act No. 50 of 1991)
- Municipal Services Act, 2000 (Act No. 32 of 2000)
- Natal Town Planning Ordinance, 1949 (Act No. 27 of 1949).
- National Building Standards Act, 1977 (Act No. 103 of 1977).
- National Road Traffic Act, 1996 (Act No. 93 of 1996).
- Occupational Health and Safety Act No, 1993 (Act No. 85 of 1993).
- Restitution of Land Rights Act (Act No. 22 of 1994)
- Restitution of Land Rights Act, 1994 (Act No. 22 of 1994).
- State Land Disposal Act, 1961 (Act No. 48 of 1961).
- Water Services Act, 1997 (Act No. 108 of 1997).

#### **Financial Management:**

- Public Finance Management Act, 1999 (Act No. 1 of 1999).

#### **Human Resource Management.**

- Basic Conditions of Employment Act, 1997 (Act No. 75 of 1997).
- Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993).
- Employment Equity Act, 1998 (Act No. 55 of 1998).
- Labour Relations Act, 1995 (Act No. 66 of 1995).
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Pension Funds Act, 1956 (Act No. 24 of 1956).
- Skills Development Act, 1998 (Act No. 97 of 1998).
- Skills Development Levies Act, 1999 (Act No. 9 of 1999).
- Unemployment Insurance Act, 2001 (Act No. 63 of 2001).

#### **Nature Reserve / Game Reserve / Park Regulations**

*EKZNW protected area regulations are enforced in accordance with Section 15 of the Nature Conservation Ordinance, 1974 (Act No. 15 of 1974) read together with the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997).*

## **2.3 Regional Planning Context and Principles**

MNR is a core conservation area forming part of the KZN protected area network. As with all EKZNW protected areas, the intention is to continually improve management effectiveness of MNR in line with the levels adopted for all protected area within the EKZNW protected area network.

In accordance with the Local Government: Municipal Demarcation Act No. 27 of 1998 and the Local Government: Structures Act No. 117 of 1998, the protected area falls within the service jurisdiction of the Ugu District Municipality. MNR also falls within the jurisdiction of the Hibiscus Coast Municipality and the Izingolweni Municipality. The bulk of the nature reserve falls within the jurisdiction of the Hibiscus Coast Municipality.

These municipalities are responsible for the preparation and administration of Integrated Development Plans (IDP) for its area of jurisdiction. These authorities are identified as important stakeholders in the MNR and will take this IMP and the existence of the protected area into account in their planning processes.

The Integrated Development Plan of all three municipalities place emphasis on the provision of basic services to local communities. A common thread of all three municipal IDP's is the development of rural tourism and local economic development. Mbumbazi nature reserve has the potential to make a small but significant contribution in this regard.

Municipalities also play a key role as regulators of development projects within their respective areas of jurisdiction. The existence and value of the Mbumbazi Nature Reserve is not at present acknowledged in the municipal spatial development plans. As these Plans are reviewed in terms of a five year planning cycle this omission will be rectified.

Alignment with regional plans will assist in developing an effective buffer zone around MNR. Protected area management in collaboration with the designated EKZNW officials will be tasked to make the relevant inputs whenever these municipalities' Integrated Development Plans and Spatial Development Frameworks are reviewed and updated.

**Action Project 2.3 (i):** Management in collaboration with other relevant EKZNW officials, will be tasked with active participation in the review processes of the municipal Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) in order to ensure an effective buffer zone surrounding MNR through an alignment of appropriate land use adjacent to the Nature Reserve.

The Nature Reserve itself has been zoned (See **Par. 2.4**) according to protected area management norms to control various activities and for the achievement of various conservation objectives.

**Action Project 2.3 (ii):** establish relationships with neighbouring properties including Hibiscus Coast Municipality to plan and restore fragmented corridors and to enable the continued functioning of existing ones.

## **2.4 Proclamation Status of MNR**

The farms Kranskloof 8100 and Subdivision 2 of the farm Tigers Hole 7790 with a total area of 628, 6173 hectares were proclaimed as a Nature Reserve on the 25<sup>th</sup> of April 1986, in Government Notice 765 Government Gazette 10125. An additional 1600 hectares area of state land known as the Margate Corridor of Farms has been administered as an intrinsic part of the Nature Reserve, since 1984.

**Action Project 2.4 (i):** Obtain the services of a land surveyor to register the consolidate MNR with the Surveyor General and seek the proclamation of the area by the MEC.

## **2.5 Local Agreements, Leases, Servitude Arrangements and MoUs**

The formal documentation and maintenance of all local agreements, leases, servitude arrangements and MoUs concerning the authorised use of MNR area by beneficiaries other than EKZNW will be undertaken to promote transparency and good governance. All such agreements will be scrutinized by the Manager: EKZNW Legal Services for direction, prior to any EKZNW member signing such documents.

The MNR Manager will be familiar with the content of such authorised documents and will ensure that there is compliance with the conditions contained therein. Copies of all documentation will also be filed manually and digitally at the MNR management and regional management offices for easy reference. These copies will be updated in accordance with any authorised amendments.

Servitude agreements for MNR include:

- Servitudes include access rights to the water pipeline that runs across the road but belongs to the local municipality and the dam which the community has access to for their cattle.

**Action Project 2.5 (i):** Obtain and review all formal and informal local agreements, leases, servitude arrangements etc. pertaining to MNR and document, update, maintain and monitor these appropriately authorised agreements. All informal agreements are to be formalised and approved by the executive.

## **2.6 Extending Conservation Land Use Management in Areas Surrounding MNR**

Opportunities may arise that will enable the establishment of new formal protected areas or other conservation management areas on land bordering or in vicinity of MNR in collaboration and co-operation with the relevant stakeholders and landowners. This is likely to contribute to the EKZNW conservation planning targets through more effective natural and cultural heritage conservation. Indirectly, new tourism opportunities could also develop with the resulting socio-economic benefits.

All EKZNW officials associated with MNR will remain sensitive to these opportunities and ready to engage with the relevant role-players, assisting them with the most appropriate options for establishing conservation areas. This may be in the form of conservancies, private, community or local authority protected areas, contractual protected areas, public open space or even incorporation of land into MNR and in so doing increasing the extent of core protected areas within KZN and increasing protected area

representivity. Alignment with the municipal IDPs will also be actively sought to ensure appropriate land use on the borders of MNR.

The most important areas in this regard would be:

- The more effective management of the large block of indigenous forest on commercially owned farmland whose conservation would have significant commercial benefits. There are also opportunities for conservation of communal land and the establishment of ecotourism projects including the Elim land restitution project, the Gamalakhe College of Education and the land administered by the Mavundla and KwaXolo Traditional Authorities.
- The linking of private and communal farmland adjoining the Mbumbazi and Oribi Gorge Nature Reserves into a biosphere reserve would be an initiative of significant benefit to the conservation and movement of wildlife found on these two nature reserves and other neighbouring properties.

<b>Action Project 2.6 (i):</b> Annually explore and investigate opportunities to extend conservation land use in and around MNR.
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### 3 BACKGROUND

#### 3.1 Origin of the Name of the Nature Reserve

The Mbumbazi Nature Reserve was proclaimed in 1985 and was originally 628 hectares in extent.

The original name of the Nature Reserve was Ntubeni, which is the Zulu name for the gorge of the Vungu River just outside the boundary of the Nature Reserve. The name refers to the catapult-like V shape of a typical traditional homestead's entrance. The gorge is also known as the Rossler's Gorge which was the name of the family which owned the farm prior to its purchase by the Department of Development Aid and proclamation as a Nature Reserve.

The Nature Reserve conserves a representative example of the grassland and forest habitats that once occurred on the KwaZulu-Natal South Coast.

#### 3.2 Location and Extent of the Nature Reserve

The Mbumbazi Nature Reserve is situated in southern KwaZulu-Natal between -30°47'35.146"S to -30°50'38.724"S and 30°14'59.744"E to 30°19'25.072"E. The GIS flat surface area of MNR amounts to 2081ha. The altitude at the highest point in MNR is 550 metres asl (above sea level) with the lowest point being 110 metres asl. The Nature Reserve falls within the jurisdiction of the Hibiscus Coast Local Municipality and the Ugu District Municipality. The Reserve neighbours the KwaXolo and Mavundla Traditional Authorities on its southern and western boundaries. The northern and eastern boundaries of the nature reserve adjoin privately owned commercial farms.

MNR is situated some 32 kilometres inland of Port Shepstone with the N2 highway from Port Shepstone to Umtata providing an easy and convenient link to the nature reserve. Access to the nature reserve off the N2 is via Main Road 55 and District Road 178.

#### 3.3 Previous Land Use

Land use prior to proclamation included commercial farming (cattle grazing and ploughed lands), subsistence farming (of both livestock and crops) and rural dwellings. Most of the land was untransformed natural land.

<b>Action Project 3.3 (i):</b> Update the previous land use of MNR.
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#### 3.4 Conservation History of the Nature Reserve

The Mbumbazi Nature Reserve was proclaimed in 1986 under the Nature Conservation Ordinance Act (Act No. 15 of 1974). Individual properties within MNR were proclaimed at different times. Prior to proclamation, different portions of the land were owned by different authorities. Land was owned by the Department of Land Affairs, Local Municipality, KwaZulu Bureau of Natural Resources and part was communally owned. The reserve was proclaimed to protect the source of the Uvongo River and to be used for official gatherings by the State. The MNR was to later be used as a Decca Navigation Station. Mbumbazi Nature Reserve conserves examples of several ecosystems and vegetation types as well as the varied biodiversity that these habitat types support. A part of the scenically attractive Rossler's Gorge also known as Ntubeni falls within the protected area. In addition to conserving this ecologically valuable area it is the long term objective of EZKNW to make the reserve accessible to the South African public while allowing an equitable flow of benefits to local communities.

The Mbumbazi nature reserve has been administered as a nature reserve by the Department of Development Aid since 1980. The original 628 hectare nature reserve has been expanded with the addition of a 1600 hectare block of privately owned farms in 1984. These farms known as the Margate

corridor were acquired by the state for homeland consolidation purposes. Since only 14% of these farms could be classified as arable, according to the Department of Agriculture's Land Capability Classification System only, these farms were set aside for nature conservation purposes by the state land disposal committee.

Since its establishment as a nature reserve, conservation work undertaken at Mbumbazi has included:

- Alien plant eradication and weed control measures;
- The establishment and implementation of a fire protection and burning programme;
- An information and extension service to the public, with it reported that from 1988 to 1994 some 20 environmental education courses were held at the nature reserve, with it reported that some 1200 teachers attended these courses;
- Ecological monitoring;
- The identification and the protection of the flora and fauna of the nature reserve with the conservation of the properties indigenous forests enjoying priority.
- Developing sound relationships with neighbouring communities through regular consultation with neighbours, and
- Neighbouring communities harvesting thatch grass in a sustainable manner from MNR. The nature reserve has also played a significant role in contributing towards poverty alleviation in the region with dozens of temporary employment positions being created through projects funded by the Department of Environmental Affairs and Tourism. The use of local suppliers of goods and services has also provided the local economy with a significant boost.

Ezemvelo KZN Wildlife took over responsibility for the nature reserve from the Natal Provincial Administration in 1997.

**Action Project 3.4 (i):** Investigate the Conservation History for MNR indicating the importance of the proclamation.

### 3.5 Climate and Weather

The South Coast has a subtropical climate with an average maximum temperature of 22,5<sup>0</sup> Celsius and an average minimum temperature of 13,6<sup>0</sup> Celsius. The area has a high average rainfall of 1224 mm per annum. The driest period of the year is from June to August.

Winds will be strong given the Nature Reserves proximity to the coast with the prevailing winds being from the Southwest (SW) and Northeast NE.

**Action Project 3.5 (i):** Maintain the collection and storage of climatic data records.

### 3.6 Physical Description

#### 3.6.1 Topography

Topographically the nature reserve lies 200 m and 400 m above sea level, with there being a steady increase in elevation from East to West.

#### 3.6.2 Geology

The parent materials of the nature reserve consist of granite, Natal Group Sandstone and alluvium.

**Action Project 3.6.2 (i):** Identify the biodiversity importance and implications of immature soil profiles for management.

**Action Project 3.6.2 (ii):** Map the soils showing areas susceptible to erosion.

**Action Project 3.6.2 (iii):** Write and submit for approval. a soil erosion control plan.

### 3.7 Geomorphology and Landforms

The Vungu river valley and the escarpment of the “Paddock” plateau are the dominant landforms encountered in the MNR. The rocky cliffs of this escarpment are comprised off buttresses of granite and gneiss.

### 3.8 Hydrology

The Vungu River has its source at Otterburn at an elevation of 610 m above sea level. And is 32 kilometres long draining a catchment of 111 km<sup>2</sup>. This perennial river forms a shallow, rock-bottomed, generally sluggish-flowing system which ends at Uvongo Beach. The river floods on an annual basis and is known for its flooding ferocity when there are storms inland. The river’s width varies from 5 to 30 metres.

There are many small wetlands in the southern part of the Nature Reserve.

**Action Project 3.8 (i):** Write a management plan in order to maintain and monitor the quantity and quality of water in the rivers.

### 3.9 Flora

#### Vegetation Types

Historically, Scarp Forests acted as Afro temperate refugia and are a contemporary overlap zone between Afro temperate and coastal forest, resulting in higher species richness in Scarp Forests than in either the Afro temperate or Indian Ocean Coastal Belt forests (MacDevette et al., 1989; van Wyk, 1990). Furthermore, these forests house numerous endemic taxa. Thus, in terms of floral biodiversity, Scarp Forest is considered the most valuable forest type in South Africa (Mucina and Rutherford, 2005). KwaZulu-Natal Coastal Forest, a species-rich subtropical forest occurs at low altitudes (10 – 150 m.a.s.l) in MNR. To maintain the current extent and integrity of the Pondoland Scarp Forest (88 ha) and KwaZulu-Natal Coastal Forest (757 ha), it is necessary to control alien plant invasion and prevent the spread of uncontrolled fires into the forest.

Pondoland – Ugu Sandstone Coastal Sourveld (158 ha) is the most threatened vegetation type in MNR and as such needs to be carefully managed. Although fire is an important management tool in maintaining savannah/grassland habitats, frequent fires, as well as high levels of grazing, are not conducive to the recruitment of many of the shrubs, herbs and generic fynbos elements that are a feature of this nutrient-poor but species-rich vegetation type.

The grassland sections of the reserve are described as KwaZulu-Natal Coastal Belt (Mucina and Rutherford, 2006). For management and conservation purposes, EKZNW has subdivided this vegetation type into North Coast Grassland and South Coast Grassland with respect to geographical location. South Coast Grassland (1078 ha), as occurs in MNR, is a Critically Endangered vegetation type with over 90% already transformed. Present-day South Coast Grassland is intensely patchy and only small fragmented pockets remain. The main threats to this important grassland include inappropriate burning regimes, bush encroachment, alien invasive plants, heavy grazing and illegal harvesting.

### Conservation Targets:

- Pondoland-Ugu Sandstone Coastal Sourveld (Critically Endangered): The provincial target is 30% of the original distribution for this vegetation type, however only 17% remains untransformed. Only 33% of the remaining 17% occurs within protected areas, and MNR safeguards 2.5% of this. The conservation target has **not** been met.
- 
- South Coast Grassland (Critically Endangered): The provincial target is 25% of the original distribution for this vegetation type, however only 6% remains untransformed. Only 22% of the remaining 6% occurs within protected areas, and MNR safeguards 11.4% of this. The conservation target has **not** been met.
- 
- Pondoland Scarp Forest (Least Threatened): The provincial target is 67% of the original distribution for this vegetation type, however 97% remains untransformed. Only 41% of the remaining 97% occurs within protected areas, and MNR safeguards 1.7% of this. The conservation target has **not** been met.
- 
- KwaZulu-Natal Coastal Forest (Least Threatened): The provincial target is 72% of the original distribution for this vegetation type, however 90% remains untransformed. Only 60% of the remaining 90% occurs within protected areas, and MNR safeguards 2% of this. The conservation target has **not** been met.

### Priority Species

The following Red Data listed plant species occur in the nature Reserve:

- |  |                |                 |
|--|----------------|-----------------|
| • <i>Craterostigma nanum</i> var. <i>nanum</i> |                | Vulnerable      |
| • <i>Eucomis autumnalis</i>                    | Pineapple lily | Declining       |
| • <i>Phyllica natalensis</i>                   |                | Vulnerable      |
| • <i>Rhynchochelyx lawsonioides</i>            |                | Near Threatened |
| • <i>Scilla natalensis</i>                     |                | Vulnerable      |

**Action Project 3.9 (i):** Develop a plant species list. This list will be filed with the Conservation Manager at MNR.

**Action Project 3.9 (ii):** Develop a flora monitoring programme for MNR.

**Action Project 3.9 (iii):** Compile and implement a flora management plan that addresses key threats to the priority flora

**Action Project 3.9 (iv):** Compile a flora map and diagnostics species list.

### 3.10 Fauna

Given the diversity of habitats, MNR has a similar remarkable diversity of animal species. Species checklists will be updated as data becomes available.

**Action Project 3.10 (i) :** Copies of the Species Checklists will be updated and filed manually and digitally at the MNR Management and Regional Offices as well as the Conservation Manager for easy reference. The copies will be updated in accordance with any authorised amendments. A fixed protocol for compiling and maintaining these checklists needs to be developed to ensure that they provide accurate, comparable and contemporary baseline data for management and scientific purposes.

### 3.10.1 Invertebrates

Invertebrates play critical roles in the functioning of all ecosystems as they are responsible for maintaining soil fertility, waste disposal, water purification, pest control, pollination and may even influence the structure of plant communities. In some cases the survival of locally endemic plant species may be linked to a single pollinator.

The EKZNW Biodiversity Database provides a relatively comprehensive list of invertebrates. No Red Data species are listed. However, the KZN endemic Gooseberry pinwheel snail (*Trachycystis conisalea*) occurs in the Nature Reserve.

**Action Project 3.10.1 (i):** Compile through research and collecting a checklist of the invertebrate species found in MNR.

### 3.10.2 Fish

A total of two fish species have been recorded within MNR, none of which are listed as Red Data species. However, the KZN endemic KwaZulu-Natal yellowfish (*Labeobarbus natalensis*) occurs in the Nature Reserve.

**Action Project 3.10.2 (i):** Identify the major threats to the Fish Species in MNR.

**Action Project 3.10.2 (ii):** Develop and implement a Fish Species Monitoring Programme.

### 3.10.3 Herpetofauna (Reptiles and Amphibians)

The presence/absence of certain frog and reptiles species is indicative of the state of health of an ecosystem. Furthermore, it is important to determine whether any rare species occur on MNR in order to determine management strategies to prevent their extinction from the Nature Reserve.

Five species of frogs/toads are listed as occurring in the Reserve. No Red Data species are listed. However, the KZN endemic Natal moss frog (*Anhydrophyrne hewitti*) occurs in the Nature Reserve.

Eleven species of reptiles are listed as occurring in the Reserve; 7 lizards and 4 snakes. No Red Data species are listed.

**Action Project 3.10.3 (i):** Compile through further research and monitoring checklists of the Herpetofauna. Identify the major threats to Herpetofauna in MNR.

**Action Project 3.10.3 (ii):** Develop and implement a Herpetofauna Species Monitoring Programme.

### 3.10.4 Avifauna (Birds)

The EKZNW Biodiversity Database lists 178 bird species for the Nature Reserve. Of particular importance are:

Spotted ground-thrush (*Zoothera guttata*)

Endangered

This species is a local migrant, overwintering in coastal forests before returning to the MNR scarp forests for the summer breeding season. It is important to ensure uninterrupted breeding through appropriate management of the indigenous scarp forest. The degradation and alteration of the forest is the primary threat to this species.

Southern ground-hornbill (*Bucorvus leadbeateri*)

Vulnerable

Ground-hornbills require a large area (ca. 100km<sup>2</sup> per group) in which to forage and find suitable breeding trees. The NR has ensured that protection is afforded to this species by safe-guarding a core area of suitable habitat in a locality where habitat alteration due to development and human pressures are high.

African marsh-harrier (*Circus ranivorus*)

Vulnerable

The wetlands in the Reserve must be maintained to provide suitable foraging and breeding grounds for pairs of African Marsh Harrier.

Cape vulture (*Gyps coprotheres*)

Vulnerable

Vultures may be seen moving through the area, but there are no suitable cliff sites in MNR to support a breeding population. The reserve may provide a potential site for a 'Vulture Restaurant'.

Martial eagle (*Polemaetus bellicosus*)

Vulnerable

The Reserve contains suitable grassland for foraging of Martial eagle. However, the total area available for foraging is too small to support a breeding pair (require ca. 300 km<sup>2</sup>). Martial eagle are probably rare, if they still occur. Its persistence in this region depends on adjacent patterns of land use and transformation. The ability of the region to support a breeding pair will depend on future habitat loss and land transformation around the reserve.

Knysna warbler (*Bradypterus sylvaticus*)

Vulnerable

A South African endemic occurring along the littoral in southern KZN. This species favours low, dense, tangled growth usually along watercourses, including alien thickets of *Lantana* and bramble (*Rubus* spp).

Denham's bustard (*Neotis denhami*)

Vulnerable

This species favours the grassland biome, preferring high-lying open grassland and frequently on plateaux. Favours cultivated lands for foraging, but strictly natural grassland for breeding. Eggs are laid onto bare ground amongst tall grass tussocks from September – December, with chicks fledging approximately 2 months after hatching. Primary causes of species decline include habitat loss and human disturbance.

