



**E Z E M V E L O
K Z N W I L D L I F E**

Conservation, Partnerships & Ecotourism

NCANDU NATURE RESERVE

Integrated

**MANAGEMENT PLAN
2009 - 2013**



Ncandu 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 (2009 – 2013) by
ARCUS GIBB (Pty) Ltd

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This Integrated Management Plan (2009 – 2013) for Ncandu Nature Reserve is recommended by the Protected Area Management Planning Committee (PAMPC), a multi-disciplinary team consisting of:

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See Stakeholder Database, **Table 6** in **Appendix 1**.

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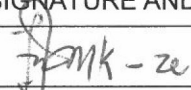


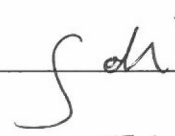
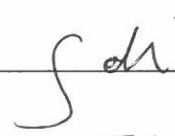
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PREFACE

This Integrated Management Plan for the Ncandu Nature Reserve is the primary and overarching management document for the protected area for the period 2009 to 2013. It forms the framework within which the nature reserve will be managed and developed towards the achievement of its management objectives, derived in collaboration with the protected area's stakeholders during the latter part of 2007 and early part of 2008.

The protected area management planning process and the resultant planning documents (elaborated on in the next few pages) has been designed to meet the statutory requirements of the National Environmental Management: Protected Areas Act (Act No. No. 57 of 2003).

The protected area management planning process requires participation from the protected area'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 protected area's management objectives are operationalised and reflected through a Strategic Management Plan in the protected area's operational budget over the next five years. A Business Plan will, at the same time, actively pursue additional and improved funding and income towards the achievement of the natural and cultural heritage conservation objectives of the nature reserve over the next five years.

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

Dr. Bandile Mkhize
Chief Executive Officer

Date:

EXECUTIVE SUMMARY AND PURPOSE OF PLAN

This Integrated Management Plan includes the management guidelines for the Ncandu Nature Reserve and is the primary and overarching management document for the Protected Area for the period 2009 to 2013. The Integrated Management Plan forms the framework within which the Protected Area will be managed, aligned to the Protected Areas Act (Act No. 57 of 2003) 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 (ARCUS GIBB (Pty) Ltd. and EKZNW) members during the consultative planning process.

The Integrated Management Plan 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 Integrated Management Plan 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. As a document to guide the management of the Ncandu Nature Reserve, based on the inputs of all stakeholders, the Integrated Management Plan also serves as the base document for monitoring both performance and compliance regarding the various management objectives of the Ncandu Nature Reserve.

Through the consultative process and Technical Task Team workshops, a vision and mission specific to the Protected Area were formulated and nine Management Objectives set. Fifty Action Projects were then identified that need to be implemented to ensure compliance of the Protected Area with its own vision and mission, the over-arching vision and mission for the EKZNW Organisation and the requirements of the Protected Areas Act. The objectives of the protected area show a strong bias towards conservation and sustainable resource management, with recognition and protection of cultural heritage resources and potential development of eco-tourism opportunities. The action plans provide methods for achieving these objectives.

Through the utilisation of the Integrated Management Plan as a guide for the compilation of the Protected Area's Strategic Management Plan and Operational Budget, it is envisaged that the Ncandu Nature Reserve's management objectives can be operationalised.

Based on the principle of adaptive management, the Integrated Management Plan will be reviewed annually, providing timeous changes to the five year plan.

Recognising the important role the Ncandu Nature Reserve plays in regional conservation initiatives, Ezemvelo KZN Wildlife, as conservation 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.

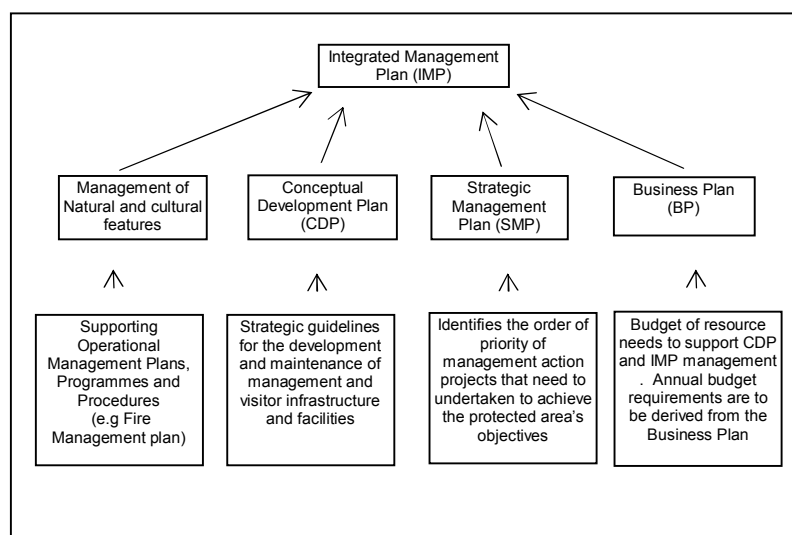


Figure 1: Core Components of the Integrated Management Plan Document

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.

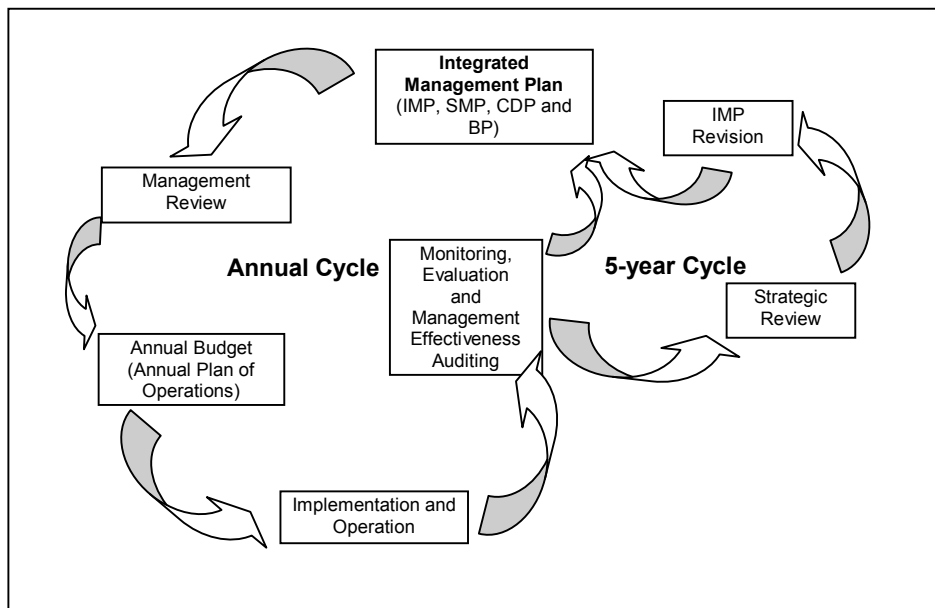


Figure 2: Integrated Management Plans: Aligning Annual and Five year Cycles

DEFINITIONS

Alien species:

Species or genotypes that are not indigenous to the Ncandu Nature Reserve and the KwaZulu-Natal, including hybrids and genetically altered organisms.

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 [Act No. 10 of 2004]).

Board:

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

Commercial Operations:

Division of Ezemvelo KZN Wildlife responsible for marketing and management of eco-tourism facilities.

Conservation Management:

Division of Ezemvelo KZN Wildlife responsible for the conservation management of the protected area and partnerships with surrounding land-users.

Culture:

In its widest sense, culture may be said to be the whole complex of distinctive spiritual, material, intellectual and emotional features that characterise a society or social group. It includes not only arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions and beliefs. It is culture that gives man the ability to reflect upon himself. It is culture that makes us specifically human, rational beings, endowed with a critical judgement and a sense of moral commitment. It is through culture that we discern values and make choices. It is through culture that man expresses himself, becomes aware of himself, recognises his incompleteness, questions his own achievements, seeks untiringly for new meanings and creates works through which he transcends his limitations (as per Mexico City Declaration on Cultural Policies).

Cultural Heritage:

As defined in Article 1 of the World Heritage Convention Act (Act No. 49 of 1999): 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 outstanding universal value from the point of view of history, art or science, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value 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 outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view." For the purpose of this IMP, features of living heritage, such as mountains, pools, rivers, boulders, etc., as well as palaeontological features, are also included under this definition. (Ref: Frans Prins of MDTP; 26/10/04).

EcoAdvice:

Division of Ezemvelo KZN Wildlife responsible for the provision of scientific advice within the three regions of the Nature Conservation Service.

Ecosystem:

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

Ecotourism (Eco-Cultural or Nature Tourism):

Ecotourism is an interactive, participatory and enlightening travel and visitation experience to environments, both natural and cultural, that ensures the sustainable use, at an appropriate level, of environmental resources and, while producing viable economic opportunities for the tourism industry and host/local communities, makes the use of these resources through sound environmental management beneficial to all tourism role players (Ecotourism Africa Trust, 1998).

Ecosystem services:

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

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

Ezemvelo KZN Wildlife:

Nature Conservation Service as established in terms of the KwaZulu-Natal Nature Conservation Management Act (Act No. 9 of 1997).

Heritage Resource:

Any place or object of cultural significance.

Heritage-Based Resources:

Refers to natural and/or cultural resources.

Living Heritage:

The intangible aspects of inherited culture, and may include:

1. cultural tradition;
2. oral history;
3. performance;
4. ritual;
5. popular memory;
6. skills and techniques;
7. indigenous knowledge systems; and
8. the holistic approach to nature, society and social relationships, as per National Heritage Resources Act (Act No. 25 of 1999).

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 [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 [Act No. 57 of 2003]).

Natural Heritage:

As defined in Article 2 of the World Heritage Convention Act (Act No. 49 of 1999): "natural heritage" is considered as consisting of physical and biological formations or groups of such formations, which are of outstanding universal 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 outstanding universal value from the point of view of science or conservation, natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

Nature Reserve:

In the context of this IMP, this means the entire proclaimed land area of the Ncandu Nature Reserve.

Partnership/s:

Means a co-operative and/or collaborative arrangement/s between protected area management/EKZNW and a third party that supports the achievement of protected area's objectives.

Protected Area:

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

In this IMP, protected area refers to the entire proclaimed land area of the Ncandu Nature Reserve

Protected Area Management Committee:

Is the management body that deals with the day-to-day management of the protected area and is chaired by the OIC.

Sense of place:

Are those characteristics that make a place special or unique, as well as those that foster a sense of authentic human attachment and belonging.

