



## VERNON GROOKES NATURE RESERVE

# MANAGEMENT PLAN 2009 - 2013



## **Vernon Crookes 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

#### **AUTHORISATION**

This **Integrated Management Plan (2009-2013)** for Vernon Crookes 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 Zeph Dindikazi Conservation Manager Vernon Crookes Nature Reserve

Roger Uys Regional Ecologist South Coast

Scotty Kyle Resource Use Ecologist

#### **Key Stakeholder Representatives**

National Government: Department of Water and Forestry, Department of Land Affairs

Provincial Government: Ezemvelo KZN Wildlife, Department of Agriculture and Environmental Affairs

and Rural Development.

Local Government: Vulamehlo Municipality
Ugu District Municipality

NGO's: Wildlife and Environmental Society of South Africa (WESSA)

Birdlife South Africa EKZNW Honorary Officers

#### RECOMMENDED:

DESIGNATION	NAME AND TITLE	SIGNATURE AND DATE
Chairperson: Coast Regional Operations Committee	MR. C. COETZEE: GENERAL MANAGER WHITEH COAST	03/02/2010 Clackee
Chairperson: EKZNW, Biodiversity Conservation Operations Management Committee	MR.B.KHOZA	16/02/2010 Fung
Chief Executive Officer: EKZNW  (CHAIRPERSON: EXCO)	DR. I. B. MKHIZE	March 12/03/2
Chairperson: KZN Nature Conservation Board	mr 2c hgid.	SM- 16/07/20
Head of Department: KZN Department of Agriculture, Environmental Affairs and Rural Development	DRSS MKHIZE	Figure 21/11/2010

#### Approved:

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

#### Circulate To:

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

Review Date: 2013

#### **TABLE OF CONTENTS**

AUTH	IORISATION	i
TABL	E OF CONTENTS	i\
PREF	ACE	vii
EXEC	CUTIVE SUMMARY AND PURPOSE OF PLAN	ix
PROT	TECTED AREA MANAGEMENT PLANNING PROCESS FRAMEWORK FOR	
	NITIONS	
	REVIATIONSMODITIONS FOR STATUTES (LEGISLATION)	
COMI	WONLY USED ABBREVIATIONS FOR STATUTES (LEGISLATION)	xv
1.	PURPOSE AND SIGNIFICANCE OF VERNON CROOKES NATURE RESERVE	4-
1. 1.1		
1.1 1.2	Purpose	
1.2	Significance	17
2.	ADMINISTRATIVE AND LEGAL FRAMEWORK	18
 2.1	Institutional Arrangements	
2.1.1	VCNR Management Authority	
2.1.2	Land Claims and Co-Management	
2.1.2	Separation of Authority Functions	
-		
2.2	Legislation Guiding the Administration of Vernon Crookes Nature Reserve	
2.3	Regional Planning Context and Principles	
2.4	Proclamation Status of VCNR	
2.5	Local Agreements, Leases, Servitude Arrangements and MoUs	
2.6	Extending Conservation Land Use Management in Areas Surrounding VCNR	21
3.	BACKGROUND	
3.1	Origin of the Name of the Nature Reserve	
3.2	Location and Extent of the Nature Reserve	23
3.3	Previous Land Use	
3.4	Conservation History of the Nature Reserve	
3.5	Climate and Weather	
3.6	Physical Description	
3.6.1	Topography	
3.6.2	Geology	24
3.6.3	Soils	25
3.7	Geomorphology and Landforms	25
3.8	Hydrology	25
3.9	Flora	25
3.10	Fauna	27
3.10.1	Invertebrates	27
3.10.2		
3.10.3		
3.10.4	• • • • • • • • • • • • • • • • • • • •	
3.10.5		
3.11	Cultural Heritage	
3.12	Socio-Cultural History of the Area	
3.13	Sociological Context	
3.14	Economic Context	
3.15	Developed Infrastructure	
3.15.1		31
3.15.2		
3.15.2 3.15.3		
3.15.4 3.15.4		
3.15.4 3.15.6		
	,	

4	MISSION STATEMENT, MANAGEMENT OBJECTIVES and CONSERVATION TARGETS	33
4.1	Introduction	
4.2	Stakeholder Participation	
4.3	Vision	
4.4	Mission	
4.5	Management Objectives	
4.6	Conservation Targets	
4.7	Conservation Targets for the Reserve	
5	ZONATION	38
_		
	OPERATIONAL MANAGEMENT POLICY FRAMEWORK AND GUIDING PRINCIPLES	
6.1	Financial and Human Resources	
6.1.1	Financial Resources	
6.1.2	Human Resource Capacity	
6.2	Local Community Involvement	
6.2.1	Local Board	
6.2.2	Community Levy Trust Fund	
6.2.3	External Funding Projects	
6.2.4	Land Claims	
6.2.5	Environmental Education	
6.2.6	Transfrontier Partnerships	
6.2.7	Informal Participation	
6.3	Security and Safety	
6.4	Natural Resource Management	
6.4.1	Introduction	
6.4.2	Fire Management	
6.4.3	Alien Species Control and Management	
6.4.4	Catchment/ River Management	
6.4.5	Soil Erosion Control	46
6.4.6	Wildlife Management	
6.4.7	Control over Illegal Use of Natural Resources	49
6.5	Cultural Resource Management	
6.6	Resource Utilisation	
6.6.1	Plants and Animals	
6.6.2	Bioprospecting	50
6.6.3	Abiotic Resources	
6.7	Eco-Cultural Tourism and Marketing	
6.8	Environmental Interpretation, Awareness and Education	
6.9	Research	
6.9.1	Monitoring and Evaluation	53
6.10	Infrastructure	
6.10.1		
6.10.2		
6.10.3		
6.10.4		
6.10. <b>5</b>		
6.10.6	·	
6.10.7		
6.10. <i>1</i>		
6.10.9		56
6.10. <b>3</b> 6.10.1		
6.10.1 6.10.1		50 57
6.10.1 6.10.1		
6.10.1 6.10.1		
6.10.1 6.11	Concept Development Plan	
6.11.1		
6.11.1 6.11.2		

6.11.	3 Alignment of CDP with Local Authority Integrated Development Plans	58
7	IMP REVIEW AND AMENDMENT PROCEDURES	60
7.1	Five-Yearly Review and Amendment Procedures	60
7.2	Annual Review and Amendment Procedures	
8	Projects For Action Correlated With Management Objectives	61
8.1	List of IMP Action Projects	61
8.2	Alignment of IMP Action Projects with Prioritised Management Objectives	67

#### LIST OF APPENDICES

Appendix 1:	List of Unpublished References for VCNR	75
Appendix 2:	EKZNW Corporate Policies	
Appendix 3:	Zonation Process	
	LIST OF MAPS	
Map 1:	VCNR Locality Map	81
Map 2a:	Topographical Map of VCNR	82
Map 2b:	Topographical Map of VCNR	
Map 3:	Zonation Map of VCNR	
Map 4a:	Vegetation Map of VCNR	
Map 4b:	Vegetation Map of VCNR	
Map 5:	Infrastructure Map of VCNR	
Map 6	Trails Map of VCNR	
	LIST OF FIGURES	
Figure 1:	Integrated Management Plans: Aligning Annual and Five year Cycles	xi
	LIST OF TABLES	
Table 1:	Biodiversity Targets	36
Table2:	List of IMP Action Projects	61
Table3:	IMP Action Projects Aligned with VCNR Management Objectives	67

#### **PREFACE**

This Integrated Management Plan for the Vernon Crookes Nature Reserve is the primary and overarching management document for the Nature Reserve for the period 2009 to 2013. It forms the framework within which the Nature Reserve will be managed and developed towards the achievement of the management objectives derived in collaboration with the Nature Reserve's stakeholders during workshops held in March and November 2007.

The protected area management planning process and the resultant planning documents (elaborated on in the next few pages) have been designed to meet the statutory requirements of the National Environment Management: Protected Areas Act.

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 Park's management objectives are pursued and reflected through a Strategic Management Plan in the nature reserve'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 KZN Wildlife as the appointed Management Authority for the Vernon Crookes Nature Reserve hereby commits itself to the implementation of the 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 Vernon Crookes Nature Reserve (VCNR). It forms the primary and overarching management document for the VCNR 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 can 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 VCNR's management objectives will be operationalised.

As a document to guide the management of the VCNR, 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 VCNR plays in regional conservation initiatives, and the strategic role the Nature 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 FOR

#### PROTECTED AREAS

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

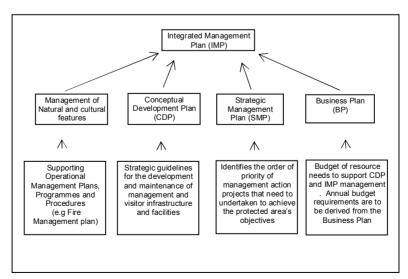
The Integrated Management Plan (IMP) is the overarching protected area integrated planning document that describes the administrative and legal framework, contextual background, public participation processes followed, vision / mission statements, management objectives, zonation as well as a management 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.

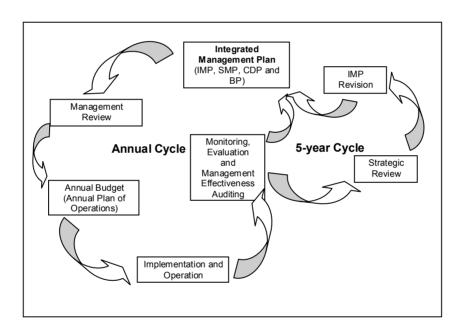


Figure 1: Integrated Management Plans: Aligning Annual and Five year Cycles

#### **DEFINITIONS**

#### Alien Species:

Means species or genotypes, which are not indigenous to Vernon Crookes 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 Vernon Crookes 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' will 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).

<sup>&</sup>lt;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 <u>environment</u> through depletion of resources such as <u>air</u>, <u>water</u> and <u>soil</u>; the destruction of <u>ecosystems</u> 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 –

- a. threaten ecosystems, habitats or other species or have a demonstrable potential to threaten ecosystems, habitats or other species; and
- b. 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 Vernon Crookes 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).

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

#### **ABBREVIATIONS**

BP Business Plan (Component of EKZNW protected area management planning process)

CDP Concept Development Plan (Component of EKZNW protected area management planning

process)

DAE&RD KwaZulu-Natal Provincial Department of Agriculture, Environmental Affairs and Rural

Development

DLA Department of Land Affairs
DPW Department of Public Works

DWEA National Department of Water and Environmental Affairs

EIA Environmental Impact Assessment EKZNW Ezemvelo KwaZulu-Natal Wildlife

FPA Fire Protection Association in terms of the National Veld and Forest Fire Act, 1998 (Act No.101

of 1998)

GIS Geographical Information Systems IAP Interested and Affected Parties

IDP Municipal Integrated Development Plan Integrated Emvironmental Management

IMP Integrated Management Plan

IUCN International Union for Conservation of Nature or The World Conservation Union (as commonly

referenced)

KZN KwaZulu-Natal (Province of the Republic of South Africa)

LDP Local Development Plan

MCM National Department of Marine and Coastal Management

MEC Member of the Executive Council for DAEA&RD, KwaZulu-Natal Provincial Government

MO Management Objective
MoA Memorandum of Agreement
MoU Memorandum of Understanding

PAMC Protected Area Management Committee/Reserve Planning Committee

PPP Public Private Partnership

ROC EKZNW Regional Operations Committee ROS Recreational Opportunity Spectrum

SA Republic of South Africa

SAHRA South African Heritage Resources Agency
SDF Municipal Spatial Development Framework
SMME Small, Micro and Medium Enterprises

SMP Strategic Management Plan (Component of EKZNW protected area management planning

process)

SUP Sustainable Utilisation Plan

UNESCO United Nations Educational, Scientific and Cultural Organisation

VCNR Vernon Crookes Nature Reserve

WUA Water User Association

#### ABBREVIATIONS USED FOR STATUTES (LEGISLATION)

CARA Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)

ECA Environment Conservation Act ,1989 (Act No. 73 of 1989)

KZNHRA KwaZulu Heritage Resources Act, 1997 (No. 10 of 1997)

KZNNCMA KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997)

NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998).

NEMBA National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

NEMPAA National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003

NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)

NWA National Water Act, 1998 (Act No. 36 of 1998)

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

#### 1. PURPOSE AND SIGNIFICANCE OF VERNON CROOKES NATURE RESERVE

#### 1.1 Purpose

The purpose of Vernon Crookes Nature Reserve (VNCR) is to:

- Contribute to the achievement of Provincial and National conservation targets through protecting a representative portion of the area and their associated biodiversity, including the ecological and evolutionary processes that generate and maintain this diversity;
- Protect endangered, rare and endemic species indigenous to the area;
- Preserve and conserve the ecological and cultural heritage integrity of the area;
- Provide controlled and equitable access by the public to the area and its resources;
- Contribute to local and regional economies through sustaining good quality water production and by providing a public amenity;
- Provide a destination for eco-cultural tourism in the KwaZulu-Natal Province;
- Provide for nature based recreation through walks, trails and game drives; and
- Maintain the supply of ecological services including water recharge and purification and carbon sequestration from VCNR's forest and grassland habitats.

#### 1.2 Significance

The significant values of VCNR include:

- **Natural and cultural values.** Various VCNR natural and cultural heritage features are of Provincial significance, and incorporate the following:
  - The outstanding natural beauty and aesthetic value of the area;
  - The diverse system of natural wetlands, grassland and forest; and
  - The biological diversity of species and habitats
- **Outdoor Recreation and Eco-cultural Tourism.** VCNR provides sustainable outdoor recreation and eco-cultural tourism activities in an area of significant natural and aesthetic beauty, and thus significantly contributes to and enhances regional tourism opportunities for visitors.

#### **Biodiversity:**

- Conserves a section of the IUCN Pondoland Centre of plant Endemism;
- Protect several endemic plants including the only population of Rhus rudatsii in a protected area; and
- Predator and prey interactions with a variety of small predators present in the nature reserve including the Martial Eagle (*Polemaetus bellicosus*), Serval (*Felis Serval*), and White-naped weasel (*Poecilogale albinucha*), Caracal (*Felis caracal*) and Blackbacked jackal (*Canis mesimelas*).