**Action Project 3.10 .4 (i):** Determine which of the listed bird species breed in the Nature Reserve and ensure that management protocols are set in place to maintain and conserve these breeding sites for the long – term persistence of the species.

**Action Project 3.10 .4 (ii):** Identify the major threats to Avifauna in MNR.

**Action Project 3.10.4 (iii):** Develop and implement an Avifauna Species Monitoring Programme.

### 3.10.5 Mammals

The EKZNW Biodiversity Database for MNR confirms the presence of twenty-nine mammal species. Red Data listed species include:

Tree hyrax (*Dendrohyrax arboreus arboreus*)

Vulnerable

This species is suggested as occurring in the Reserve. Hyrax require well-developed woodland, forest or thickets along the coastal regions of KZN. They are selective browsers, feeding on a range of tree species. The primary threat to this species is the destruction of their tree food species.

**Action Project 3.10.5 (i):** Identify the major threats to Mammals in MNR.

**Action Project 3.10.5 (ii):** Develop and implement a Mammals Species Monitoring Programme.

### 3.11 Cultural Heritage

MNR's cultural resources include:

- Gravesites and two buildings that are older than 60 years.

- A number of old homesteads and graves are found in the MNR;
- The history of the KwaXolo and Mavundla Traditional Authorities, the Elim Mission community and the settler community.

Bona Fida researchers are allowed to view sites with the provision of obtaining permits from Ezemvelo KZN Wildlife and AMAFA.

**Action Project 3.11 (i):** Map the GPS Co-ordinates and provide Management Plans for these sites.

**Action Project 3.11 (ii):** Identify the archaeological, historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with requirements of heritage legislation.

### 3.12 Socio-Cultural History

The Portuguese ship wreck survivors inhabited this area.

**Action Project 3.12 (i):** Update research on the archaeology and socio cultural history of the MNR.

**Action Project 3.12 (ii):** Make use of archaeology and evidence of the past cultures that inhabited the area in describing the cultural heritage value of MNR.

### 3.13 Sociological Context

The reserve is surrounded by rural communities and private commercial agriculture (crops).

**Action Project 3.13 (i):** Update the Sociological context and its importance to MNR.

### 3.14 Economic Context

Recreational activities that may be offered by MNR in the future are as follows:

- The opening of the nature reserve to the public and the promotion of eco-cultural tourism in areas bordering the nature reserve has been identified as a priority by local communities, although there are no facilities at present.
- Zoning the nature reserve allows for the development of recreational opportunities and the conservation of biodiversity. The existing road network is potentially a valuable ecotourism asset for self guided game drives.

Facilities and services that are currently offered by MNR include:

- Employment opportunities to the local community for the eradication of alien plants; and

Ecosystem services that are provided by MNR, but not restricted to, include:

- Potable drinking water to the surrounding communities
- Recreational experiences (ecotourism)
- Meets people's sense of cultural, spiritual and intellectual needs
- Nutrient cycling
- Water filtration
- Regulation of ground water and river channel flow
- Climate regulation
- Seed dispersal
- Maintenance of soil health
- Prevention of soil erosion

- Carbon sequestration

**Action Project 3.14 (i):** Update the economic context and its importance for MNR.

### 3.15 Developed Infrastructure

It is imperative that the necessary appropriate standard of infrastructure be developed and maintained as soon as possible to support the effective management of MNR and promote eco-cultural tourism to the reserve. Concept future development will be detailed in the MNR Concept Development Plan. [See **Action Project 6.11.3 (ii)**]

**Action Project 3.15 (i):** Identify and map infrastructure using GIS and include in a spatial database. Develop standard protocols and procedures for infrastructure in MNR.

**Action Project 3.15 (ii):** Repair, where necessary, the standard and state of the existing infrastructure provided in the MNR.

#### 3.15.1 Eco-Cultural Tourism Infrastructure

MNR currently has no eco-tourism facilities in place although it is EKZNW Management's intention is to provide day activities for visitors. MNR is currently not open to the general public.

**Action Project 3.15.1 (i):** Investigate future opportunities for eco-cultural tourism infrastructure for MNR.

#### 3.15.2 Management Infrastructure

The following management buildings are present in MNR

- Main office block
- Manager's office
- Three staff accommodation units with ablution facilities
- Navigation station (not used by the Nature Reserve)

#### 3.15.3 Bulk Infrastructure:

Bulk infrastructure consists of:

- 16 km of management tracks. There are currently no roads for public use.
- There is one septic tank
- Water from the dam is pumped to tanks where it is purified and distributed to the management infrastructure via gravity
- Electricity is provided by Eskom
- There is one Telkom line
- There are no helipads

#### 3.15.4 Conservation Infrastructure

Consists of:

- There are no hiking trails, viewing sites or picnic sites presently in the MNR.
- The perimeter boundary fences total length is approximately 22 km. The existing boundary fence is generally 1.8 m high with three strand electric fence on the inside.
- There are no internal fences in MNR.

### 3.15.5 Water Supply Infrastructure

Borehole water is pumped to tanks where it is purified and distributed via gravity. All water supply infrastructure will be appropriately screened to reduce its potentially detrimental aesthetic impact on the landscape. For management purposes it is essential that all water supply infrastructure be indicated on the reserve map.

<b>Action Project 3.14.5 (i):</b> Update MNR Map to include the location of all water supply infrastructure.
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### 3.15.6 Infrastructure Maintained By Other Organisations

Electricity is provided to MNR by Eskom and there is one Telkom telephone line. The SAPS provides the tower for the repeater which is located outside the Nature Reserve. EKZNW maintains the repeater and the SAPS are responsible for the maintenance of the tower.

<b>Action Project 3.15.6 (i):</b> Compile MoA between different service providers and MNR. Manager needs to ensure that he is familiar with all agreements.
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## 4 MISSION STATEMENT, MANAGEMENT OBJECTIVES and CONSERVATION TARGETS

### 4.1 Introduction

Ezemvelo KwaZulu-Natal Wildlife has a legislative mandate which rests the custodianship of biodiversity conservation within the organisation. In alignment with this mandate, EKZNW has adopted a Five Year Strategic Plan and Performance Plan for 2009-2014 which has identified the following corporate Vision, Mission, Goals and Core Values (see Text Box below):

<b>EKZN WILDLIFE STRATEGIC VISION, MISSION, GOALS AND CORE VALUES</b>	
<b>VISION</b>	
<b><i>“To be a world renowned leader in the field of biodiversity conservation”</i></b>	
<b>MISSION STATEMENT</b>	
<b><i>“To ensure effective conservation and sustainable use of KwaZulu Natal’s biodiversity in collaboration with stakeholders for the benefit of present and future generations.”</i></b>	
<b>STRATEGIC GOALS</b>	
<ol style="list-style-type: none"><li>1. To conserve indigenous biodiversity in KwaZulu-Natal both within and outside of protected areas.</li><li>2. To be a sustainable, well resourced and capacitated biodiversity conservation and ecotourism organisation.</li><li>3. To foster the value of biodiversity conservation with stakeholders.</li><li>4. To be an efficient, effective and compliant organisation with good governance.</li><li>5. To effectively promote the mandate of the organisation to stakeholders.</li></ol>	
<b>CORE VALUES</b>	
<b>Integrity</b>	– at all times we act morally, ethically and with honesty.
<b>Respect</b>	– we treat stakeholders with patience, politeness and acknowledge and value their right and those of the environment.
<b>Accountability</b>	– we involve stakeholders in the organisation’s activities with a culture of openness and are answerable for the outcome of our actions and activities.
<b>Team Work</b>	– working together to achieve our vision through goals.
<b>Innovation</b>	– an adaptable organisation that embraces the culture of creativity and learning.
<b>Excellence</b>	– we are a progressive organisation applying best practices to achieve the highest quality and standards.
<b>Commitment</b>	– at all times we undertake our activities with passion, loyalty and dedication.
<b>Productivity</b>	– we undertake to produce results timeously, efficiently and effectively.

Cognisant of EKZNW’s legislative mandate as well its corporate Vision, Mission, Goals and Core Values, this MNR Integrated Management Plan (IMP) has been developed in consultation with stakeholders.

## 4.2 Stakeholder Participation

The public participation process followed in developing this IMP included public meetings with stakeholders and management staff, resulting in the development of the draft IMP. The draft IMP was then reformatted into a standardised EKZNW IMP format and advertised and distributed for further public comment. The document was then finalised while undertaking further consultation.

The details of the public participation process for this IMP's development is contained in the Public Participation Report (see Appendix I, Item 7)..

<b>Action Project 4.2 (i):</b> Implementation of EKZNW IEM Policy. Create awareness of or inform surrounding landowners on the IEM process and legislation through fora.
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<b>Action Project 4.2 (ii):</b> Participate as a key stakeholder in EIA applications for developments near the Nature Reserve that may impact on the protected area.
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<b>Action Project 4.2 (iii):</b> Participate in existing neighbour liaison fora.
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## 4.3 Vision

“ *A co-managed Nature Reserve that is rich in ecological diversity, provides educational opportunities and is an important tourism destination, with tourism providing economic benefits to neighbouring communities.*”

## 4.4 Mission

EKZNW and the MNR Management envisage the conservation of the MNR through sustainability being attained between resource utilisation, host community beneficiation, and industry participation, based on clear and acceptable public policy.

As such, the management institution accepts its mission as being:

“ *To sustainably manage and conserve the natural and cultural resources of the MNR, based on sound environmental principles. Emphasis will be placed on co-management (joint decision making) and the creation of opportunities (in nature conservation management and ecotourism) for the local community.*”

#### 4.5 Management Objectives

Management Objectives for MNR were not set according to ranking:

- Conserve rare and endemic ecosystems and species
- Conserve the Mbumbazi Nature Reserve, its associated biodiversity and maintain its developed infrastructure
- Contribute to sub-regional eco-tourism initiatives
- Contribute to the achievement of national and provincial conservation targets
- Facilitate controlled access to cultural heritage sites
- Facilitate environmental and cultural activities, education and awareness, including access to historical information related to the history of the reserve and the surrounding area
- Identify and control threats to biodiversity
- Minimise threats to the sense of place (retain the aesthetic value of the area)
- Participate as a key stakeholder in local environmental management initiatives
- Play a key role in local eco-tourism initiatives
- Play a notable role in local, regional, national and international conservation initiatives
- Promote and encourage community involvement in biodiversity conservation
- Promote and ensure effective communication between the local communities and EKZNW through integrated, shared and co-operative working relationships
- Promote conservation as a viable and sustainable land use option
- Promote supervised access to the reserve and its resources, both natural and cultural, and promote responsible use of the facilities by the public
- Provide appropriate recreational opportunities
- Safeguard the archaeological, historical, palaeontological and living cultural heritage of the Reserve
- **Conservation** of key biodiversity features, biophysical processes, landscapes, abiotic, historical and archaeological resources
- The provision of **socio-economic benefits** (benefit flow) to the Reserve's neighbours and to contribute to the local economy and the efforts of conservation in a sustainable manner based on sound business principles (EKZN Business Plan)
- The provision of appropriate ecotourism **business** opportunities in the natural and cultural environment based within the influence sphere of MNR
- The formation of functional **partnerships** to integrate the MNR with regional development plans and other initiatives which underwrite the vision of MNR.

#### 4.6 Conservation Targets

In order to assist in developing a conservation management strategy more effectively linked to budget and resources, it is necessary to have specific conservation objectives (or 'targets' in conservation planning terms) in place. Monitoring of status relative to these targets will then allow for measurement of success of management interventions (and consequent budget and resource adjustments where required), and to trigger management interventions when certain thresholds are reached. This removes the 'monitoring to extinction' problem that has arisen in many organisations.

Apart from the need to monitor the success of implementation of the strategy in terms of achievement of conservation targets, a basic requirement for a systematic approach to conservation planning, impact assessment and protected area management effectiveness assessment is the identification of a clear set of provincial goals for the province, which for operational use needs to be translated into a more specific set of quantitative 'targets' (Margules & Pressey 2000). A key (but faulty) assumption often made with provincial Systematic Conservation Plans in terms of conservation priorities outside the protected area network is that protected areas continue to conserve key species and habitats at the same levels at which they occurred when the plan was developed. Where protected areas have failed to do so, it will result in an underestimate of conservation requirements outside protected areas and hence the real possibility of provincial conservation objectives and targets not being achieved. It is therefore essential to design and implement management and monitoring strategies to ensure that MNR continues to conserve those species and habitats which are important at a provincial level.

Conservation targets for biodiversity are not easily set, and indeed, conservation managers, scientists, decision makers and politicians have been reluctant to formalise and agree to targets. In reality our understanding of 'how much is enough', in what spatial configuration this will be, what the most critical processes are for the maintenance of biodiversity and how one will conserve these is poor, and the debate and research around this topic will continue for some time to come. This information will be continuously updated over time as our knowledge of area, connectivity and other process requirements improves for the conservation of ecosystems, communities and species. However, management has to take place despite these deficiencies so it is necessary to make best use of available information, stating the assumptions and limitations, and to see conservation targets as a set of working hypotheses around which conservation planning and evaluation will take place. Another advantage of developing strategies around targets is that this process serves to highlight the critical knowledge deficits thus guiding future research and monitoring priorities.

Specific conservation targets for the MNR are required to develop a strategy linked to budget and resources, to allow for monitoring and evaluation, as well as policy improvement.

### Conservation targets for MNR

Specific conservation targets for MNR are required to develop a strategy linked to budget and resources, to allow for monitoring and evaluation, as well as policy improvement. See Table 1:

**Table 1: Biodiversity Targets**

Element of Concern	Key Attribute (Threats)	Indicator	Current Status	Target
<b>Conserve the endangered and critically endangered Veld types in MNR.</b>				
The Pondoland-Ugu Sandstone Coastal Sourveld is critically endangered.	<ul style="list-style-type: none"> <li>The provincial target is 30%, however only 17.1% is untransformed.</li> <li>Only 32.5% of this vegetation type remains within protected areas.</li> <li>Decline of veldtype.</li> </ul>	<ul style="list-style-type: none"> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>No recruitment.</li> <li>Illegal harvesting of plants.</li> </ul>	• MNR contributes 2.5% to the provincial remains.	TBD
Southcoast Grassland is critically endangered.	<ul style="list-style-type: none"> <li>The provincial target is 25%, however only 6.2% is untransformed.</li> <li>Only 22.0% of this vegetation type remains within protected areas.</li> <li>Decline of veld type</li> </ul>	<ul style="list-style-type: none"> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>Arson Fires.</li> <li>No recruitment.</li> </ul>	• MNR contributes 11.4% to the provincial remains.	TBD
<b>To conserve rare ecosystems and species.</b>				
<i>Zoothera guttata</i> (Endangered bird).	• There is a loss of individuals.	• Loss of suitable habitat.	• MNR needs to conserve this species in good condition	TBD

**Action Project 4.6 (i):** Set conservation targets and monitoring strategies for the identified species.

**Action Project 4.6 (ii):** Develop conservation targets and monitoring strategies for Cultural, Business and Partnerships Objectives.

## 5. ZONATION

The Recreational Opportunity Spectrum (ROS) has been used for zoning of the Park. This system was developed by the United States Forest Service and is used to zone protected areas in KZN by EKZNW

The ROS system enables the protected area to be zoned, in context, according to seven categories. These categories are spread along a continuum, from Wilderness to rural recreational development namely: Pristine Wilderness, Primitive Wilderness, Semi-Primitive Wilderness, Semi-primitive Non-Motorised, Semi-Primitive Motorised, Roaded Natural and Rural.

Each category within the ROS is defined in terms of activity, setting and experience opportunities. The ROS zonation system recognises and reflects:

- the sensitive features associated with the protected area (*i.e.* biophysical, cultural and sense of place)
- the range of existing and potential visitor experiences in and surrounding the protected area.
- the influence of existing development and use on these features and experiences
- the opportunities and constraints (biophysical, social or managerial constraints) for use
- the existing / potential threats to the protected area either within or adjacent to the protected area.
- the opportunities for extending the protected area and linking with surrounding reserves, conservancies and open spaces

As a result, the final management zonation is a composite of ecological zonation (based on natural and cultural resource sensitivity), sense of place, cultural features, patterns of environmental settings, and existing development and use patterns. The final zonation map is represented as a desired state, *i.e.* directing management towards a vision for each zone, which reflects and respects the broader conservation and ecotourism objectives for the reserve.

A zonation table detailing the boundaries and rationale for each zone, as well as the zone's natural and cultural features supports the zonation map. Biophysical features that are readily located on the ground have been used to demarcate and delineate the zone boundaries. The zones are indicated spatially on Zonation Map 3. The zones are recognised in MNR, these are given in Appendix 3.

(Source: ROS User Guide, United States Forest Service, as in the Advanced Wilderness Course Manual)

**Action Project 5 (i):** Revise the existing MNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved.

## 6. OPERATIONAL MANAGEMENT POLICY FRAMEWORK AND GUIDING PRINCIPLES

The following predominant existing or potential threats to the Nature Reserve have been identified:

- Inadequate financial and human resources.
- Illegal activities in and around the Nature Reserve such as poaching and arson fires.
- Alien species invasion.
- Soil erosion.
- Adjacent communities that are not supportive of the Park as with the illegal cutting of fences and land claims against the Nature Reserve.

***The MNR operational policy framework, guidelines and strategies have been developed to support the achievement of the stated Nature Reserve management objectives and where possible to address the existing or potential threats as listed above.***

### 6.1 Financial and Human Resources

#### 6.1.1 Financial Resources

Capital and operational funding for MNR is sourced primarily from the KwaZulu-Natal Provincial Government. Funding is furthermore generated from commercial operations within the Park and various external sources.

Levels of funding have remained stable, however, over time the management of the Nature Reserve cannot be sustained at required levels and capital assets, including infrastructure, are not being effectively maintained.

It is necessary therefore to develop a realistic five-year Strategic Management and Business Plans in an attempt to secure funding to effectively support the achievement of the mission and management objectives for the Nature Reserve.

The development of A MNR Business Plan is a priority and will indicate past income and expenditure trends, a five year projection of income and expenditure targets that will allow for effectively achieving the MNR management objectives. In addition, planning will be put in place to address any budget shortfalls after the annual grants from the KwaZulu-Natal Provincial Government have been accounted for.

The total self-sufficiency of commercial operations within the Nature Reserve is a minimum requirement, while it will be expected that commercial operations will respect the natural and cultural heritage values of MNR and that any operational profit will be used to subsidize the Nature Reserve's conservation and community programmes.

The value of ecosystem services that MNR provides as well as the direct and indirect economic value of the Nature Reserve to the local and regional economy will be determined in order to market the Nature Reserve, ensure continued government funding and where appropriate, leverage additional funding from other sources.

<b>Action Project 6.1.1 (i):</b> Develop a five-year Strategic Management Plan and Business Plan for MNR.
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<b>Action Project 6.1.1 (ii):</b> Initiate a resource economics study of the Nature Reserve to determine its economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.
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### 6.1.2 Human Resource Capacity

The existing human resource structure and capacity is insufficient to fully meet MNR Management Objectives. The following objectives in particular are emphasised as the future objectives:

- Safe and secure environment for staff and visitors.
- Efficient and profitable tourism management
- Effective conservation and sustainable use of the biodiversity and landscape.
- Stakeholder liaison.
- Environmental education and awareness programmes.

In order to effectively address the full spectrum of MNR management functions it is imperative that the human resource needs are fully investigated with a view to developing a new and effective human resource structure for MNR.

To improve accountability, efficiency, co-ordination and reporting significantly, an option would be to consider a staff structure situated under a single Nature Reserve Manager. This investigation needs to be undertaken urgently in order to inform the MNR Business Plan.

**Action Project 6.1.2 (i):** Investigate and develop an appropriate human resource structure and capacity of MNR with a view to improving effectiveness and efficiency in achieving MNR objectives and informing the Business Plan.

#### 6.1.2.1 MNR Employment Policy Guidelines

MNR Management Committee will always be informed in advance of impending recruitment of staff.

- Appointments will be made in accordance with the:
  - relevant employment legislation;
  - employment policy framework of EKZNW;
  - required experience, skills, proven ability and qualifications of applicants.
- Entry-level or temporary appointments requiring no specific skills will be employed from neighbouring communities after consultation with the MNR Management Committee and local leaders.

### 6.2 Local Community Involvement

EKZNW will strive to work collaboratively with institutions and adjacent landowners / communities to improve communication as well as conservation management in and around the Nature Reserve for the benefit of all. Neighbour relations and partnerships are guided by EKZNW Board Policies No. 4.8 and 4.11 (**Appendix 2**).

EKZNW encourages community involvement in the management of the Nature Reserve through collaboration with adjoining communities in the following programmes and projects.

**Action Project 6.2 (i):** EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of MNR for the benefit of all.

### 6.2.1 Local Board

Community participation in the Nature Reserve is realised, mainly, through a Local Board which is established in terms of Chapter 5 of the KZNNCMA. The EKZNW Board Policy No.4.9 (**Appendix 2**) provides an operational relationship framework between the Nature Reserve and its Local Board to ensure effective community participation in the management of the Nature Reserve. This Local Board must still be established.

**Action Project 6.2.1 (i):** Establish a Local Board for MNR.

### 6.2.2 Community Levy Trust Fund

Communities adjacent to the MNR benefit from income generated by the Nature Reserve through a community levy paid by visitors. These funds are administered through the Community Trust Fund and provided to communities for development needs as prescribed by EKZNW Board Policies No. 4.16 and No. 4.6 (**Appendix 2**).