Stakeholders/Interested and affected parties:

As defined in the Guideline Document EIA Regulations (DEAT, April 1998), 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 (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 [Act No. 10 of 2004]).

ABBREVIATIONS

Amafa	Amafa aKwaZulu-Natali (KZN Heritage Agency)
BP	Business Plan
CDP	Concept Development Plan
DAEA&RD	KwaZulu-Natal Department of Agriculture, Environmental Affairs and Rural Development
DEAT	National Department of Environmental Affairs and Tourism
DEVCO	EKZNW's Development Committee
DWAF	National Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
FPA	Fire Protection Association
I&AP	Interested and Affected Parties
IDP	Integrated Development Plan
IMP	Integrated Management Plan
KZN	KwaZulu-Natal Province of the Republic of South Africa
MOA	Memorandum of Agreement
NNR	Ncandu Nature Reserve
PA	Protected Area
PAMC	Protected Area Management Committee
PAMP	Protected Area Management Plan
ROC	EKZNW's Regional Operations Committee for the uKhahlamba Region
SA	Republic of South Africa
SAHRA	South African Heritage Resources Agency
SMP	Strategic Management Plan

ABBREVIATIONS USED FOR STATUTES (ACTS)

CARA	Conservation of Agricultural Resources Act (No. 43 of 1983)
ECA	Environment Conservation Act (No. 73 of 1989)
KZNHRA	Kwa-Zulu Heritage Resources Act (No. 10 of 1997)
NEMA	National Environmental Management Act (No. 107 of 1998)
NHRA	National Heritage Resources Act (No. 25 of 1999)
NWA	National Water Act (No. 36 of 1998)
PFMA	Public Finance Management Act (No. 1 of 1999)
PAA	National Environmental Management: Protected Areas Act (No. 57 of 2003)
TOPS	National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004), in relation to threatened or protected species (TOPS Regulations)

1 PURPOSE AND SIGNIFICANCE OF THE NCANDU NATURE RESERVE

1.1 Purpose

The purpose of Ncandu Nature Reserve (NNR) is to:

- Contribute to the achievement of Provincial and National conservation targets through protecting the Ncandu and Normandien forests, grassland 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;
- Safeguard the archaeological, historical, palaeontological and living cultural heritage of the area;
- Provide controlled and equitable access by the public to the area and its resources;
- Contribute to local and regional economies through eco-cultural tourism, and the sustainable use of natural resources; and
- Provide a destination for eco-cultural tourism.

1.2 Significance

The PA is of conservation significance because it is the only area in the Amajuba District that affords statutory protection to Montane forests as well as grassland, herb and shrub communities, along with the associated fauna. The two broad vegetation communities in the area are Northern Afrotropical Forest (500ha) and the Low Escarpment Moist Grassland (1375ha) [Muchina & Rutherford, 2006].

The PA is important as a part of the water catchment area for the lower lying agricultural area of Leeukop and for the city of Newcastle, which forms part of the Amajuba District Municipality. The Ncandu River that flows from the PA, feeds the Amcor Dam on the outskirts of Newcastle and is an important supplementary supply to Ntshingwayo (Chelmsford) Dam, particularly in times of drought.

Some important bird species at the PA include White Stork, Bald Ibis, and Denham's Bustard. A wide range of mammals are present and includes African Wild Cat, Bushbuck, Cape Clawless Otter, Caracal, Grey Duiker, Grey Rhebuck, Mountain Reedbuck, Serval, and Water Mongoose.

The protected area is important to the national environmental conservation programme for the reasons listed below:

- The PA affords protection for a wide variety of plant and animals, including a number of Red Data Book species
- The PA protects some of the largest and most important Northern Afrotropical Forest on the low Berg. These forests, despite past misuse, are in very good condition
- The PA is one of great natural beauty, being in a largely unspoiled state

The area offers a great variety of landscapes ranging from panoramic landscapes to the narrow and confined landscapes of the Ncandu River Gorge, and presents a favourable contrast to the surrounding agricultural land. The Ncandu and Normandien forests are local features of aesthetic importance with few additional extensive forests in the low Berg in northern KwaZulu-Natal.

2 ADMINISTRATIVE AND LEGAL FRAMEWORK

2.1 Institutional Arrangements

2.1.1 Ncandu Management Authority

Ezemvelo KwaZulu-Natal Wildlife is the designated Management Authority responsible and accountable for the Ncandu Nature Reserve (NNR).

The PA is State forest and is administered under the provisions of the Forest Act (Act No.122 of 1984) and the KwaZulu-Natal Nature Conservation Management Act [the Management Act] by Ezemvelo KZN Wildlife (EKZNW). Going forward, this section requires that the provincial MEC assign the management of the Protected Area to a Management Authority.

Action Project 2.1.1 (i): Seek assignment from the MEC by re-appointing EKZNW as the management authority for NNR 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 NNR through the relevant provincial departments, District and Local Municipalities.

2.2 Legislation Guiding the Administration of the Nature Reserve

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

The operational administration and management of the Nature Reserve is subject to the following key statutes – it is acknowledged that this list is not exhaustive. Managers are to 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>.

Biodiversity and Cultural Resource Management and Development

- The Constitution of South Africa (Act No. 108 of 1996)
- KwaZulu Natal Nature Conservation Management Act (Act No. 9 of 1997)
- Environment Conservation Act (Act No. 73 of 1989) [ECA]
- National Environmental Management Act (Act No. 107 of 1998) [NEMA]
- National Environmental Management: Protected Areas Act (Act No. 57 of 2003) [PAA]
- National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)
- Conservation of Agricultural Resources Act (Act No. 43 of 1983) [CARA]
- National Water Act (Act No. 36 of 1998) [NWA]
- National Heritage Resources Act (Act No. 25 of 1999)
- AMAFA aKwaZulu-Natali/Heritage KwaZulu-Natal: KwaZulu-Natal Heritage Act (Act No. 10 of 1997)
- Traditional Healers Act (Act No. 10 of 2004)
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) in relation to threatened or protected species (TOPS Regulations).

General Management

- Broad-based Black Economic Empowerment Act (Act No. 53 of 2003)
- Communal Land Rights Acts (Act No. 11 of 2004)
- Development Facilitation Act (Act No. 67 of 1995)
- Disaster Management Act (Act No. 57 of 2002)
- Fire Brigade Services Act (Act No. 99 of 1987)
- Intergovernmental Relations Framework Act (Act No. 13 of 2005)
- KwaZulu Ingonyama Trust Act (Act No. 3 of 1994)
- KwaZulu-Natal Planning & Development Act (Act No. 5 of 1998)
- Local Government: Municipal Systems Act (Act No. 32 of 2000)
- Municipal Services Act (Act No. 32 of 2000)
- Natal Town Planning Ordinance (Ordinance No. 27 of 1949)
- National Building Standards Act & Regulations (Act No. 103 of 1977)
- National Road Traffic Act & Regulations (Act No. 93 of 1996)
- Occupational Health and Safety Act (Act No. 85 of 1993)
- Occupational Health and Safety Act (Act No. 85 of 1993)
- Restitution of Land Rights Act (Act No. 22 of 1994)
- State Land Disposal Act (Act No. 48 of 1961)
- Water Services Act (Act No. 108 of 1997)

Financial Management

- Public Finance Management Act (Act No. 1 of 1999) [PFMA]

Human Resource Management

- Basic Conditions of Employment Act (Act No. 75 of 1997)
- Compensation for Occupational Injuries and Diseases Act (Act No. 130 of 1993)
- Employment Equity Act (Act No. 55 of 1998)
- Labour Relations Act (Act No. 66 of 1995 as amended)
- Occupational Health and Safety Act (Act No. 85 of 1993)
- Pension Funds Act (Act No. 24 of 1956)
- Skills Development Act (Act No. 97 of 1998)
- Skills Development Levies Act (Act No. 9 of 1999)
- Unemployment Insurance Act (Act No. 36 of 2001)

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.

2.3 Regional Planning Context and Principles¹

NNR 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 NNR 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 Amajuba District Municipality and the Newcastle Local Municipality.

Such alignment will assist in developing an effective buffer zone around NNR. Management, in collaboration with the designated EKZNW officials, will be tasked to make the relevant inputs whenever these municipalities' Integrated Development Plans (IDP's) and Spatial Development Frameworks (SDF's) are reviewed and updated.

Action Project 2.3 (i): Management in collaboration with other relevant EKZNW officials, is mandated with active participation in the review processes of the municipal Integrated Development Plans (IDP's) and Spatial Development Frameworks (SDF's) in order to ensure an effective buffer zone surrounding NNR through an alignment of appropriate land use adjacent to the Nature Reserve and ensure municipal service delivery.

The value, sensitivity and conservation significance of NNR is recognised in the IDP, the Amajuba Tourism Development Plan and the Newcastle Municipality IDP. Newcastle Municipalities' IDP further identifies NNR as a "special environmental management area", thereby recognising the regional role NNR plays in conservation of the ecological assets of the Municipality. The Strategic Environmental Assessment (SEA) undertaken for the District also identifies NNR as an area of natural forest of 'intermediate' value.

In terms of tourism and economic potential for the local and District Municipality, NNR was not identified as being a current asset, but the studies do reference the PA as being a tourism resource with the potential to attract tourists to the area.

There are relatively few formal conservation areas in the District, although there are many environmentally sensitive areas e.g. wetlands. The formal conservation areas are:

- Chelmsford Nature Reserve
- Ncandu Nature Reserve / Incandu Forest Reserve

2.4 Proclamation Status of the Nature Reserve

The NNR was first proclaimed as a State Forest in 1925 and then re-proclaimed as a nature Reserve in 1989.

NNR fits into Category VI of the Government Gazette 15726 Notice 449 of 9 May 1994, this being "Sustainable Use Area" (definition: a predominantly natural area of land, designated and managed to ensure the long-term protection and maintenance of its biological diversity, by providing a sustainable flow of natural products). (**Appendix 2, Item 4**).