#### Socio - Economic:

- Employment opportunities in nature conservation tourism are provided to local people;
- 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 communities from sustainable resource (consumptive and non-consumptive) use and employment in various poverty alleviation projects include alien plant control programmes; and
- VCNR is of value to the scientific community for the research opportunities it provides and its value as a site
  for field excursions by students and staff.

#### 2. ADMINISTRATIVE AND LEGAL FRAMEWORK

#### 2.1 Institutional Arrangements

#### 2.1.1 VCNR Management Authority

Ezemvelo KwaZulu-Natal Wildlife is the appointed Management Authority responsible and accountable for the Vernon Crookes Nature Reserve. 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 VCNR 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 (*VCNR*) through the relevant provincial departments, District and Local Municipalities.

#### 2.1.2 Land Claims and Co-Management

The land claim against VCNR has been gazetted and is currently being processed.

Project 2.1.2 (i): Finalise the settlement agreement pertaining to VCNR.

#### 2.1.3 Separation of Authority Functions

Other public service providers within VCNR 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 VCNR.

#### 2.2 Legislation Guiding the Administration of Vernon Crookes Nature Reserve.

It is important to note that Vernon Crookes Nature Reserve 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's 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 land 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 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

VCNR 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 VCNR in line with the levels adopted for all protected area within the EKZNW protected area network.

In the KwaZulu-Natal Province, the Nature Reserve is situated within the Ugu District Municipality and the Vulamehlo Local Municipality

Such alignment will assist in developing an effective buffer zone around VCNR. 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.

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. VCNR also falls within the jurisdiction of the Vulamehlo municipality which administers an area that is rural in character. These municipalities are responsible for the preparation and administration of Integrated Development Plans (IDP) for its area of jurisdiction. This authority is identified as an important stakeholder in the VCNR and will take into account this IMP and the existence of the protected area in their planning processes.

The Integrated Development Plans of these two municipalities place emphasis on the provision of basic services to local communities. The Vulamehlo IDP also recognises that VCNR will make a contribution to the development of a rural tourism industry in its municipal area which adjoins the Hibiscus Coast which is the second largest tourism destination in KwaZulu-Natal.

The IDP's of both the Local and District Municipalities recognise that poor environmental management is a major challenge facing their overlapping areas of jurisdiction.

Action Project 2.3(i): Management in collaboration with other relevant EKZNW officials will be mandated 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 VCNR 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): Attend Ugu Biodiversity Forum. Establish relationships with neighbouring properties to plan and restore fragmented corridors and to enable the continued functioning of existing ones.

#### 2.4 Proclamation Status of VCNR

VCNR was originally proclaimed on the 4<sup>th</sup> of January 1973 Proclamation 254/72(r). It has subsequently been expanded on the 14 January 1976 - P157/76. A further 500 hectares of land has been donated by Illovu sugar and is managed as part of the Nature Reserve. The VCNR therefore needs to be surveyed and re-proclaimed.

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

Action Project 2.4 (ii): Formalise the proclamation of the land donated by Illovu Sugar.

#### 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 VCNR 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 appointed EKZNW executive member signing such documents.

The VCNR 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 VCNR management and regional management offices for easy reference. These copies will be updated in accordance with any authorised amendments. The Board of EKZNW has recognised a right of way along the existing tourist road linking two local communities on the reserves north-eastern boundary.

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

#### 2.6 Extending Conservation Land Use Management in Areas Surrounding VCNR

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 VCNR in collaboration and co-operation with the relevant communities 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 VCNR 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 VCNR 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 VCNR.

The most important areas in this regard would be:

- VCNR is relatively small in size and for this reason the sound conservation management of land adjoining the
  protected area will assist significantly in the conservation of biodiversity of the protected area. The Montezuma
  game farm is the largest block of untransformed land adjoining the nature reserve it consists of extremely
  rugged and attractive terrain which is largely unsuited to cultivation is the on the northern boundary of the
  VCNR.
- Opportunities for co-operative agreements and co-management of land also exist elsewhere with blocks of
  indigenous forests conserved on commercial farms used primarily for sugar cane and timber cultivation. Efforts
  to control invasive alien plants on adjoining farms would significantly assist the management of the VCNR in its
  own ongoing alien plant management programmes.
- On its eastern boundary the Nature Reserve shares a common boundary with land administered by the Cele
  Traditional Authority. Links have been developed over many years by the management authority with the rural
  communities inhabiting this area and will remain an important focus for the Management Authority for the
  foreseeable future.

Action Project 2.6 (i): Annually explore and investigate opportunities to extend conservation land use in and around VCNR.

#### 3. BACKGROUND

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

The Nature Reserve was named after the late Vernon Crookes who had established the Game Park.

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

The Vernon Crookes Nature Reserve is situated in southern KwaZulu-Natal between -30°15'20.387"S to -30°18'34.686"S and 30°32'49.776"E to 30°37'37.711"E. The GIS flat surface area of VCNR amounts to 2201ha. The altitude at the highest point in VCNR is 540 metres asl with the lowest point being 160 metres asl.

Access to the nature reserve is via the Park Rynie offramp from the N2 via the tar Main Road 55 and the gravel District Road 178. VCNR is some 12 kilometres inland of the town of Umzinto and 80 kilometres southwest of the city of Durban/Ethekweni.

Adjoining land uses include timber and sugar cane farms (to the west and south) and communal farming areas to the east. The protected area covers an area of some 3000ha.

#### 3.3 Previous Land Use

Prior to proclamation, VCNR was used for a variety of activities. These were:

- Cattle grazing. The Reynold's Brothers used the land for cattle grazing and a portion of land for beef production.
- The reserve was subject to burning practices to provide for cattle grazing.
- Portions of grassland were used to construct kraals and the south eastern part of the reserve was used for sugar cultivation.
- There is evidence of footpaths, clearance of bush and disturbance which indicates that medicinal plants were collected and woodcutting was practiced.
- Gold mining took place but was discontinued as it was no longer viable.

**Action Project 3.3 (i):** Update the previous land use for VCNR.

#### 3.4 Conservation History of the Nature Reserve

The Nature Reserve was proclaimed under the Nature Conservation Ordinance (Act No.15 of 1974). The reserve was proclaimed to conserve the natural features of the landscape. These include the waterfalls, grasslands, forest patches, rivers and diverse wildlife. The Vernon Crookes Game Park was established in 1968 and in December 1970, Reynolds Brothers Limited the owners of the property wrote to the Natal Parks Game and Fish Preservation Board: "The Directors of Reynolds Brothers, deeply conscious of the growing interest in our wildlife and nature conservation, consider that this need can only be promoted further if the management of the park is taken over by the Parks Board". The original terms offered by Reynolds Brothers were to lease the property for a period of fifty years to the Parks Board with an access right of way across their estate to the entrance to the nature reserve. A condition of establishment was that the nature reserve be named after the late Vernon Crookes who had established the Game Park.

Some of the conservation achievements of the VCNR since its establishment as a provincial nature reserve have been:

 The implementation of alien plant eradication and weed control measures (without which large areas of VCNR would in no way resemble their natural state).

- A grassland management programme including the institution of a controlled burning programme and the management of wildlife numbers.
- The reintroduction of species known to have historically occurred in the nature reserve and monitoring and management o wildlife in the VCNR.
- The institution of scientific research programmes. Detailed studies have been undertaken of many aspects
  of the nature reserve have been undertaken by students of the Universities of KwaZulu-Natal and the Free
  State.
- Neighbour relationship programmes. Achievements include the preferential employment of local people in conservation programmes, controlled harvesting of thatch grass and timber from invasive alien trees, environmental awareness work with local schools, the allocation of community levy funds to neighbours and in a major concession to neighbours, local people are allowed traversing rights across certain areas of the nature reserve.
- Monitoring wildlife populations in the nature reserve and policing illegal activities. To give an indication of the need for this work on an annual basis some eighty snares are removed, 3-4 hunting dogs have to be put down and 2-3 cases of theft are laid.
- Developing and providing infrastructure for visitors and management of the reserve including an excellent road and trail network and visitor facilities including overnight accommodation and picnic sites

Challenges that the reserve are still in the process of addressing include the cutting of fences for grazing cattle, 24 hour access community gates which allows pedestrians and vehicles through the reserve, theft of EKZNW items from the camp and poaching with dogs.

**Action Project 3.4 (i):** Update the conservation history for VCNR indicating the importance of the proclamation.

#### 3.5 Climate and Weather

The Nature Reserve has an annual rainfall of 1000 mm or more with most rain falling between the months of September and March. Rainfall patterns vary over a nine to ten year cycle between wet and dry periods, according to the detailed records kept by EKZNW since 1982. The wettest year on record to date was in 1986, with just over 1800 mm of rainfall recorded. The nature reserve driest year to date was in 1992; with 400 mm of rain recorded.

Temperatures range from an average minimum of 9 C in winter to 19 C in summer to an average maximum of 22°C in winter to 28° C in summer.

**Action Project 3.5 (i):** Maintain the collection and storage of climatic data records. Include the Predictive Mean maximum and minimum temperatures in conjunction with mean rainfall for VCNR.

#### 3.6 Physical Description

#### 3.6.1 Topography

The area's topography is closely related to its geology and geomorphology with the highest point in VCNR being at Kwantaba on the northwestern boundary, elevation of 540 m asl and the lowest point in the Nyengelezi river valley at approximately 160 m asl.

#### 3.6.2 Geology

The reserve is underlain by granite, schist and gneiss of the Basement Complex with a plateau of Natal Sandstone on the nature reserve's eastern extremity. Isolated outcrops of pegmatite and ultrabasic rocks occur. Ultrabasic rocks are a deep green and believed to be the parent material of the earth's igneous core while pegmatic rocks are the world's main source of natural gems.

Deposits of gold were discovered along the Mnyengelezi valley in the late 1880's and the Happy Thought Gold Mine was worked sporadically by the Natal Gold Mining Company until 1908. The mine was re-opened

by Reynolds Brothers for a brief period from August 1934 to February 1940. The original shafts and adits of this mine are to date the oldest recorded structures in the Vernon Crookes nature reserve.

Deposits of uranium are also found at Vernon Crookes nature reserve, prospecting established that these deposits are small and low grade in nature.

#### 3.6.3 SOILS

The main soils of the Nature Reserve are shallow soils of the Mispah and Glenrosa forms. Poorly drained Katspruit soils are common in the valleys while Champagne soils characterise a number of the vleis in the nature reserve. Other soils are also found in isolated patches with local variations in parent material, microclimate and topography being regarded as responsible for these variations.

**Action Project 3.6.3 (i):** Identify the biodiversity importance and implications of immature soil profiles for management.

Action Project 3.6.3 (ii): Map the soils of VCNR showing areas susceptible to soil erosion.

Action Project 3.6.3 (iii): Write and submit for approval a soil erosion control plan.

#### 3.7 Geomorphology and Landforms

The most important landforms in the nature reserve are a series of steep sided river valleys and rounded hilltops with a plateau of high ground along the nature reserve's northern boundary. This plateau is a very important feature of VCNR with most staff and visitor facilities are located in this area.

#### 3.8 Hydrology

VCNR is situated on the catchment divide between the open valley of the uMzinto river and the much steeper and more deeply incised Mpambanyoni River. Almost all of the nature reserve is located in the Mzinto catchment whose estuary is some fifteen kilometres to the southeast at Kelso. VCNR is drained by two major streams the Mnyengelezi and Mhlanga streams. The nature reserve conserves the upper catchments of these streams.

There are a large number of wetlands in the nature reserve as well as several small dams, the largest being two hectares in extent. The wetlands are important breeding sites and sources of food for several species of wildlife.

Action Project 3.8 (i): Management will monitor the quantity and quality of water in the rivers.

#### 3.9 Flora

#### Vegetation Types

VCNR is a complex mosaic of primary species-rich grasslands interspersed with subtropical forest patches and savannah. This Reserve is critical for the conservation of South Coast Grassland (952 ha), and together with Umbumbazi Nature Reserve, conserves the majority of this Critically Endangered vegetation type. Furthermore, VCNR also conserves a significant portion of Critically Endangered Moist Ngongoni Veld (479 ha).

Historically, Scarp Forests acted as Afrotemperate refugia and are a contemporary overlap zone between Afrotemperate and coastal forest, resulting in higher species richness in Scarp Forests than in either the Afrotemperate 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, 2006). To maintain the current extent and integrity of Northern Coastal Scarp Forest (276 ha), it is necessary to control alien plant invasion and

prevent the spread of uncontrolled fires into the forest. An Indian Ocean Coastal Belt forest type, KwaZulu-Natal Coastal Forest (431 ha) is a species-rich, tall forest that occurs at low altitudes on rolling coastal plains. Also belonging to the IOCB, is the South Coast Bushland. Occupying only a small area of the Reserve (15 ha), South Coast Bushland is a mosaic of thicket, grassland and bushclumps.

Both vegetation types belonging to the savannah biome are Critically Endangered; KwaZulu-Natal Sandstone Sourveld (47 ha) with over 90% of this vegetation already transformed, and Moist Ngongoni Veld with over 83% transformed. It is therefore imperative that no further loss or transformation of KwaZulu Natal Sandstone Sourveld or Moist Ngongoni Veld be allowed. 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 and herbs that are a feature of both vegetation types, but KwaZulu-Natal Sandstone Sourveld in particular (Mucina and Rutherford, 2006). The occurrence of bulbous plants in the grassland sections, in particular *Bowiea volubilis*, *Craterostigma nanum var. nanum*, *Eucomis autumnalis* and *Scilla natalensis*, needs to be monitored as these species are harvested for medicinal purposes.

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 occurs in VCNR and 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, within the reserve, include inappropriate burning regimes, bush encroachment, alien invasive plants, heavy grazing and illegal harvesting.

#### Conservation Targets:

- KwaZulu-Natal Sandstone Sourveld (Critically Endangered): The provincial target is 23% of the original
  distribution for this vegetation type, however only 7% remains untransformed. Only 2% of the remaining
  7% occurs within protected areas, and VCNR safeguards 0.5% of this. The conservation target has not
  been met.
- Moist Ngongoni Veld (Critically Endangered): VCNR safeguards 0.6%. The conservation target of 25% 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 VCNR safeguards 10.1% of this. The conservation target has **not** been met.
- South Coast Bushland (Endangered): The provincial target is 25% of the original distribution for this vegetation type, however only 29% remains untransformed. Only 2% of the remaining 29% occurs within protected areas, and VCNR safeguards 0.1% of this. The conservation target has **not** been met.
- Eastern Scarp Forest Northern Coastal Scarp Forest (Least Threatened): The provincial target is 62% of the original distribution for this vegetation type, however 96% remains untransformed. Only 67% of the remaining 96% occurs within protected areas, and VCNR safeguards 5.1% 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 VCNR 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 for which conservation targets are required.