**Action Project 6.2.2 (i):** The Community Levy will continue to be collected for the development and upliftment of the local communities.

### 6.2.3 External Funding Projects

MNR procures external funding for specific Nature Reserve related projects; priority is given to training members of the community and the creation of community small, micro and medium enterprise (SMME) business and employment opportunities.

**Action Project 6.2.3 (i):** Training of members of the local community will continue to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities.

### 6.2.4 Land Claims

Some areas in MNR are subject to land claims by communities that allege they were historically dispossessed of their land and rights in land due to racially discriminatory laws and practices. It is anticipated that, upon resolution of the land claims by the Regional Land Claims Commission, ownership of land could revert back to these communities. Change of land use in conservation areas is however not an option, but co-management of areas owned by communities is a realistic possibility. EKZNW Board Policy No. 4.1 (**Appendix 2**) outlines the organization's approach in this regard. Once these land claims have been resolved according to the legal prescripts of SA, this IMP will be amended to take into account any new resolutions and co-management agreements that need to be addressed by management. The land claim against MNR has been gazetted and is being processed. **[See Action Project 2.1.2 (i)].**

### 6.2.5 Environmental Education

It is EKZNW policy to provide environmental education programmes for communities adjoining MNR. These programmes will be conducted in accordance with **Board Policy No. D 2.34**. Access to the material and spiritual benefits of the Nature Reserve is facilitated in accordance with Neighbour Relations **Board Policy D 4.1** (See **Appendix 2**). Environmental education programmes are addressed further under **Par. 6.8**.

**Action Project 6.2.5 (i):** Investigate and implement additional environmental education programmes for communities surrounding MNR.

### 6.2.6 Transfrontier Partnerships

MNR has no Transfrontier Partnerships.

### 6.2.7 Informal Participation

Local community involvement will not only occur through formal structures like the MNR Local Board but also through an annual public meeting where informal community participation will be encouraged.

**Action Project 6.2.7 (i):** Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.

Informal communication between the general public / stakeholders and reserve management will be encouraged at all times within practical limits (Open door policy).

## 6.3 Security and Safety

EKZNW recognises that illegal activities within and around MNR will be a severe threat to the integrity of its natural and cultural heritage, its water storage and supply infrastructure, as well as the safety of MNR users, neighbouring communities and the attainment of its stated Mission and Management Objectives.

Nature Reserve management will therefore initiate and institutionalise a security strategy that ensures co-ordinated participation in all possible local, regional or security forums and networks while optimising security in and around MNR. This strategy will ensure sufficient capacity to deal with conservation-related illegal activities in MNR (See also **Par. 6.4.7**) and contribute to a network of provincial, national and international law enforcement intelligence.

**Action Project 6.3 (i):** Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.

**Action Project 6.3 (ii):** Facilitate access to educational information pertaining to the history of the Nature Reserve and surrounding areas.

## 6.4 Natural Resource Management

### 6.4.1 Introduction

The management philosophy is one of adaptive management. This includes implementing management actions according to the stated objectives, policies and operational plans, monitoring progress and adapting the management strategy accordingly. This is done using a participatory, team approach and making use of the best scientific understanding in collaboration with partners and stakeholders. The principle of sustainable use of natural resources is implicit in the philosophy.

Management aims to conserve biodiversity through addressing threats and ensuring the maintenance and/or re-instatement of ecological processes that are considered the main determinants of ecosystem structure and function. Where these processes or regulatory mechanisms have been disrupted and cannot be re-instated, management will attempt to simulate their effects. Management intervention in the system will be minimised. In particular, the function of sustained water delivery of water quality is paramount.

Fire is a key ecological process influencing biodiversity in MNR. Given the above, the objective is to actively manage for a shifting mosaic of vegetation patches with high basal cover but different ages and sizes - thereby creating a diversity of habitats that will ensure the conservation of the biodiversity representative of the area. This approach will also provide the best insurance policy for the majority of organisms for which habitat requirements and response to fire are unknown. The mosaic is achieved through controlling the spread of fire in the landscape and the conditions under which fires are ignited.

The other key interventions required to conserve biodiversity are the control of invasive species and man-induced soil erosion, as well as wildlife management and minimising illegal activities (e.g. illegal hunting and plant collecting).

#### 6.4.2 Fire Management

Nature Reserve Management shall convene and chair a **Fire Workshop** in February each year. This workshop shall include Conservation Partnerships and Ecological Advice staff, and invited experts where appropriate.

At this Fire Workshop the burns of the previous fire season (planned and unplanned) will be reviewed and, based on the Nature Reserve **Fire Management Plan**, management units will be scheduled for burns in the upcoming fire season and recorded as the **Annual Burning Plan** for implementation. In preparation for the Fire Workshop all fire returns will be with Ecological Advice by 30 November each year to allow for digital capture and analysis of the data.

The **Fire Management Plan** is to be based on the MNR management objectives and guided by 'best practice' linked to scientific understanding, legal context and risk management.

**Action Project 6.4.2 (i):** Develop a MNR **Fire Management Plan** that provides comprehensive fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.

**Action Project 6.4.2 (ii):** Develop a computerized decision support tool linked to GIS that will be included in the Fire Management Plan, to assist in the planning of burns at the annual Fire Workshop. This rule-based tool will ensure that MNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.

MNR is obligated in terms of the National Veld and Forest Fire Act to be a member of the local Fire Protection Association (FPA). In this regard Park Management will actively champion the establishment and maintenance of FPA's on and bordering MNR in order to gain the full legal advantages of being a member of the FPA and to promote, where possible, fire management regimes surrounding MNR that would benefit the conservation of biodiversity and ecological processes.

**Action Project 6.4.2 (iii):** Promote and champion (in cooperation with DWAF and the "Working on Fire" programme) the establishment of FPAs on the borders of MNR.

**Action Project 6.4.2 (iv):** Arrange a MNR Fire Management Workshop in February of each year.

#### 6.4.3 Alien Species Control and Management

The requirements of NEMBA (Sections 76 and 77) in terms of **invasive species** and the relevant legal obligations of protected area management authorities will be noted. The following is the MNR strategy to deal with alien and alien invasive species in the Nature Reserve.

**Action Project 6.4.3 (i):** Compile and implement an Alien Species Management Plan. Identify and itemise indicator species and determine their current species densities in the Nature Reserve.

##### 6.4.3.1 Alien Plants

Alien plant species have been planted or have established themselves within MNR over time. Because they can, to varying degrees, impact negatively on water production, the natural

environment and biodiversity as well as the natural landscape character of the Nature Reserve, their control and management is considered a management priority.

Wherever possible and appropriate these plants will be removed from MNR.

The following management guidelines apply:

### ***Alien Plant Introductions***

Introductions of alien plants to MNR will not be tolerated except for non-invasive vegetables, garden plants, fruit trees, or herbs (for domestic consumption) planted within staff accommodation plots or non-invasive pot plants used indoors for decorative purposes, provided these plants in no way impact negatively on the ecological processes or disrupt normal animal behaviour patterns (e.g. fruit trees and baboons / monkeys).

Only plants indigenous to the MNR and surrounds will be used outdoors in landscaping projects within the demarcated development zones.

### ***Declared Alien Weeds and Invasive Plants***

Alien plants declared **weeds and invader plants** under section 29 of CARA (Act No. 43 1983) are a serious threat to the ecological functioning of natural systems as well as groundwater storage and water production from catchments. They will be controlled in terms of the relevant CARA regulations. An ongoing time-bound programme to effectively control these alien weeds and invader plants within the MNR and up to 1km beyond (buffer area) the Nature Reserve boundary will be developed in collaboration with neighbours and the relevant municipalities.

State poverty relief programs such as 'Landcare', 'Working for Water', 'Working on Fire' and 'Working for Wetlands' will be used to full effect to complement the Nature Reserve budget for this management task.

MNR management will be accountable for all invasive alien plant clearing and therefore will strictly supervise control operations to ensure that the correct methodologies are used and to avoid environmental damage.

Alien species are regarded as species or genotypes that are not indigenous to the Nature Reserve, including hybrids and genetically altered organisms. Alien plants which have been declared weeds and invader plants (according to Section 29 of CARA) are a serious threat to the ecological functioning of natural systems.

The alien plant species of relevance within and immediately surrounding the Nature Reserve are the following:

- |                              |                   |
|------------------------------|-------------------|
| • <i>Ageratum conyzoides</i> | Invading ageratum |
| • <i>Chromolaena odorata</i> | Triffid weed      |
| • <i>Solanum mauritianum</i> | Bugweed           |

**Project 6.4.3.1 (i):** Undertake a full species survey for alien plant species present and map their distribution.

**Project 6.4.3.1 (ii):** Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within MNR and 1 km beyond (buffer area) the Nature Reserve boundary.

### ***Existing Non-invasive Alien Plants***

A phased 3-year plan to address the existence and spread of **non-invasive alien plants** (including grasses) that already exist within MNR will be developed. Where required, this plan will also address the re-planting of relevant areas with indigenous plants for horticultural purposes. If considered appropriate by the PAMC, certain non-invasive alien plants may be demarcated and retained for horticultural or cultural-historical purposes. They will, however, not be replaced should they die, unless recommended by the PAMC for cultural-historical reasons. All seedlings of demarcated alien plants will be removed annually.

**Project 6.4.3.1 (iii):** Develop a phased 3-year plan to address the existing non-invasive alien plants in MNR.

### **6.4.3.2 Alien Animals**

Because alien animal species will threaten the ecological, genetic or natural aesthetic integrity of the Nature Reserve and can be vectors for the spread of diseases, their control and management are considered a management priority. Wherever possible and appropriate these animals will be removed from the MNR.

The following management guidelines apply:

#### ***Alien Animals Present In MNR***

Alien animals that are present and are a threat / potential threat to the ecological processes / tourism experience in the Nature Reserve will be dealt with as necessary according to a control programme developed and approved by the PAMC.

EKZNW has allowed the surrounding local communities to graze cattle in the MNR.

A management strategy is needed to monitor and eliminate of alien fish species in MNR.

Mallard ducks, alien wild ungulates, 'domesticated' guinea fowl and feral species are all potential threats and could be found in the Nature Reserve sporadically. They will be destroyed as soon as possible after their presence is detected (humanely as practically possible and with due regard for the tourist experience).

**Action Project 6.4.3.2 (i):** Develop a control programme for alien animals present in MNR.

**Action Project 6.4.3.2 (ii):** Develop a management strategy that will minimize the negative impact of alien fish and promote the establishment of sustainable populations of fish species indigenous to MNR

#### ***Alien Animal Introductions***

Introductions of alien animals to MNR is not accepted except:

- as part of culture-based, community-based or management projects approved by the PAMC ; or
- for domestic animals and livestock (incl. donkeys and horses) kept for official purposes or privately by staff according to specific rules for each management centre / protected area, and
- in accordance with relevant EKZNW policies.

It is critically important that these exceptions do not negatively influence the integrity and sustainability of Nature Reserve's biodiversity and ecological processes.

A new, standardised and equitable MNR policy for keeping domestic animals and livestock is required and will also include procedures to deal in a consistent manner with alien animals that stray into MNR. This policy will, *inter alia* clearly address:

- Threats to biodiversity conservation as a priority.
- Reducing the numbers of such animals to an absolute minimum.
- Designating areas where these animals will be kept. They will not be allowed to roam or feed in the nature reserve (except for official patrol horses when on patrol) or interfere in any way with tourists.
- The proper and hygienic care of these animals.
- Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals e.g. stable, camps cages etc.

**Action Project 6.4.3.2 (iii):** Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the Nature Reserve that includes procedures for dealing in a consistent manner with alien animals that stray into the Park. This policy will, *inter alia* clearly address:

- Threats to biodiversity conservation as a priority.
- Reducing the numbers of such animals to an absolute minimum.
- Designating areas where these animals will be kept. They will not be allowed to roam or feed in the Park (except for official patrol horses when on patrol) or interfere in any way with tourists.
- The proper and hygienic care of these animals.
- Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals e.g. stables, camps, cages etc.
- Disciplinary measures for staff transgressing these regulations or failing to enforce these measures.

#### 6.4.4 Catchment / Groundwater / River Management

In order to ensure a sustained flow of good quality water from this natural catchment it is essential that throughout the catchment (both in and outside MNR):

- A good vegetative canopy and basal cover is maintained to maintain a sustained flow of water and reduce turbidity caused by accelerated soil loss.
- Strict pollution control and waste management standards be applied especially in the Nature Reserve;
- Invasive alien plants are removed and controlled; and
- Aquifer and surface water quality and quantity are monitored.

**Action Project 6.4.4 (i):** Obtain all standards for water quality from the Municipality, review monitoring results against these standards and take appropriate actions should any standard not be met.

#### 6.4.5 Soil Erosion Control

Gradual natural soil erosion processes will be allowed to continue unless this is a threat to the achievement of the Nature Reserve's management objectives. However, in the case of human-induced and / or aggravated erosion, appropriate remedial management action will be taken. Potential human impacts will be avoided through appropriate planning and maintenance of infrastructure especially trails/ pathways.

Human-induced soil erosion in MNR is primarily the result of overgrazing practices, the presence of invasive alien vegetation and roads of the Nature Reserve. Old quarry sites / borrow pits and areas that have been cleared of invasive alien vegetation need rehabilitation plans primarily to prevent soil erosion.

Extensive sites of potential or aggravated soil erosion will be mapped, and the rehabilitation prioritised annually.

Rehabilitation of soil erosion sites will follow the guidelines presented by Coetzee (2005) and the EKZNW Track and Trail Maintenance Manual.

**Action Project 6.4.5 (i):** Map all extensive or potential human-induced / aggravated soil erosion sites and annually monitor the condition of these sites in order to prioritise rehabilitation work.

#### 6.4.6 Wildlife Management

The primary objective of wildlife management at MNR will be to maintain, within the ecological carrying capacity of the Nature Reserve, viable indigenous wildlife populations that historically occurred in the area and are suited to the particular habitats offered by MNR.

Where possible, a minimal intervention management strategy will be followed in terms of indigenous wildlife management. Exceptions would be the specific strategies identified in terms of the National Norms and Standards for the management of specific species in accordance with NEMBA and / or this IMP and / or additional actions recommended by the PAMC. The latter interventions will only be considered for the following purposes:

- safeguarding populations of Rare and Endangered species;
- achieving MNR's Management Objectives and set Conservation Targets;
- complying with MNR's IMP Management Guidelines;
- the maintenance of populations of wildlife species to avoid the over-utilisation of the available natural resources;
- research and monitoring purposes;
- translocation to other state or private protected areas;

Wildlife that have been injured and are highly unlikely to survive is to be destroyed on the authority of the MNR Manager. The Reserve Manager will, however ensure that all relevant information is recorded and the relevant data / specimens / material provided is provide to the Ecological Advice component staff responsible for processing and recording such information. A copy of these records will be kept in the reserve office record system. The by-products such as meat and horns will be disposed of according to tariffs and procedures determined by EKZNW and in accordance with the relevant legislation.

**Action Project 6.4.6 (i):** Compile and implement a Wildlife Protection Management Plan.

**Action Project 6.4.6 (ii):** Compile and implement a Priority Species Management Plan and determine status of priority species.

##### 6.4.6.1 Introductions of Indigenous Animal Species into MNR

The introduction of indigenous animal species into the Nature Reserve will be considered in terms of **Corporate Policy D2.21** (See **Appendix 2**) and taking into account their natural distribution range, genetic compatibility, social behaviour characteristics, impacts on existing populations, habitat requirements, practical management and possible interaction with human communities adjacent to MNR.

The introduction of **any** animal species (individual or group) will be done in collaboration with the responsible Ecological Advice staff, with the approval of the PAMC. The introduction will be adequately documented. An animal species introduction policy for MNR is needed for the effective application of this policy guideline.

**Action Project 6.4.6.1 (i):** Develop a policy that addresses the introduction and population monitoring of animal species into the Nature Reserve.

#### 6.4.6.2 Game Population Management

Ongoing game population management will be aimed at maintaining a diversity of species without negatively affecting vegetative diversity and cover. The objective of this management is to control numbers as far as possible within the ecological carrying capacity of the Nature Reserve. Ungulate game species populations that are not strongly territorial will be subject to a population management programme as their population numbers have the potential to increase to unsustainable numbers within the confines of MNR. This could result in overgrazing and trampling of the vegetation and eventually accelerated soil erosion and biodiversity losses. To guide game population management, it is therefore necessary to develop a MNR Game Management Policy Guideline document that is reviewed and recommended by the MNR PAMC.

The MNR PAMC will annually in February determine and recommend game removal or augmentation in terms of the Game Management Policy Guideline

Game removal from MNR will only be undertaken by means of:

- Live Capture; or
- Culling Programmes

**Action Project 6.4.6.2 (i):** Develop a MNR Game Introduction and Monitoring Programme with Guidelines in terms of the EKZNW Wildlife Introduction Policy [Action Project: 6.4.6.1 (i)] and implement.

#### 6.4.6.3 Fishery Management

There is no fishery monitoring conducted at MNR.

**Action Project 6.4.6.3 (i):** Develop and implement a fishery Management Plan for MNR.

#### 6.4.6.4 Bird Management

There is no bird monitoring conducted at MNR.

**Action Project 6.4.6.4 (i):** Develop and implement a Bird Management Plan for MNR.

#### 6.4.6.5 Problem Animal Management (Damage Causing Animals)

Animals that become a danger or excessive nuisance to persons and property due to either habituation or aberrant behaviour are to be destroyed humanely or captured and removed from MNR. This also applies to animals that escape or leave and return periodically and cause damage outside MNR.

To minimize the need to control problem animals, pro-active and preventative measures (e.g. fencing) would be considered as a priority, while affected public, visitors or neighbours need to be informed appropriately regarding the relevant animal behaviour and / or dangers. Where the only solution to the problem lies in destroying or capturing animals, the methods decided upon will be with due regard to avoiding possible public criticism.

All human / wildlife conflict matters relating to problem animal management (damage causing animals) will be dealt with in terms of the **NEMBA Norms and Standards for Management of Human and Wildlife Conflict in SA**. This is applicable to animals within and outside of the Nature Reserve.

**Action Project 6.4.6.5 (i):** The MNR Conservation Manager will ensure that all complaints and incidents reported are investigated by the relevant staff and/or District Conservation Officer (DCO) as soon as possible. Complaint details, investigation findings and remedial action taken is to be recorded in the prescribed Damage Causing Animals Complaints Register kept on station. Investigations and incident reporting is to be carried out in accordance with **EKZNW's DCO Control Protocol and Guidelines**.

#### 6.4.7 Control Over Illegal Use of Natural Resources

Illegal utilisation of MNR's natural resources is not quantified and is to be considered a threat that has the potential to increase significantly if not adequately controlled.

Ongoing vigilance through cost-effective surveillance, monitoring programmes and reaction capabilities is to be undertaken. Direct illegal use of natural resources will be dealt with by MNR management while high risk criminal activities will be monitored and communicated to the relevant security forces as part of a broader co-operative security strategy [See **Action Project 6.3(i)**].

A staff component of two field rangers, primarily tasked with law enforcement, has been appointed, is operative maintained. Should illegal activities increase then it will be necessary for the staff component to be increased accordingly.

To assist in maintaining the Nature Reserve ecological integrity and safeguarding staff and visitors, it is essential that the effectiveness of the field ranger component and their deployment is regularly and critically assessed. A well maintained statistical incident register will be an effective tool for such assessments (See also **Monitoring and Evaluation under Par. 6.9.1**).

**Action Project 6.4.7 (i):** Assessment of the field ranger component will be done monthly.

To resolve illegal resources by neighbouring communities understanding and awareness through pro-active education amongst these communities is to be undertaken (See **Local Community Involvement: Environmental Education under Par. 6.2.5**).

**Action Project 6.4.7 (ii):** Management will prosecute those people that illegally utilise natural resources for commercial or other purposes in accordance with the legislation.

#### 6.5 Cultural Resource Management

Management of the cultural heritage is guided by the National Heritage Resources Act and as well as the Amafa / EKZNW Co-operative Conservation Management of Cultural Heritage Agreement (signed July 2005) and aims to promote the conservation and public appreciation of the cultural heritage found in MNR. (See **Appendix 2, Policy B7**). The policy also provides guidelines in terms of monuments and memorials.

There is a critical need to develop a comprehensive cultural heritage management plan for MNR that would meet national requirements. This plan will cover archaeological, historical sites as well as palaeontological features and living heritage sites.

The cultural heritage of the MNR is non-renewable and importantly may shed further light on the socio-cultural history of the area. These resources are fragile and therefore the Cultural Heritage Management Plan will, in addition, address institutional specialist capacity to guide cultural heritage management on MNR.

**Action Project 6.5 (i):** Develop a comprehensive Cultural Heritage Inventory and Management Plan for MNR in collaboration with SAHRA and Amafa. Institutional capacity will also be addressed by this plan.

**Action Project 6.5 (ii):** Identify the archaeological, Historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with the requirements of Amafa.

## 6.6 Resource Utilisation

Requests for extractive use of plant, animal and abiotic resources will be considered provided that such resource use is sustainable, controlled and the natural or cultural heritage conservation management objectives of MNR are not compromised. Resource use will not be allowed to degrade the aesthetic landscape character of MNR or be permitted if management staff lack adequate capacity to ensure effective control over the resource utilisation or by compromising its essential functions.

**Action Project 6.6 (i):** Control or 'bench mark' areas within MNR will be identified where no extractive resource utilisation of indigenous species will take place.