¹ References:

Graham Muller & Associates (2004): Amajuba District Municipality: Tourism Development Plan for the Amajuba District
Amajuba District Municipality (2007): Integrated Development Plan Review 2006/7
SiVest and Deloitte & Touche Consortium (2002): Newcastle Integrated Development Plan

2.5 Local Agreements, Servitude Arrangements and MOUs

NNR has a number of informal arrangements related particularly to access to and through the Nature Reserve. These include:

- An application for servitude access was made by the owners of Gallway Farm (Born Free Investments (PTY) LTD) to access their property through the management track running through NNR on the Mullerspas side of the protected area. This track provides the shortest distance to the Gallway property from the town of Newcastle; access is otherwise formally available through a registered servitude via the farms, The Top and Leopard Dale, on the Normandien Pass side of the property. The intention of Born Free Investments (PTY) LTD is to formalise the track by upgrading it to a road. EKZNW are not in support of the Gallway application.
- An agreement with Dr Stride of Leopard's Kloof Farm for access to the PA needs to be mapped and formalised.
- The Ncandu River Dam Consortium intends to construct a dam and associated tourism development, adjacent to the PA. The construction of the dam will only take place once the necessary approvals from the Department of Water Affairs and Forestry (DWAF) have been obtained. To date the final approval from DWAF has not been issued. A Memorandum of Agreement to facilitate tourism activities linking the proposed dam and the PA has been finalised.

Action Project 2.5 (i): Review all formal and informal local agreements, leases, servitude arrangements *etc.* pertaining to NNR and document, update, maintain and monitor these appropriately authorised agreements and ensure compliance with all conditions and rights in law. All informal and revised agreements will be formalised and approval sought from the Board.

2.6 Extending Conservation Land Use Management in Areas Surrounding the Nature Reserve

Given the biodiversity importance of the general area (Rushworth, 2006), together with the awkward configuration of the existing protected area, it is desirable to improve the conservation management of the surrounding properties so as to improve management effectiveness and achievement of provincial biodiversity targets. The neighbouring properties could be brought under improved conservation management through a combination of land acquisition and co-management arrangements with areas declared as private nature reserves or with biodiversity agreements facilitated by the KZN Biodiversity Stewardship Programme. The minimum target should be to have a formal contract and co-management agreement with all properties immediately bordering the existing protected area.

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 NNR in collaboration and co-operation with the relevant stakeholders and landowners. This is likely to contribute to the EKZNW conservation planning targets through more effective natural and cultural heritage conservation. Indirectly, new tourism opportunities could also develop with the resulting socio-economic benefits.

All EKZNW officials associated with NNR 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.

Action Project 2.6 (i): Encourage neighbouring landowners to establish private nature reserves and / or enter into co-management agreements, utilising incentives provided through the KZN Biodiversity Stewardship Programme.

3 BACKGROUND

3.1 *Origins of the Name of the Nature Reserve*

Ncandu Nature Reserve is named after the waterfall on the Ncandu River, which flows through the PA.

3.2 *Location and Extent of the Nature Reserve*

Ncandu Nature Reserve is situated in north-western KwaZulu-Natal Province, Republic of South Africa, approximately 32km south west of Newcastle on the Mullers Pass Road (**Appendix 1, Map 1**). The protected area falls within the EKZNW East sub-region of the uKhahlamba Region and the Newcastle Magisterial District, 80km from Ladysmith on the north side of the dam and 19km South of Newcastle on the D210 District Road towards Normandien.

The protected area was proclaimed in 1925 as Ncandu Forest Reserve, with two pieces of state land later added in 1989 from the adjoining farms, Steep Glen and Buffel's Hoek, to bring its current area to 1858 ha. The protected area is more or less rectangular, 11.80km long and 6.37km at its widest point. The protected area extends from 27°51'36"S to 27°58'12"S, and from 29°40'48"E to 29°45'00"E, across an altitude gradient of 1460 m to 1900 m a.s.l.

3.3 *Conservation History of the Nature Reserve*

The PA has a rich history. It was initially used by the San (Bushmen) and subsequently by Iron Age Nguni people. White settlers to Northern Natal later established farms in the area. The discovery of coal led to the establishment of the nearby town of Newcastle. Consequently, the forests within the NNR were extensively logged by the settlers for timber, to build the town of Newcastle. At the time, the forest was initially state land, which in later years was transferred to EKZNW as the management authority.

In addition to the extensive logging that took place, the adjoining grasslands were subjected to detrimental burning and grazing practices. Wildfires still regularly cross the boundaries of the PA and burn out against the forest margin, resulting in a truncated grassland/forest boundary with little or no ecotone development. There is a current initiative to expand the PA to include the remaining sections of the forests on the adjacent properties.

Unauthorized uses such as collecting plant material for medicinal use, felling of certain trees to make household utensils and carvings, and poaching occur but attempts are made to restrict such activities by law enforcement efforts.

3.4 *Description*

3.4.1 *Climate and Weather*

Ncandu Nature Reserve lies in the summer rainfall region, receiving most of its rainfall from November to March. There are no official rainfall figures for the protected area, but the mean annual precipitation at the town of Newcastle (~22km away) is 801 mm with rainfall levels varying from 680mm in lower altitudes to 1900mm in the higher altitudes. Despite this, the protected area lies on the escarpment and receives significant orographic precipitation increasing the average rainfall in the PA well above that of Newcastle.

The mean annual temperature of Newcastle is 17.8°C, but due to the altitudinal difference, NNR is probably a few degrees less. Mean annual summer (January) minimum and maximum temperatures of 16.3 °C and 29.1 °C and winter (July) minimum and maximum temperatures of 2.8 °C and 20.7 °C have been recorded for Newcastle. Frost occurs between April and September of between 90 to 150 days during the year and snowfalls occur frequently. Southerly and northerly to north-westerly winds prevail in the area.

Action Project 3.4.1 (i): Record basic weather statistics such as min/max temperatures and rainfall for NNR.

3.4.2 Topography

The Nature Reserve lies on the eastern Drakensberg Escarpment of southern Africa and is situated in the Low Berg escarpment between the Free State and KwaZulu-Natal with altitudes ranging from 1500m to 1940m. The topography is rugged and the escarpment is incised by numerous kloofs and gorges. The largest of these gorges is the Ncandu River Gorge which has steep sides and heavily forested slopes (**Appendix 1, Map 3**).

3.4.3 Geology, Geomorphology and Soils

The geology of the protected area consists of a band of Clarens Sandstone of the Beaufort Group, running along the northern end of Ncandu River Gorge. This sandstone overlies shale and mudstone of the Estcourt Formation, and is intersected by dolerite dykes. Sandstone, shale and mudstone of the Adelaide Formation also occur at lower altitudes within the protected area (Johnson *et al.*, 2006).

The soils are dominated by Glenrosa and/or Mispah forms² which are both shallow soils over rock. Although most soils are ferrallitic (*i.e.* have erosion resistant properties), the steep slopes of the protected area erode rapidly if misused. A principal cause of accelerated erosion is trampling either by livestock or humans on incorrectly sited paths and steep areas. As this escarpment is a key water catchment area for the region it is essential that management work to contain accelerated erosion and so ensure the sustained yield of high quality water.³

3.4.4 Hydrology

The Nature Reserve is traversed by a perennial river, the Ncandu River, with deep, steep sided valleys fed by numerous tributaries. Located in the upper reaches of Ncandu River, the NNR forms a significant part of the catchment area of this river. The Ncandu River is of considerable importance to the agricultural communities downstream. It also feeds the Amcor Dam (on the outskirts of Newcastle) that is an important supplementary supply to Ntshingwayo Dam at Chelmsford Nature Reserve, especially in times of drought. The Horn River also has its source within the stateland section of the protected area, adjoining the Buffel's Hoek farm (**Appendix 1, Map 3**).

3.4.5 Flora

NNR is characterised by steep forest filled gorges and rolling grassy plateaus. The vegetation consists of a mix of Low Escarpment Moist Grassland (Muchina and Rutherford, 2006, vegetation type Gs3) on the plateau and Northern Afrotropical Forest (Muchina and Rutherford, 2006, vegetation type FO2) in the valleys.

Grasslands on the plateau are generally medium to short and dominated by palatable red grass (*Themeda triandra*) however, tall grasses like common thatching grass (*Hyparrhenia hirta*) dominates in the wetter and disturbed areas. Patches of fynbos characterised by *Cliffortia linearifolia*, erica (*Erica evansii*) and mountain passerina (*Passerina montana*) are scattered across the grassland where sandstone outcrops form fire refugia. Sugarbush (*Protea caffra*) trees are also scattered across the sandstones, turning the grassland, in places, into protea savannas. In moist depressions it appears as though the grassland is being invaded by bracken fern (*Pteridium aquilinum*), with dense monospecific (single species) stands developing in some areas.

OuHout (*Leucosidea sericea*) scrub occurs along the margins of forests and up drainage lines reaching into the grasslands where the forest trees get burnt out by the regular fires that sweep across the protected area. Where the fire has been excluded, the forest margins and rocky outcrops support a diversity of ecotonal species such as mountain cypress (*Widdringtonia nodiflora*), glossy Berg bottlebrush (*Greyia sutherlandii*), quilted sagewood (*Buddleja salvifolia*), tree fuchsia (*Halleria lucida*) and wild currant (*Rhus* spp.). Forests in the Nature Reserve have been exploited in the past, as evidenced by the presence of old saw pits (Howison,

² Department of Environmental Affairs, 2001

³ References:

Howison, O. 1988. *Normandien State Forest policy statement*. Natal Provincial Administration, Pietermaritzburg.

1988) and continue to suffer harvesting of bark for use in traditional medicines. The forests are currently also seriously threatened by uncontrolled and all too frequent fires.⁴

Action Project 3.4.5 (i): Update the vegetation map of NNR and implement appropriate management actions to maintain the biodiversity of NNR and counteract any negative impacts.

3.4.5.1 Priority Species

The following Red Data listed plant species occur in the reserve:

<i>Crassula obovata</i> var. <i>dregeana</i>	Stonecrop	Vulnerable
<i>Lotononis amajubica</i>		Rare

3.4.6 Fauna

Species checklists will be compiled as data becomes available (**Appendix 2, Item 3**). A fixed protocol for compiling and maintaining these checklists will be developed to ensure that they provide accurate, comparable and contemporary baseline data for management and scientific purposes

Action Project 3.4.6 (i): Update the EKZNW Biodiversity Database with the NNR animal species checklist records.

3.4.6.1 Invertebrate Fauna

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.

Among the invertebrate fauna the endangered northern black millipede (*Doratogonus septentrionalis*) and the Scarce scarlet (*Bowkeria phosphor borealis*) are endemic to KwaZulu-Natal and have a restricted distribution. There is also a newly discovered, yet to be described keeled millipede (*Ulodesmus* sp. nov.) and a number of KwaZulu-Natal endemics including: Pearlrose's spined millipede (*Zinophora pearlae*), white-haired robber fly (*Hyphenetes argothrix*), Bourquin's earthworm (*Proandricus bourquini*) and the Near-endemic Drakensberg tail-wagger (*Sheldonia transvaalensis*).