•	Begonia dregei	Dwarf wild begonia	Endangered
•	Bowiea volubilis	Climbing lily	Vulnerable
•	Brachystelma gerrardii		Endangered
•	Clivia miniata var. miniata	Clivia/Bush lily	Vulnerable
•	Crinum moorei	Moore's crinum	Vulnerable
•	Cryptocarya myrtifolia	Myrtle quince/Wild camphor	Vulnerable

Eriosemopsis subanisophylla

Eucomis autumnalis Pineapple Iily Declining

Phus grandidans

Rhus grandidens Least Concern

Rhus rudatisii

Senecio dregeanus Vulnerable

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

Vulnerable

Endangered

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

Action Project 3.9 (iii): Identify threats to the priority flora and their associated animal species, as well as required mitigatory actions.

Action Project 3.9 (iv): Compile a flora map with a diagnostic species list.

Action Project 3.9 (v): Determine conservation targets for red data plants.

#### 3.10 Fauna

The VCNR has a relatively comprehensive list of the fauna of the Vernon Crookes Nature Reserve.

**Action Project 3.10 (i):** Copies of the Species Checklists will be updated and filed manually and digitally at the VCNR Management and Regional Offices as well as the Conservation Manager for easy. 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 butterfly and moth species for the Reserve (154 spp.), but is not as complete for other invertebrate groups. Of particular importance is the rare Whitish amakosa rocksitter (*Durbania amakosa albescens*).

**Action Project 3.10.1 (i):** Compile through further research and collecting a check list of the invertebrate species found in VCNR identifying those species that are threatened and or endemic.

#### 3.10.2 Fish

A total of five indigenous fish species have been recorded within VCNR, 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 VCNR.

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

#### 3.10.3 Herpetofauna (Amphibians and Reptiles)

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 VCNR in order to determine management strategies to prevent their extinction from the Reserve.

Thirty-one species of frogs are listed as occurring in the Reserve. Of particular importance are: Natal leaf-folding frog (*Afrixalus spinifrons* and *A. s. spinifrons*) Vulnerable

The species favours grassy wetland and savannah habitats.

Kloof frog (Natalobatrachus bonebergi)

Endangered

Breeds in slow-moving sections of forest streams.

Twenty-one species of reptiles are listed as occurring in the Reserve; 15 lizards and 6 snakes. No Red Data species are listed.

Action Project 3.10.3 (i): Compile through further research and monitoring check lists of the Herpetofauna.

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

#### 3.10.4 Avifauna (Birds)

The EKZNW Biodiversity Database lists 295 bird species for the Nature Reserve. Of particular importance are:

Spotted ground-thrush (Zoothera guttata)

Endangered

This species is a local migrant, overwintering in VCNR's scarp forests before returning to coastal forests for the summer breeding season. VCNR thus protects part of an area considered to be vital to the long-term persistence of this species, providing essential feeding grounds prior to migration and breeding.

Southern ground-hornbill (Bucorvus leadbeateri)

Vulnerable

Ground-hombills require a large area (ca. 100km² 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 grass-owl (Tyto capensis)

Vulnerable

Grass-owls favour tall, dense and rank patches of grassland. Nesting takes place on the ground in a tunnel of dense grass from March – April with juveniles fledging 3 months later. Management protocols need to take this breeding cycle into account when planning burning regimes.

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 approx. 2 months after hatching. Primary causes of species decline include habitat loss and human disturbance.

Grev crowned crane (Balearica regulorum)

Vulnerable

Maintain the wetlands and the associated grasslands in the Reserve in a suitable state for the continued breeding and foraging of Grey crowned cranes. Cranes have large home ranges and the reserve is too small to exclusively support a breeding pair, which will thus be influenced by the surrounding patterns of land use in the nearby areas.

Striped flufftail (Sarothrura affinis)

Vulnerable

The flufftails occur in tall, rank grasslands with associated drainage lines and prefer grassland dominated by Red grass (*Themede triandra*) for breeding sites. Being a ground nester requiring grassland habitat, this species is vulnerable to overgrazing and too- frequent burning.

African marsh-harrier (Circus ranivorus)

Vulnerable

The wetlands in the reserve support breeding 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 VCNR to support a breeding population. Management protocols will not affect this species.

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 km²). 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).

Short-tailed pipit (Anthus brachyurus)

Vulnerable

This species occurs in fairly short, open grassland during the summer breeding season, and winters in seasonally flooded grasslands. Nests in tall, dense grass stands. The main threats to this species include loss of habitat and overgrazing.

Action Project 3.10.4 (i): Identify the major threats to Avifauna in VCNR.

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

#### 3.10.5 Mammals

The EKZNW Biodiversity Database for VCNR confirms the presence of thirteen mammal species. Red Data listed species include:

Blue duiker (Philantomba monticola bicolour)

Vulnerable

Blue duiker are specialised in their habitat requirements and are confined to forests (with a well developed understorey), thickets or dense coastal bush, and are most at risk from poaching or illegal hunting.

Oribi (Ourebia ourebia)

Endangered.

Oribi require open grassland with both short grass for grazing and long grass in which to take cover during resting and breeding. The primary threats to this species are illegal hunting and inappropriate burning regimes.

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

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

#### 3.11 Cultural Heritage

VCNR's cultural resources include:

- A number of old homesteads and approximately 36 sites of graves are found in VCNR;
- Old give mining shafts and other remnants of the Umzinto "gold rush" with three old gold diggings the Happy Thoughts, Golden Butterfly and Guy Fawkes mines (Norman P, perscomms); and,
- The history of the Cele Traditional Council and the settler community.

• The old Traditional Court which is a living Cultural Site

The Gold Mine is available for public viewing on request. Bona Fida researchers are allowed to view sites with the provision of obtaining permits from Ezemvelo KZN Wildlife and AMAFA.

Ramasar, V provides a useful introduction to the gold mining past of the nature reserve in her dissertation on *The Geology and Structure of the Happy Thought Gold Mine* 

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 VCNR. Ensure compliance with the requirements of heritage legislation.

#### 3.12 Socio-Cultural History of the Area

The communities that inhabited the land prior to proclamation were labour tenants. They were displaced and moved off the land due to conservation of biodiversity and ecotourism. Dispossessions were executed by the Native Land Act of 1936. The displaced communities then settled on the boundary of the VCNR. They are now three individual farms. These are namely, Mistake Farm under Inkosi Cele, Maizeland under Inkosi Duma and the Dumisa community under Inkosi Duma.

Action Project 3.12 (i): Update the Socio-cultural history of VCNR.

#### 3.13 Sociological Context

The reserve is bordered by three rural communities namely; Mistake Farm, Maizeland and the Dumisa Community. The reserve is further surrounded by commercial agriculture such as sugarcane and a game park

Action Project 3.13 (i): Update the sociological context and its importance to VCNR.

#### 3.14 Economic Context

The Nature Reserve contributes to the economy in the following ways:

Recreational activities that are offered by VCNR include:

- Self guided and guided trails;
- Cycling
- Game viewing
- · Bird Watching;
- Tourism roads; and
- Picnicking

Facilities and services that are offered by VCNR include:

- Overnight accommodation at the Nyengelezi camp;
- Braai Facilities;
- Employment opportunities to the local community for the eradication of alien plants and fire management;
- The levy which is used for the upliftment and development of the local community.

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

- 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; and
- Carbon sequestration.

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

#### 3.15 Developed Infrastructure

VCNR's tourism infrastructure includes a network of tourist roads as well as a  $4 \times 4$  route, hiking trails and the Nyengelezi camp. Facilities at the tourist camp include  $5 \times 2$  bed cottages, a ten bed treehouse, the Nyengelezi field laboratory, ablution facilities and a communal kitchen.

It is imperative that the necessary appropriate standard of infrastructure be developed and maintained as soon as possible to support the effective management of VCNR and promote eco-cultural tourism to the Nature Reserve. Future development will be detailed in the VCNR Concept Development Plan.

**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 VCNR.

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

#### 3.15.1 Eco-cultural Tourism Infrastructure

Eco-cultural tourism infrastructure in the Park consists of:

- Five two bedroom rondavals with a communal kitchen and ablution facilities
- A 10 bed tree hut with ablution facilities
- Four picnic sites with ablution facilities
- One view point
- 4km of self guided trails
- · Guided tour of the gold mine site

#### 3.15.2 Management Infrastructure

Management infrastructure consists of:

- One Conservation Managers house (3 Bedroom) with ablution facilities
- Three staff accommodation units and ablution facilities
- One workshop/ garage
- Main office with ablution facilities
- One laundry
- One gas shed
- One prefab

#### 3.15.3 Bulk Infrastructure

Bulk infrastructure consists of:

- 36.2 kilometers of roads and vehicle tracks (14 kilometers of management tracks, 12.2 kilometres of public road and 10km of 4x4 visitor tracks).
- One waste management site (solid waste is collected once a week and is taken to the Umdoni landfill site).
- Septic tanks that will be drained by the local municipality when necessary.
- No helipads
- Water is taken from the dam and is purified within VCNR and distributed via gravity.
- Eskom provides electricity.
- A Telkom line is available at the reserve

#### 3.15.4 Conservation Infrastructure

Other conservation infrastructure outside the developed centres consists of:

- · 4 km of self-guided hiking trails
- 210km of internal fencing around staff accommodation and the gas shed
- The perimeter boundary fences total length is approximately 22km. The existing boundary fence is generally 1.8 m high.

#### 3.15.5 Water Supply Infrastructure

Water is pumped from the dam to the reservoir where it is purified and distributed via gravity.

All water supply infrastructure will be appropriately screened to reduce its detrimental aesthetic impact. For management purposes it is essential that all water supply infrastructure be indicated on the reserve map.

Action Project 3.15.5: Update VCNR Map to include the location of all water supply infrastructure.

#### 3.15.6 Infrastructure Maintained by other Organisations

Electricity is a public service provided by Eskom. Solid waste is collected and disposed of at the Umdoni landfill and sewerage is collected in septic tanks and will be removed by the local municipality when necessary. Security at the main gate is an outsourced service. There is one telephone line that is provided by Telkom and the repeater is maintained by the SAPS.

**Action Project 3.15.6 (i):** Compile MoAs between different service providers and VCNR. Manager needs to ensure that he is familiar with all agreements.

#### 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):

### EKZN WILDLIFE STRATEGIC VISION, MISSION, GOALS AND CORE VALUES

#### VISION

"To be a world renowned leader in the field of biodiversity conservation"

#### MISSION STATEMENT

"To ensure effective conservation and sustainable use of KwaZulu Natal's biodiversity in collaboration with stakeholders for the benefit of present and future generations."

#### STRATEGIC GOALS

- 1. To conserve indigenous biodiversity in KwaZulu-Natal both within and outside of protected areas.
- 2. To be a sustainable, well resourced and capacitated biodiversity conservation and ecotourism organisation.
- 3. To foster the value of biodiversity conservation with stakeholders.
- 4. To be an efficient, effective and compliant organisation with good governance.
- 5. To effectively promote the mandate of the organisation to stakeholders.

#### **CORE VALUES**

**Integrity** — at all times we act morally, ethically and with honesty.

Respect - we treat stakeholders with patience, politeness and acknowledge and value their right and those of the

environment.

Accountability - we involve stakeholders in the organisation's activities with a culture of openness and are answerable for the

outcome of our actions and activities.

**Team Work** — working together to achieve our vision through goals.

**Innovation** – an adaptable organisation that embraces the culture of creativity and learning.

**Excellence** — we are a progressive organisation applying best practices to achieve the highest quality and standards.

Commitment
 Productivity
 at all times we undertake our activities with passion, loyalty and dedication.
 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 VCNR 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)..

**Action Project 4.2 (i):** Implementation of EKZNW IEM Policy. Create awareness of or educate surrounding landowners on the IEM process and legislation through fora.

**Action Project 4.2 (ii):** Participate as a key stakeholder in EIA applications for developments near the Nature Reserve that may impact on the protected area.

Action Project 4.2 (iii): Participate in existing neighbour liaison fora.

#### 4.3 Vision

The vision of the VCNR is:

"A consolidated, managed and legally protected Nature Reserve, providing sustainable and tangible benefits to visitors, neighbours and the municipal area through the provision of appropriate access to the cultural and natural resources".

#### 4.4 Mission

EKZNW, as the designated Management Authority supports the following mission statement for the Nature Reserve.

The Mission of VCNR is:

"To sustainably manage and conserve the natural and cultural resources of the Vernon Crookes Nature Reserve, based on sound environmental principles and management, for the equitable benefit of both visitors and other stakeholders."

#### 4.5 Management Objectives

Management Objectives for VCNR are set out below and are not ranked according to priority:

- Conserve rare and endemic ecosystems and species
- Conserve the Vernon Crookes 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

The above objectives were aligned with the following overarching management objectives for VCNR. These objectives are not ranked in order.

- 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 VCNR.
- The formation of functional **partnerships** to integrate the VCNR with regional development plans and other initiatives which underwrite the vision of VCNR.