### 6.6.1 Plants and Animals

Extractive resource use will be undertaken in accordance with **EKZNW Board Policy Nos. D2.15 and D3.12 to D3.19.**

The PAMC are to evaluate applications with due consideration of:

- any applicable land restitution or other agreements,
- the precautionary principle
- ecological and social acceptability,
- impact on the aesthetic character of the landscape,
- impact on eco-cultural tourism,
- sustainable and wise use of the resource,
- benefit to neighbouring communities,
- equitable access to the resource,
- any benefit transaction that is acceptable within the PFMA framework,
- harvesting operations that are effectively controlled and monitored,
- a written agreement stipulating resource price and /or conditions of harvest, and
- viable alternatives.

**Action Project 6.6.1 (i):** Evaluate Resource Use in MNR in terms of EKZNW policies for the Evaluation of Extractive Resource Use. If possible, sustainable and feasible in terms of this guideline, develop a resource use management plan and implement.

### 6.6.2 Bioprospecting

Requests to collect biological material / samples from MNR will be considered by the PAMC in accordance with, amongst others, **EKZNW Board Policy D2.15 (Appendix 2)** from *bone fide* South African research institutions until national (NEMBA) and provincial legislation governing bioprospecting is in place.

Bioprospecting activities within the Nature Reserve will be closely monitored and regulated in terms of present environmental legislation.

### 6.6.3 Abiotic Resources

The extraction of abiotic resources from the protected area will not be permitted unless it has direct bearing on achievement of the MNR management objectives and any application for extraction by an external body will be referred to the EKZNW Board.

## 6.7 Eco-Cultural Tourism and Marketing

Eco-cultural tourism and marketing will be considered within the framework of, amongst others, **Board Policy E1 to E19** with regard to Commercial Operations.

EKZNW has the mandate to sustainably develop the MNR within the framework of its approved IMP and Concept Development Plan CDP. This will be undertaken to fully realise its eco-cultural tourism and associated income-generating potential, while respecting and giving access to the Nature Reserve's natural and cultural heritage features.

To fulfil this mandate, and in accordance with NEMPAA, EKZNW will initiate the compilation of a CDP. It will address future new development as well as the upgrading and maintenance of all existing infrastructure including tourist facilities (See **Par. 6.10**).

The CDP will be guided by the framework of the MNR Mission, Management Objectives, Zonation and Management Policy Guidelines as adopted and approved for this IMP. The approach adopted in the compilation of the CDP will involve an objective and integrated assessment of the Nature Reserve in terms of its natural and cultural heritage sensitivities, management and bulk infrastructure, its particular sense of place and its visitor infrastructure and facilities

EKZNW will strive to provide a quality eco-cultural tourism experience for visitors to the MNR. A range of appropriate facilities and services will be provided for the use of visitors to MNR. While some of these will serve recreational and social needs, emphasis will be placed on facilities and services that enrich the visitor's understanding and appreciation of the Nature Reserve.

In order for MNR to realise its full income-generating potential:

- The quality and standard of facilities will be maintained at a high level.
- Professional standard tourism service delivery will be provided.
- Its tourism opportunities will be competitively and effectively marketed.
- Cultural heritage tourism will require emphasis.
- A partnership strategy, that takes full advantage of appropriate opportunities for outsourcing (joint venture or otherwise) needs to be put in place while linkages will be sought with other regional tourism initiatives.
- A visitor orientation and interpretation strategy will be developed and implemented.

The above policies and values will be supported by a MNR Eco-cultural Tourism Development and Marketing Strategy that will be compiled and approved.

**Action Project 6.7 (i):** Cognisant of the MNR IMP and CDP policy guidelines, develop a MNR Eco-cultural Tourism Development and Marketing Strategy that addresses:

- the attainment of professional tourism service delivery standards
- branding and marketing
- linkages with other regional tourist initiatives
- public / private partnerships
- cultural heritage tourism
- visitor awareness, orientation and interpretation

**Action Project 6.7 (ii):** Develop and communicate formal procedures for local tourism user groups.

**Action Project 6.7 (iii):** Develop and implement Visitor Management Plan. Undertake analysis of available recreational facilities and identify opportunities to improve them.

**Action Project 6.7 (iv):** Align marketing strategy with EKZNW organisational plan.

## 6.8 Environmental Interpretation, Awareness and Education

Environmental interpretation, awareness and education of MNR's natural and cultural resources will be aimed at creating an awareness, understanding and appreciation of the value of these resources among the general public and visitors to the Nature Reserve.

**Action Project 6.8 (i):** compile educational material on environmental and cultural aspects of the Nature Reserve.

An environmental awareness and education programme will be developed to pro-actively engage, inform and benefit the Nature Reserve's range of neighbouring communities and visitors. **Board Policies D 2.34** (Environmental Education) and **D 4.1** (Neighbour Relations) apply (See **Appendix 2**).

Programmes will not be primarily aimed at children, but provision will be made for developing various programmes, applicable to a wide spectrum of ages and education levels.

Programmes for groups and communities from other areas will be accommodated on request whenever possible. The "Kids and Parks" Programme requires school groups visiting the Nature Reserve's, to submit a lesson plan before the visit to qualify for a concession. The visit takes place during schooling days.

**Action Project 6.8 (ii):** Engage in biodiversity and cultural education with schools, communities, interest groups and staff.

Where and whenever possible members of the local community (e.g. community tour guides) will be empowered and used to run appropriate environmental education tours.

**Action Project 6.8 (iv):** Develop a MNR environmental awareness education programme specifically for surrounding neighbouring communities and the general public interest groups.

An interpretation programme using signage, displays and information media will be developed to effectively direct and inform visitors in respect of appropriate natural and cultural features of the area. The format of these signs will be standardised and trail marking will be a priority.

**Action Project 6.8 (v):** Develop an interpretation programme in a standard format for the Nature Reserve.

An investigation to identify synergies in the needs of various government or other institutions in the area to develop awareness programmes (e.g. social education of the youth) will be undertaken and if feasible, to combine environmental awareness education with these other programmes. In this way, it will be possible to combine resources to reach a wider target audience.

**Action Project 6.8 (vi):** Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve.

**Action Project 6.8 (vii):** Develop and implement a Civil Emergency Procedures Plan.

## 6.9 Research

Priority will be given to research that will provide information and understanding that is of direct benefit to MNR and will guide management interventions required to achieve the protected area's conservation targets as well as natural and cultural heritage management objectives in the most cost-effective manner. Opportunities will, however, be considered and provided for both applied *and* theoretical research of local, provincial or national importance.

Long term research and monitoring is desirable and necessary as a result of the dynamic and stochastic nature of the ecosystem and to ascertain whether management actions are having their desired affect in terms of achieving conservation targets as well as natural and cultural heritage management objectives.

Partnerships and agreements with appropriate academic and research institutions will be promoted to stimulate and encourage the desired research in MNR. In order to achieve this, the following will be undertaken:

- Management and scientific staff as well as external researchers will identify and priorities research requirements. This research priority list will then be circulated to tertiary research institutions and made available on the web site.
- All baseline abiotic and biotic data collected will be collated and stored in databases as well as GIS data layers to assist researchers in the planning of research projects and interpretation of data.
- Appropriate permanent research facilities will be developed within or bordering the Park in order to facilitate research work.

**Action Project 6.9 (i):** Develop a prioritised MNR natural and cultural heritage research project list.

**Action Project 6.9 (ii):** Develop procedures that will ensure that all abiotic and biotic data collected are captured in managed databases and GIS data layers for interrogation by researchers and managers.

**Action Project 6.9 (iii):** Investigate the potential in or near MNR for the development of permanent research facilities.

All proposals to undertake research within the Nature Reserve will be submitted and evaluated using the procedures outlined in the *Guidelines for the Registration and Administration of Research Projects Undertaken by or through Ezemvelo KZN Wildlife (August 2002)* [Appendix I, Item 6]. Where research requires the collection of biological material, a collection permit will be issued in accordance with approval of the research project.

A copy of all publications is to be lodged within the Nature Reserve, the Regional Office as well as the Head Office library and details captured using appropriate keywords into Region's bibliography.

A MNR bibliography and reference library facilities will be developed together with procedures to maintain a hard and digital copy of all MNR related research work, all documents listed as IMP supporting documentation in **Appendix 1** as well as any new supporting management documentation produced. Libraries will be maintained at the Nature Reserve and at Regional Office. Strict curation rules will apply and the ultimate responsibility for the curation of this library at MNR shall be allocated to the most senior reserve management position and the Regional Co-ordinator: Ecological Advice.

**Action Project 6.9 (iv):** Identify and develop reference library facilities and procedures to maintain hard and digital copies of all MNR related research work, all documents listed as IMP supporting documentation in **Appendix 1** as well as any new supporting management documentation produced. Strict curation rules shall apply and the ultimate responsibility for the curation of this library at MNR will be allocated to the most senior reserve management position and the Regional Co-ordinator: Ecological Advice at the Regional Office.

#### 6.9.1 Monitoring and Evaluation

Baseline data collection, monitoring and evaluation will be undertaken in order to determine whether conservation targets, natural and cultural heritage management objectives, as well as, eco-cultural tourism objectives and targets are being achieved, and to ascertain the effectiveness of management interventions. Much of this information is required in order to meet the legal reporting requirements of the NEMBA and NEMPAA.

Due to (a) the stochastic (random behaviour) nature of the environment, (b) the effects of long-term climate cycles and change, and (c) the length of time for treatment effects to manifest themselves, it is necessary to implement long term baseline collection and monitoring programmes. It is also necessary

to monitor and record all management interventions and the biophysical environment in order to understand the causes for any biological and environmental changes that may occur.

All existing monitoring programs are to be maintained. No programme is to cease and may only do so if in writing by the PAMC minutes to terminate a particular monitoring programme is recommended and is submitted to BCOM for approval.

The **Ecological Advice component** is responsible for:

- Designing all biodiversity monitoring and baseline collection programmes (including the data capture and storage procedures) and ensuring that these will provide data of the right precision and accuracy, and at the right frequency, in order to guide management decision making and to allow for reporting at the required frequency.
- Biodiversity data management, secure storage, analysis, reporting and regular feedback to management.
- Undertaking scientific monitoring and data collection.

The **Biodiversity Conservation Management component** is responsible for:

- The accurate collection of biodiversity baseline data, monitoring and data storage as agreed with the Ecological Advice component.
- Monitoring the use of natural areas by visitors through Limits of Acceptable Change criteria.
- Monitoring cultural sites as outlined in approved and implemented cultural heritage management plans in collaboration with Amafa/SAHRA as the case may be.
- Monitoring energy and water use by conservation management facilities.
- Monitoring development or land use change in the Nature Reserve and in its buffer zone for compliance with set environmental conditions linked to authorization.
- Monitoring compliance by outside parties with conditions as specified in agreements, contracts etc. in collaboration (where practical and as agreed) with the Ecotourism and Marketing component.

The **Ecotourism and Marketing (Commercial Operations) component** is responsible for:

- Monitoring eco-cultural tourism statistics and revenue generation and reporting against revenue targets.
- Monitoring energy and water use by eco-cultural tourism and associated management facilities.
- Monitoring compliance by outside parties with conditions as specified in agreements, contracts etc. in collaboration (where practical and as agreed) with the Biodiversity Conservation Management component.

**Action Project 6.9.1 (i):** An appropriate monitoring and evaluation programme for each of the above components is to be developed for the Nature Reserve and implemented.

## 6.10 Infrastructure

EKZNW has the mandate to maintain, remove, expand or develop infrastructure within MNR for natural and cultural heritage management as well as eco-cultural tourism purposes. However, development projects will only be undertaken if they are:

- aligned with the Nature Reserve's Zonation and Management Guidelines.
- listed as an approved Action Projects either in this IMP or in the Nature Reserve's Concept Development Plan (CDP).
- recommended for implementation by the PAMC and approved by the EKZNW Board's Development Committee.
- compliant with the relevant NEMA regulations and other applicable legal requirements, particularly regarding Environmental and Heritage Impact Assessments.

**Infrastructure development outside MNR or on its periphery will always be considered as a preferred option, where practical, to reduce the amount of infrastructure and its resultant impacts on the environment within the Nature Reserve.**

MNR management is responsible for infrastructure within the Nature Reserve and will at all times ensure that it is maintained in a safe, sound, clean, serviceable and aesthetically acceptable condition. Tourist accommodation, campgrounds and other facilities are at all times to be maintained to appropriate world-class standards regarding appearance, cleanliness and serviceability.

Utility service providers (e.g. Telkom, Eskom, DWAF), concessionaires or other groupings that may, through agreements, develop, use and /or maintain infrastructure within MNR, are to be closely monitored by management to ensure that they abide by conditions contained in the relevant agreements and servitude conditions. Management will ensure that their activities do not negatively impact on the achievement of the natural and cultural heritage management objectives as well as landscape character of MNR and that they maintain the same values as expressed above.

All structures are to be (as far as possible) harmonised with the surrounding environment and landscape character through appropriate siting, use of colour, building materials, landscaping and screening.

To create a sound foundation for future planning, all infrastructure will be listed on a maintained database and their positions plotted with GPS points on an associated MNR Infrastructure Map. Furthermore, the desirability and effectiveness of this infrastructure will be assessed with a view to reducing the impact of these structures on the MNR environment and landscape.

**Action Project 6.10 (i):** Develop and maintain a MNR Infrastructure database and map.

**Action Project 6.10 (ii):** Review the desirability and effectiveness of all present infrastructure associated with the Nature Reserve with regard to:

- Adequacy
- State of repair
- Existing maintenance plans and programs
- Visitor and staff use, requirements and values
- Financial
- Environmental impact (negative and positive)
- Income generation
- Possibilities of outsourcing

#### **6.10.1 Entrance Points and Gates**

All road entrance points to MNR will be under the control of management, certain functions may, however be outsourced. It is important that the entrance gates be secure at all times to discourage illegal entry to MNR.

#### **6.10.2 Boundary Fence**

The purpose of the boundary fence is to keep game in and live stock out of the Nature Reserve while demarcating reserve boundaries to assist in preventing illegal entry. There is 22 km of fencing 1.8 meters high with three strands of electric fence on the inside.

#### **6.10.3 Internal Fences**

There are no internal fences in the MNR.

#### **6.10.4 Signage**

All access routes to MNR will be signposted.

Four groups of signage are identified, namely:

**Public Entrance Gate and Boundary Signage**

A standard for this signage is to be developed that clearly depicts that one is entering the Mbumbazi Nature Reserve with any camp /office names in a secondary position.

**Management Infrastructure Area Signage**

Interpretation, directional and information signage in MNR will have a standardized.

**Trail Signage**

There are presently no trails in the MNR.

**Memorial Plaques**

In terms of the Public Monuments and Memorials Policy and the Names of Protected Areas under the Control of EKZNW Policy, all applications for such memorials are to be made to the Board who would approve or not in terms of design and location. All such applications are subject to an EIA. The key legislation includes the KwaZulu – Natal Heritage Act, 1997 (Act No.10 of 1997) and the KwaZulu – Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997).

### 6.10.5 Roads, Tracks and Paths

**Map 6** indicates the existing vehicle roads / tracks and footpaths used for public access, recreational use or management purposes.

Roads and tracks will be kept to a minimum to maintain the natural character of the landscape as far as possible and to avoid unnecessary negative impacts on the natural and cultural heritage of MNR. In terms of this management guideline, a critical evaluation of the existing road / track and footpath network needs to be undertaken to identify any that need to be closed or re-aligned. Any section that is approved for closure will be rehabilitated according to a documented rehabilitation programme.

Proposed development of new roads / tracks and footpaths or their closure will be aligned with the Zonation specified in this IMP and will follow the appropriate legal and other procedures after recommendation from the PAMC.

Management will ensure that the existing vehicle road / tracks and footpaths on MNR are effectively maintained to the appropriate standards in order to support the relevant use and avoid soil erosion as well as other negative impacts on the environment.

Roads and tracks that are heavily used by vehicles or sections prone to accelerated soil erosion will be tarred, paved, concreted or upgraded to 'all-weather' gravel roads that have been treated with a dust repellent (sealer).

**Action Project 6.10.5 (i):** All management tracks will be evaluated for the suitability of their alignment and recommendations made for new vehicle roads and tracks, repair or closure (with rehabilitation measures) of existing ones.

**Action Project 6.10.5 (ii):** Investigate [ in consultation with SAHTOA (SA Hiking Trail Owners Association)] the potential for a hiking trail routes and day walks in MNR and make recommendations on professional hiking trail evaluation, design, construction, Maintenance, accreditation, marketing, management as well as estimated revenue and expenditure. Implement if feasible.

### 6.10.6 Staff Accommodation

Where essential for the efficient functioning of MNR, management will consider the provision and maintenance of staff accommodation, according to Corporate Norms and Standards. Accommodation is

to meet standards as set by EKZNW's Technical Division and any development or maintenance in this regard will form part of the CDP.

Staff will be encouraged to acquire their own housing and live outside MNR, where practically possible and financially viable. In such cases, official transport to and from MNR may be considered depending on site specific circumstances and applicable corporate policies.

#### **6.10.7 Offices, Workshops, Stables and Other Infrastructure**

MNR management will ensure that all infrastructure within the Nature Reserve is always maintained in a clean, neat and functional state and that these work areas meet Occupational Health and Safety Act standards.

All service areas (e.g. workshops, waste management and storage areas) will be effectively screened from public view using indigenous plantings.

Management will also be responsible for ensuring that any facility for keeping animals encamped or in captivity on MNR are legally compliant or maintained at generally accepted standards for keeping and caring for such animals.

#### **6.10.8 Services**

Management will strive to ensure that wherever possible, service infrastructure such as electricity, telephone, water supply *etc.* be located appropriately in the landscape or effectively screened to minimise their aesthetic and / or other environmental impacts. Reserve management will also strive to ensure that such infrastructure is maintained in a safe, serviceable and aesthetically acceptable condition by the relevant service providers.

#### **6.10.9 Radio Communication and Other Communication Equipment**

MNR management uses a two-way radio system for efficient management. Any future radio repeater stations or similar communication towers will comply with EIA conditions.

#### **6.10.10 Waste Management**

##### **6.10.10.1 Domestic Solid Waste**

All domestic waste is to be sorted for recycling. The recyclable waste is to be removed to authorized recycling depots/ companies. The use of organic waste for compost purposes permitted but will be subject to strict conditional approval on the recommendation of the MNR PAMC. All historical waste disposal sites in MNR are to be rehabilitated.

Solid waste management procedures will be closely monitored by management to prevent pollution and other adverse impacts, especially of the water resources. All waste receptacles (for staff or the public) will be animal-proof (especially against baboons and monkeys) and maintained as such.

<b>Action Project 6.10.10.1 (i):</b> Develop an integrated waste management plan for MNR.
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<b>Action Project 6.10.10.1 (ii):</b> Develop, install and maintain effective standardized solid waste receptacles for MNR that are animal and baboon / monkey-proof.
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##### **6.10.10.2 Sewage**

All sewage systems are to be investigated and their compliance verified. New systems will be installed where there is non-compliance with legal requirements.

Existing infrastructure at MNR are septic tank / French drain sewage systems that will possibly be contaminating ground and surface water. These systems will be replaced with more environmentally friendly systems.

**Action Project 6.10.10.2 (i):** All sewage systems in MNR to be investigated for legal compliance. A phased development plan to upgrade existing systems and septic tank / French drain systems is to be put in place.

#### **6.10.11 Water- And Energy-Saving Measures**

Infrastructure in MNR has little or no modern water- and energy-saving (electricity) devices or measures in place.

**Action Project 6.10.11 (i):** Develop a phased plan to install standardised (reliable and tested) water-and energy-saving devices throughout MNR as soon as practically possible.

#### **6.10.12 Aircraft Landing Fields**

No airstrips are permitted inside MNR except for helicopter landing pads (if required) maintained to the minimum aviation standards at selected sites within the Natural zone. These are primarily for emergency purposes or for such other purposes on the approval of PAMC after taking into account the effect on biodiversity and the environment, 'sense of place' values and tourist disturbance aspects.

**Action Project 6.10.12 (i):** Determine the requirement for helicopter landing pads on MNR. If required and approved, select site/s and maintain according to minimum aviation standards.

#### **6.10.13 Staff and Visitor Safety**

All requirements of the Occupational Health and Safety Act and other applicable legal requirements will be met to provide for the safety of staff and visitors in and around infrastructure installations at MNR (e.g. fire and electricity).

**Action Project 6.10.13 (i):** Management will maintain a secure entry controls system and maintain a high level of internal security in order that visitors and their belongings will be safe and secure.

**Action Project 6.10.13 (ii):** All Reserve staff will receive appropriate training regarding all health and safety aspect and will receive refresher course training as required on a regular basis.

### **6.11 Concept Development Plan**

#### **6.11.1 Institutional Framework For Implementation Of CDP Development Projects**

The MNR management has the mandate to manage and sustainably develop the protected area to fully realise its ecotourism and associated income-generating potential, while respecting and giving access to the protected area's biodiversity and cultural values. Infrastructural planning and development of the protected area will be undertaken cognizant of the requirements the National Environmental Management Act (No. 107 of 1998) and the National Heritage Resources Act (No. 25 of 1999) and the KwaZulu-Natal Heritage Management Act (No. 10 of 1997).

The MNR is guided by the framework of the MNR's Vision, Mission, Management Objectives, Zonation, Policy Framework and the Guiding Principles of this IMP. The approach adopted in the compilation of the CDP involves an objective and integrated assessment of the Reserve in terms of its natural and cultural heritage sensitivities, management and bulk infrastructure, its particular sense of place and its visitor infrastructure and facilities.