Action Project 3.4.6.1 (i): Confirm the presence and status of Red Data Book invertebrate species occurring in NNR.

⁴

References:

Camp, K.G.T. 1996. *The bioresource groups of KwaZulu-Natal*. KwaZulu-Natal. Department of Agriculture, Cedara.
Howison, O. 1988. *Normandien State Forest policy statement*. Natal Provincial Administration, Pietermaritzburg.
Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J. (eds) 2006. *The geology of South Africa*. The Geological Society of South Africa, Johannesburg.
Muchina, L. and Rutherford, M.C. (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelizia*, 19. South African National Biodiversity Institute, Pretoria.

3.4.6.2 Herpetofauna

Twelve species of reptiles are listed as occurring in the PA; 1 chameleon, 8 lizards and 3 snakes. No Red Data species are listed. In addition to the spiny crag lizard (*Pseudocordylus spinosus*), which is restricted within KZN, a new, yet to be described, species of dwarf chameleon (*Bradypodion sp. nov.*) has been recorded in NNR. Three species of frogs/toads are listed as occurring in the Nature Reserve. No Red Data species are listed.

Action Project 3.4.6.2 (i): Confirm the presence and status of herpetofauna occurring in NNR.

3.4.6.3 Fish

Fish recorded at NNR include the indigenous Natal mountain catfish (*Amphilius natalensis*), the chubbyhead barb (*Barbus anoplus*) and the exotic rainbow trout (*Oncorhynchus mykiss*).

Action Project 3.4.6.3 (i): Confirm the presence and status of fish species occurring in NNR.

3.4.6.4 Birds

The EKZNW Biodiversity Database lists 78 bird species for the Nature Reserve. Of particular importance are:

Wattled crane (*Bugeranus carunculatus*)

Critically Endangered

This species requires winter wetland sites for breeding, but there are no such suitable sites in NNR. However, Wattled cranes are known to breed in the area (Chelmsford NR) and may occur in NNR to forage in the grasslands.

Grey crowned crane (*Balearica regulorum*)

Vulnerable

Grey crowned cranes have been recorded in the area (Chelmsford NR) and are thus likely to occur in NNR.

Blue crane (*Anthropoedus paradisea*)

Vulnerable

This is the world's most range-restricted crane. This species primarily occupies the grassland biome, though frequently occurs in pastures, and require shallow water or pans in which to roost. Blue Cranes were sighted foraging with a young chick on the State Land in the Southern section of NNR during February 2009, which confirmed they are breeding either within NNR or on the adjacent Leopard Kloof farm. The farm forms part of the Biodiversity Stewardship sites that have been submitted to the EKZNW steering committee for consideration.

Denham's bustard (*Neotis denhami*)

Vulnerable

This species favours the grassland biome, preferring high-lying open grassland and frequently on plateaux. It Requires 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.

Southern bald ibis (*Geronticus calvus*)

Vulnerable

Forage in the PA.

Action Project 3.4.6.4 (i): Evaluate and assess the significance of NNR in terms of its contribution towards the conservation of bird species, particularly Red Data Book species.

3.4.6.5 Mammals

The steep wooded valleys of NNR may retain populations of bushbuck (*Tragelaphus scriptus*) and grey duiker (*Silvicapra grimmia*), however plains antelope characteristic of the area no longer exist. The protected area is populated by chacma baboon (*Papio hamadryas*), common molerat (*Cryptomys hottentotus natalensis*), rock hyrax (dassie) (*Procavia capensis*), striped mouse (*Rhabdomys pumilio*) and vlei rat (*Otomys irroratus*). Oribi (*Ourebia ourebi*) and rough-haired golden mole (*Chrysospalax villosus*), are known from the surrounding grasslands and mountain reedbuck (*Redunca fulvorufula*) could do well in the grasslands of the plateau. The introduction of these antelope will however require a greater area to be incorporated into some form of nature conservation scheme (e.g. through the KZN Biodiversity Stewardship Program) with improved security and management, particularly to control poaching and unplanned fires.

Action Project 3.4.6.5 (i): Initiate a survey of the small mammals on NNR.

3.4.7 Cultural Heritage

The PA hosts a variety of cultural heritage aspects including one San rock art site, stone-age artefacts, late Stone Age sites, and the spiritually significant waterfall within the Nature Reserve. There is a lack of readily available information that describes the cultural heritage and associated protection value of these aspects. A more detailed literature review and / or heritage investigation is required to form the basis of developing a strategy for the protection of these resources.

Action Project 3.4.7 (i): Develop a strategy for the protection of cultural heritage resources in the PA, in conjunction with AMAFA and SAHRA and implement an appropriate resource management plan.

3.4.8 Socio-Cultural History

The Nature Reserve was initially inhabited by the San (Bushmen) and subsequently by Iron Age Nguni people. Thereafter, white settlers to Northern Natal established farms in the area.

An important part of the socio-cultural history of the wider area is the battle that took place at Isandlwana (8km away) in 1879, at which the Zulu general, Ntshingwayo kaMahole Khoza, led the Zulu people against the British Lord Chelmsford and his platoon. The PA was previously named Ntshingwayo wetland, after the Zulu general.

NNR is located in an area that was classified as no-mans-land in the late 1870's. The area was claimed by the Zulu's, Swazi's and Boers. This area of conflict eventually became part of the Colony of Natal.

The surrounding area is significant as it is the area where the infamous Battle of Wolkrans took place where the Boers were defeated by the Zulu's in the last days of the Anglo-Boer War. This defeat played a significant role in the future politics of the area.

Action Project 3.4.8 (i): Undertake a study to adequately document the Socio-Cultural History of the NNR and surrounding area.

3.4.9 Socio-Economic Context

The local communities surrounding NNR are characterised by a low employment rate. There appears to be a high level of subsistence agriculture. It is further estimated that only a small percentage of the population in the area are functionally literate. High population growth rates and increasing trends in unemployment result in increasing levels of poverty. Consequently, with a staff compliment of five people, future nature based tourism development in NNR and its surrounds will have an important role to play in addressing issues of livelihood and local economic development in this deprived region of KwaZulu-Natal.

Newcastle is the closest town to NNR and serves as the main socio-economic hub for the area. Commercial activities in the areas surrounding the Nature Reserve include commercial livestock (beef and sheep), dairy, grain, and vegetable (irrigated maize) farming. Game ranches and coal mines (Dannhauser, Durnacol) can also be found in the environs of the Nature Reserve. Other communities active in the surrounding areas are mainly labour tenants, living on farms with limited subsistence farming activities.

A new dam, the Ncandu Dam has been proposed to be constructed downstream of the Nature Reserve on the Ncandu River for the irrigation of farms on Buffalo Flats and for the undertaking of recreational activities. The top end of the water body will flood a small area of the Nature Reserve and EKZNW has agreed to this in exchange for the purchase and proclamation as a private nature reserve of the farm Union and the remainder of the properties on which the dam will be built. This dam will only be constructed once the necessary approvals have been obtained from DWAF.

3.4.10 Eco-Cultural Tourism

NNR is currently only accessible by special request to the Conservation Manager, Chelmsford Nature Reserve. However, should the Ncandu Dam be approved, the existing, currently closed, hiking trail may, along with others, be re-established to provide access to the protected area. Nature walks may include bird and tree identification tours.

Action Project 3.4.10 (i): Develop eco-cultural tourism infrastructure and activities for NNR in line with the Concept Development Plan for the Nature Reserve.

3.4.11 Developed Infrastructure

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

The following infrastructure is present at NNR (**Appendix 1, Map 2 and 3**):

- 1 x 5 bedroom building that houses the field rangers and general assistants.
- 1 x 4 bedroom building used for visitors only. This building has a kitchen, sitting room and two bedrooms.

3.4.11.1 Eco-Cultural Tourism Infrastructure

There is currently no eco-cultural infrastructure present in NNR.

3.4.11.2 Bulk Infrastructure

- Approximately 4.1km of roads and vehicle tracks, and 0.8km of management tracks.
- 1 x 10 000l water storage tank that is filled by a borehole.

3.4.11.3 Conservation Infrastructure

Other conservation infrastructure outside the developed centres consists of

- Hiking trails (currently unused)
- The perimeter boundary fences total length is approximately 40.5 km. The existing boundary fence is generally 1.2m high and consists of a regular cattle fence and is in urgent need of repair.

3.4.11.4 Infrastructure Maintained by Other Organisations

There is no infrastructure within the boundaries of NNR that is maintained by other organisations.

4 VISION, MISSION, 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 (**Appendix 2 Item 1**) 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	
<i>“To be a world renowned leader in the field of biodiversity conservation”</i>	
MISSION STATEMENT	
<i>“To ensure effective conservation and sustainable use of KwaZulu Natal’s biodiversity in collaboration with stakeholders for the benefit of present and future generations.”</i>	
STRATEGIC GOALS	
<ol style="list-style-type: none">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	– at all times we undertake our activities with passion, loyalty and dedication.
Productivity	– we undertake to produce results timeously, efficiently and effectively.

As a planning tool, EKZNW, as the institution responsible for managing the access and use of the protected area, will use this plan for decision-making purposes, as well as an awareness tool for staff, neighbours and visitors as to the vision, mission and operational guidelines of the Nature Reserve.

The vision, mission, and management objectives for the Ncandu Nature Reserve were set by the broad stakeholders and extensively discussed and consulted by the Technical Task Team, based on the Integrated Management Planning Process. (**Appendix 2, Item 5**).

4.2 Vision of Ncandu Nature Reserve

To be an effective protected area that has secured and conserved its representative natural and cultural heritage, while providing a sustainable flow of ecosystem services and benefits (water production and medicinal plant harvesting), and including eco-tourism and recreational opportunities.

4.3 Mission of Ncandu Nature Reserve

To effectively manage the natural processes that support biodiversity and ecosystem services, protect the cultural heritage and provide equitable and sustainable access to the resources of the protected area.

4.4 Management Objectives

To attain the vision, mission and objectives of the Nature Reserve, as well as the mission of EKZNW the key objectives are: [N.B. Objectives are ordered according to the contents of the Vision and Mission, and ranked in [] at the end of each Objective, with [1] representing the highest and [9] the lowest priority].