## 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 VCNR 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.

# **Conservation Targets for the Reserve**

Specific conservation targets for the VCNR 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 the VCNR are presented in Table 1:

**Table 1: Biodiversity Targets** 

Element of Concern	Key Attribute (Threats)	Indicator	Current Status	Target
Conserve the endang	ered and critically endangere	ed Veld types in VCNR.		•
The KwaZulu Natal Sandstone Sourveld is critically endangered.	<ul> <li>The provincial target is 23%, however only 6.6% is untransformed.</li> <li>Only 1.7% of this vegetation type remains within protected areas.</li> <li>Decline of veldtype.</li> </ul>	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>Poor veld management.</li> <li>Arson Fires.</li> <li>No recruitment.</li> <li>Illegal harvesting of plants.</li> </ul>	VCNR contributes 0.5% to the provincial remains.     The target is to maintain the current extent and where possible, to increase its representation within the protected area system.	TBD
Moist Ngongoni Veld is critically endangered.	<ul> <li>Only 17.2% is untransformed.</li> <li>Only 1.0% of this vegetation type remains within protected areas.</li> <li>Decline .of veld type</li> </ul>	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>Poor veld management.</li> <li>Arson Fires.</li> <li>No recruitment.</li> </ul>	VCNR     contributes 0.6%     to the provincial remains.     The target is to maintain the current extent and where possible, to increase its representation within the protected area system.	TBD
Southcoast Grassland is critically endangered.	<ul> <li>The provincial target is 25%, however only 6.2% is untransformed.</li> <li>Only 21.9% of this vegetation type remains within protected areas.</li> <li>Decline of veldtype.</li> </ul>	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>Poor veld management.</li> <li>Arson Fires.</li> <li>No recruitment.</li> </ul>	VCNR     contributes     10.1% to the     provincial     remains.     The target is to     maintain the     current extent     and where     possible, to     increase its     representation     within the     protected area     system.	TBD

Element of Concern	Key Attribute (Threats)	Indicator	Current Status	Target
Southcoast Bushland is endangered.	<ul> <li>The provincial target is 25%, however only 29.5% is untransformed.</li> <li>Only 2.4% of this vegetation type remains within protected areas.</li> <li>Decline of veldtype.</li> </ul>	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>Poor veld management.</li> <li>Arson Fires.</li> <li>No recruitment.</li> </ul>	VCNR     contributes 0.1%     to the provincial remains.     The target is to maintain the current extent and where possible, to increase its representation within the protected area system.	TBD
	endangered and endangered R	ed Data plant species.		
Begonia Dregei is endangered.	There is a loss of plant species.	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>No recruitment.</li> </ul>	Target TBD     VCNR needs to conserve this species in good condition	TBD
Brachystelma Gerradii is endangered.	There is a loss of plant species.	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>No recruitment.</li> </ul>	Target TBD     VCNR needs to conserve this species in good condition	TBD
Hrusrudatisii is endangered.	There is a loss of plant species.	<ul> <li>Land transformation.</li> <li>Alien species invasion.</li> <li>No recruitment.</li> </ul>	Target TBD     VCNR needs to conserve this species in good condition	TBD
To conserve rare and	endemic ecosystems and spec	ies.		
<ul> <li>Natalobatrachus Bonebergi is endangered.</li> <li>Amphibian</li> </ul>	There is a loss of individuals.	Decrease in condition.	<ul> <li>Target TBD</li> <li>VCNR needs to conserve this species in good condition</li> </ul>	TBD
<ul><li>Zoothera guttata is endangered.</li><li>Bird.</li></ul>	There is a loss of individuals.	Loss of suitable habitat.	TBD     VCNR needs to conserve this species in good condition	TBD
<ul> <li>Ourebia ourebia is rare.</li> <li>Mammal.</li> </ul>	There is a loss of individuals.	Decrease in condition.	Target TBD     VCNR 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.

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 which guide both the manager and the recreationist. The manager will provide the opportunity for obtaining the experiences that the recreationist expects within a particular category. The ROS zonation system recognises and reflects:

- the sensitive features associated with the reserve (i.e. biophysical, cultural and sense of place)
- the range of existing and potential visitor experiences in and surrounding the Reserve
- 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 Reserve either within or adjacent to the Reserve
- the opportunities for extending the Reserve 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 (Appendix III) 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. These zones are recognised in VCNR, and are given in Appendix III and illustrated on Map 3.

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

**Action Project 5 (i):** Revise the existing VCNR 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 with dogs and arson fires.
- Alien species invasion.
- Soil erosion.
- · Cattle and goat grazing
- Theft of fences and furniture from the Nature Reserve
- The 24 hour public access road which allows entry of communities at all times. The activities within VCNR
  cannot be monitored at all times as a result.

The VCNR 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 VCNR is sourced primarily from the KwaZulu-Natal Provincial Government. Funding is furthermore generated from commercial operations within the Nature Reserve 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 VCNR 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 VCNR 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 VCNR and that any operational profit will be used to subsidise the Nature Reserve's conservation and community programmes.

The value of ecosystem services that VCNR 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.

Action Project 6.1.1 (i): Develop a five-year Strategic Management Plan and Business Plan for VCNR.

**Action Project 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.

### 6.1.2 Human Resource Capacity

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

- 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 VCNR 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 VCNR.

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 VCNR Business Plan.

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

# 6.1.2.1 VCNR Employment Policy Guidelines

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

- 4 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.
- 4 Entry-level or temporary appointments requiring no specific skills will be employed from neighbouring communities after consultation with the VCNR Management Committee

### 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 II).

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 VCNR 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 II) 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 will still be established.

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

### 6.2.2 Community Levy Trust Fund

Communities adjacent to the VCNR 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 II).

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

**Action Project 6.2.2 (ii):** Management will annually identify community projects that may be financially supported from the fund.

### 6.2.3 External Funding Projects

VCNR 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 continued to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.

### 6.2.4 Land Claims

Some areas in VCNR 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 II) outlines the organisation'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 [see Action Project 2.1.2 (i)].

#### 6.2.5 Environmental Education

It is EKZNW policy to provide environmental education programmes for communities adjoining VCNR 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 II**). 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 VCNR.

### 6.2.6 Transfrontier Partnerships

VCNR has no Transfrontier Partnerships.

#### 6.2.7 Informal Participation

Local community involvement will not only occur through formal structures like the VCNR 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 VCNR 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 VCNR 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 coordinated participation in all possible local, regional or security forums and networks while optimising security in and around VCNR. This strategy will ensure sufficient capacity to deal with conservation-related illegal activities in VCNR. (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):** 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 6.3 (iii): Develop and implement a Civil Emergency Procedures Plan

### 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; otherwise Management intervention in the system will be minimised. In particular, the function of sustained water delivery of quality water is paramount.

Fire is a key ecological process influencing biodiversity in VCNR. 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 is 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 maninduced 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 must 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 VCNR management objectives and guided by 'best practice' linked to scientific understanding, legal context and risk management.

VCNR 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 Management will actively champion the establishment and maintenance of FPA's on and bordering VCNR in order to gain the full legal advantages of being a member of the FPA and to promote, where possible, fire management regimes surrounding VCNR that would benefit the conservation of biodiversity and ecological processes.

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

Action Project 6.4.2 (ii): Arrange a VCNR Management Fire Workshop in February of each year.

**Action Project 6.4.2 (iii):** Develop a VCNR **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 (iv):** 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 VCNR - wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.

## 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 VCNR 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 VCNR over time. Because they will, 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 VCNR.

The following management guidelines apply:

#### Alien Plant Introductions

Introductions of alien plants to VCNR 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 VCNR 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 VCNR 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.

VCNR 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 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 Reserve are the following:

Chromolaena odorata
 Paraffin/Triffid weed

Lantana camaraSolanum mauritianumBugweed

**Project 6.4.3.1 (i):** Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR 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 VCNR will be developed. Where required, this plan will also address the re-planting of relevant areas with indigenous plants. 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 (ii):** Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.

#### 6.4.3.2 Alien Animals

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 VCNR.

The following management guidelines apply:

#### Alien Animals Present in VCNR

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.

There are currently no grazing concessions that have been made regarding alien animals in VCNR. Sometimes security fences are cut allowing goats and cattle to enter VCNR. Cutting of these fences is an illegal activity and culprits will be found and prosecuted.

No concessions have been made regarding alien animals however, illegal cattle and goat grazing occurs within the Nature Reserve. Dogs also enter the Nature Reserve to illegally hunt game.

A management strategy is needed to monitor and manage the impact of alien fish species in VCNR.

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 VCNR.

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

# Alien Animal Introductions

Introductions of alien animals to VCNR is not accepted except:

- as part of culture-based, community-based or management projects approved by the EKZN POLICY / 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 EKZN 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 VCNR 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 VCNR.

**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/ 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 VCNR):

- A good vegetative canopy and basal cover is maintained to maintain a sustained flow of water and reduce turbidity caused by accelerated soil loss (See Par. 6.4.2 and 6.4.5).
- Strict pollution control and waste management standards will be applied [especially in the Nature Reserve] (See **Par. 6.10**).
- Natural wetlands in the catchment are maintained and any damaged wetlands rehabilitated.
- Invasive alien plants are removed and controlled (See Par. 6.4.3), and
- Aquifer and surface water quality and quantity is monitored.

**Action Project 6.4.4 (i):** Obtain all standards for water quality from the Municipality or Department of Water and Environmental Affairs (DWEA), 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 VCNR is primarily the result of historical overgrazing practices, the presence of invasive alien vegetation, vehicle tracks and roads as well as the creation of paths by livestock prior to the establishment 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 VCNR 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 VCNR.

Most wildlife populations presently existing in VCNR are self-regulatory because of territorial behaviour, predator-prey relationships, food availability etc. The vegetation of VCNR is not generally considered to be over-utilised by wildlife species.

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 VCNR's Management Objectives and set Conservation Targets;
- complying with VCNR'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 will be destroyed on the authority of the VCNR 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 the status of priority species.

### 6.4.6.1 Introductions of Indigenous Animal Species into VCNR

The introduction of indigenous animal species into the Nature Reserve will be considered in terms of **Corporate Policy D2.21** (See **Appendix II**) 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 VCNR.

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 VCNR 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 not 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 (plains game) populations that are 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 VCNR. 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 VCNR Game Management Policy Guideline document that is reviewed and recommended by the VCNR PAMC.

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

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

- Live Capture; or
- Culling Programmes

**Action Project 6.4.6.2 (i):** Develop a VCNR 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 currently no biomonitoring of the fish populations.

Action Project 6.4.6.3 (i): Develop a fishery management plan for VCNR.

#### 6.4.6.4 Bird Management

VCNR is an important bird site and bird watching is a well known activity within VCNR. No bird monitoring or management is practiced.

Action Project 6.4.6.4 (i): Develop a bird management plan for VCNR.

# 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 VCNR. This also applies to animals that escape or leave and return periodically and cause damage outside VCNR.

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 VCNR 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 VCNR'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 VCNR 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 standing staff component of seven field rangers, primarily tasked with law enforcement, has been appointed, is operative and will be 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 used in such assessments (See also **Monitoring and Evaluation under Par. 6.9**).

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

To resolve illegal utilisation of natural 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**). Management will prosecute those people that illegally utilise natural resources for commercial or other purposes in accordance with the legislation.

**Action Project 6.4.7(ii):** Management will continue to 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 VCNR. (See **Appendix II**, **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 VCNR 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 VCNR is non-renewable and importantly may shed further light on the sociocultural 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 VCNR.

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

#### 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 VCNR are not compromised. Resource use will not be allowed to degrade the aesthetic landscape character of VCNR or be permitted if management staff lack adequate capacity to ensure effective control over the resource utilisation or by compromising essential functions.

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

#### 6.6.1 Plants and Animals

Extractive resource 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 VCNR 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 VCNR will be considered by the PAMC in accordance with, amongst others, **EKZNW Board Policy D2.15** (Accessed EKZNW Intranet on 8/09/2008) 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 VCNR management objectives.

### 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 VCNR 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 VCNR 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 VCNR. A range of appropriate facilities and services will be provided for the use of visitors to VCNR. 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 VCNR 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 VCNR Eco-cultural Tourism Development and Marketing Strategy that will be compiled and approved.

**Action Project 6.7 (i):** Cognisant of the VCNR IMP and CDP policy guidelines, develop a VCNR Ecocultural 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 groups.

**Action Project 6.7 (iii):** Develop and implement a Visitor Management Plan. Undertake analysis of available recreational facilities.

# 6.8 Environmental Interpretation, Awareness and Education

Environmental interpretation, awareness and education of VCNR'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.

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 II**).

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.

Action Project 6.8 (i): Compile educational material on environmental and cultural aspects of VCNR

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.

**Action Project 6.8 (iii):** Facilitate access to educational information pertaining to the history of the Nature Reserve and surrounding areas.

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

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 (iv): 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.

#### 6.9 Research

Priority will be given to research that will provide information and understanding that is of direct benefit to VCNR 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 VCNR. In order to achieve this, the following will be undertaken:

- Management and scientific staff as well as external researchers will identify and prioritise 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 Nature Reserve in order to facilitate research work.

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 II]. 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 will be lodged within the Nature Reserve, the Regional Office as well as the Head Office library and details captured using appropriate keywords into Coastal Region's bibliography.

A VCNR bibliography and reference library facilities is to be developed together with procedures to maintain a hard and digital copy of all VCNR 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 Coastal Regional Office. Strict curation rules shall apply and the ultimate responsibility for the curation of this library at VCNR will be allocated to the most senior reserve management position and the Regional Coordinator: Ecological Advice.

Action Project 6.9 (i): Develop a prioritised VCNR 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): Identify and develop reference library facilities and procedures to maintain hard and digital copies of all VCNR 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 will apply and the ultimate responsibility for the curation of this library at VCNR will be allocated to the most senior reserve management position and the Regional Coordinator at Coastal 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 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 a specific decision recorded 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 authorisation.
- 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 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 VCNR 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 VCNR 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.

VCNR 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), concessionaires or other groupings that may, through agreements, develop, use and /or maintain infrastructure within VCNR 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 VCN Rand 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 VCNR 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 VCNR environment and landscape.

#### 6.10.1 Entrance Points and Gates

All road entrance points to VCNR 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 VCNR.

#### 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 the Nature Reserve boundaries to assist in preventing illegal entry.

There is approximately 22 km of fence at 1.8 m high.

Action Project 6.10.2 (i): Boundary fences need to be repaired or erected where necessary.

#### 6.10.3 Internal Fences

There are internal fences within VCNR around infrastructure such as staff accommodation and the gas shed.

#### 6.10.4 Signage

All access routes to VCNR are to be appropriately 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 VCNR with any camp /office names in a secondary position.

### Management Infrastructure Area Signage

Interpretation, directional and information signage in VCNR will have a standardised format

#### Trail Signage

The trail signage format is currently a bushbuck painted on the concrete with an arrow board indicating the name of the trail direction.

# 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

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 VCNR 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 VCNR 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 vehicle roads and 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.

#### 6.10.6 Staff Accommodation

Where essential for the efficient functioning Of VCNR, 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 VCNR, where practically possible and financially viable. In such cases, official transport to and from VCNR may be considered depending on site specific circumstances and applicable corporate policies.