### 6.11.2 Strategic Considerations and Management Guidelines

The general strategic direction for the protected area set by this CDP for 2008 to 2013 is essentially one of consolidating and improving existing management and tourism infrastructure within the protected area while also seeking to improve links with local and regional conservation and tourism initiatives.

The emphasis in this CDP is on the improvement of the standard of existing infrastructure and improving the camp site as well as day visitor facilities throughout the protected area. Facilities for people with disabilities are to receive attention through specific policy formulation which will be applied to built infrastructure and related visitor amenities. It is envisaged that the implementation of this CDP will be instrumental in broadening access to the Reserve by a greater spectrum of the public and will provide a platform towards improving income generation, benefit flow management and inform any further appropriate development during the next five year planning period. The following strategic management considerations, of which the majority have been identified by the IMP, are critical to support and effectively implement the protected area's CDP.

### 6.11.3 Alignment of CDP with Local Authority Integrated Development Plans

Emphasis has been placed on the importance of a cooperative governance relationship between MNR management and the Ugu Municipality, to ensure that continuous development planning in and around the Reserve is appropriately aligned as required by the National Environmental Management: Protected Areas Act and the Local Government: Municipal Systems Act.

It is critical from a biodiversity conservation, tourism and benefit flow perspective to preserve the aesthetic qualities of the natural landscape or "sense of place" which is strongly linked to retaining the natural character of the landscape both in and adjacent to the protected area.

In compliance with NEMPAA and in order to initiate the development of new infrastructure as well as the strategic maintenance of existing infrastructure, EKZNW will initiate the compilation of a Conceptual Development Plan (CDP). The CDP will address the future development, improvement and maintenance of all infrastructure including eco-cultural tourism facilities.

The CDP will be guided by the framework of the MNR Mission, Management Objectives, Zonation and Management Policy Guidelines as adopted and approved for this IMP. The approach adopted in the compilation of the CDP will involve an objective and integrated assessment of the Nature Reserve in terms of its natural and cultural heritage sensitivities, management and bulk infrastructure, its particular sense of place and its visitor infrastructure and facilities.

<b>Action Project 6.11.3 (i):</b> Compile and implement an Infrastructure Maintenance Plan.
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<b>Action Project 6.11.3 (ii):</b> Develop a Concept Development Plan and align with Municipal Planning.
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## 7. IMP REVIEW AND AMENDMENT PROCEDURES

### 7.1 Five-Yearly Review and Amendment Procedures

This MNR IMP will be reviewed every five years with the next review period planned for 2013 to revise and amend the IMP for the following five years, namely 2014 to 2018. If deemed appropriate by the PAMC, the review will take place sooner.

The EKZNW Management Planning Steering Committee in collaboration with the Co-ordinator: Management Planning will give guidance on the extent of public / stakeholder participation required before submitting the amended / updated IMP for approval to the MEC. The extent of the public / stakeholder participation (apart from that undertaken with the Local Board) will depend on the nature and extent of amendments recommended by the relevant MNR PAMC.

**Action Project 7.1 (i):** The PAMC will undertake a five-yearly review of this IMP in 2013 for the following five years.

### 7.2 Annual Review and Amendment Procedures

The PAMC will convene annually in November to monitor and evaluate IMP progress, plan and, if necessary, recommend the re-prioritisation of management activities for the next year. The PAMC will, as record of these meetings, submit a report to the EKZNW Management Planning Co-ordination Unit which contains the following:

- Any recommended **minor amendments or corrections** to the IMP that do not affect the substance of the Mission, Management Objectives, Zonation, Management Policy Framework and Guiding Principles;
- The result of an annual evaluation by the PAMC of the Management Effectiveness Level achieved for MNR. This will be calculated using the World Bank Protected Area Management Effectiveness Evaluation Tool (Stolton *et al*, 2007);
- The cumulative number of Action Projects per Management Objective that have been completed, activated or not activated; as well as
- An indication of progress towards achieving Conservation Targets set in the IMP.

The PAMC will also be responsible for the recommendation of any policies, projects and plans that are developed as a result of the implementation of this IMP or other *ad hoc* projects *etc.* not covered by the IMP that have operational, financial and human resource or ecological implications (e.g. research projects that have not been identified according to IMP guidelines, or *ad hoc* funding received for the development of unplanned recreational facilities).

**Any proposed significant amendments that are deemed necessary / urgent and that are likely to result in the amendment of the Mission, Management Objectives, Management Policy Framework and Guiding Principles** contained in the MNR IMP will be supported by the PAMC, the Integrated Management Planning Steering Committee and BCOMM before being subjected to the appropriate public / stakeholder participation process and before BCOMM recommends that the proposed amended IMP is submitted for authorisation through the EKZNW Board to the MEC.

The EKZNW Management Planning Co-ordinator will ensure that any minor or significant IMP amendments that are appropriately approved, are duly noted / recorded and that a new digital 'master copy' (Word) version is generated and archived with the EKZNW Management Planning Co-ordination Unit as well as ensuring that updated 'read only' copies are distributed to the relevant Head Office sections and Regional General Manager who will ensure that the updated 'read only' digital and / or hard copies are distributed to all staff requiring these. The EKZNW Management Co-ordinator will furthermore be responsible to ensure that website / intranet copies are updated at the same time.

**Action Project 7.2 (i):** Convene a PAMC meeting annually in November to monitor, evaluate and report on progress in terms of this IMP, plan and, if necessary, recommend the re-prioritisation of management activities or amendments to the IMP. Ensure all resource needs are submitted when budgets are being prepared.

## 8. PROJECTS FOR ACTION CORRELATED WITH MANAGEMENT OBJECTIVES

While the tables below indicate the list of identified Action Projects that support the achievement of the specific objectives, it must be recognised that a number of other actions relating to ongoing protected area management, take place. Such actions would relate particularly to security, maintenance (buildings, roads, fences, veld management, etc) and relationships with stakeholders. It is important that they be detailed and included when developing budgets and business strategies.

### 8.1 List of IMP Action Projects

**Table 2** below lists the Action Projects identified in the IMP. The Action Project number corresponds to the relevant paragraph in the text of the IMP.

This is a comprehensive list of Action Projects identified as requiring attention for the management of the protected area. Management will identify, review and act on the identified priority Action Projects that will impact on the achievement of the protected area's objectives. These priorities will be regularly reviewed during this five year period.

It is important to note that these IMP Action Projects will not be interpreted in isolation but will be interpreted and operationalised within the context of the associated narrative that precedes the articulation of the Action Project in the relevant paragraph.

**Table 2: List of IMP Action Projects**

No.	IMP Action Project No.	Project Description
1	2.1.1 (i)	Obtain written assignment from the MEC re - appointing EKZNW as the management authority for MNR in terms of Section 38(2) of NEMPAA.
2	2.1.2 (i)	Finalise the settlement agreement pertaining to MNR.
3	2.1.3 (i)	Update and compile a list of all service providers in MNR.
4	2.3 (i)	Management in collaboration with other relevant EKZNW officials, will be tasked with active participation in the review processes of the municipal Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) in order to ensure an effective buffer zone surrounding MNR through an alignment of appropriate land use adjacent to the Nature Reserve.
5	2.3 (ii)	Establish relationships with neighbouring properties including Hibiscus Coast Municipality to plan and restore fragmented corridors and to enable the continued functioning of existing ones.
6	2.4 (i)	Obtain the services of a land surveyor to register the consolidate MNR with the Surveyor General and seek the proclamation of the area by the MEC.
7	2.5 (i)	Obtain and review all formal and informal local agreements, leases, servitude arrangements <i>etc.</i> pertaining to MNR and document, update, maintain and monitor these appropriately authorised agreements. All informal agreements are to be formalised and approved by the executive.
8	2.6 (i)	Annually explore and investigate opportunities to extend conservation land use in and around MNR.
9	3.3 (i)	Update the previous land use of MNR.
10	3.4 (i)	Update the Conservation History for MNR indicating the importance of the proclamation.
11	3.5 (i)	Maintain the collection and storage of climatic data records.
12	3.6.2 (i)	Identify the biodiversity importance and implications of immature soil profiles for management.
13	3.6.2 (ii)	Map the soils showing areas susceptible to erosion.

14	3.6.2 (iii)	Write and submit for approval, a soil erosion control plan.
15	3.8 (i)	Write a management plan in order to maintain and monitor the quantity and quality of water in the rivers.
16	3.9. (i)	Develop a plant species list. This list will be filed with the Conservation Manager at MNR.
17	3.9. (ii)	Develop a flora monitoring programme for MNR.
18	3.9. (iiv)	Compile and implement a flora management plan that addresses the threats.
19	3.9. (iv)	Compile a flora map and diagnostics species list.
20	3.10 (i)	Copies of the Species Checklists will be updated and filed manually and digitally at the MNR Management and Regional Offices as well as the Conservation Manager for easy reference. The copies will be updated in accordance with any authorised amendments. A fixed protocol for compiling and maintaining these checklists needs to be developed to ensure that they provide accurate, comparable and contemporary baseline data for management and scientific purposes.
21	3.10.1 (i)	Compile through further research and collecting a checklist of the invertebrate species found in MNR.
22	3.10.2 (i)	Identify the major threats to Fish Species in MNR.
23	3.10.2 (ii)	Develop and implement a Fish Species Monitoring Programme.
24	3.10.3 (i)	Compile through further research and monitoring, checklists of the Herpetofauna. Identify the major threats to Herpetofauna in MNR.
25	3.10.3 (ii)	Develop and implement a Herpetofauna Species Monitoring Programme.
26	3.10.4 (i)	Determine which of the bird species breed in the Nature Reserve, and ensure that management protocols are set in place to maintain and conserve these breeding sites for the long – term persistence of the species.
27	3.10.4 (ii)	Identify the major threats to Avifauna in MNR.
28	3.10.4 (iii)	Develop and implement an Avifauna Species Monitoring Programme.
29	3.10.5 (i)	Identify the major threats to Mammals in MNR.
30	3.10.5 (ii)	Develop and implement a Mammals Species Monitoring Programme.
31	3.11 (i)	Map the GPS Co-ordinates and provide Management Plans for these sites.
32	3.11 (ii)	Identify the archaeological, historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with requirements of heritage legislation.
33	3.12 (i)	Update research on the archaeology and socio cultural history of the MNR.
34	3.12 (ii)	Make use of archaeology and evidence of the past cultures that inhabited the area in describing the cultural heritage value of MNR.
35	3.13 (i)	Update the Sociological context and its importance to MNR.
36	3.14 (i)	Update the economic context and its importance for MNR.
37	3.15 (i)	Identify and map infrastructure using GIS and include in a spatial database. Develop standard protocols and procedures for infrastructure in MNR.
38	3.15 (ii)	Repair, where necessary, the standard and state of the existing infrastructure provided in the MNR.
39	3.15.1 (i)	Investigate future opportunities for eco – cultural tourism infrastructure for MNR.
40	3.15.4 (i)	Develop a maintenance plan for all trails and fences.

41	3.15.5 (i)	Update MNR Map to include the location of all water supply infrastructure.
42	3.15.6 (i)	Compile MoA between different service providers and MNR. Manager needs to ensure that he is familiar with all agreements.
43	4.2 (i)	Implementation of EKZNW IEM Policy. Create awareness of or inform surrounding landowners on the IEM process and legislation through fora.
44	4.2 (ii)	Participate as a key stakeholder in EIA applications for developments near the Nature Reserve that may impact on the protected area.
45	4.2 (iii)	Participate in existing liaison fora.
46	4.7 (i)	Set conservation targets and monitoring strategies for the identified species.
47	4.7 (ii)	Develop conservation targets and monitoring strategies for Cultural, Business and Partnerships.
48	5 (i)	Revise the existing MNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved.
49	6.1.1 (i)	Develop a five-year Strategic Management Plan and Business Plan for MNR.
50	6.1.1 (ii)	Initiate a resource economics study of the Nature Reserve to determine its economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.
51	6.1.2 (i)	Investigate and develop an appropriate human resource structure and capacity of MNR with a view to improving effectiveness and efficiency in achieving MNR objectives and informing the Business Plan.
52	6.2 (i)	EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of MNR for the benefit of all.
53	6.2.1 (i)	Establish a Local Board for MNR
54	6.2.2 (i)	The Community Levy will continue to be collected for the development and upliftment of the local communities of VCNR.
55	6.2.3 (i)	Training of members of the local community will continue to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities.
56	6.2.5 (i)	Investigate and implement additional environmental education programmes for communities surrounding MNR.
57	6.2.7 (i)	Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.
58	6.3 (i)	Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.
59	6.4.2 (i)	Develop a MNR <b>Fire Management Plan</b> that provides comprehensive Fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.
60	6.4.2 (ii)	Develop a computerized decision support tool linked to GIS that will be included in the Fire Management Plan, to assist in the planning of burns at the annual Fire Workshop. This rule-based tool will ensure that MNR- wide and area-specific fire management objectives can be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.

61	6.4.2 (iii)	Promote and champion (in cooperation with DWAF and the "Working on Fire" programme) the establishment of FPAs on the borders of MNR.
62	6.4.2 (iv)	Arrange a MNR Fire Management Workshop in February of each year.
63	6.4.3 (i)	Compile and implement an Alien Species Management Plan. Identify and itemise indicator species and determine their current species densities for MNR.
64	6.4.3.1 (i)	Undertake a full species survey for alien plant species present and map their distribution.
65	6.4.3.1 (ii)	Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within MNR and 1 km beyond (buffer area) the Nature Reserve boundary.
66	6.4.3.1 (iii)	Develop a phased 3-year plan to address the existing non-invasive alien plants in MNR.
67	6.4.3.2 (i)	Develop a control programme for alien animals present in MNR.
68	6.4.3.2 (ii)	Develop a management strategy that will minimize the negative impact of alien fish and promote the establishment of sustainable populations of fish species indigenous to MNR
69	6.4.3.2 (iii)	<p>Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the Nature Reserve that includes procedures for dealing in a consistent manner with alien animals that stray into the Park. This policy will, <i>inter alia</i> clearly address:</p> <ul style="list-style-type: none"> <li>• Threats to biodiversity conservation as a priority.</li> <li>• Reducing the numbers of such animals to an absolute minimum.</li> <li>• Designating areas where these animals will be kept. They will not be allowed to roam or feed in the Park (except for official patrol horses when on patrol) or interfere in any way with tourists.</li> <li>• The proper and hygienic care of these animals.</li> <li>• Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals e.g. stables, camps, cages etc.</li> <li>• Disciplinary measures for staff transgressing these regulations or failing to enforce these measures.</li> </ul>
70	6.4.4 (i)	Obtain all standards for water quality from the Municipality, review monitoring results against these standards and take appropriate actions should any standard not be met.
71	6.4.5 (i)	Map all extensive or potential human-induced / aggravated soil erosion sites and annually monitor the condition of these sites in order to prioritise rehabilitation work.
72	6.4.6 (i)	Compile and implement a Wildlife Protection Management Plan
73	6.4.6 (ii)	Compile and implement a Priority Species Management Plan and determine status of priority species.
74	6.4.6.1 (i)	Develop a policy that addresses the introduction and population monitoring of animal species into the Nature Reserve.
75	6.4.6.2 (i)	Develop an MNR Game Introduction and Monitoring Programme with Guidelines in terms of the EKZNW Wildlife Introduction Policy and implement.
76	6.4.6.2 (ii)	Develop an MNR Game Management Policy Guideline and implement.
77	6.4.6.3 (i)	Develop and implement a fishery Management Plan for MNR.
78	6.4.6.4 (i)	Develop and implement a bird Management Plan for MNR.
79	6.4.6.5 (i)	The MNR Conservation Manager will ensure that all complaints

		and incidents reported are investigated by the relevant staff and or District Conservation Officer (DCO) as soon as possible. Complaint details, investigation findings and remedial action taken is to be recorded in the prescribed Damage Causing Animals Complaints Register kept on station. Investigations and incident reporting is to be carried out in accordance with <b>EKZNW's DCO Control Protocol and Guidelines</b> .
80	6.4.7 (i)	Assessment of the field ranger component will be done monthly.
81	6.4.7 (ii)	Management will prosecute those people that illegally utilise natural resources for commercial or other purposes in accordance with the legislation.
82	6.5 (i)	Develop a comprehensive Cultural Heritage Inventory and Management Plan for -MNR in collaboration with SAHRA and Amafa. Institutional capacity will also be addressed by this plan.
83	6.5 (ii)	Identify archaeological, historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with the requirements of Amafa.
84	6.6 (i)	Control or 'bench mark' areas within MNR will be identified where no extractive resource utilisation of indigenous species will take place.
85	6.6.1 (i)	Evaluate Resource Use in MNR in terms of EKZNW policies for the Evaluation of Extractive Resource Use. If possible, sustainable and feasible in terms of this guideline, develop a resource use management plan and implement.
86	6.7 (i)	Cognisant of the MNR IMP and CDP policy guidelines, develop MNR Eco-cultural Tourism Development and Marketing Strategy that addresses: <ul style="list-style-type: none"> <li>the attainment of professional tourism service delivery standards.</li> <li>branding and marketing.</li> <li>linkages with other regional tourist initiatives.</li> <li>public / private partnerships.</li> <li>cultural heritage tourism.</li> <li>visitor awareness, orientation and interpretation.</li> </ul>
87	6.7 (ii)	Develop and communicate formal procedures for local tourism user groups.
88	6.7 (iii)	Develop and implement Visitor Management Plan. Undertake analysis of available recreational facilities and identify opportunities to improve them.
89	6.7 (iv)	Align marketing strategy with EKZNW organisational plan.
90	6.8 (i)	Compile educational material on environmental and cultural aspects of the Nature Reserve.
91	6.8 (ii)	Engage in biodiversity and cultural education with schools, communities, interest groups and staff.
92	6.8 (iii)	Facilitate access to educational information pertaining to the history of the Nature Reserve and surrounding areas.
93	6.8 (iv)	Develop an MNR environmental awareness education programme specifically for neighbouring communities and the general public interest groups.
94	6.8 (v)	Develop an interpretation programme in a standard format for the Nature Reserve.
95	6.8 (vi)	Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve.
96	6.8 (vii)	Develop and implement a Civil Emergency Procedures Plan.
97	6.9 (i)	Develop a prioritised MNR natural and cultural heritage research

		project list.
98	6.9 (ii)	Develop procedures that will ensure that all abiotic and biotic data collected are captured in managed databases and GIS data layers for interrogation by researchers and managers.
99	6.9 (iii)	Investigate the potential in or near MNR for the development of permanent research facilities.
100	6.9 (iv)	Identify and develop reference library facilities and procedures to maintain hard and digital copies of all MNR related research work, all documents listed as IMP supporting documentation in <b>Appendix 1</b> as well as any new supporting management documentation produced. Strict curation rules will apply and the ultimate responsibility for the curation of this library at MNR will be allocated to the most senior reserve management position and the Regional Co-ordinator: Ecological Advice at the Coastal Regional Office.
101	6.9.1 (i)	An appropriate monitoring and evaluation programme for each of the above components is to be developed for the Nature Reserve and implemented.
102	6.10 (i)	Develop and maintain an MNR Infrastructure database and map.
103	6.10 (ii)	Review the desirability and effectiveness of all present infrastructure associated with Nature Reserve with regard to: <ul style="list-style-type: none"> <li>• Adequacy.</li> <li>• State of repair.</li> <li>• Existing maintenance plans and programs.</li> <li>• Visitor and staff use, requirements and values.</li> <li>• Financial.</li> <li>• Environmental impact (negative and positive).</li> <li>• Income generation.</li> <li>• Possibilities of outsourcing.</li> </ul>
104	6.10.10.1 (i)	Develop an integrated waste management plan for MNR.
105	6.10.10.1 (ii)	Develop, install and maintain effective standardized solid waste receptacles for MNR that are animal and baboon / monkey-proof.
106	6.10.10.2 (i)	All sewage systems in MNR will be investigated for legal compliance. A phased development plan to upgrade existing systems and septic tank / French drain systems will be put in place.
107	6.10.11 (i)	Develop a phased plan to install standardised (reliable and tested) water- and energy-saving devices throughout MNR as soon as practically possible.
108	6.10.12 (i)	Determine the requirement for helicopter landing pads on MNR. If required and approved, select site/s and maintain according to minimum aviation standards.
109	6.10.13 (i)	Management will maintain a secure entry controls system and maintain a high level of internal security in order that visitors and their belongings will be safe and secure.
110	6.10.13 (ii)	All Reserve staff will receive appropriate training regarding all health and safety aspect and will receive refresher course training as required on a regular basis.
111	6.11.3 (i)	Compile and implement an Infrastructure Management Plan.
112	6.11.3 (ii)	Develop a Concept Development Plan and align with Municipal Planning.
113	6.12.5 (i)	All management tracks will be evaluated for the suitability of their alignment and recommendations made for new vehicle roads and tracks, repair or closure (with rehabilitation measures) of existing ones.

114	6.12.5 (ii)	Investigate [ in consultation with SAHTOA (SA Hiking Trail Owners Association)] the potential for a hiking trail routes and day walks in MNR and make recommendations on professional hiking trail evaluation, design, construction, maintenance, accreditation, marketing, management as well as estimated revenue and expenditure. Implement if feasible.
115	7.1 (i)	The PAMC will undertake a five-yearly review of this IMP in 2013 to revise and amend the IMP for the following five years.
116	7.2 (i)	Convene a PAMC meeting annually in November to monitor, evaluate and report on progress in terms of this IMP, plan and, if necessary, recommend the re-prioritisation of management activities or amendments to the IMP. Ensure all resource needs are submitted when budgets are being prepared.