1. Establish and maintain effective linkages with neighbouring communities and other stakeholders to achieve an effective protected area through collaborative management [5]
2. Ensure that the protected area is effectively managed and resourced (this includes: financial, human, equipment and institutional) [2]
3. Conserve and restore the biodiversity and ecosystem processes towards meeting provincial conservation targets for key species and habitats representative of the protected area [1]
4. Retain the natural character (sense-of-place) of the forest and grassland ecosystems [7]
5. Ensure that the protected area and buffer zone are free from the negative impacts of alien species [3]
6. Provide adequate protection for the cultural heritage features of the protected area [6]
7. Ensure that the extractive use of natural resources is equitable and sustainable [4]
8. Support the local and regional economy by providing eco-tourism opportunities [8]
Offer appropriate recreational opportunities for a diversity of peoples [9]

4.5 Conservation Targets for the Nature Reserve

Typically, protected areas suffer from insufficient funding and resources to achieve their conservation mandate. By identifying specific conservation targets it is possible to develop a strategy linked to budget and resources that addresses conservation priorities in the protected area. Monitoring the success of this strategy then allows management interventions (including budget and resource adjustments) to be timeously adjusted when targets are not being met. The actions required to achieve the conservation targets set here are expanded, with associated Action Projects in the section on Biodiversity Conservation and Management (Section 6.4).

Action Project 4.5 (i): Develop conservation and monitoring strategies for all species for which conservation targets have been set.

Table 1: Conservation Targets⁵

Feature	Target	Rationale / notes	2008 status	Key threats (in approximate order of importance)
Northern Afrotemperate Forest (Muchina and Rutherford 2006, Vegetation type FOz2)	No net loss of untransformed habitat	National conservation target is 31%, with 30% currently protected although threatened with degradation if not appropriately managed (Muchina & Rutherford 2006).	523 ha of untransformed forest represented in protected area.	<ul style="list-style-type: none"> • Uncontrolled fires • Livestock browsing, particularly goats • Unsustainable extractive resource use for traditional medicine • Alien plant invasion
Low Escarpment Moist Grassland (Muchina and Rutherford 2006, Vegetation type Gs3)	No net loss of untransformed habitat	National conservation target is 23%, with 2% currently protected (Muchina & Rutherford 2006).	1335 ha of untransformed grassland represented in protected area.	<ul style="list-style-type: none"> • Inappropriate fire regimes • Inappropriate grazing • Alien plant invasion • Uncontrolled access by motorised vehicles (e.g. quad bikes)
Oribi (<i>Ourebia ourebi</i>)	Self sustaining population	Oribi populations continue to decline, placing the species in the Endangered category (Friedman and Daly 2004). Although not currently resident in the protected area, oribi occur on the nearby Steep Glen Farm.		<ul style="list-style-type: none"> • Illegal hunting (with dogs) • Inappropriate grassland management, especially fire management • Inappropriate fencing

⁵ References:

Friedmann, Y. and Daly, B. (eds). 2004. *Red data book of the mammals of South Africa: a conservation assessment*. Conservation Breeding Specialist Group (SSC/IUCN), Endangered Wildlife Trust, South Africa.
 Muchina, L. and Rutherford, M.C. (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.

5 ZONATION

5.1 Zonation Categories

Zonation within protected areas is an internationally accepted practice for the purpose of effecting management and recreation activities. The use of a nationally standardised system of classification, which characterises the various zones will ensure that protected area managers and users have a clear indication of the management and recreational opportunities within the various zones.

The Zonation Plan is divided into different forms of land use. Only those activities relating to the policy for each zone will be permitted within the designated area. The Zonation Map for NNR is illustrated in **Appendix 1, Map 2**.

Action Project 5.1 (i): Revise the existing NNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved.

5.1.1 Land Use

The zonation system, according to the USA-designed Recreational Opportunity Spectrum (ROS), is presented in **Map 2** and **Appendix 3, Table 6**. According to this system, there are only two zones within the PA, described as follows.

Table 2: Ncandu Nature Reserve Zonation

Category	Description of Criteria to be used for Zonation	Setting descriptions (as from ROS Handbook)
Roaded Natural	<ul style="list-style-type: none"> Small to medium sized camp nodes (20 – 100 beds), access control points, 2x4 roads (tar & gravel), small to medium management nodes. 	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of humans. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modifications and utilization practices are evident, but harmonise with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.
Rural	<ul style="list-style-type: none"> A rural recreational node/area, rather than as a nature-based experience. Resort type development rather than a nature-based tourism facility. 	Area is characterized by a substantially modified natural environment. Resource modifications and utilization 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.

The Zonation Plan is shown in **Appendix 2, Map 2**.

6 POLICY FRAMEWORK AND GUIDING PRINCIPLES

The policy framework, guidelines and strategies have been developed to support the achievement of the objectives of the protected area (**Section 4.4**).

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

- Inadequate financial and human resources.
- Illegal activities in and around the PA.
- Catchment degradation disrupting natural ecological processes.
- Inappropriate or ineffective conservation management (especially fire management).
- Loss or degradation of cultural heritage sites.
- Alien species invasion.
- Soil erosion.
- Adjacent communities that are not supportive of the PA.
- Poor management of natural resources / inappropriate / incompatible development and land use in and adjacent to the PA.

The NNR operational policy framework, guidelines and strategies have been developed to support the achievement of the PA 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 the PA is primarily sourced from the KwaZulu-Natal Provincial Government. Levels of funding have remained stable, however additional funds are required to maintain management effectiveness, and achieve the Conservation Targets and prioritised Actions Projects identified for this protected area.

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

PA Business Plan development 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 objectives of the PA. 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 PA, should any be developed, is a minimum requirement. While it will be expected that commercial operations will respect the biodiversity and cultural values of the PA, any operational profit will be used to subsidise the PA's conservation and community programmes.

The value of ecosystem services that the PA provides as well as the direct and indirect economic value of the PA to the local and regional economy will be determined to market the PA, ensure continued government funding and / or 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 the PA.
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Action Project 6.1.1 (ii): Initiate a resource economics study of the Nature Reserve to determine its economic importance and value regarding the provision of ecosystem services and its contribution to the local and regional economy.
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6.1.2 Human Resource Capacity

The existing human resource (staffing) structure and capacity is insufficient to fully meet PA management requirements. As such it has been recognised that an Administration Clerk, two General Assistants and a Second in Charge (Conservation Manager) need to be sourced. A compliment of at least three Field Rangers is required to be permanently stationed in the PA, especially if co-management agreements are to be entered into with neighbouring properties.

To effectively address the full spectrum of PA management functions, it is imperative that the human resource needs are fully investigated with a view of developing a new effective and efficient human resource structure for NNR.

Action Project 6.1.2 (i): Fulfil outstanding staffing requirements, namely an Administration Clerk, two General Assistants and a Second In Charge (Conservation Manager) based at Chelmsford Nature Reserve, and three Field Rangers based permanently in Ncandu Nature Reserve.

6.1.2.1 NNR Employment Policy Guidelines

The PAMC 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 NNR PAMC.

6.2 Community Participation

EKZNW will strive to work collaboratively with institutions and adjacent landowners / communities to improve communication as well as conservation management in and around the PA for the benefit of all. Neighbour relations and partnerships are guided by EKZNW Board Policies (**Appendix 2, Item 2**).

Community involvement in the management of the PA through collaboration with adjoining communities in the following programmes and projects is encouraged by EKZNW:

6.2.1 Neighbour Relations Forum

The neighbour relations forum is made up of surrounding land owners and the local community. Monthly meetings are held to discuss management activities within the reserve and issues in the surrounding areas.

6.2.2 Community Levy Trust Fund

The PA is currently not open to the general public due to its small size and ecological sensitivity and, as mentioned; visits to the PA are only possible through special request and arrangements with the Conservation Manager. Community levies are thus currently not collected, but the PA is eligible to apply for a portion of the 10% unallocated pooled Community Levy. Should a scheme for regular visitor access to the park be developed and introduced, communities adjacent to the PA should benefit from income generated by the PA through a community levy paid by visitors. These funds would then be administered through a Community Trust Fund and provided to communities for development needs as prescribed by EKZNW Board Policies (**Appendix 2, Item 2**).

6.2.3 External Funding Projects

EKZNW procures external funding for specific PA-related projects with priority given to training members of the community and the small, micro and medium enterprise (SMME) business in the community and providing employment opportunities.

6.2.4 Land Claims

No land claims are known to have been registered on NNR at the time of compilation of this IMP.

6.2.5 Environmental Education

Environmental education programmes for communities adjoining the PA are currently being implemented. These programmes are conducted in accordance with EKZNW Environmental Education Policy and Framework No.4.23 while communities are also provided with controlled access to the PA in accordance with EKZNW Policy 4.19. (**Appendix 2, Item 2**).

Action Project 6.2.5 (i): Identify environmental education opportunities that may be associated with the proposed development of the Ncandu Dam.

6.3 Security and Safety

General biodiversity threats are present as a result of criminal activities in the PA. Two main types of security issues can be noted, namely, biodiversity issues and user conflicts. Biodiversity issues include unplanned fires, hunting with dogs and poaching. User conflicts include vandalism, particularly damage to fences by trespassers.

EKZNW recognises that illegal activities within and around the PA can 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 PA users, neighbouring communities and the attainment of its stated Mission and Management Objectives.

Management will therefore initiate and implement a security strategy that ensures co-ordinated participation in all possible local and regional security forums and networks while optimising security in and around the PA. This strategy will ensure sufficient capacity to deal with conservation-related illegal activities in NNR 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 PA that ensures collaboration with all relevant institutions.

6.4 Biodiversity Conservation and Management

In addition to conserving representative portions of Northern Afrotemperate Forest (Muchina and Rutherford 2006, Vegetation type FOz2) and Low Escarpment Moist Grassland (Muchina and Rutherford 2006, Vegetation type Gs3), NNR provides important ecosystem service to the region (e.g. water catchment management for Newcastle). The protected area also has a high value in-terms-of its sense-of-place/scenic splendour and is home to a number of endemic and threatened animal and plant species.

Conservation management is conducted using an adaptive management approach. This includes identifying conservation targets, implementing best management practice, monitoring the progress towards addressing these targets, 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.

Conservation management is centered on the manipulation of fire, the key ecological process influencing the biodiversity and ecosystem processes in the PA. There is a poor understanding of what the “natural” (historic) fire regime would have been and it is not practical to attempt to mimic “natural” burning patterns given the relatively small size of the PA and surrounding landuse. Management, instead, aims to promote a shifting mosaic of patches of different age and size - thereby creating a diversity of habitats. This approach will satisfy the known requirements for key species while also providing the best insurance policy for the majority of organisms whose habitat requirements and response to fire and grazing are unknown.

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

6.4.1 Fire Management

Management will conduct a pre-burn field inspection with EcoAdvice to agree upon the areas that are to be scheduled for burning each year. This inspection will be complete by the end of May each year, prior to the establishment of trace-lines and fire breaks, and be based on at least the last three years fire history and the Fire Management Plan for the PA. Any changes to this fire program for the year need to be agreed upon by both the PA Management and EcoAdvice.