### 6.10.7 Offices, Workshops, Stables and other Infrastructure

VCNR 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 VCNR 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* are 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

VCNR 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 VCNR PAMC. All historical waste disposal sites in VCNR 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.

Action Project 6.10.10.1 (i): Develop an integrated waste management plan for VCNR.

**Action Project 6.10.10.1 (ii):** Develop, install and maintain effective standardized solid waste receptacles for VCNR that are animal and baboon / monkey-proof.

### 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 VCNR has 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. Septic tank / French drain systems will not be installed at future small developments.

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

### 6.10.11 Water- and Energy-Saving Measures

Water-and-Energy-Saving measures have been introduced to VCNR by means of:

- Energy saving light bulbs.
- Constant monitoring and checks for water leaks.

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

### 6.10.12 Aircraft Landing Fields

No airstrips are permitted inside VCNR except for a helicopter landing pad maintained to the minimum aviation standards at selected site 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 in VCNR. 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 VCNR (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 PLANS

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 VCNR 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.

### 6.11.1 INSTITUTIONAL FRAMEWORK FOR IMPLEMENTATION OF CDP DEVELOPMENT PROJECTS

The VCNR 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 VCNR is guided by the framework of the VCNR'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 the CDP 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 the 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.

#### 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 VCNR management and the Vulamehlo Municipality, to ensure that continuous development planning in and around the VCNR 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.

Action Project 6.11.3 (i): Develop and maintain a VCN, infrastructure database and map.

**Action Project 6.11.3 (ii):** Review the desirability and effectiveness of all present infrastructure associated with 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

Action Project 6.11.3 (iii): Compile and implement and Infrastructure Maintenance Plan.

Action Project 6.11.3 (iv): Develop a Concept Development Plan and align with Municipal plans.

#### 7 IMP REVIEW AND AMENDMENT PROCEDURES

### 7.1 Five-Yearly Review and Amendment Procedures

This VCNR 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 2014-2018. 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 and the Joint Management Committee) will depend on the nature and extent of amendments recommended by the relevant VCNR PAMC.

**Action Project 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 Annual Review and Amendment Procedures

The PAMC will convene annually regularly 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 <u>minor amendments or corrections</u> 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 VCNR. 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 VCNR 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 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

**Table2** 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.

**Table2: 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 VCNR in terms of Section 38(2) of NEMPAA.
2.	2.1.2 (i)	Finalise the settlement agreement pertaining to VCNR.
3.	2.1.3 (i)	Update and compile a list of all service providers in VCNR.
4.	2.3 (i)	Management in collaboration with other relevant EKZNW officials, will be mandated 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 VCNR through an alignment of appropriate land use adjacent to the Nature Reserve.
5.	2.3 (ii)	Attend Ugu Biodiversity Forum. Establish relationships with neighbouring properties 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 VCNR with the Surveyor General and seek the proclamation of the area by the MEC.
7.	2.4 (ii)	Formalise the proclamation of the land donated by Illovu Sugar.
8.	2.5 (i)	Review all formal and informal local agreements, servitude arrangements etc. pertaining to VCNR and document, update, maintain and monitor these appropriately authorised agreements. All informal and revised agreements are to be formalised and approved by the Executive.
9.	2.6 (i)	Annually explore and investigate opportunities to broaden conservation land use in and around VCNR.
10.	3.3 (i)	Update the previous land use for VCNR.
11.	3.4 (i)	Update the conservation history for VCNR indicating the importance of the proclamation.
12.	3.5 (i)	Maintain the collection and storage of climatic data records. Include the Predictive Mean maximum and minimum temperatures in conjunction with mean rainfall for VCNR.

13.	3.6.3 (i)	Identify the biodiversity importance and implications of immature soil profiles for management.
14.	3.6.3 (ii)	Map the soils of VCNR showing areas susceptible to soil erosion.
15.	3.6.3 (iii)	Write and submit for approval a soil erosion control plan.
16.	3.8 (i)	Management will monitor the quantity and quality of water in the rivers.
17.	3.9 (i)	Develop a plant species list. This list will be filed with the Conservation Manager at VCNR.
18.	3.9 (ii)	Develop a flora monitoring programme for VCNR.
19.	3.9 (iii)	Identify threats to the priority flora and their associated animal species, as well as required mitigatory actions.
20.	3.9 (iv)	Compile a flora map and a diagnostic species list.
21.	3.9 (v)	Determine conservation targets for red data plants.
22.	3.10 (i)	Copies of the Species Checklists will be updated and filed manually and digitally at the VCNR 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.
23.	3.10.1 (i)	Compile through further research and collecting, a check list of the invertebrate species found in VCNR, identifying those species that are threatened and or endemic.
24.	3.10.2 (i)	Identify the major threats to the fish species in VCNR.
25.	3.10.2 (ii)	Develop and implement a Fish Species Monitoring Programme.
26.	3.10.3 (i)	Compile through further research and monitoring check lists of the Herpetofauna
27.	3.10.3 (ii)	Develop and implement a Herpetofauna Species Monitoring Programme
28.	3.10.4 (i)	Identify the major threats to Avifauna in VCNR.
29.	3.10.4 (ii)	Develop and implement an Avifauna Species Monitoring Programme.
30.	3.10.5 (i)	Identify the major threats to Mammals in VCNR.
31.	3.10.5 (ii)	Develop and implement a Mammals Species Monitoring Programme
32.	3.11 (i)	Map the GPS co-ordinates and provide Management Plans for these sites.
33.	3.11 (ii)	Identify the archaeological, historical, palaeontological and cultural heritage sites at VCNR. Ensure compliance with the requirements of heritage legislation.
34.	3.12 (i)	Update the Socio-cultural History of VCNR.
35.	3.13 (i)	Update the socio – logical context and its importance to VCNR.
36.	3.14 (i)	Update the economic context and its importance for VCNR.
37.	3.15 (i)	Identify and map infrastructure using GIS and include in a spatial database. Develop standard protocols and procedures for infrastructure in VCNR.
38.	3.15 (ii)	Repair, where necessary, the standard and state of the existing infrastructure provided in the VCNR.
39.	3.15.5 (i)	Update VCNR Map to include the location of all water supply infrastructure.
40.	3.15.6 (i)	Compile MoAs between different service providers and VCNR. Manager needs to ensure that he is familiar with all agreements.
41.	4.2 (i)	Implementation of EKZNW IEM Policy. Create awareness of or educate surrounding landowners on the IEM process and legislation through fora.
42.	4.2 (ii)	Participate as a key stakeholder in EIA applications for developments near the Nature Reserve that may impact on the protected area.
43.	4.2 (iii)	Participate in existing neighbour liaison fora.

44. 4.6 (1) Set conservation targets and monitoring strategies for the identified species.  45. 4.6 (ii) Develop conservation targets and monitoring strategies for Cultural, Business and Partherships.  Revise the existing VCNR zonation plan in accordance with the new EXZMW standard zonation system as soon as it is developed and approved.  47. 6.1.1 (i) Develop a five-year Strategic Management Plan and Business Plan for VCNR.  48. 6.1.1 (ii) Develop a five-year Strategic Management Plan and Business Plan for VCNR.  49. 6.1.2 (i) Capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR Optional society of VCNR with a view to improving effectiveness and efficiency in achieving VCNR Optional society with landowners and surrounding communities to improve conservation management of VCNR for the benefit of all.  50. 6.2 (i) Establish a Local Board for VCNR  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and uplifirment of the local communities.  53. 6.2.3 (i) Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities or VCNR.  55. 6.2.7 (i) Promote and comploment opportunities that will benefit the surrounding local communities or VCNR.  56. 6.3 (i) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Pian that provides comprehensive Fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.  Develop a computerized decision support tool linked to GIS that will be inclu		1	Out assessmentian towards and magnifesting strategies for the identified
46. 5 (i) Business and Partnerships.  Revise the existing VCNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved.  47. 6.1.1 (ii) Develop a five-year Strategic Management Plan and Business Plan for VCNR.  48. 6.1.1 (iii) economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.  49. 6.1.2 (i) Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency achieving VCNR objectives and informing the Business Plan for VCNR by the surface of the benefit of all.  50. 6.2 (i) Establish a Local Board for VCNR.  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and upliffment of the local communities. Training of members of the local communities that will benefit the surrounding local communities of VCNR.  53. 6.2.3 (i) Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities of VCNR.  55. 6.2.7 (ii) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Develop a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a vCNR Management Plan that provides comprehensive Fire management objectives, scientific understanding, management ensured the value of the Fire Management Plan that provides comprehensive fire management objectives scientific understanding, management ensured the value of the Fire Management Pl	44.	4.6 (1)	
46. 5 (i) EKZNW standard zonation system as soon as it is developed and approved.  47. 6.1.1 (ii) Develop a five-year Strategic Management Plan and Business Plan for VCNR.  48. 6.1.1 (iii) 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.  49. 6.1.2 (i) Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR objectives and informing the Business Plan.  EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of VCNR for the benefit of all.  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and upliftment of the local communities.  Training of members of the local community will continue to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities of VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  68. 6.4.2 (iii) Develop a VCNR Management Plan that provides comprehensive fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.  69. 64.2 (iii) Develop an opportunity and itemize indicator species and determine their current species densities in the Nature	45.	4.6 (ii)	
48. 6.1.1 (ii) VCNR.  48. 6.1.1 (iii) 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.  Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR with a view to improving effectiveness and efficiency in achieving VCNR will continue to work collaboratively with landowners and surrounding communities to improve conservation management of VCNR for the benefit of all.  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and uplifiment of the local communities.  Training of members of the local community will continue to be practiced. Investigate and implement additional environmental education programmes for communities arrounding VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Plan that provides comprehensive Fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.  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 VCNR wide and area-specific fire management objec	46.	5 (i)	EKZNW standard zonation system as soon as it is developed and approved.
48. 6.1.1 (ii) economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.  Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR bejectives and informing the Business Plan.  EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of VCNR for the benefit of all.  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and upliftment of the local communities.  Training of members of the local community will continue to be practiced.  53. 6.2.3 (i) Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  For annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  54. 6.2.7 (i) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme the establishment of FPAs on the borders of VCNR.  55. 6.4.2 (ii) Arrange a VCNR Management Fire Workshop in February of each year.  56. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  57. 6.4.2 (iv) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iv) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  59. 6.4.2 (iv) Promote and champion (in cooperation with DWAF and the "Working and research required and resources needed.  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 VCNR- wide and area-specific fire management objectives will be simultane	47.	6.1.1 (i)	
49. 6.1.2 (i) capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR objectives and informing the Business Plan.  EKZNW will continue to work collaboratively with landowners and surrounding communities to improve conservation management of VCNR for the benefit of all.  51. 6.2.1 (i) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and upliftment of the local communities.  53. 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 of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a vCNR 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.  Develop a computerized decision support tool linked to GIS that will be included in the Fire Workshop. This rule-based tool will ensure that VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and the Nature Reserve.  Develop a nongoing time-bound programme to effectively control d	48.	6.1.1 (ii)	economic value regarding the provision of ecosystem services and its contribution to the local and regional economy.
50. 6.2 (i) surrounding communities to improve conservation management of VCNR for the benefit of all.  51. 6.2.1 (ii) Establish a Local Board for VCNR.  52. 6.2.2 (i) The Community Levy will continue to be collected for the development and uplitment of the local communities.  53. 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 of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a VCNR 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.  6.4.2 (iv) 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 VCNR-wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  64.3 (i) Endough Plan Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop a nongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer are	49.	6.1.2 (i)	capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR objectives and informing the Business Plan.
52. 6.2.2 (i) The Community Levy will continue to be collected for the development and upliffment of the local communities.  53. 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 of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  55. 6.2.7 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  56. 6.3 (i) Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a VCNR 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.  60. 6.4.2 (iv) 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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  61. 62. 64.3 (i) Develop a ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve.  62. 64.3.1 (ii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	50.	6.2 (i)	surrounding communities to improve conservation management of VCNR for the benefit of all.
52.   0.2.2 (i)   upliftment of the local communities.  Training of members of the local community will continue to be practiced. Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  54.   6.2.5 (i)   Investigate and implement additional environmental education programmes for communities surrounding VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56.   6.3 (i)   Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57.   6.4.2 (ii)   Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58.   6.4.2 (iii)   Arrange a VCNR Management Fire Workshop in February of each year.  59.   6.4.2 (iii)   Develop a VCNR 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.  60.   6.4.2 (iv)   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 VCNR-wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  61.   6.4.3 (i)   Compile and implement an Alien Species management Plan, Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  62.   6.4.3.1 (i)   Develop a nogoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63.   6.4.3.1 (ii)   Develop a phased 3-year plan to address the existing non-invasive alien plants in V	51.	6.2.1 (i)	Establish a Local Board for VCNR.
53. 6.2.3 (i) Investigate other employment opportunities that will benefit the surrounding local communities of VCNR.  54. 6.2.5 (i) Investigate and implement additional environmental education programmes for communities surrounding VCNR.  55. 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.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a VCNR 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.  60. 6.4.2 (iv) 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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  61. 6.4.3 (i) Ended in Implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  62. 6.4.3.1 (ii) Develop a nongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63. 6.4.3.1 (iii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	52.	6.2.2 (i)	
for communities surrounding VCNR.  Annually in March of each year arrange a public meeting to give feedback on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  Develop a VCNR 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.  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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop a nongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	53.	6.2.3 (i)	Investigate other employment opportunities that will benefit the surrounding
55. 6.2.7 (i) on progress, planned projects and encourage informal local community participation.  56. 6.3 (i) Develop an integrated security strategy for the Nature Reserve that ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a VCNR 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.  59. 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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  61. 6.4.3 (i) Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  62. 6.4.3.1 (i) Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63. 6.4.3.1 (ii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	54.	6.2.5 (i)	
93. (i) ensures collaboration with all relevant institutions.  57. 6.4.2 (ii) Promote and champion (in cooperation with DWAF and the "Working for Fire" programme) the establishment of FPAs on the borders of VCNR.  58. 6.4.2 (iii) Arrange a VCNR Management Fire Workshop in February of each year.  59. 6.4.2 (iii) Develop a VCNR 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.  60. 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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  61. 62. Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  62. 62. 63. 64.3.1 (ii) Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63. 64.3.1 (ii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	55.	6.2.7 (i)	on progress, planned projects and encourage informal local community participation.
57. 6.4.2 (ii)  Fire" programme) the establishment of FPAs on the borders of VCNR.  Arrange a VCNR Management Fire Workshop in February of each year.  Develop a VCNR 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.  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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	56.	6.3 (i)	
Develop a VCNR 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.  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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	57.	6.4.2 (i)	
Fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.  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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	58.	6.4.2 (ii)	Arrange a VCNR Management Fire Workshop in February of each year.
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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.  Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.  Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	59.	6.4.2 (iii)	Fire management objectives, scientific understanding, management actions, legal compliance, personnel training requirements, monitoring and research required and resources needed.
61. 6.4.3 (i) itemize indicator species and determine their current species densities in the Nature Reserve.  Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63. 6.4.3.1 (ii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	60.	6.4.2 (iv)	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 VCNR- wide and area-specific fire management objectives will be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.
62. 6.4.3.1 (i) alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.  63. 6.4.3.1 (ii) Develop a phased 3-year plan to address the existing non-invasive alien plants in VCNR.	61.	6.4.3 (i)	Compile and implement an Alien Species management Plan. Identify and itemize indicator species and determine their current species densities in the Nature Reserve.
plants in VCNR.	62.	6.4.3.1 (i)	alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.
64. 6.4.3.2 (i) Develop a control programme for alien animals present in VCNR.	63.	6.4.3.1 (ii)	plants in VCNR.
	64.	6.4.3.2 (i)	Develop a control programme for alien animals present in VCNR.