## 8.2 Alignment of IMP Action Projects with Prioritised Management Objectives

The 117 IMP Action Projects from **Table 3** have been aligned with the Management Objectives and are listed in **Table 4** below.

The IMP Action Projects in many cases are cross-cutting in achieving more than one objective. To aid prioritisation they have been placed (listed in number sequence) under the objective where they are likely to make the greatest contribution.

**Table 3: IMP Action Projects aligned with and supporting the various MNR Management Objectives.**

<b>Conservation</b>	
<b>Conservation of key biodiversity features, biophysical processes, landscapes, abiotic, historical and archaeological resources</b>	
Conserve the Mbumbazi Nature Reserve and its associated biodiversity	
3.6.2 (i)	Identify the biodiversity importance and implications of immature soil profiles for management.
3.6.2 (ii)	Map the soils showing areas susceptible to erosion.
3.6.2 (iii)	Write and submit for approval, a soil erosion control plan.
3.8 (i)	Write a management plan in order to maintain and monitor the quantity and quality of water in the rivers.
3.10.4 (i)	Determine which of the bird species breed in the Nature Reserve, and ensure that management protocols are set in place to maintain and conserve these breeding sites for the long – term persistence of the species.
Facilitate environmental and cultural activities, education and awareness, including access to historical information related to the history of the reserve and the surrounding area.	
6.2.5 (i)	Investigate and implement additional environmental education programmes for communities surrounding MNR.
6.8 (vi)	Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve.
Contribute to the achievement of national and provincial conservation targets	
4.6 (i)	Set conservation targets and monitoring strategies for the identified species.
4.6 (ii)	Develop conservation targets and monitoring strategies for Cultural, Business and Partnerships, Objectives
Identify and control threats to biodiversity	
3.10.2 (i)	Identify the major threats to Fish Species in MNR.
3.10.3 (i)	Compile through further research and monitoring, checklists of the Herpetofauna. Identify the major threats to Herpetofauna in MNR.
3.10.4 (ii)	Identify the major threats to Avifauna in MNR.
3.10.5 (i)	Identify the major threats to Mammals in MNR.
Safeguard the archaeological, historical, palaeontological and living cultural heritage of the Reserve.	
3.11 (ii)	Identify the archaeological, historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with requirements of heritage legislation.
3.12 (i)	Update research on the archaeology and socio cultural history of the MNR.

3.12 (ii)	Make use of archaeology and evidence of the past cultures that inhabited the area in describing the cultural heritage value of MNR.
6.5 (ii)	Identify archaeological, historical, palaeontological and cultural heritage sites at MNR. Ensure compliance with the requirements of Amafa.
Other Action Projects supporting MNR Conservation Management Objective.	
2.1.1 (i)	Obtain written assignment from the MEC re - appointing EKZNW as the management authority for MNR in terms of Section 38(2) of NEMPAA.
2.1.2 (i)	Finalise the settlement agreement pertaining to MNR.
2.4 (i)	Obtain the services of a land surveyor to register the consolidate MNR with the Surveyor General and seek the proclamation of the area by the MEC.
2.6 (i)	Annually explore and investigate opportunities to extend conservation land use in and around MNR.
3.3 (i)	Update the previous land use of MNR.
3.4 (i)	Update the Conservation History for MNR indicating the importance of the proclamation.
3.5 (i)	Maintain the collection and storage of climatic data records.
3.9. (i)	Develop a plant species list. This list will be filed with the Conservation Manager at MNR.
3.9. (ii)	Develop a flora monitoring programme for MNR.
3.9. (iii)	Compile and implement a flora management plan that addresses the threats.
3.9. (iv)	Compile a flora map and diagnostics species list.
3.10 (i)	Copies of the Species Checklists will be updated and filed manually and digitally at the MNR Management and Regional Offices as well as the Conservation Manager for easy reference. The copies will be updated in accordance with any authorised amendments. A fixed protocol for compiling and maintaining these checklists needs to be developed to ensure that they provide accurate, comparable and contemporary baseline data for management and scientific purposes.
3.10.1 (i)	Compile through further research and collecting a checklist of the invertebrate species found in MNR.
3.10.2 (ii)	Develop and implement a Fish Species Monitoring Programme.
3.10.3 (ii)	Develop and implement a Herpetofauna Species Monitoring Programme.
3.10.5 (ii)	Develop and implement a Mammals Species Monitoring Programme.
3.11 (i)	Map the GPS Co-ordinates and provide Management Plans for these sites.
3.15 (i)	Identify and map infrastructure using GIS and include in a spatial database. Develop standard protocols and procedures for infrastructure in MNR.
3.15 (ii)	Repair, where necessary, the standard and state of the existing infrastructure provided in the MNR.
3.15.4 (i)	Develop a maintenance plan for all trails and fences.
3.15.5 (i)	Update MNR Map to include the location of all water supply infrastructure.
3.15.6 (i)	Compile MoA between different service providers and MNR. Manager needs to ensure that he is familiar with all agreements.
5 (i)	Revise the existing MNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved.
6.3 (i)	Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.
6.4.2 (i)	Develop a MNR <b>Fire Management Plan</b> that provides comprehensive fire management objectives, scientific understanding, management actions, legal

	compliance, personnel training requirements, monitoring and research required and resources needed.
6.4.2 (ii)	Develop a computerized decision support tool linked to GIS that will be included in the Fire Management Plan, to assist in the planning of burns at the annual Fire Workshop. This rule-based tool will ensure that MNR- wide and area-specific fire management objectives can be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.
6.4.2 (iii)	Promote and champion (in cooperation with DWAF and the "Working on Fire" programme) the establishment of FPAs on the borders of MNR.
6.4.2 (iv)	Arrange a MNR Fire Management Workshop in February of each year.
6.4.3 (i)	Compile and implement an Alien Species Management Plan. Identify and itemise indicator species and determine their current species densities for MNR.
6.4.3.1 (i)	Undertake a full species survey for alien plant species present and map their distribution.
6.4.3.1 (ii)	Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within MNR and 1 km beyond (buffer area) the Nature Reserve boundary.
6.4.3.1 (iii)	Develop a phased 3-year plan to address the existing non-invasive alien plants in MNR.
6.4.3.2 (i)	Develop a control programme for alien animals present in MNR.
6.4.3.2 (ii)	Develop a management strategy that will minimize the negative impact of alien fish and promote the establishment of sustainable populations of fish species indigenous to MNR
6.4.3.2 (iii)	<p>Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the Nature Reserve that includes procedures for dealing in a consistent manner with alien animals that stray into the Park. This policy will, <i>inter alia</i> clearly address:</p> <ul style="list-style-type: none"> <li>• Threats to biodiversity conservation as a priority.</li> <li>• Reducing the numbers of such animals to an absolute minimum.</li> <li>• Designating areas where these animals will be kept. They will not be allowed to roam or feed in the Park (except for official patrol horses when on patrol) or interfere in any way with tourists.</li> <li>• The proper and hygienic care of these animals.</li> <li>• Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals e.g. stables, camps, cages etc.</li> <li>• Disciplinary measures for staff transgressing these regulations or failing to enforce these measures.</li> </ul>
6.4.4 (i)	Obtain all standards for water quality from the Municipality, review monitoring results against these standards and take appropriate actions should any standard not be met.
6.4.5 (i)	Map all extensive or potential human-induced / aggravated soil erosion sites and annually monitor the condition of these sites in order to prioritise rehabilitation work.
6.4.6 (i)	Compile and implement a Wildlife Protection Management Plan
6.4.6.1 (i)	Develop a policy that addresses the introduction and population monitoring of animal species into the Nature Reserve.
6.4.6.2 (i)	Develop an MNR Game Introduction and Monitoring Programme with Guidelines in terms of the EKZNW Wildlife Introduction Policy and implement.
6.4.6.3 (i)	Develop and implement a fishery Management Plan for MNR.
6.4.6.4 (i)	Develop and implement a bird Management Plan for MNR.

6.4.6.5 (i)	The MNR Conservation Manager will ensure that all complaints and incidents reported are investigated by the relevant staff and or District Conservation Officer (DCO) as soon as possible. Complaint details, investigation findings and remedial action taken is to be recorded in the prescribed Damage Causing Animals Complaints Register kept on station. Investigations and incident reporting is to be carried out in accordance with <b>EKZNW's DCO Control Protocol and Guidelines</b> .
6.4.7 (i)	Assessment of the field ranger component will be done monthly.
6.4.7 (ii)	Management will prosecute those people that illegally utilise natural resources for commercial or other purposes in accordance with the legislation.
6.5 (i)	Develop a comprehensive Cultural Heritage Inventory and Management Plan for MNR in collaboration with SAHRA and Amafa. Institutional capacity will also be addressed by this plan.
6.6 (i)	Control or 'bench mark' areas within MNR will be identified where no extractive resource utilisation of indigenous species will take place.
6.6.1 (i)	Evaluate Resource Use in MNR in terms of EKZNW policies for the Evaluation of Extractive Resource Use. If possible, sustainable and feasible in terms of this guideline, develop a resource use management plan and implement.
6.8 (vii)	Develop and implement a Civil Emergency Procedures Plan.
6.9 (i)	Develop a prioritised MNR natural and cultural heritage research project list.
6.9 (ii)	Develop procedures that will ensure that all abiotic and biotic data collected are captured in managed databases and GIS data layers for interrogation by researchers and managers.
6.9 (iii)	Investigate the potential in or near MNR for the development of permanent research facilities.
6.9 (iv)	Identify and develop reference library facilities and procedures to maintain hard and digital copies of all MNR related research work, all documents listed as IMP supporting documentation in <b>Appendix 1</b> as well as any new supporting management documentation produced. Strict curation rules will apply and the ultimate responsibility for the curation of this library at MNR will be allocated to the most senior reserve management position and the Regional Co-ordinator: Ecological Advice at the Coastal Regional Office.
6.9.1 (i)	An appropriate monitoring and evaluation programme for each of the above components is to be developed for the Nature Reserve and implemented.
6.10 (i)	Develop and maintain an MNR Infrastructure database and map.
6.10 (ii)	Review the desirability and effectiveness of all present infrastructure associated with Nature Reserve with regard to: <ul style="list-style-type: none"> <li>• Adequacy.</li> <li>• State of repair.</li> <li>• Existing maintenance plans and programs.</li> <li>• Visitor and staff use, requirements and values.</li> <li>• Financial.</li> <li>• Environmental impact (negative and positive).</li> <li>• Income generation.</li> <li>• Possibilities of outsourcing.</li> </ul>
6.10.5 (i)	All management tracks will be evaluated for the suitability of their alignment and recommendations made for new vehicle roads and tracks, repair or closure (with rehabilitation measures) of existing ones.
6.10.10.1 (i)	Develop an integrated waste management plan for MNR.
6.10.10.1 (ii)	Develop, install and maintain effective standardized solid waste receptacles for MNR that are animal and baboon / monkey-proof.
6.10.10.2 (i)	All sewage systems in MNR will be investigated for legal compliance. A phased development plan to upgrade existing systems and septic tank / French drain systems will be put in place.

6.10.11 (i)	Develop a phased plan to install standardised (reliable and tested) water- and energy-saving devices throughout MNR as soon as practically possible.
6.10.12 (i)	Determine the requirement for helicopter landing pads on MNR. If required and approved, select site/s and maintain according to minimum aviation standards.
6.10.13 (i)	Management will maintain a secure entry controls system and maintain a high level of internal security in order that visitors and their belongings will be safe and secure.
6.10.13 (ii)	All Reserve staff will receive appropriate training regarding all health and safety aspect and will receive refresher course training as required on a regular basis.
6.11.3 (i)	Compile and implement an Infrastructure Management Plan.
7.1 (i)	The PAMC will undertake a five-yearly review of this IMP in 2013 to revise and amend the IMP for the following five years.
7.2 (i)	Convene a PAMC meeting annually in November to monitor, evaluate and report on progress in terms of this IMP, plan and, if necessary, recommend the re-prioritisation of management activities or amendments to the IMP. Ensure all resource needs are submitted when budgets are being prepared.
<b>Socio-Economic Benefits</b> The provision of <b>socio-economic benefits</b> (benefit flow) to the Reserve's neighbours and to contribute to the local economy and the efforts of conservation in a sustainable manner based on sound business principles (EKZN Business Plan)	
Other Action Projects supporting MNR Socio-Economic Management Objective.	
3.13 (i)	Update the Sociological context and its importance to MNR.
3.14 (i)	Update the economic context and its importance for MNR.
6.1.1 (ii)	Initiate a resource economics study of the Nature Reserve to determine its economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.
6.2.2 (i)	The Community Levy will continue to be collected for the development and upliftment of the local communities.
6.2.3 (i)	Training of members of the local community will continue to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities.
6.2.7 (i)	Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.
6.7 (iv)	Align marketing strategy with EKZNW organisational plan.
6.10.5 (ii)	Investigate [ in consultation with SAHTOA (SA Hiking Trail Owners Association)] the potential for a hiking trail routes and day walks in MNR and make recommendations on professional hiking trail evaluation, design, construction, maintenance, accreditation, marketing, management as well as estimated revenue and expenditure. Implement if feasible.
<b>Business</b> The provision of appropriate ecotourism <b>business</b> opportunities in the natural and cultural environment based within the influence sphere of MNR	
Other Action Projects supporting MNR Business Management Objective.	
2.5 (i)	Obtain and review all formal and informal local agreements, leases, servitude arrangements <i>etc.</i> pertaining to MNR and document, update, maintain and monitor these appropriately authorised agreements. All informal agreements are to be formalised and approved by the Executive.
6.1.1 (i)	Develop a five-year Strategic Management Plan and Business Plan for MNR.
6.1.2 (i)	Investigate and develop an appropriate human resource structure and capacity of MNR with a view to improving effectiveness and efficiency in achieving MNR objectives and informing the Business Plan.

<b>Partnerships</b>	
The formation of functional <b>partnerships</b> to integrate the MNR with regional development plans and other initiatives which underwrite the vision of MNR	
Promote and ensure effective communication between the local communities and EKZNW through integrated, shared and co-operative working relationships.	
4.2 (i)	Implementation of EKZNW IEM Policy. Create awareness of or inform surrounding landowners on the IEM process and legislation through fora.
4.2 (iii)	Participate in existing liaison fora.
Participate as a key stakeholder in local environmental management initiatives.	
4.2 (ii)	Participate as a key stakeholder in EIA applications for developments near the reserve that may impact on the protected area.
Other Action Projects supporting MNR Partnerships Management Objective.	
2.1.3 (i)	Update and compile a list of all service providers in MNR.
2.3 (i)	Management in collaboration with other relevant EKZNW officials, will be tasked with active participation in the review processes of the municipal Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) in order to ensure an effective buffer zone surrounding MNR through an alignment of appropriate land use adjacent to the Nature Reserve.
2.3 (ii)	Establish relationships with neighbouring properties including Hibiscus Coast Municipality to plan and restore fragmented corridors and to enable the continued functioning of existing ones.
6.2 (i)	EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of MNR for the benefit of all.
6.2.1 (i)	Establish a Local Board for MNR.
6.7 (i)	Cognisant of the MNR IMP and CDP policy guidelines, develop MNR Eco-cultural Tourism Development and Marketing Strategy that addresses: <ul style="list-style-type: none"> <li>• the attainment of professional tourism service delivery standards.</li> <li>• branding and marketing.</li> <li>• linkages with other regional tourist initiatives.</li> <li>• public / private partnerships.</li> <li>• cultural heritage tourism.</li> <li>• visitor awareness, orientation and interpretation.</li> </ul>
6.7 (ii)	Develop and communicate formal procedures for local tourism user groups.
6.7 (iii)	Develop and implement Visitor Management Plan. Undertake analysis of available recreational facilities and identify opportunities to improve them.
6.8 (v)	Develop an interpretation programme in a standard format for the Nature Reserve.
6.11.3 (ii)	Develop a Concept Development Plan and align with Municipal Planning.

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## APPENDIX 1

### List of References for Unpublished Supporting Documentation

#### MNR - Integrated Management Plan 2009 - 2013

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##### *Copies available from:*

Coastal Regional Office of Ezemvelo KZN Wildlife. Private Bag X3. Congella. 4013  
Contact person: Ecological Advice Coordinator, Coastal Region

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##### **Item**

1. EKZNW Corporate Strategic Plan and Performance Plan for 2009-2014.
2. EKZNW Corporate Policies (Norms & Standards) listed in **Appendix 2**.
3. EKZNW Biodiversity Database Checklists for MNR.
4. Amafa / EKZNW Co-operative Conservation Management of Cultural Heritage Agreement (signed July 2005).
5. List of local agreements, leases and other servitude arrangements pertaining to MNR.
6. Guidelines for the Registration and Administration of Research Projects Undertaken by or through Ezemvelo KZN Wildlife (August 2002)
7. Public Participation Report for Mbumbazi Nature Reserve

## APPENDIX 2

**Appendix 2** below lists the EKZNW Corporate Policies (Norms & Standards) referenced from intranet<sup>4</sup> that are most relevant to EKZNW PA management. It is, however, the responsibility of all management and other personnel associated with the management of protected areas to ensure that they familiarise themselves and comply with the most recent versions of all EKZNW Board Approved Policies.

<b>EKZNW CORPORATE POLICIES (NORMS &amp; STANDARDS)</b>	
<b>Policy File No.</b>	<b>CORPORATE AFFAIRS</b>
B 2	• Access to Ezemvelo KZN Wildlife Areas and Employment.
B 5	• Outsourcing of Functions and Services
B 7	• Monuments, Memorials and Names of Protected Areas under the control of EKZNW.
B 8	• Restricted use of Board Theatres, Halls and Conference Facilities etc.
B 9	• Code of Ethics / Conduct.
B 10	• Photography in Board Protected Areas.
B 13	• Mission Statement
B 14	• Access to Information.
<b>Policy File No.</b>	<b>INTERNAL AUDIT</b>
C 5	• Management Control
	<b>BIODIVERSITY CONSERVATION OPERATIONS</b>
	<b>1. NATURAL RESOURCE SUSTAINABILITY</b>
<b>Policy File No.</b>	<b>Threatened Species and Ecosystems</b>
D 1.1	• Disposal of Black Rhino.
D 1.2	• Disposal of Surplus White Rhino.
D 1.3	• Strategy for the Management of Southern White Rhino in KwaZulu-Natal.
D 1.4	• Strategy for the Biological Management of Black Rhino in KwaZulu-Natal.
D 1.5	• Rhinoceros Products.
D 1.6	• Crocodilians
D 1.7	• Cycads.
D 1.8	• Disposal of Threatened Species.
<b>Policy File No.</b>	<b>Exotic and Invasive Species</b>
D 1.9	• Release of Alien Species.
D 1.10	• Control Measures for Red-billed Quelea.
D 1.12	• Grass Carp.
D 1.13	• Establishment of Alien Plantations.
	•
<b>Policy File No.</b>	<b>Migratory Species</b>
D 1.14	• Black Wildebeest and Blue Wildebeest Hybridization and Conservation.
D 1.15	• Permit authorizing the collection of Biological Material within Board Areas.