Action Project 6.4.1 (i): Develop a Fire Management Plan for the PA to outline: fire management objectives, scientific understanding, management actions, legal compliance, fire contingency plan, personnel training requirements, monitoring and research required.

The extent and nature of both planned and unplanned fires will be reported by PA Management to EcoAdvice using the official format as part of their Monthly Biological Returns, with all submission for the year due by the end of November that year.

The budgeting process will reflect that adequate resources to address fire management requirements in the PA have been considered.

The PA is obligated in terms of the National Veld and Forest Fire Act (Act No. 101 of 1998) to be a member of the local Fire Protection Association (FPA). In this regard PA Management will actively champion the maintenance of the Newcastle FPA to gain the full legal advantages of being a member of the FPA. Management will use the FPA to influence fire management regimes in the lands surrounding the PA to promote the conservation of biodiversity and ecological processes.

6.4.2 Wildlife Management

Given the high altitude and sourveld nature of the grasslands in Ncandu, the PA has probably never supported large numbers of game. Instead these grasslands would have contained a suite of antelope species typical of such montane areas, including: grey rhebuck (*Pelea capreolus*), mountain reedbuck (*Redunca arundinum*) and oribi (*Ourebia ourebi*). The short-grass, typical of this area, negates the need for bulk grazers to support these selective feeders. They, nevertheless, require appropriate fire management to ensure sufficient grazing and browsing (of forbs/wildflowers) at the correct times of the year. Given the generally harsh environment, mammal populations in the PA are generally self-regulating, requiring few off-takes. Instead, wildlife should be managed as a metapopulation in the broader area, being allowed to increase and populate surrounding untransformed farmlands. Other threatened species such as the rough-haired golden mole (*Chrysospalax villosus*) and Denham's bustard (*Neotis denhami*) will be maintained and benefit from an informed fire program.

Monitoring of game populations, introductions, mortalities and removals will be reported by PA Management to EcoAdvice using the official format as part their Monthly Biological Returns. An annual game census is to be conducted by the PA Management in September of each year and the results submitted to EcoAdvice prior to the annual Animal Population Control workshop. These figures will be added to and used with the historical game count data to advise planned game removals.

6.4.2.1 Oribi Management

Oribi (*Ourebia ourebi*) are currently an endangered species, whose population numbers continue to decline through habitat loss, inappropriate management and particularly hunting with dogs (Friedmann and Daly 2004). Currently there are no oribi recorded in Ncandu Nature Reserve however, they do occur on Steep Glen, a nearby farm. Given the importance of increasing the number of viable oribi populations and presence of suitable oribi habitat in KZN, consideration should be given to the re-introduction of oribi to NNR. Re-introduction should be in line with the EKZNW policy on the "Re-establishment of terrestrial mammals in Board Areas" (March 1998, corporate policy 3.18) and the Oribi Conservation Plan (Marchant *et al.* 2005). Before re-introduction however, the PA needs to be secured with appropriate fencing, adequately patrolled to address illegal hunting (especially with dogs), and a management program developed to address oribi habitat requirements (e.g. tall-grass for lying-up and appropriate short-grass for feeding over winter).

Action Project 6.4.2.1 (i): Develop an oribi management program for the PA based on the Oribi Conservation Plan.

6.4.2.2 Problem Animal Management

There is little call for the control of problem animals from the PA, but individuals that become a danger or excessive nuisance to persons and property due to either habituation or aberrant behavior may need to be destroyed humanely or captured and removed from the PA. This also applies to animals that escape or leave and return periodically and cause damage outside the PA.

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

Control of problem animals in and on the boundaries of the PA needs to be in line with any EKZNW Problem Animal Management Manual that is developed and take into consideration the National Policy and Strategy for Problem Animal Control in South Africa (January 1998).

6.4.2.3 Introduction of Indigenous Animal Species

At present oribi are the only species identified for re-introduction into the PA. If, however, other species are to be considered, their introduction will be in line with the EKZNW policy on the “Re-establishment of terrestrial mammals in Board Areas” (**Appendix 2, Item 2**), and take into account their natural distribution range, genetic compatibility, social behavior characteristics, impacts on existing populations, habitat requirements, practical management and possible interaction with human communities adjacent to the PA.⁶

6.4.3 Alien Species Control and Management

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.

Action Project 6.4.3 (i): Undertake a full species survey for alien plant species present in NNR.

6.4.3.1 Alien Plants

Alien plant species have been planted or have established themselves within the PA over time. They can, to varying degrees, impact negatively on water production, the natural environment and biodiversity as well as the natural landscape character of the PA. Their control and management is considered a management priority. Wherever possible and appropriate these plants should be removed from the PA.

The following management guidelines apply:

Alien Plant Introductions

Introductions of alien plants to the PA will not take place except for revegetation purposes where native species will not achieve the short-term objective of stabilizing the environment. Only plants indigenous to the Northern Low Escarpment Moist Grassland (Muchina & Rutherford, 2006 Gs and/or Northern Afrotemperate Forest will be used in landscaping projects and ideally for revegetation/rehabilitation. Refer also to the EKZNW policy on “Re-establishment and Management of Vegetation on Development Sites in the KZNNCS PAs” (January 1999, corporate policy 3.05). (**Appendix 2, Item 2**).

Existing Non-invasive Alien Plants

A phased three year plan (management unit-based) to address the existence of non-invasive alien plants (including grasses) that already exist within the PA will be developed. Where required, this plan will also address the re-planting of relevant areas with indigenous plants for horticultural purposes.

Action Project 6.4.3.1 (i): Develop a phased three year plan to address the existing non-invasive alien plants in the PA.

Declared Alien Weeds and Invasive Plants

Alien plants, declared weeds and invader plants according to Section 29 of the Care of Agricultural Resources Act (Act No. 43 of 1983) [CARA], or any other legislation are a serious threat to the ecological functioning of natural systems, including water production, and will be strictly controlled in terms of the relevant CARA regulations. An ongoing time-bound program to effectively control these alien weeds and invader plants within the PA and 1km (buffer area) of the PA boundary will be developed. State poverty relief

⁶ References:

Friedmann, Y. and Daly, B. (eds). 2004. *Red data book of the mammals of South Africa: a conservation assessment*. Conservation Breeding Specialist Group (SSC/IUCN), Endangered Wildlife Trust, South Africa.

Marchant, A., Rushworth, I. and McCann, K. (eds). 2005. *Oribi (Ourebia ourebi) conservation plan*. Oribi Working Group, Endangered Wildlife Trust, South Africa.

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

Action Project 6.4.3.1 (ii): Develop and implement an ongoing time-bound program to effectively control declared alien weeds and invader plants within the PA and 1 km (buffer area) of the PA boundary.

6.4.3.2 Alien Animals

Alien animal species can threaten the ecological, genetic or natural aesthetic integrity of the PA and can be vectors for the spread of disease. Their control and management are considered a management priority. Wherever possible and appropriate these animals will be removed from the PA.

The following management guidelines apply:

Alien Animal Introductions

Introductions of alien animals to the PA will not take place except:

As part of culture-based, community-based or management projects; or for domestic animals (e.g. dogs and horses) kept for official purposes or privately by staff.

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

A new, standardized and equitable PA policy for keeping domestic animals and livestock is needed and will also include procedures to deal in a consistent manner with alien animals that stray into the PA.

Action Project 6.4.3.2 (i): Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the PA that includes procedures for dealing in a consistent manner with alien animals that stray into the PA. 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 and may be taken (e.g. where people may walk their dogs).
- The proper and hygienic care of these animals.
- Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals (e.g. cages, camps and stables).
- Disciplinary measures for staff transgressing these regulations.

Alien Animals Present in the PA

Alien animals that are present and are a threat / potential threat to the ecological processes/tourism experience in the PA will be dealt with as necessary according to a control program.

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

Action Project 6.4.3.2 (ii): Develop a control program for alien animals present in or entering into the PA.

6.4.4 Soil Erosion and Control

Given that the PA forms the main catchment of the Ncandu River that is to feed the proposed Ncandu Dam and contains several high lying wetland areas and friable humic soils in the high lying parts, it is essential that any cause of accelerated soil loss be addressed immediately and the environment restored. Chief amongst these threats is the traversing of high lying wetland areas with motor vehicles (e.g. quad bikes and 4x4s). Traversing such sensitive sites will be avoided and alternative appropriately sited and maintained routes found and used.

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

Human-induced soil erosion in NNR is primarily the result of historical overgrazing practices, the presence of invasive alien vegetation, poor alignment and management of foot paths, 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 6.4.4 (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. Control will be implemented on a priority/budget based level.

6.4.5 Control over Illegal Activities and Use of Natural Resources

Illegal activities within the PA and illegal utilisation of the PA's natural resources (especially the forest for traditional medicines) are realities that are present, but not well quantified. Observations suggest that this is a significant threat which has the potential to increase, especially given the planned developments in areas surrounding the PA.

A standing staff component of three 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.

It is policy to maintain an ongoing vigilance through cost-effective surveillance, monitoring programs and reaction capabilities. The main effort towards resolving illegal utilization of natural resources by neighboring communities for purposes of subsistence will be to create understanding and awareness through pro-active education amongst these communities. Management will however take strong legal action against those that illegally utilise natural resources for commercial or other purposes.

It is recommended that where necessary to avoid the threat to biodiversity by illegal and / or non-sustainable use, that where possible, alternative sources of desired products be sought and the users encouraged and motivated to make use of such alternatives.

6.5 Resource Utilisation

Management, in conjunction with EcoAdvice, will consider requests for extractive use of plant and animal resources, only if the biodiversity objectives are not compromised, and there is no long-term detrimental effect on the ecological sustainability or functioning of the PA. Management will refer to and implement current EKZNW guidelines on resource use from protected areas. (**Appendix 2, Item 2**).

Action Project 6.5 (i): Conduct a project to identify end users of the ecosystem services provided by the PA.