65.	6.4.3.2 (ii)	Develop a management strategy that will minimise the negative impact of alien fish and promote the establishment of sustainable populations of fish species indigenous to the VCNR.
66.	6.4.3.2 (ii)	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 must, 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 must be kept. They must 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.
67.	6.4.4 (i)	Obtain all standards for water quality from the Municipality or Department of Water and Environmental Affairs (DWEA), review monitoring results against these standards and take appropriate actions should any standard not be met.
68.	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.
69.	6.4.6 (i)	Compile and implement a Wildlife Protection Management Plan.
70.	6.4.6 (ii)	Compile and implement a Priority Species Management Plan and determine the status of priority species.
71.	6.4.6.1 (i)	Develop a policy that addresses the introduction and population monitoring of animal species into the Nature Reserve.
72.	6.4.6.2 (i)	Develop a VCNR Game Introduction and monitoring Programme in terms of the VCNR Wildlife Introduction Policy [Action Project: 6.4.6.1 (i)] and implement.
73.	6.4.6.2 (ii)	Develop a VCNR Game Management Guidelines and implement.
74.	6.4.6.3 (i)	Develop a fishery management plan for VCNR.
75.	6.4.6.4 (i)	Develop a bird management plan for VCNR.
76.	6.4.6.5 (i)	The VCNR 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> .
77.	6.4.7 (i)	Assessment of the field ranger component will be done monthly.
78.	6.4.7 (ii)	Management will continue to prosecute those people that illegally utilise natural resources for commercial or other purposes in accordance with the legislation.
79.	6.5 (i)	Develop a comprehensive Cultural Heritage Inventory and Management Plan for VCNR in collaboration with SAHRA and Amafa. Institutional capacity will also be addressed by this plan.
80.	6.6 (i)	Control or 'bench mark' areas within VCNR will be identified where no extractive resource utilisation of indigenous species will take place.
81.	6.6.1 (i)	Evaluate Resource Use in VCNR 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.
82.	6.7 (i)	Cognisant of the VCNR IMP and CDP policy guidelines, develop VCNR 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.
83.	6.7 (ii)	Develop and communicate formal procedures for local tourism user groups.
84.	6.7 (iii)	Develop and implement Visitor Management Plan. Undertake analysis of available recreational facilities.
85.	6.8 (1)	Compile educational material on environmental and cultural aspects of the Nature Reserve.
86.	6.8 (ii)	Engage in biodiversity and cultural education with schools, communities, interest groups and staff.
87.	6.8 (iii)	Facilitate access to educational information pertaining to the history of the Nature Reserve and surrounding areas.
88.	6.8 (iv)	Develop a VCNR environmental awareness education programme specifically for surrounding neighbouring communities and the general public interest groups.
89.	6.8 (v)	Develop an interpretation programme in a standard format for the Nature Reserve.
90.	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.
91.	6.8 (vii)	Develop and implement a Civil Emergency Procedures Plan.
92.	6.9 (i)	Develop a prioritised VCNR natural and cultural heritage research project list.
93.	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.
94.	6.9 (iii)	Identify and develop reference library facilities and procedures to maintain hard and digital copies of all VCNR 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 VCNR will be allocated to the most senior reserve management position and the Regional Coordinator at Coastal Regional Office.
95.	6.9.1 (i)	An appropriate monitoring and evaluation programme is to be developed for the Nature Reserve and implemented.
96.	6.10.2 (i)	Boundary fences need to be repaired or erected where necessary.
97.	6.10.5 (i)	All vehicle roads and 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.
98.	6.10.10.1 (i)	Develop an integrated waste management plan for VCNR.
99.	6.10.10.1 (ii)	Develop, install and maintain effective standardized solid waste receptacles for VCNR that are animal and baboon / monkey-proof.
100.	6.10.10.2 (i)	All sewage systems in VCNR to be investigated for legal compliance. A phased development plan to upgrade existing systems and septic tank / French drain systems is be put in place.
101.	6.10.11 (i)	Develop a phased plan to install standardised (reliable and tested) water- and energy-saving devices throughout VCNR as soon as practically possible.

102.	6.10.12 (i)	Determine the requirement for helicopter landing pads in VCNR. If required and approved, select site/s and maintain according to minimum aviation standards.
103.	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.
104.	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.
105.	6.11.3 (i)	Develop and maintain a VCNR,iInfrastructure database and map.
106.	6.11.3 (ii)	Review the desirability and effectiveness of all present infrastructure associated with Nature Reserve with regard to:
107.	6.11.3 (iii)	Compile and implement and Infrastructure Maintenance Plan.
108.	6.11.3 (iv)	Develop a Concept Development Plan and align with Municipal plans.
109.	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.
110.	7.2 (i)	Convene a PAMC meeting annually to monitor, evaluate and report on progress in terms of this IMP, plan and, if necessary, recommend the reprioritisation 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 112 IMP Action Projects from **Table2** have been aligned with the Management Objectives and are listed in **Table3** 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.

Table3: IMP Action Projects aligned with and supporting the various VCNR Management Objectives.

Conservation Conservation of archaeological re	key biodiversity features, biophysical processes, landscapes, abiotic, historical and sources
Conserve the Vern	on Crookes Nature Reserve and its associated biodiversity
3.6.3 (i)	Identify the biodiversity importance and implications of immature soil profiles for management.
3.6.3 (ii)	Map the soils showing areas susceptible to erosion.
3.6.3 (iii)	Write and submit for approval, a soil erosion control plan.
3.8 (i)	Management will monitor the quantity and quality of water in the rivers.
	mental and cultural activities, education and awareness, including access to historical to the history of the reserve and the surrounding area.
6.2.5 (i)	Investigate and implement additional environmental education programmes for communities surrounding VCNR.
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 a	chievement of national and provincial conservation targets
3.9 (v)	Determine conservation targets for red data plants.
Identify and control	I threats to biodiversity
3.9 (iii)	Identify threats to the priority flora and their associated animal species, as well as required mitigatory actions.
3.10.2 (i)	Identify the major threats to Fish Species in VCNR.
3.10.3 (i)	Compile through further research and monitoring, checklists of the Herpetofauna. Identify the major threats to Herpetofauna in VCNR.
3.10.4 (i)	Identify the major threats to Avifauna in VCNR.
3.10.5 (i)	Identify the major threats to Mammals in VCNR.
Safeguard the arch	naeological, historical, paleontological and living cultural heritage of the Reserve.
3.11 (i)	Map the GPS co-ordinates and provide Management Plans for these sites.
3.11 (ii)	Identify the archaeological, historical, paleontological and cultural heritage sites at VCNR. Ensure compliance with requirements of heritage legislation.
3.12 (i)	Update the Socio-cultural history of VCNR.
Other Action Project	cts supporting VCNR Conservation Management Objective.
2.1.1 (i)	Obtain written assignment from the MEC re - appointing EKZNW as the management authority for VCNR in terms of Section 38(2) of NEMPAA.
2.1.2 (i)	Finalise the settlement agreement pertaining to VCNR.

2.4 (i)	Obtain the services of a land surveyor to register the consolidate VCNR 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 VCNR.	
3.3 (i)	Update the previous land use of VCNR.	
3.4 (i)	Update the conservation history for VCNR 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 VCNR.	
3.9 (ii)	Develop a flora monitoring programme for VCNR.	
3.9 (iv)	Compile and implement a flora management plan that addresses the threats.	
3.10 (i)	Copies of the Species Checklists will be updated and filed manually and digitally at the VCNR 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 check list of the invertebrate species found in VCNR, identifying those species that are threatened and or endemic.	
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.	
3.15 (i)	Identify and map infrastructure using GIS and include in a spatial database. Develop standard protocols and procedures for infrastructure in VCNR.	
3.15 (ii)	Repair, where necessary, the standard and state of the existing infrastructure provided in the VCNR.	
3.15.5 (i)	Update VCNR Map to include the location of all water supply infrastructure.	
3.15.6 (i)	Compile MoAs between different service providers and VCNR. Manager needs to ensure that he is familiar with all agreements.	
5 (i)	Revise the existing VCNR 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 (iii)	Develop a VCNR <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 (iv)	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 VCNR- wide and area-specific fire management objectives can be simultaneously achieved wherever possible, and will allow for flexibility in response to unplanned fires.	
6.4.3 (i)	Compile and implement an Alien Species Management Plan. Identify and itemise indicator species and determine their current species densities for VCNR.	
6.4.3.1 (i)	Undertake a full species survey for alien plant species present.	

6.4.3.1 (ii)	Develop an ongoing time-bound programme to effectively control declared alien weeds and invader plants within VCNR and 1 km beyond (buffer area) the Nature Reserve boundary.
6.4.3.2 (i)	Develop a control programme for alien animals present in VCNR.
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 VCNR
6.4.3.2 (iii)	<ul> <li>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: <ul> <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 <i>e.g.</i> stables, camps, cages <i>etc.</i></li> <li>Disciplinary measures for staff transgressing these regulations or failing to enforce these measures.</li> </ul> </li> </ul>
6.4.4 (i)	Obtain all standards for water quality from the Municipality or Department of Water and Environmental Affairs (DWEA), 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 a VCNR Game Introduction and monitoring Programme in terms of the VCNR Wildlife Introduction Policy and implement.
6.4.6.2 (ii)	Develop a VCNR Game Management Policy Guideline and implement.
6.4.6.3 (i)	Develop and implement a Fishery Management Plan for VCNR.
6.4.6.4 (i)	Develop and implement a Bird Management Plan for VCNR.
6.4.6.5 (i)	The VCNR 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 continue to 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 VCNR in collaboration with SAHRA and Amafa. Institutional capacity will also be addressed by this plan.
6.6 (i)	Control or 'bench mark' areas within VCNR will be identified where no extractive resource utilisation of indigenous species will take place.
6.6.1 (i)	Evaluate Resource Use in VCNR 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 VCNR 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)	Identify and develop reference library facilities and procedures to maintain hard and digital copies of all VCNR 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 VCNR 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 is to be developed for the Nature Reserve and implemented.
6.10.5 (i)	All vehicle roads and 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 VCNR.
6.10.10.1 (ii)	Develop, install and maintain effective standardized solid waste receptacles for VCNR that are animal and baboon / monkey-proof.
6.10.10.2 (i)	All sewage systems in VCNR 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 VCNR as soon as practically possible.
6.10.12 (i)	Determine the requirement for helicopter landing pads on VCNR. 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 (ii)	Review the desirability and effectiveness of all present infrastructure associated with 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.
6.11.3 (iii)	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 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.

Socio-Economic Benefits
-------------------------

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)			
Other Action Projects supporting VCNR Socio-Economic Management Objective.			
2.1.3 (i)	Update and compile a list of all service providers in VCNR.		
2.3 (i)	Management in collaboration with other relevant EKZNW officials, will be mandated 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 VCNR through an alignment of appropriate land use adjacent to the Nature Reserve.		
3.13 (i)	Update the Socio-logical context and its importance to VCNR.		
3.14 (i)	Update the economic context and its importance for VCNR.		
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.		
6.1.2 (i)	Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR objectives and informing the Business Plan.		
6.2.2 (i)	The Community Levy will continue to be collected for the development and upliftment of the local communities.		
6.2.2 (ii)	Management will annually identify community projects that may be financially supported from the fund.		
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 of VCNR.		
Business			
The provision of appropriate ecotourism <b>business</b> opportunities in the natural and cultural environment based within the influence sphere of VCNR			
Other Action Projects supporting VCNR Business Management Objective.			
2.5 (i)	Review all formal and informal local agreements, servitude arrangements <i>etc.</i> pertaining VCNR and document, update, maintain and monitor these appropriately authoris agreements. All informal and revised agreements are to be formalised and approved by		

2.5 (i)	Review all formal and informal local agreements, servitude arrangements <i>etc.</i> pertaining to VCNR and document, update, maintain and monitor these appropriately authorised agreements. All informal and revised 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 VCNR.		
6.1.2 (i)	Investigate and develop an appropriate human resource structure and capacity of VCNR with a view to improving effectiveness and efficiency in achieving VCNR objectives and informing the Business Plan.		

### **Partnerships**

The formation of functional partnerships to integrate the VCNR with regional development plans and other initiatives which underwrite the vision of VCNR

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

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 VCNR Partnerships Management Objective.				
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 VCNR through an alignment of appropriate land use adjacent to the Nature Reserve.			
2.3 (ii)	Attend Ugu Biodiversity Forum. Establish relationships with neighbouring properties to plan and restore fragmented corridors and to enable the continued functioning of existing ones.			
3.15.6 (i)	Compile MoAs between different service providers and VCNR. Manager needs to ensure that he is familiar with all agreements.			
6.2.1 (i)	Establish a Local Board for VCNR.			
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 (i)	Cognisant of the VCNR IMP and CDP policy guidelines, develop VCNR 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.			
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.			
6.8 (v)	Develop an interpretation programme in a standard format for the Nature Reserve.			
6.11.3 (iv)	Develop a Concept Development Plan and align with Municipal plans.			