<sup>4</sup> [www.kznwildlife.com/intranet](http://www.kznwildlife.com/intranet) (Accessed 31 March 2009)

	<b>2. CONSERVATION EFFECTIVENESS</b>
<b>Policy File No.</b>	<b>Strategic Applications</b>
D 2.1	<ul style="list-style-type: none"> <li>• Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MAB (Man and Biosphere) Programme.</li> </ul>
<b>Policy File No.</b>	<b>Conservation Management: Protected Area Management</b>
D 2.2	<ul style="list-style-type: none"> <li>• Management of Wilderness Areas.</li> </ul>
D 2.3	<ul style="list-style-type: none"> <li>• Protected Area Development.</li> </ul>
D 2.4	<ul style="list-style-type: none"> <li>• Prohibition of Works and Servitudes in Board Areas.</li> </ul>
D 2.5	<ul style="list-style-type: none"> <li>• <u>Zonation and Regulations for the control of off-road vehicles on beaches controlled by the Board.</u></li> </ul>
D 2.6	<ul style="list-style-type: none"> <li>• Quarries in KZN Protected Areas.</li> </ul>
D 2.7	<ul style="list-style-type: none"> <li>• Re-establishment and Management of Vegetation on Development Sites in the Ezemvelo KZN Wildlife Protected Areas.</li> </ul>
D 2.8	<ul style="list-style-type: none"> <li>• Ecotourism and Protected Areas.</li> </ul>
D 2.9	<ul style="list-style-type: none"> <li>• Solid Waste Management within Protected Areas.</li> </ul>
D 2.10	<ul style="list-style-type: none"> <li>• State Security Service Activities within Board Areas.</li> </ul>
D 2.11	<ul style="list-style-type: none"> <li>• Shark Nets in or bordering KwaZulu-Natal Nature Conservation Board Controlled Areas.</li> </ul>
<b>Policy File No.</b>	<b>Integrated Environmental Management</b>
D 2.12	<ul style="list-style-type: none"> <li>• Integrated Environmental Management - incorporating the procedure for the assessment of the impact of proposed development projects on nature conservation concerns.</li> </ul>
D 2.13	<ul style="list-style-type: none"> <li>• Precautionary Principle.</li> </ul>
D 2.14	<ul style="list-style-type: none"> <li>• Shark Net Installations.</li> </ul>
D 2.15	<ul style="list-style-type: none"> <li>• Bioprospecting in KwaZulu-Natal.</li> </ul>
D 2.17	<ul style="list-style-type: none"> <li>• Use of Pesticides by the Ezemvelo KZN Wildlife: Safety to Humans and the Environment.</li> </ul>
D 2.18	<ul style="list-style-type: none"> <li>• Interference with the Mouth of a Lagoon or River (Breaching).</li> </ul>
<b>Policy File No.</b>	<b>Ex Situ Wild Animal Management</b>
D 2.21	<ul style="list-style-type: none"> <li>• Re-establishment of Terrestrial Mammals in Board Areas.</li> </ul>
	<ul style="list-style-type: none"> <li>• Translocation of Animals.</li> </ul>
D 2.25	<ul style="list-style-type: none"> <li>• Elephant Introductions and Elephant in Enclosures.</li> </ul>
D 2.27	<ul style="list-style-type: none"> <li>• Introduction and Keeping of Large Predators in Enclosures in KZN.</li> </ul>
D 2.28	<ul style="list-style-type: none"> <li>• Use of Narcotic Drugs.</li> </ul>
D 2.29	<ul style="list-style-type: none"> <li>• Falconry.</li> </ul>
<b>Policy File No.</b>	<b>Human Animal Conflict - Inside and Outside Protected Areas</b>
D 2.30	<ul style="list-style-type: none"> <li>• Disposal of Leopard from Ezemvelo KZN Wildlife Protected Areas.</li> </ul>
D 2.31	<ul style="list-style-type: none"> <li>• Problem Animal Control.</li> </ul>
D 2.32	<ul style="list-style-type: none"> <li>• Compensation claims in respect of damage caused by Lion, Cheetah, Wild Dog and Elephant to Stock and Crops.</li> </ul>
D 2.33	<ul style="list-style-type: none"> <li>• Instances of Death as a result of an Unprovoked Attack by a Wild Animal Normally contained and originating from within a Fenced Protected Area under the Control of the KwaZulu-Natal Nature Conservation Board.</li> </ul>

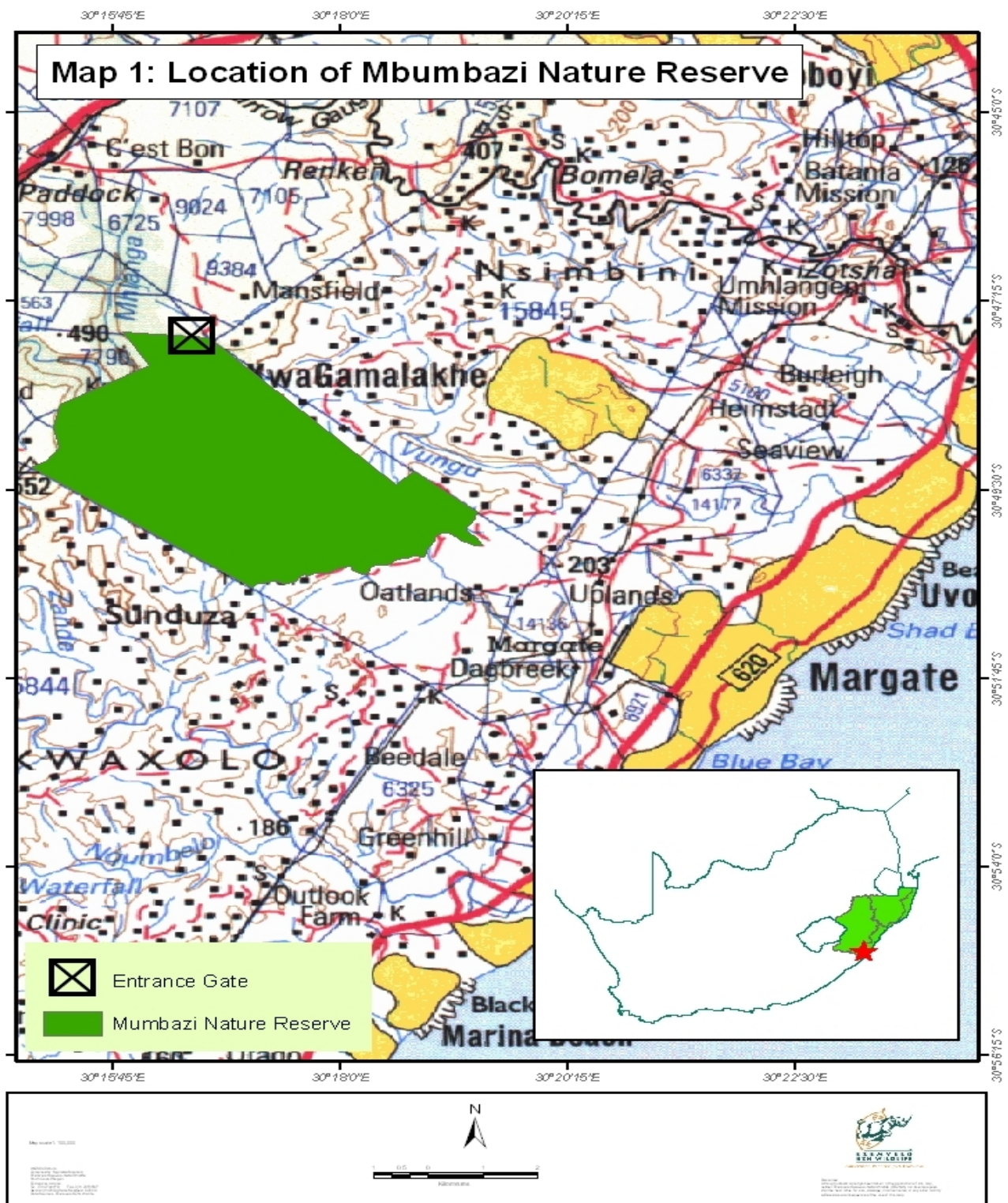
<b>Policy File No.</b>	<b>Environmental Awareness</b>
D 2.34	<ul style="list-style-type: none"> <li>Environmental Education Policy.</li> </ul>
	<b>3. BIODIVERSITY PROTECTION</b>
<b>Policy File No.</b>	<b>Co-management</b>
D 3.1	<ul style="list-style-type: none"> <li>Supply of Game to Conservancies, Community Conservation Areas and Biosphere Reserves in KwaZulu-Natal</li> </ul>
D 3.2	<ul style="list-style-type: none"> <li>Establishment and Management of Community Conservation Reserves (CCR)</li> </ul>
D 3.4	<ul style="list-style-type: none"> <li>Community Conservation Programmes</li> </ul>
D 3.5	<ul style="list-style-type: none"> <li>Neighbours' Access to Board Protected Areas</li> </ul>
D 3.6	<ul style="list-style-type: none"> <li>Relationship with Local Boards</li> </ul>
D 3.7	<ul style="list-style-type: none"> <li>Conservation Partnerships Between KwaZulu-Natal Nature Conservation Board and Adjacent Landowners</li> </ul>
D 3.8	<ul style="list-style-type: none"> <li>Community Trust</li> </ul>
D 3.9	<ul style="list-style-type: none"> <li>Community Levy Policy and Guidelines</li> </ul>
D 3.10	<ul style="list-style-type: none"> <li>Land Claims on Proclaimed and Unproclaimed Provincial and Assigned National Protected areas in KwaZulu-Natal</li> </ul>
D 3.11	<ul style="list-style-type: none"> <li>Amafa Policy Guidelines for the access of rock art sites in KwaZulu Natal</li> </ul>
<b>Policy File No.</b>	<b>Resource-use benefits</b>
D 3.12	<ul style="list-style-type: none"> <li>Disposal of Venison from Ezemvelo KZN Wildlife Management Operations.</li> </ul>
D 3.13	<ul style="list-style-type: none"> <li>Sustainable use of wildlife resources.</li> </ul>
D 3.14	<ul style="list-style-type: none"> <li>Freshwater Angling.</li> </ul>
D 3.15	<ul style="list-style-type: none"> <li>Freshwater species utilisation.</li> </ul>
D 3.16	<ul style="list-style-type: none"> <li>Use of plant resources from protected areas.</li> </ul>
D 3.17	<ul style="list-style-type: none"> <li>Use of doomed biological material.</li> </ul>
D 3.19	<ul style="list-style-type: none"> <li>Provision of hunting by Ezemvelo KZN Wildlife.</li> </ul>
<b>Policy File No.</b>	<b>4. RELATIONSHIPS</b>
D 4.1	<ul style="list-style-type: none"> <li>Neighbour Relations.</li> </ul>
D 4.2	<ul style="list-style-type: none"> <li>Participation - Non Government Organisations.</li> </ul>
D 4.3	<ul style="list-style-type: none"> <li>Data Access.</li> </ul>
D 4.4	<ul style="list-style-type: none"> <li><u>Consultation and Communication with Stakeholders: Policy and Guidelines.</u></li> </ul>
<b>Policy File No.</b>	<b>COMMERCIAL OPERATIONS</b>
E 1	<ul style="list-style-type: none"> <li>Concessions for Welfare Groups.</li> </ul>
E 2	<ul style="list-style-type: none"> <li>Hiking and Mountaineering.</li> </ul>
E 3	<ul style="list-style-type: none"> <li>Educational Concessions.</li> </ul>
E 4	<ul style="list-style-type: none"> <li>Club Facilities within Board Areas.</li> </ul>
E 5	<ul style="list-style-type: none"> <li>Hutted Camps.</li> </ul>
E 6	<ul style="list-style-type: none"> <li>Joint Venture Scheme.</li> </ul>
E 7	<ul style="list-style-type: none"> <li>Allocation of Sites in terms of the Joint Venture Scheme.</li> </ul>
E 8	<ul style="list-style-type: none"> <li>Access to Protected Areas through Unofficial Entry Points.</li> </ul>
E 9	<ul style="list-style-type: none"> <li>Visitor Facilities Management by Ezemvelo KZN Wildlife.</li> </ul>
E 10	<ul style="list-style-type: none"> <li>Lease of Lakeshore at State Dam Protected Areas.</li> </ul>
E 11	<ul style="list-style-type: none"> <li>Execution, Control and Management of Leases and Concession Contracts (excluding Biodiversity Conservation Partnerships and Leases of Wildlife).</li> </ul>

E 12	• Private Sector Reservations Policy.
E 13	• Partnerships for Eco-Tourism Development within or Adjacent to Protected Areas.
E 14	• Discounting of Tariffs for Walk-in Guests.
E 15	• Ecotourism Discounting Strategy.
E 16	• Travel Trade Commissions: Tour Operator/ Travel Agency.
E 17	• Policy and Procedure for the establishment and monitoring of Commercial Operations Public Private Partnership (PPP) Agreements.
E 18	• Administrative and operational policy on Professional hunting in South Africa.
E 19	• Commercialisation.

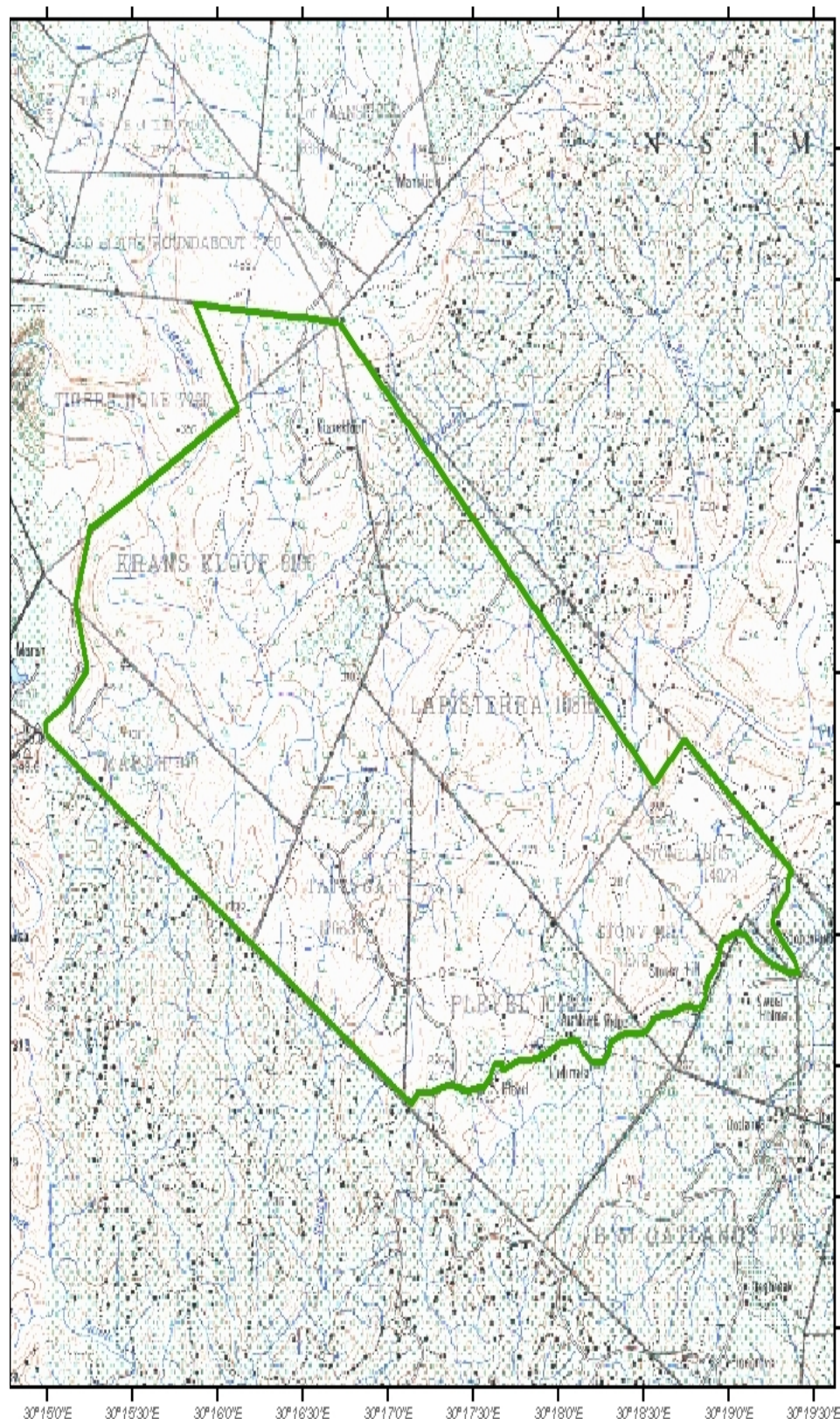
### APPENDIX 3 – ZONATION DESCRIPTIONS

CATEGORY	DESCRIPTION OF CRITERIA TO BE USED FOR ZONATION	SETTING DESCRIPTIONS (AS FROM ROS HANDBOOK)
Semi-Primitive Non-motorised	<p>Closely related to the above zone, but usage of formalized trails at a high intensity – concreting/rock-packing of trails</p> <p>Natural environment experience, non-motorised use, usually a buffer between Wilderness and semi-primitive wilderness/roaded natural areas</p> <p>Visual and audio impact from outside, at a short distance (&lt; 5km)</p> <p>May be hiking huts or other types of low-scale accommodation, possible field ranger outposts.</p>	<p>Area is characterised by a predominantly natural or natural-appearing environment of moderate to large size, interaction between users is low, but there is often evidence of other users. The area is managed such that minimum on-site controls and restrictions may be present, but are subtle. Motorised use is not permitted.</p>
Semi-Primitive Motorised	<p>4x4 trails and their area of impact (audio and visual)</p> <p>Visitor and management tracks and their zone of visual and audio impact (GIS to be used to determine exact range of impact, hence an initial distance of 100m other side has been set)</p> <p>Rustic accommodation, or low-level, low intensity tourism nodes (no bigger than 10 – 20 beds).</p>	<p>Area is characterised by predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are suitable. Motorised use is allowed.</p>
Rural	<p>A rural recreational node/area, rather than as a nature-based experience. Resort type development rather than a nature-based tourism facility.</p>	<p>Area is characterised by a substantially modified natural environment. Resource modifications and utilisation practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident and the interaction between users is often moderate-high. A number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.</p>

**Map 1: Location Map of MNR**



**Map 2a: Topographic Map of MNR**



## Topographic Map : Map 2a Mbumbazi Nature Reserve

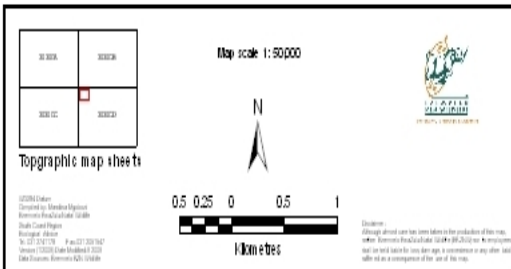
**Boundary**

### Reserve Extents

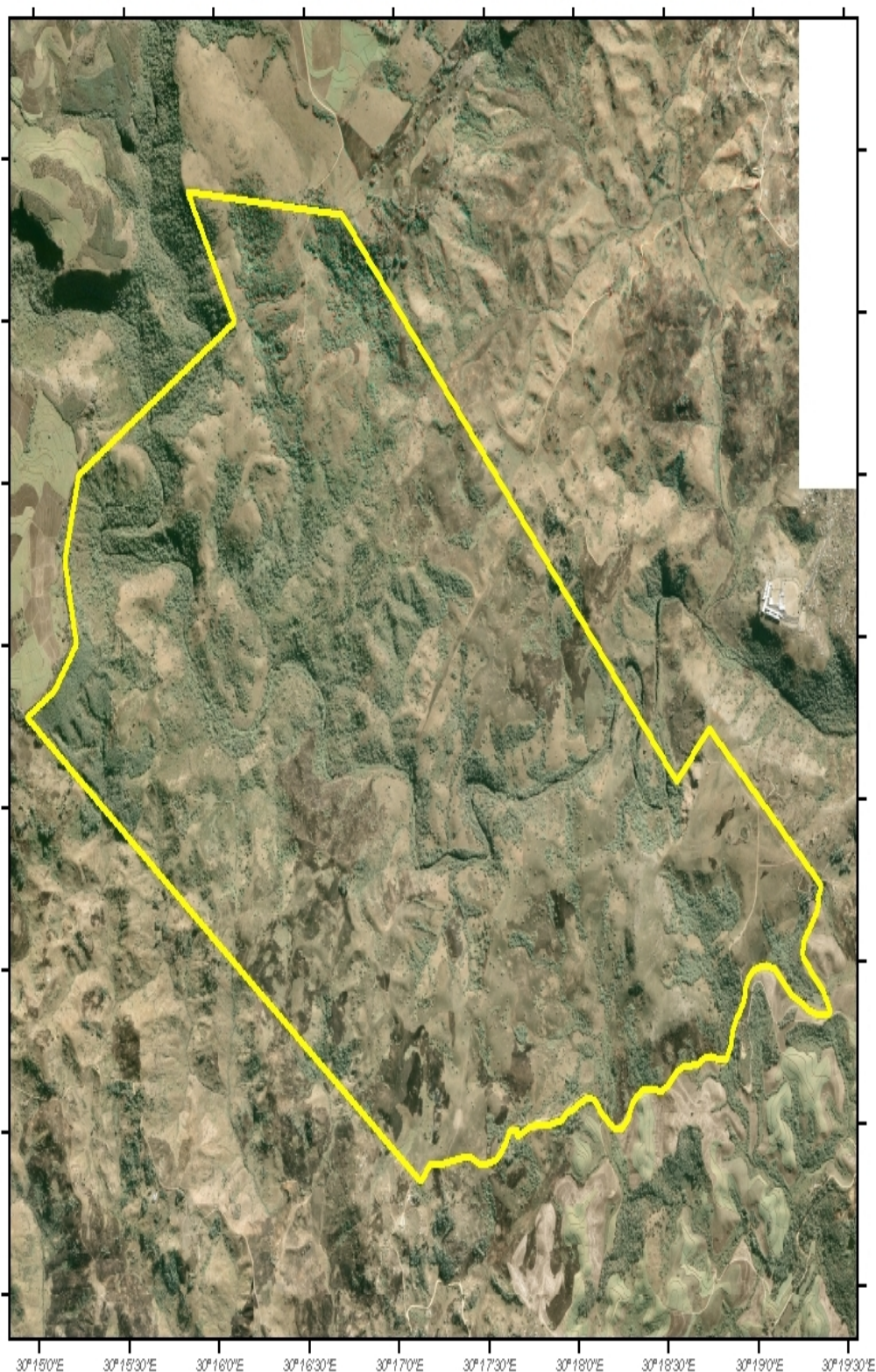
Area: = 2081 Ha (Flat) .... Ha (Surface)  
 Boundary length: = 21.4 Km (Flat) ..... Km (Surface)  
 Highest point 550 m a.s.l  
 Lowest point 110 m a.s.l  
 Centroid (MB) Lat. -30.8213 dd Long. 30.2881 dd

### Geographical Extent

Lat. -30°47'35.146" to -30°50'38.724"  
 Long 30°14'59.744" to 30°19'25.072"



**Map 2b: Infrastructure of MNR**



**Topographic map : Map 2b  
Mbumbazi Nature Reserve**



#### Reserve Extents

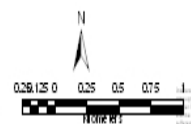
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 Highest point 550 m a.s.l  
 Lowest point 110 m a.s.l  
 Centroid (MB) Lat. -30.8213 dd Long. 30.2881 dd