6.5.1 Plants and Animals

Extractive resource use applications will be considered within the framework of EKZNW policies (**Appendix 2, Item 2**), namely:

- Precautionary Principle (July 1999, corporate policy 3.06)

- Sustainable use of wildlife resources (April 1997, corporate policy 3.13)
- Freshwater Species Utilisation (February 2000, corporate policy 3.23)
- Use of Plant Resources from PA's (January 2001, corporate policy 3.27)
- Use of doomed biological material (February 2000, corporate policy 3.5)

Applications will be evaluated according to accepted guidelines that ensure:

- Sustainable and wise use of the resource
- Ecological and social acceptability
- Benefit to neighboring communities
- Equitable access to the resource
- That the transaction is within the PFMA framework
- That the harvesting operations are effectively controlled and monitored
- A written agreement stipulating resource price and conditions of harvest
- Due consideration of alternatives

6.5.2 Bioprospecting

Requests to collect biological material / samples from the PA will only be considered by Management in consultation with EcoAdvice and in accordance with the EKZNW policy on the "Use of Plant Resources from PAs" (**Appendix 3, Item 2**) and the provisions of Chapter six of the National Environmental Management: Biodiversity Act (Act No.10 of 2004) on bioprospecting, from *bona fide* South African research institutions.

6.6 Eco-Cultural Tourism and Marketing

Birding and tree identification are the main eco-tourism activities currently undertaken at the PA. It must be noted that access to the PA is currently on special request however; this may change with the development of the proposed Ncandu Dam. Should the Ncandu Dam be constructed, the PA management will refer back to the MOA between EKZNW and the Ncandu Dam Consortium, and to the protected area's CDP, that will guide future developments of eco-tourism facilities and other infrastructure.

Eco-cultural tourism and marketing will be considered within the framework of, amongst others, the relevant Board Policies (**Appendix 2, Item 2**), with regard to **Commercial Operations**.

EKZNW has the mandate to sustainably develop the NNR 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 PA'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 NNR 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.

Management will strive to provide a quality eco-cultural tourism experience for visitors to the PA. A range of appropriate facilities and services will be provided for the use of visitors to NNR. 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 NNR 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 NNR Eco-cultural Tourism Development and Marketing Strategy that will be compiled and submitted for approval.

Action Project 6.6 (i): Cognisant of the NNR IMP and CDP policy guidelines, develop a NNR 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 Environmental Interpretation and Education

Ncandu Nature Reserve currently does not have any environmental education facilities; however this may be re-evaluated if the Ncandu Dam is constructed improving access and creating eco-tourism opportunities. Instead, the nearby Chelmsford Nature Reserve serves as the focus area for grassland education in the region.

Environmental interpretation, awareness and education of NNR'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 PA.

An environmental awareness and education programme in accordance with the relevant Board Policies (**Appendix 2, Item 2**) will be developed to pro-actively engage, inform and benefit the Nature Reserve's range of neighbouring communities and visitors.

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

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

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

Action Project 6.7 (i): Develop a NNR environmental awareness education programme specifically for surrounding neighbouring communities and the general public interest groups.

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

Action Project 6.7 (ii): Develop an interpretation programme in a standard format for the Nature Reserve.

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

Action Project 6.7 (iii): Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve.

6.8 Research

To date there has been little to no research in Ncandu Nature Reserve. This will be addressed through a targeted program to identify research needs and priorities for the PA, to be addressed by Management, EcoAdvice, amateur naturalists and researchers from tertiary institutions.

The natural heritage, the functioning of the ecosystems and the cultural heritage that NNR was declared to conserve are presently inadequately understood. Research is necessary to provide such information that will assist in ensuring that the natural and cultural heritage management objectives of NNR are realised.

Priority will be given to research that will provide information and understanding that is of direct benefit to NNR 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 (e.g. *Grassland Research*) is necessary as a result of the dynamic and stochastic nature of the ecosystem and to ascertain whether management actions are having their desired effect 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 NNR. In order to achieve this, the following will be undertaken:

- Ø 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.
- Ø 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.
- Ø Appropriate permanent research facilities will be developed within or bordering the PA 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)*. 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's Regional Office as well as the Head Office library.

A NNR bibliography and reference library facilities is to be developed together with procedures to maintain a hard and digital copy of all NNR related research work. Libraries will be maintained at the Nature Reserve's

Regional Office. Strict curation rules shall apply and the ultimate responsibility for the curation of this library at NNR will be allocated to the most senior reserve management position.

Action Project 6.8 (i): Identify research needs and priorities, and the scope for addressing them in NNR.
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6.9 Monitoring and Evaluation

Biodiversity in forest and grassland habitats, such as that which characterise the PA, is maintained and promoted by appropriate levels of disturbance. These natural ecosystem processes can, however, be inappropriately applied, so coming to pose a threat to biodiversity. Key amongst these disturbances in NNR is the affects of fire on the forests of NNR. Currently, the impacts of unplanned and uncontrolled fires on the forests are being monitored biennially through a series of fixed point photos, but need to be quantified through a study of the distribution, structure and composition of the forest flora.

The Conservation Manager is responsible for reporting on game introductions, mortalities and removals to EcoAdvice using the official format for Monthly Biological Returns. If oribi are re-introduced to the PA, Management will be responsible for conducting an oribi count in September of each year, the results of which are to be submitted to EcoAdvice.

The extraction of natural resources for traditional medicinal use has been observed to be a significant threat, especially to the forest flora, but has yet to be quantified, and needs urgent attention.

Due to (a) the stochastic (random behaviour) nature of the environment, (b) the effects of long-term climate cycles and change, and (c) the length of time for treatment effects to manifest themselves, it is necessary to implement long term baseline collection and monitoring programmes. It is also necessary to monitor and record all management interventions and the biophysical environment in order to understand the causes for any biological and environmental changes that may occur.

All existing monitoring programs will be maintained. No program 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 BCOMM for approval.

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

- The accurate collection of biodiversity baseline data, monitoring and data storage.
- 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:

- 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 Natuer 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 (i): Develop and implement an appropriate monitoring and evaluation programme for the PA, especially to address fire impacts on, and medicinal plant harvesting from the forest.

6.10 Infrastructure

Infrastructure within the PA will be maintained, removed, expanded or developed for conservation management purposes by EKZNW. This will be undertaken cognisant of and in accordance with legal requirements and procedures regarding Environmental Impact and Cultural Resource Assessments.

Responsibility for infrastructure is split between Conservation Management and Commercial Operations. Apart from compliance with legal requirements, proposals for major maintenance projects or the removal, expansion or development of infrastructure will comply with the IMP's NNR Zonation and be a listed project in the PA's Concept Development Plan. The framework of PA mission, objectives, zonation will guide the CDP and 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 PA in terms of its natural and cultural heritage sensitivities, management and bulk infrastructure, its particular sense of place and its visitor infrastructure and facilities.

Action Project 6.10 (i): Develop a Concept Development Plan (CDP) for the PA that includes conservation and eco-cultural tourism management facilities.

Action Project 6.10 (ii): Develop and maintain a NNR Infrastructure database and map.

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

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

Commercial Operations is responsible for infrastructure within the PA and will at all times ensure that it is maintained in a safe, sound, clean, serviceable and aesthetically acceptable condition. All structures will as far as possible be harmonised with the surrounding environment and landscape character through appropriate siting, use of colour, building materials, landscaping and screening.

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

6.10.1 Entrance Gates

Entrance to NNR is only by special request, made via the Chelmsford Nature Reserve office.

6.10.2 Signage

With a limited staff presence on station, appropriate signage is required to ward off trespassers and discourage illegal activities such as unlawful plant and animal harvesting. Additional signage may be required if the Ncandu Dam development is approved. This will be in-line with the proposed activities as outlined in the MOA between EKZNW and the Ncandu Dam Consortium.

Action Project 6.10.2 (i): Ensure that there is sufficient and appropriate signage to identify the PA and address security (i.e. illegal access) concerns.

6.10.3 Roads, Tracks and Paths

An existing hiking trail is present at NNR, however, it is in disrepair and currently not in use. There will be a need for the usage of the hiking trail to be reviewed if and when the Ncandu Dam is constructed.

6.10.4 Fencing

Only part of the PA is appropriately fenced, raising biodiversity and security concerns.

Action Project 6.10.4 (i): Appropriately fence the PA to address biodiversity (e.g. oribi conservation) access and security (i.e. illegal access) concerns.

6.10.5 Staff Accommodation

PA management will supply and maintain accommodation for their staff where required, according to Board Policies. Accommodation will meet standards as set by EKZNW's Technical Division and be reflected in the CDP. There is currently one field ranger outpost which is being refurbished after it burnt down.

Action Project 6.10.5 (i): Review the condition of staff housing, identify and address immediate requirements set by EKZNW's Technical Division, and develop a long term maintenance plan.

6.10.6 Offices, Outposts and other Management Infrastructure

Offices need to meet Occupational Health and Safety (OHS) standards and require a maintenance plan in line with the CDP. There is one field ranger outpost that doubles as an office. There are no workshops, stables or other management infrastructure.

Where the PA management operates offices and workshops within the PA, it will ensure that service areas are effectively screened from public view and that work areas meet Occupational Health and Safety Act (Act No. 85 of 1993) standards.

Action Project 6.10.6 (i): Develop an infrastructural maintenance plan in line with the CDP to ensure compliance with Occupational Health and Safety standards.

6.10.7 Services

Any proposed installation of electricity, telephone and water services will be positioned to minimise their aesthetic and environmental impacts. The proposed installation may be listed as an activity which requires an Environmental Impact Assessment (EIA) procedure to be followed in accordance with the EIA Regulations, and such procedures will then be followed as part of the planning phase for the installation. Maintenance responsibilities will be taken into account before allowing such infrastructure to be erected and when conducting management activities in the PA (e.g. burning under electricity and telephone lines).

Any new installations will thus comply with the relevant legislation, obtain the appropriate approvals (e.g. EIA's) and be signed off by DEVCO and ROC prior to installations. EIA's are to be undertaken as necessary.

6.10.8 Radio Communication and Other Communication Equipment

The PA management requires a two-way radio system for efficient management. Any radio repeater stations or other similar communication towers will be approved by DEVCO and ROC, comply with any applicable EIA Regulations / conditions and other relevant legislation.

6.10.9 Waste Management

6.10.9.1 Domestic solid waste

All domestic waste will be sorted for recycling and will be removed from the PA by authorised waste removal companies to municipal waste management sites. The controlled management and use of organic waste for compost purposes may be permitted. Any historical waste sites in the PA will be rehabilitated in accordance with the requirements of Section 19 of the National Water Act (Act No. 36 of 1998), and Section 12 of the Department of Water Affairs and Forestry (DWAF) Minimum Requirements for Waste Disposal by Landfill, 1998, and any amendments thereto.

Solid waste management procedures will be closely monitored by PA management to prevent pollution and other adverse impacts, especially of the water resources. All staff and public waste receptacles will be animal- and especially baboon-proof and maintained as such.