### REFERENCES:

Allan D., Birding in Southern KwaZulu-Natal. Ugu Regional Council and the Hibiscus Coast and Country Publicity Association, undated.

Barnes K.N., *The Eskom Red Data Book of birds of South Africa, Lesotho and Swaziland*. Birdlife South Africa, Johannesburg, 2000.

Botha JO *Veld Resource Assessment, Veld Management Plan and Wildlife Management Plan for Vernon Crookes Nature Reserve.* KwaZulu-Natal Department of Agriculture and Environmental Affairs, July 2001. Browning, J. and Getliffe-Norris, F., *Trees (some shrubs/climbers) Vernon Crookes Nature Reserve*, Natal. University of KwaZulu-Natal Pietermaritzburg, 1989.

Burns, R.F. *G Vernon Crookes Game Park*. Reynolds Brothers Limited, Sezela, 8<sup>th</sup> December 1970, unpublished letter.

Coetzee, K. 2005. Caring for Natural Rangelands. University of KwaZulu-Natal Press, Scottville, South Africa.

Danielsen, V.K. *Happy Thought Mine*. Chief Inspector of Mines: Natal, 12<sup>th</sup> May 1980, unpublished letter. Ezemvelo KZN Wildlife, Corporate *Biodiversity Database*, *species at location*, *unpublished computer spreadsheet*.

Ezemvelo KZN Wildlife, *Vernon Crookes Nature Reserve, Management Meetings* (Minutes from 12<sup>th</sup> May 1982 – 20<sup>th</sup> February 2001).

Friedmann, Y. 2004. Red Data Book of the Mammals of South Africa: A Conservation Assessment. Endangered Wildlife Trust and CBSG (IUCN/SSC).

Hockey, P.A.R., Dean, W.R.J., Ryan, P.G.(eds). 2005. Roberts Birds of Southern Africa. VIIth ed.

Hughes, J.C. Soil Survey of the Vernon Crookes Nature Reserve. University of Natal, Department of Soil Science and Agrometeorology, Pietermaritzburg, September 1987.

Kok, D.J. and Seaman, M.T. Polystomatidae (monogenea) parasitic in the anuran genus Natalobatrachus in South Africa, Suid Afrikaanse Tydskrif Dierkunde, Vol 22(4), 1987.

Kok, D.J. and Seaman, M.T. Report on Faunal Survey and Studies in Vernon Crookes Nature Reserve, March 1985. Department of Zoology and Entomology University of the Orange Free State (Unpublished document).

Le Roux I.G., Alien Plant Control in Coastal Forest and Thornveld (Veld type1): Costs, Progress and Lessons learned at Vernon Crookes Nature Reserve. Natal Parks Board, October 1989.

MacDevette, D.R., MacDevette D.K., Gordon I.G. & Bartholomew R.L.C., 1989. Floristics of the Natal Indigenous Forests. In Geldenhuys C.J. (Ed.) Biogeography of the Mixed Evergreen Forests of Southern Africa. Occasional Report No. 45. Foundation For Research Development. Pretoria. South Africa.

Maddock, A.H. and Zaloumis G., 1987. Additional and confirming records of the vertebrates at Vernon Crookes Nature Reserve with indications of rodent and ungulate abundances, Lammergy, December 1987. Margules C. & Pressey R. Systematic conservation planning, Nature 405 (243-253), 2000

Mucina, L., Rutherford, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. South African National Biodiversity Institute, Pretoria.

Ramasar, V. *The Geology and Structure of the Happy Thought Gold Mine*, Umzinto Goldfields, KwaZulu-Natal. University of Natal Department of Geology and Applied Geology, Durban, 15<sup>th</sup> March 1997.

Rowe Rowe D.T. The Camivores of Natal, Natal Parks Board, 1994.

Rowe Rowe D.T. The Ungulates of Natal, Natal Parks Board, 1994.

Sandwith, T.S. and Brown, A.D.I. Reconnaissance Vegetation Mapping at Vernon Crookes Nature Reserve. 1981

Scott-Shaw, R., 1999. Rare and Threatened Plants of KwaZulu-Natal and Neighbouring Regions. KwaZulu-Natal Nature Conservation Service. Teeanem Printers. Pietermaritzburg.

Seaman, M.T. and Kok, D.J. Report on Student Excursion to Vernon Crookes Nature Reserve, March 1984. Department of Zoology and Entomology University of the Orange Free State (Unpublished document).

Skinner, J.D., Chimimba, C.T., (eds.), 2005. The Mammals of the Southern African SUbregion, 3<sup>rd</sup> ed. Cambridge University Press, Cape Town.

Stolton, S., Hockings, M., Dudley, N., MacKinnon, K., Whitten, T. and Leverington, F. 2007. *Management Effectiveness Tracking Tool: Reporting Progress at Protected Area Sites: Second edition.* World Bank and WWF Forest Alliance.

Taylor P. *The Smaller Mammals of KwaZulu-Nata*l, University of Natal Press, Pietermaritzburg, 1998. Ugu District Municipality. *Integrated Development Plan Review for 2004/2005*. Ugu District Municipality. 2004.

Van Wyk, A.E., 1990. The sandstone regions of Natal and Pondoland: remarkable centres of endemism. *Palaeoecology of Africa and the surrounding islands, Vol. 21, Southern African Society for Quaternary Research, Proceedings of the IXth Biennial Conference* (ed). By K. Heine), pp 243-257. A.A. Balkema, Rotterdam.

Vulamehlo Municipality assisted by Maseko Hlongwane, Vulamehlo Integrated Development Plan, unpublished document, www.devplan.kzntl.gov.za.

### **APPENDIX 1**

List of References for Unpublished Supporting Documentation VCNR - Integrated Management Plan 2009 - 2013

### Copies available from:

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

### Item

- 1. EKZNW Corporate Strategic Plan and Performance Plan for 2009-2014.
- 2. EKZNW Corporate Policies (Norms & Standards) listed in Appendix II.
- 3. EKZNW Biodiversity Database Checklists for VCNR.
- 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 VCNR.
- 6. Guidelines for the Registration and Administration of Research Projects Undertaken by or through Ezemvelo KZN Wildlife (August 2002).
- 7. Public Participation Report for the Vernon Crookes Nature Reserve IMP.

## **APPENDIX 2 – EKZNW CORPORATE POLICIES**

FI	K7N'	W CORPORATE POLICIES (NORMS & STANDARDS)		
<u></u> -	114	W SONI CHATE I GEIGIES (NONIMO & STANDARDO)		
Policy	File			
No.		CORPORATE AFFAIRS		
B 2		Access to Ezemvelo KZN Wildlife Areas and Employment.		
B 5		Outsourcing of Functions and Services		
B 7		<ul> <li>Monuments, Memorials and Names of Protected Areas under the control of EKZNW.</li> </ul>		
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.		
Policy	File			
<u>No.</u>		INTERNAL AUDIT		
C 5		Management Control		
		BIODIVERSITY CONSERVATION OPERATIONS		
		1. NATURAL RESOURCE SUSTAINABILITY		
Policy	File	There is a second Control of Cont		
<u>No.</u>		Threatened Species and Ecosystems		
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.		
Policy	File	Evetic and Investive Species		
<u>No.</u> D 1.9		Exotic and Invasive Species		
		Release of Alien Species.  Control Measures for Red billed Quales.		
D 1.10		Control Measures for Red-billed Quelea.     Cross Corp.		
D 1.12		Grass Carp.  Fatablishment of Alice Plantations		
D 1.13		Establishment of Alien Plantations.		
Delier	Til a			
<u>Policy</u> No.	File	Migratory Species		
D 1.14		Black Wildebeest and Blue Wildebeest Hybridization and Conservation.		
D 1.14 D 1.15				
טו.וט		<ul> <li>Permit authorising the collection of Biological Material within Board Areas.</li> </ul>		

		2. CONSERVATION EFFECTIVENESS		
Policy	File			
<u>No.</u>		Strategic Applications		
D 2.1		<ul> <li>Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MA (Man and Biosphere) Programme.</li> </ul>		
D !!	F.11			
Policy No.	File	Conservation Management: Protected Area Management		
D 2.2		Management of Wilderness Areas.		
D 2.2		Protected Area Development.		
D 2.4		Protected Area Development.     Prohibition of Works and Servitudes in Board Areas.		
D 2.5		<ul> <li>Zonation and Regulations for the control of off-road vehicles on beaches controlled by</li> </ul>		
		the Board.		
D 2.6		Quarries in KZN Protected Areas.		
D 2.7		<ul> <li>Re-establishment and Management of Vegetation on Development Sites in the Ezemvelo KZN Wildlife Protected Areas.</li> </ul>		
D 2.8		Ecotourism and Protected Areas.		
D 2.9		Solid Waste Management within Protected Areas.		
D 2.10		State Security Service Activities within Board Areas.		
D 2.11		Shark Nets in or bordering KwaZulu-Natal Nature Conservation Board Controlled Areas.		
Policy	File			
<u>No.</u>		Integrated Environmental Management		
D 2.12		<ul> <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		Precautionary Principle.		
D 2.14		Shark Net Installations.		
D 2.15		Bioprospecting in KwaZulu-Natal.		
D 2.17		<ul> <li>Use of Pesticides by the Ezemvelo KZN Wildlife: Safety to Humans and the Environment.</li> </ul>		
D 2.18		Interference with the Mouth of a Lagoon or River (Breaching).		
Policy	File			
<u>No.</u>		Ex Situ Wild Animal Management		
D 2.21		Re-establishment of Terrestrial Mammals in Board Areas.		
D 2.22		Translocation of Animals.		
D 2.25		Elephant Introductions and Elephant in Enclosures.		
D 2.27		<ul> <li>Introduction and Keeping of Large Predators in Enclosures in KZN.</li> </ul>		
D 2.28		Use of Narcotic Drugs.		
D 2.29		Falconry.		
Policy	File			
<u>No.</u>		Human Animal Conflict - Inside and Outside Protected Areas		
D 2.30		Disposal of Leopard from Ezemvelo KZN Wildlife Protected Areas.		
D 2.31		Problem Animal Control.		
D 2.32		<ul> <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> <li>Instances of Death as a result of an Unprovoked Attack by a Wild Animal Normally</li> </ul>		

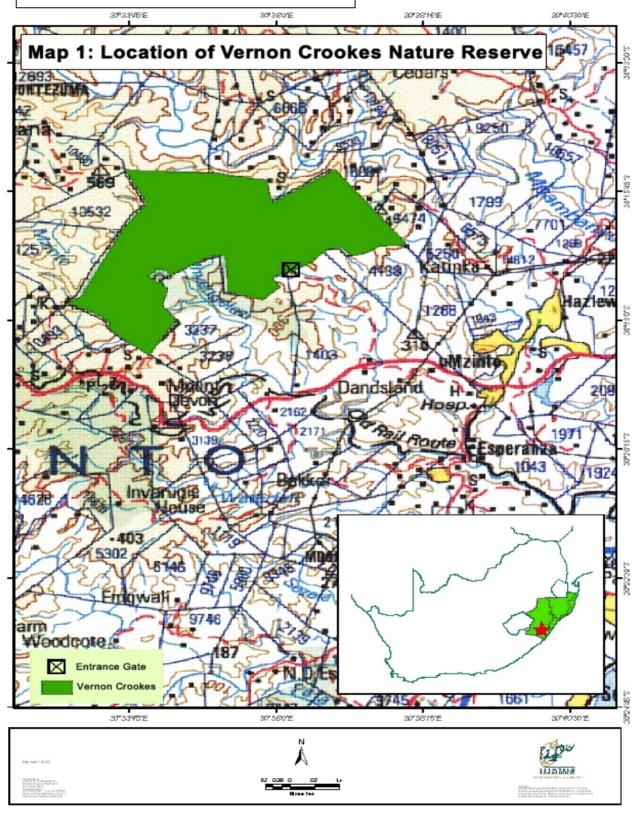
	contained and originating from within a Fenced Protected Area under the Control of t KwaZulu-Natal Nature Conservation Board.			
Policy	<del>-</del> ile			
No.	Environmental Awareness			
D 2.34	Environmental Education Policy.			
	3. BIODIVERSITY PROTECTION			
Policy	<del>-</del> ile			
<u>No.</u>	Co-management			
D 3.1	<ul> <li>Supply of Game to Conservancies, Community Conservation Areas and Biosphe Reserves in KwaZulu-Natal</li> </ul>			
D 3.2	Establishment and Management of Community Conservation Reserves (CCR)			
D 3.4	Community Conservation Programmes			
D 3.5	Neighbours' Access to Board Protected Areas			
D 3.6	Relationship with Local Boards			
D 3.7	<ul> <li>Conservation Partnerships Between KwaZulu-Natal Nature Conservation Board a Adjacent Landowners</li> </ul>			
D 3.8	Community Trust			
D 3.9	Community Levy Policy and Guidelines			
D 3.10	<ul> <li>Land Claims on Proclaimed and Unproclaimed Provincial and Assigned Nation Protected areas in KwaZulu-Natal</li> </ul>			
D 3.11	Amafa Policy Guidelines for the access of rock art sites in KwaZulu Natal			
	<u>-ile</u>			
<u>No.</u>	Resource-use benefits			
D 3.12	Disposal of Venison from Ezemvelo KZN Wildlife Management Operations.			
D 3.13	Sustainable use of wildlife resources.			
D 3.14	Freshwater Angling.			
D 3.15	Freshwater species utilisation.			
D 3.16	Use of plant resources from protected areas.			
D 3.17	Use of doomed biological material.			
D 3.19	Provision of hunting by Ezemvelo KZN Wildlife.			
D - l' -	-y.			
<u>Policy</u> No.	File 4. RELATIONSHIPS			
D 4.1				
D 4.1 D 4.2	Neighbour Relations.     Participation Non Covernment Organizations			
D 4.2 D 4.3	Participation - Non Government Organisations.			
	Data Access.  Our publishing and Company is at inspecific published and Reliance Reliance and Control in a second control			
D 4.4	Consultation and Communication with Stakeholders: Policy and Guidelines.			
Policy	-ile			
No.	COMMERCIAL OPERATIONS			
<u> </u>	Concessions for Welfare Groups.			
E 2	Hiking and Mountaineering.			
E 3	Educational Concessions.			
E 4	Club Facilities within Board Areas.			
E 5	Hutted Camps.			
	F Hutteu Caπβ5.			