#### Geographical Extent

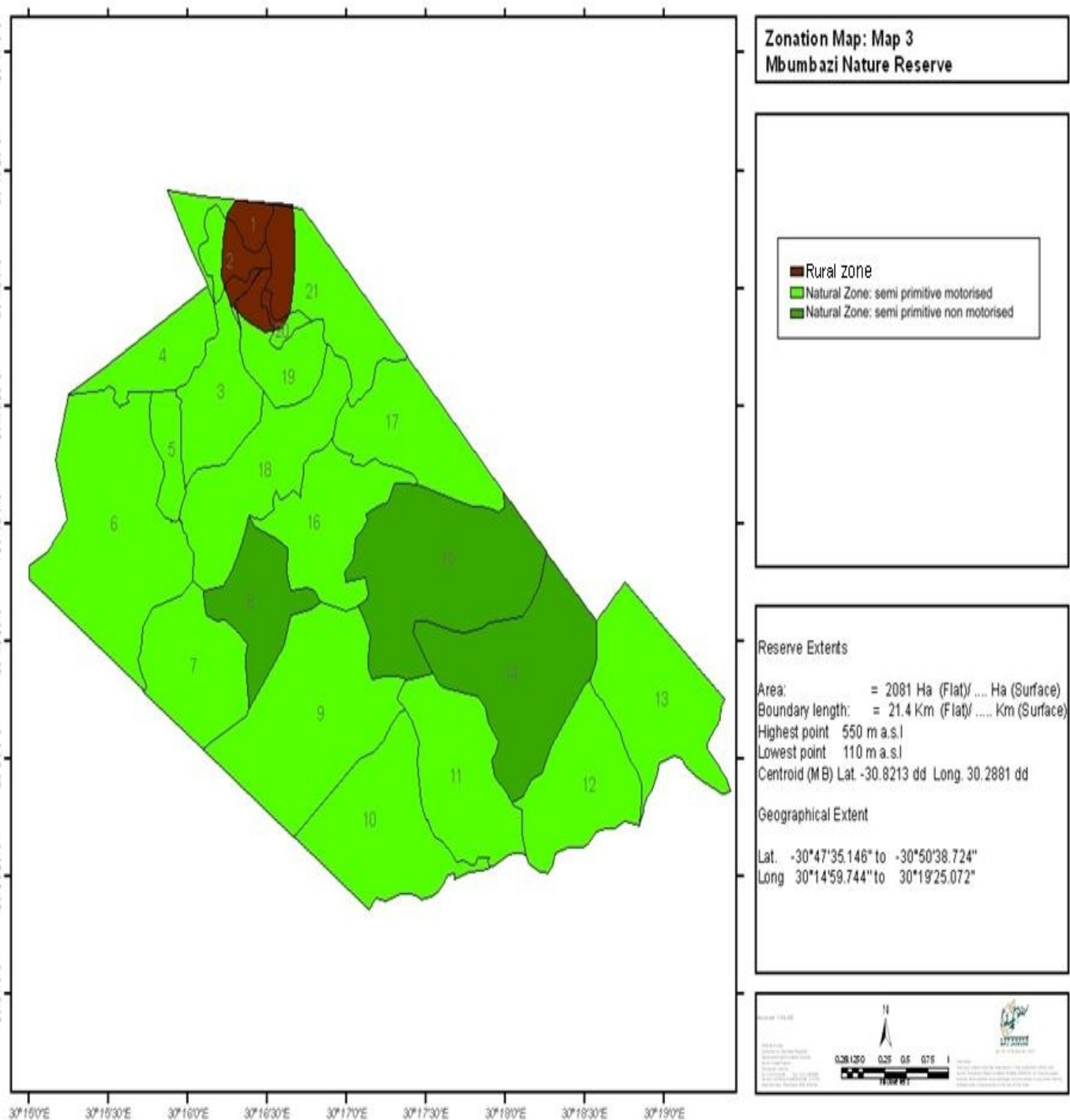
Lat. -30°47'35.146" to -30°50'38.724"  
 Long 30°14'59.744" to 30°19'25.072"

Map scale 1:8

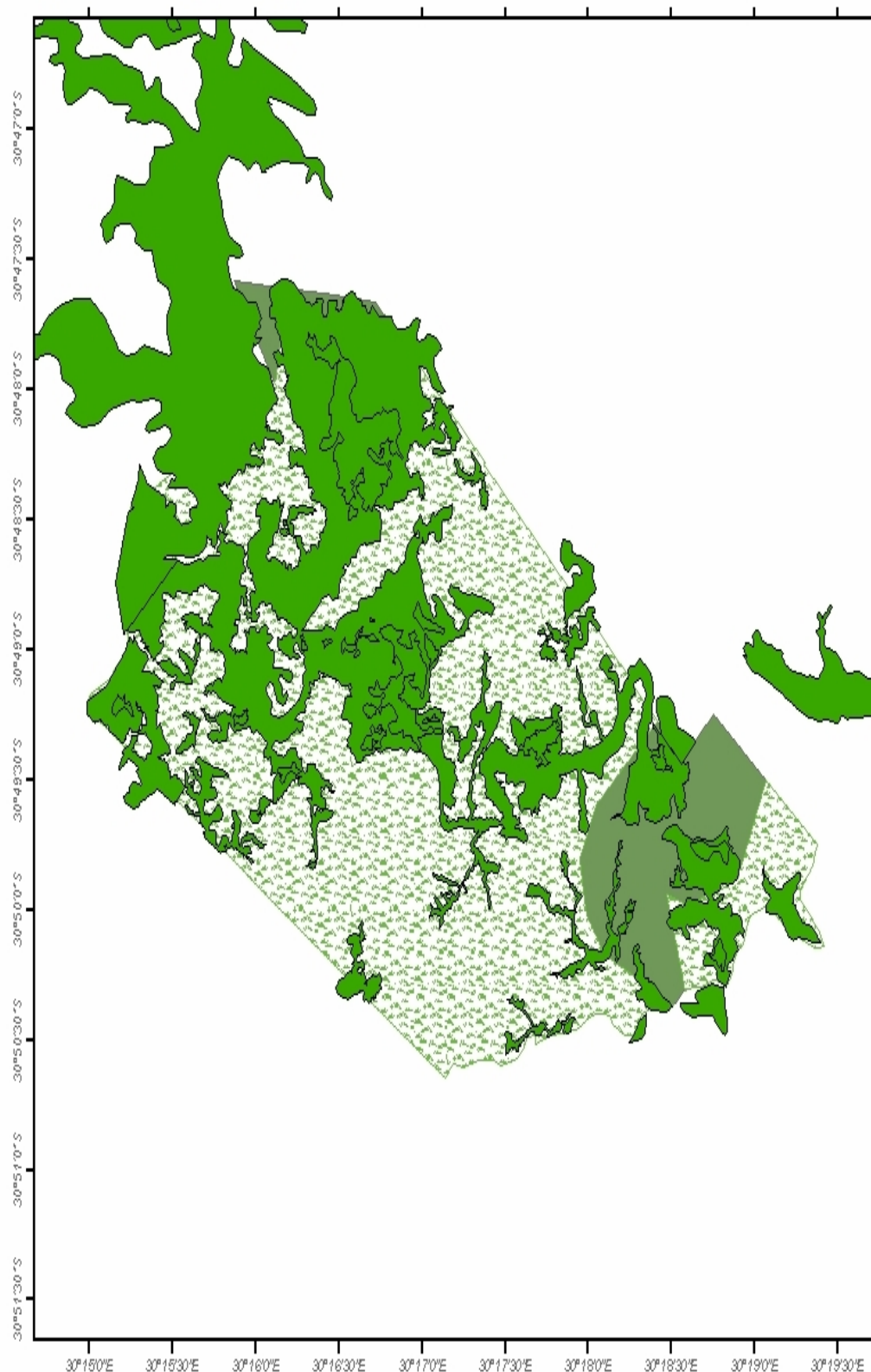
Scale of 1:8  
 0 0.25 0.5 0.75 1  
 Kilometres



**Map 3: Zonation Map of MNR**



**Map 4a: Vegetation Map of MNR**



**Vegetation map (2009): Map 4a  
Mbumbazi Nature Reserve**

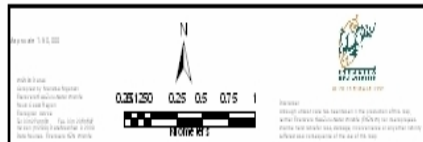
- Forest
- Pondoland-Ugu Sandstone Coastal Sourveld
- South Coast Grassland

#### Reserve Extents

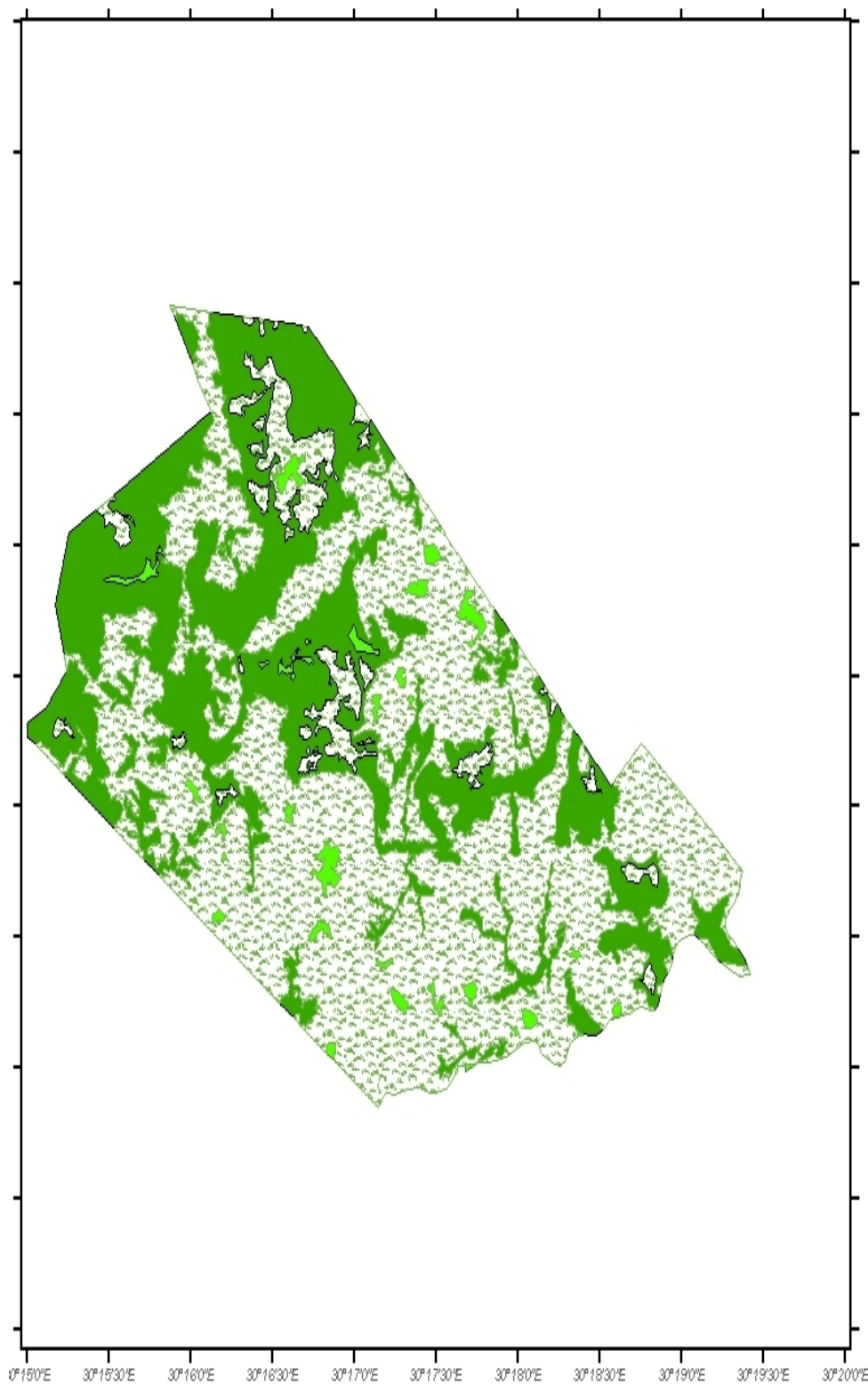
Area: = 2081 Ha (Flat) .... Ha  
 Boundary length: = 21.4 Km (Flat) ..... Km  
 Highest point: 550 m a.s.l  
 Lowest point: 110 m a.s.l  
 Centroid (MB) Lat. -30.8213 dd Long. 30.2881 dd

#### Geographical Extent

Lat. -30°47'35.146" to -30°50'38.724"  
 Long 30°14'59.744" to 30°19'25.072"



**Map 4b: Vegetation Map of MNR**



**Vegetation map: Map 4b  
Mbumbazi Nature Reserve**

**Vegetation**

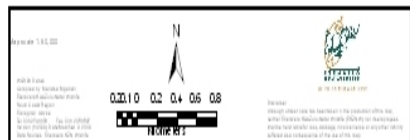
- Forest
- Grassland
- Bush Clump

**Reserve Extents**

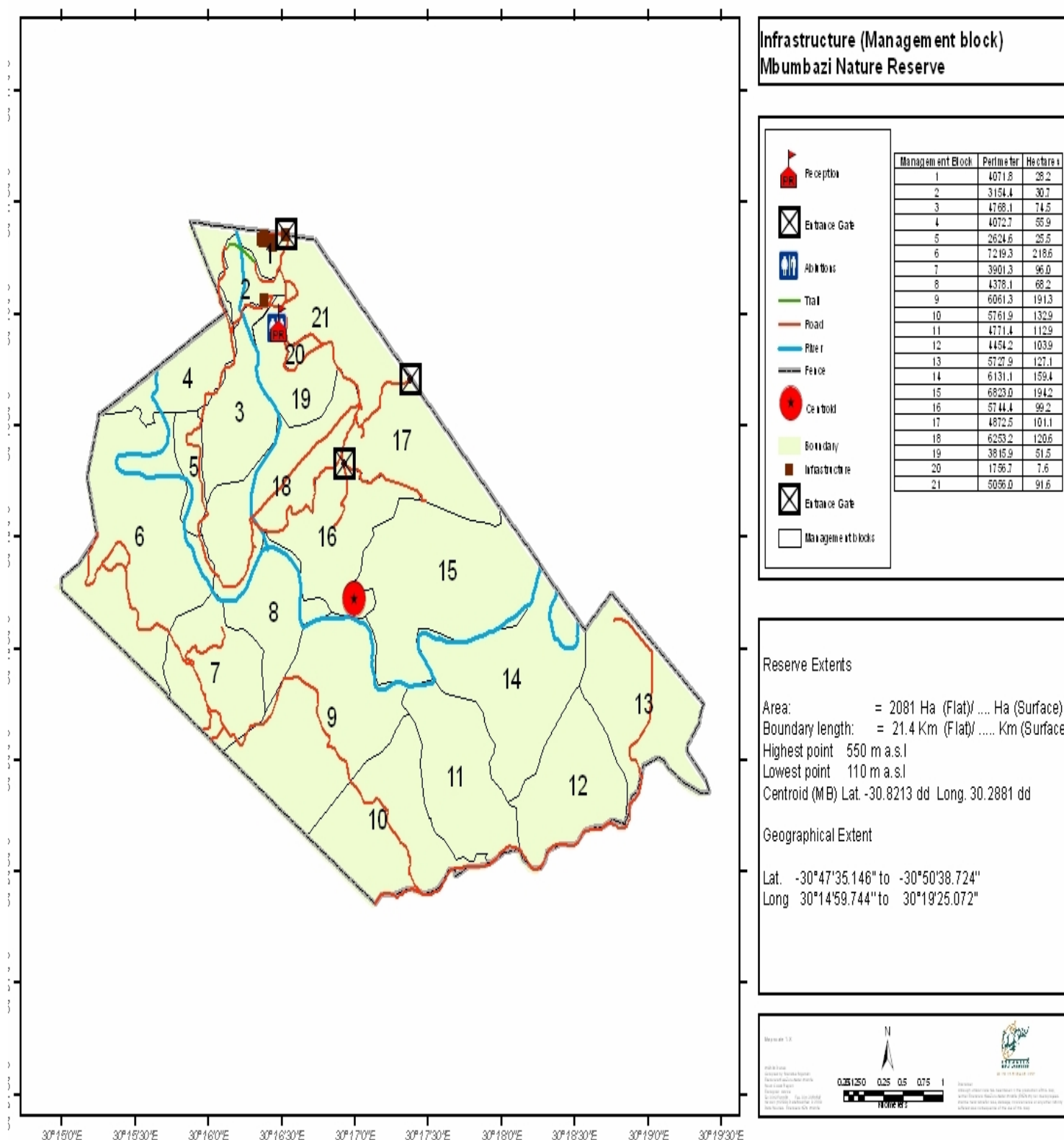
Area: = 2081 Ha (Flat) ..... Ha (Surface)  
 Boundary length: = 21.4 Km (Flat) ..... Km (Surface)  
 Highest point 550 m a.s.l  
 Lowest point 110 m a.s.l  
 Centroid (MB) Lat. -30.8213 dd Long. 30.2881 dd

**Geographical Extent**

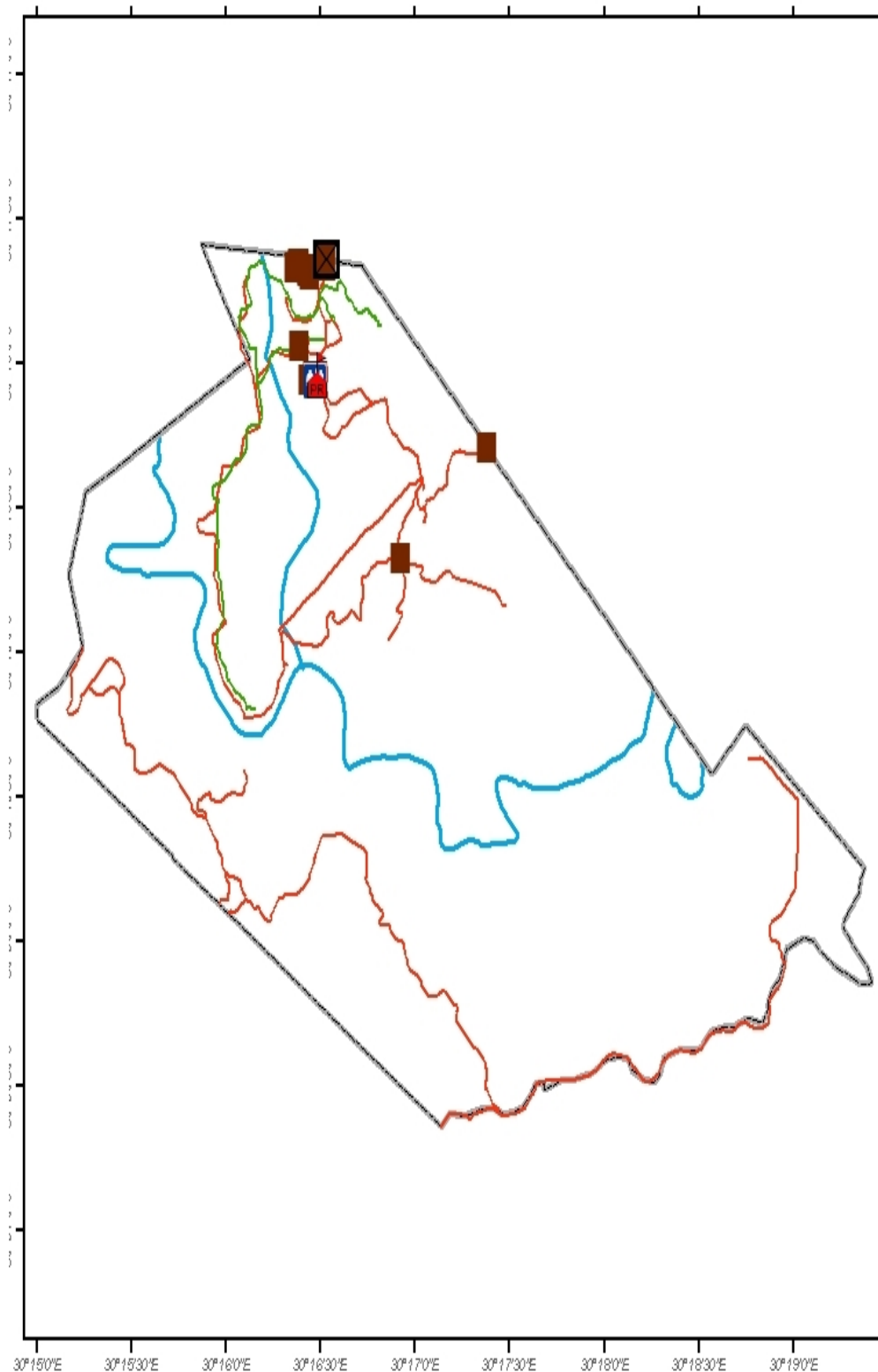
Lat. -30°47'35.146" to -30°50'38.724"  
 Long 30°14'59.744" to 30°19'25.072"



**Map 5: Infrastructure of MNR**



**Map 6: Trails Map of MNR**



**Trails map: Map 6  
Mbumbazi Nature Reserve**

- Trail
- Reception
- Ablutions
- Road
- River
- Fence
- Infrastructure
- Entrance Gate

#### Reserve Extents

Area: = 2081 Ha (Flat)/ ..... Ha (Surface)  
 Boundary length: = 21.4 Km (Flat)/ ..... Km (Surface)  
 Highest point 550 m a.s.l  
 Lowest point 110 m a.s.l  
 Centroid (MB) Lat. -30.8213 dd Long. 30.2881 dd

#### Geographical Extent

Lat. -30°47'35.146" to -30°50'38.724"  
 Long 30°14'59.744" to 30°19'25.072"