г с	1	
E 6	Joint Venture Scheme.	
E 7	Allocation of Sites in terms of the Joint Venture Scheme.	
E 8	Access to Protected Areas through Unofficial Entry Points.	
E 9	Visitor Facilities Management by Ezemvelo KZN Wildlife.	
E 10	Lease of Lakeshore at State Dam Protected Areas.	
E 11	Execution, Control and Management of Leases and Concession Contracts (excluding Biodiversity Conservation Partnerships and Leases of Wildlife).	
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	<ul> <li>Policy and Procedure for the establishment and monitoring of Commercial Operations Public Private Partnership (PPP) Agreements.</li> </ul>	
E 18	Administrative and operational policy on Professional hunting in South Africa.	
E 19	Commercialisation.	

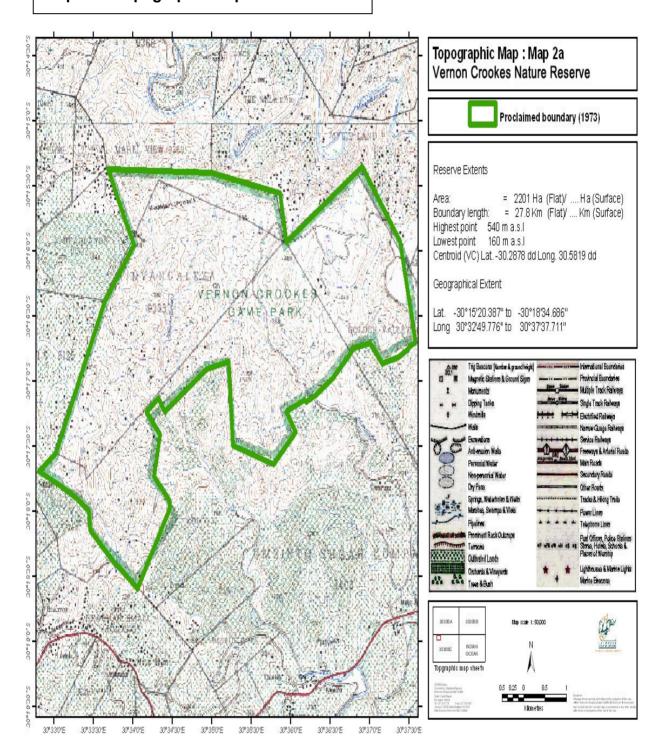
## **APPENDIX 3 – ZONATION DESCRIPTIONS**

CATEGORY	DESCRIPTION OF CRITERIA TO BE USED FOR ZONATION	SETTING DESCRIPTIONS (AS FROM ROS HANDBOOK)
Semi- Primitive Non- motorised	Closely related to the above zone, but usage of formalized trails at a high intensity – concreting/rock-packing of trails  Natural environment experience, non-motorised use, usually a buffer between Wilderness and semi-primitive wilderness/roaded natural areas  Visual and audio impact from outside, at a short distance (< 5km)  May be hiking huts or other types of low-scale accommodation, possible field ranger outposts.	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.
Semi- Primitive Motorised	4x4 trails and their area of impact (audio and visual) 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) Rustic accommodation, or low-level, low intensity tourism nodes (no bigger than 10 – 20 beds).	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.
Rural	A rural recreational node/area, rather than as a nature-based experience. Resort type development rather than a nature-based tourism facility.	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.

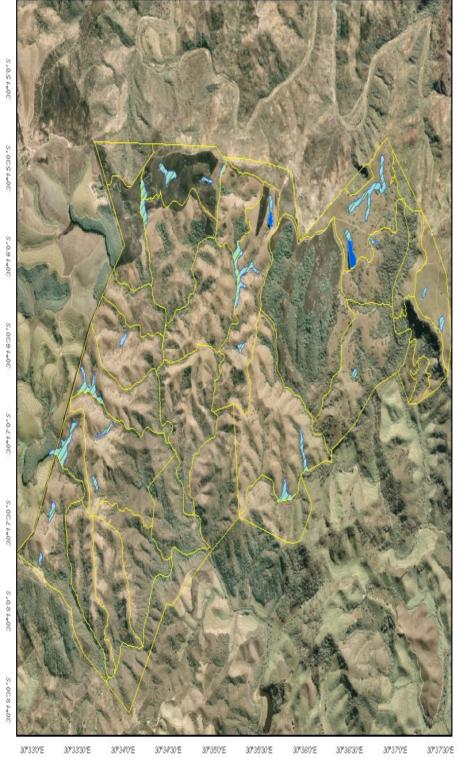




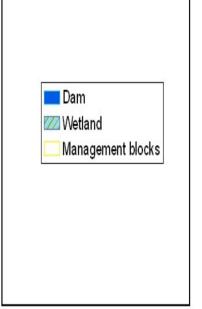
# Map 2a - Topographic Map of VCNR



# Map 2b - Topographic Map of VCNR



# Topographic Map: Map 2b Vernon Crookes Nature Reserve

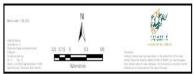


### Reserve Extents

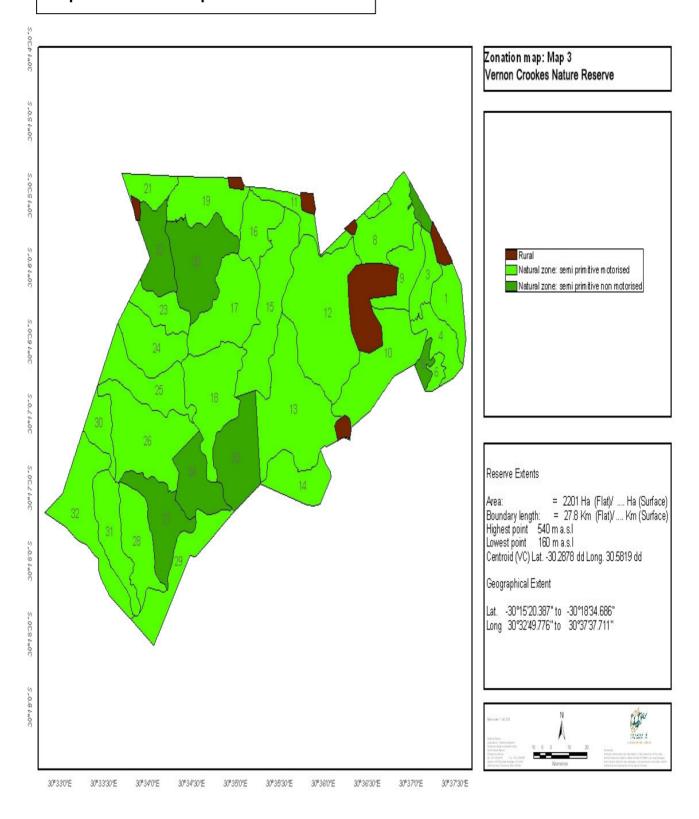
Area: = 2201 Ha (Flat)/ .... Ha (Surface)
Boundary length: = 27.8 Km (Flat)/ .... Km (Surface)
Highest point 540 m a.s.l
Lowest point 180 m a.s.l
Centroid (VC) Lat. -30 2878 dd Long. 30 5819 dd

### Geographical Extent

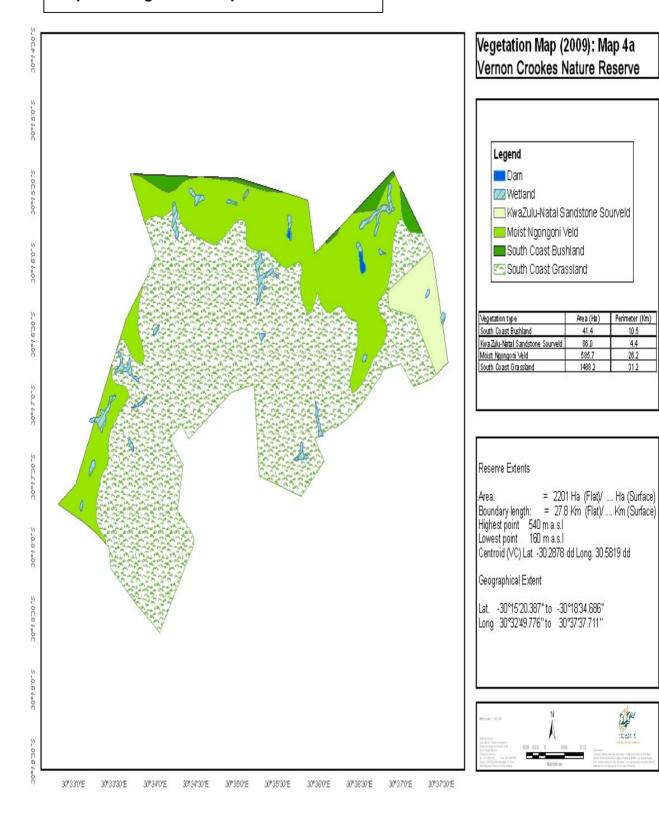
Lat. -30°15'20.387" to -30°18'34.686" Long 30°32'49.776" to 30°37'37.711"



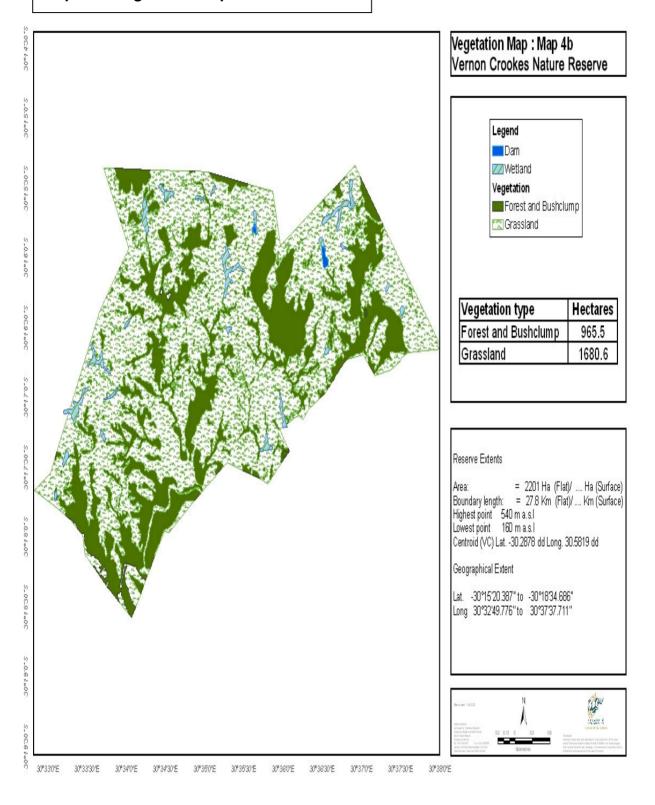
# Map 3 – Zonation Map of VCNR



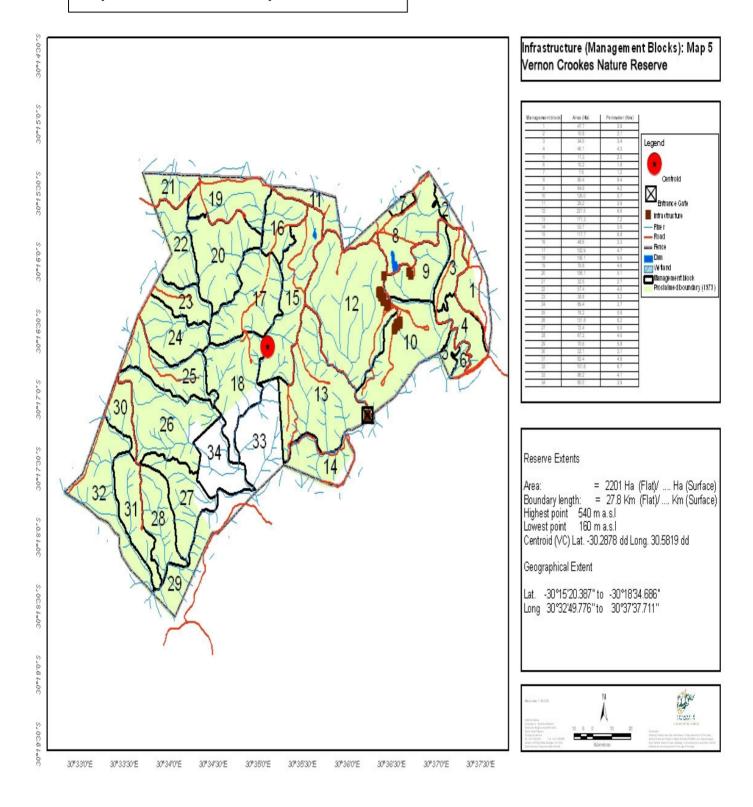
## Map 4a - Vegetation Map of VCNR



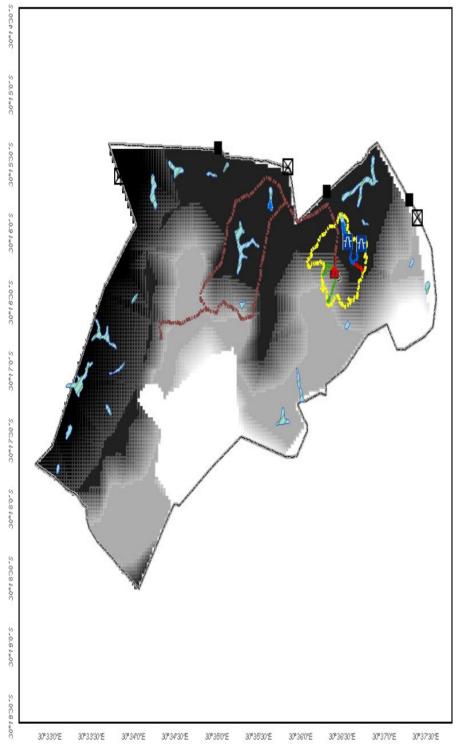
## Map 4b - Vegetation Map of VCNR



# Map 5 - Infrastructure Map of VCNR



# Map 6 - Trails Map of VCNR



# Trails Map: Map 6 Vernon Crookes Nature Reserve