Action Project 6.10.9.1 (i): Develop an integrated waste management plan for the PA.

Action Project 6.10.9.1 (ii): Develop, install and maintain effective standardised solid waste receptacles for the PA that are animal proof.

6.10.9.2 Sewage

EKZNW will at least comply with the requirements of Section 19 of the National Water Act, Act 36 of 1998, the DWAF General Standard for Effluents (Government Notice R991, May 1984) and any applicable new legal standards regarding the processing and disposal of sewage. All sewage systems in the protected area will be investigated and their compliance verified. New systems will be installed where there is non-compliance.

The infrastructure at the NNR has septic tank / French drain sewage systems that could possibly be contaminating ground and surface water. These systems will be replaced with more environmentally friendly systems available on the market as funding allows. Septic tank / French drain systems will not be installed at future small developments.

Action Project: 6.10.9.2 (i): All sewage systems in the PA 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.

6.10.9.3 Water- and Energy-Saving Measures

The only building in place within the PA is the Field Ranger Outpost, which is currently fuelled with gas and obtains water from a tank on site. Protection of the water tank on site is essential as it is the only water source to the ranger post at present.

However, should it be decided that additional infrastructure be established within the PA or that the ranger post be upgraded with more reliable energy and water infrastructure, the use of modern water- and energy-saving (electricity) devices or measures (e.g. signage) will be made. Not only will this demonstrate an environmentally friendly approach, but also has the potential to bring about significant financial savings on energy over time.

Action Project 6.10.9.3 (i): Review potential to install a solar panel based electricity system and implement if feasible.

6.10.10 Staff and Visitor Safety

All requirements of the Occupational Health and Safety Act (Act No. 85 of 1993) and other applicable legal requirements (including fire contingency plans) will be met to provide for the safety of staff and visitors in and around infrastructure installations at the PA.

Management maintains a secure entry control system with rangers that patrol the park daily to deter illegal activities and trespassers on the property.

All PA staff will be trained regarding all health and safety aspects and receive appropriate refresher course training as required on a regular basis.

7 PROJECTS FOR ACTION CORRELATED WITH MANAGEMENT OBJECTIVES

7.1 List of Action Projects

The table below lists the Action Projects identified in the IMP. The number of the Action Project corresponds to the relevant sub-section or paragraph in the IMP.

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

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.

Table 3: List of Action Projects

No	Action Project No.	Action Project Description
1	2.1.1 (i)	Seek assignment from the MEC by re-appointing EKZNW as the management authority for NNR in terms of Section 38(2) of NEMPAA
2	2.3 (i)	Management in collaboration with other relevant EKZNW officials, is mandated with active participation in the review processes of the municipal Integrated Development Plans (IDP's) and Spatial Development Frameworks (SDF's) in order to ensure an effective buffer zone surrounding NNR through an alignment of appropriate land use adjacent to the Nature Reserve and ensure municipal service delivery
3	2.5 (i)	Review all formal and informal local agreements, leases, servitude arrangements <i>etc.</i> pertaining to NNR and document, update, maintain and monitor these appropriately authorised agreements and ensure compliance with all conditions and rights in law. All informal and revised agreements will be formalised and approval sought from the Board
4	2.6 (i)	Encourage neighbouring landowners to establish private nature reserves and / or enter into co-management agreements, utilising incentives provided through the KZN Biodiversity Stewardship Programme
5	3.4.1 (i)	Record basic weather statistics such as min/max temperatures and rainfall for NNR
6	3.4.5 (i)	Update the vegetation map of NNR and implement appropriate management actions to maintain the biodiversity of NNR and counteract any negative impacts
7	3.4.6 (i)	Update the EKZNW Biodiversity Database with the NNR animal species checklist records
8	3.4.6.1 (i)	Confirm the presence and status of Red Data Book invertebrate species occurring in NNR
9	3.4.6.2 (i)	Confirm the presence and status of herpetofauna occurring in NNR
10	3.4.6.3 (i)	Confirm the presence and status of fish species occurring in NNR
11	3.4.6.4 (i)	Evaluate and assess the significance of NNR in terms of its contribution towards the conservation of bird species, particularly Red Data Book species
12	3.4.6.5 (i)	Initiate a survey of the small mammals on NNR
13	3.4.7 (i)	Develop a strategy for the protection of cultural heritage resources in the PA, in conjunction with AMAFA and SAHRA and implement an appropriate resource management plan
14	3.4.8 (i)	Undertake a study to adequately document the Socio-Cultural History of the NNR and surrounding area
15	3.4.10 (i)	Develop eco-cultural tourism infrastructure and activities for NNR in line with the Concept Development Plan for the Nature Reserve
16	4.5 (i)	Develop conservation and monitoring strategies for all species for which conservation targets have been set
17	5 (i)	Revise the existing NNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved
18	6.1.1 (i)	Develop a five-year Strategic Management Plan and Business Plan for the PA
19	6.1.1 (ii)	Initiate a resource economics study of the Nature Reserve to determine its economic importance and value regarding the provision of ecosystem services and its contribution to the local and regional economy
20	6.1.2 (i)	Fulfil outstanding staffing requirements, namely an Administration Clerk, two General Assistants and a Second In Charge (Conservation Manager) based at Chelmsford Nature Reserve, and three Field Rangers based permanently in Ncandu Nature Reserve
21	6.2.5 (i)	Identify environmental education opportunities that may be associated with the proposed

No	Action Project No.	Action Project Description
		development of the Ncandu Dam
22	6.3 (i)	Develop an integrated security strategy for the PA that ensures collaboration with all relevant institutions
23	6.4.1 (i)	Develop a Fire Management Plan for the PA to outline: fire management objectives, scientific understanding, management actions, legal compliance, fire contingency plan, personnel training requirements, monitoring and research required
24	6.4.2.1 (i)	Develop an oribi management program for the PA based on the Oribi Conservation Plan
25	6.4.3 (i)	Undertake a full species survey for alien plant species present in NNR
26	6.4.3.1 (i)	Develop a phased three year plan to address the existing non-invasive alien plants in the PA
27	6.4.3.1 (ii)	Develop and implement an ongoing time-bound program to effectively control declared alien weeds and invader plants within the PA and 1 km (buffer area) of the PA boundary
28	6.4.3.2 (i)	<p>Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the PA that includes procedures for dealing in a consistent manner with alien animals that stray into the PA. This policy will, <i>inter alia</i> clearly address:</p> <ul style="list-style-type: none"> • 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 and may be taken (e.g. where people may walk their dogs) • The proper and hygienic care of these animals • Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals (e.g. cages, camps and stables) • Disciplinary measures for staff transgressing these regulations
29	6.4.3.2 (ii)	Develop a control program for alien animals present in or entering into the PA
30	6.4.4 (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. Control will be implemented on a priority/budget based level
31	6.5 (i)	Conduct a project to identify end users of the ecosystem services provided by the PA
32	6.6 (i)	<p>Cognisant of the NNR IMP and CDP policy guidelines, develop a NNR Eco-cultural Tourism Development and Marketing Strategy that addresses:</p> <ul style="list-style-type: none"> • 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
33	6.7 (i)	Develop a NNR environmental awareness education programme specifically for surrounding neighbouring communities and the general public interest groups
34	6.7 (ii)	Develop an interpretation programme in a standard format for the Nature Reserve
35	6.7 (iii)	Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve
36	6.8 (i)	Identify research needs and priorities, and the scope for addressing them in NNR
37	6.9 (i)	Develop and implement an appropriate monitoring and evaluation programme for the PA, especially to address fire impacts on, and medicinal plant harvesting from the forest
38	6.10 (i)	Develop a Concept Development Plan (CDP) for the PA that includes conservation and eco-cultural tourism management facilities
39	6.10 (ii)	Develop and maintain a NNR Infrastructure database and map
40	6.10 (iii)	<p>Review the desirability and effectiveness of all present infrastructure associated with the Nature Reserve with regard to:</p> <ul style="list-style-type: none"> • Adequacy • State of repair • Existing maintenance plans and programs • Visitor and staff use, requirements and values • Financial • Environmental impact (negative and positive) • Possibilities of outsourcing
41	6.10 (iv)	Develop a Concept Development Plan for NNR
42	6.10.2 (i)	Ensure that there is sufficient and appropriate signage to identify the PA and address security (<i>i.e.</i> illegal access) concerns
43	6.10.4 (i)	Appropriately fence the PA to address biodiversity (<i>e.g.</i> oribi conservation) access and security (<i>i.e.</i> illegal access) concerns
44	6.10.5 (i)	Review the condition of staff housing, identify and address immediate requirements set by EKZNW's Technical Division, and develop a long term maintenance plan
45	6.10.6 (i)	Develop an infrastructural maintenance plan in line with the CDP to ensure compliance with

No	Action Project No.	Action Project Description
		Occupational Health and Safety standards
46	6.10.9.1 (i)	Develop an integrated waste management plan for the PA
47	6.10.9.1 (ii)	Develop, install and maintain effective standardised solid waste receptacles for the PA that are animal proof
48	6.10.9.2 (i)	All sewage systems in the PA 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
49	6.10.9.3 (i)	Review potential to install a solar panel based electricity system and implement if feasible
50	8.1 (i)	The PAMC will undertake a five-yearly review of this IMP to revise and amend the IMP for the following five years
51	8.2 (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

7.2 Alignment of Action Projects with Management Objectives

The Management Objectives for NNR derived at the Key-Stakeholders Workshop.

The 51 IMP Action Projects from **Table 3** have been aligned with the Management Objectives and are listed in **Table 4** below.

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

Table 4: Action Projects aligned with Management Objectives

Biodiversity Objectives		
No.	Action Project No.	Project Description (Goal)
1) Conserve and restore the biodiversity and ecosystem processes towards meeting provincial conservation targets for key species and habitats representative of the protected area		
6	3.4.5 (i)	Update the vegetation map of NNR and implement appropriate management actions to maintain the biodiversity of NNR and counteract any negative impacts
7	3.4.6 (i)	Update the EKZNW Biodiversity Database with the NNR animal species checklist records
8	3.4.6.1 (i)	Confirm the presence and status of Red Data Book invertebrate species occurring in NNR
9	3.4.6.2 (i)	Confirm the presence and status of herpetofauna occurring in NNR
10	3.4.6.3 (i)	Confirm the presence and status of fish species occurring in NNR
11	3.4.6.4 (i)	Evaluate and assess the significance of NNR in terms of its contribution towards the conservation of bird species, particularly Red Data Book species
12	3.4.6.5 (i)	Initiate a survey of the small mammals on NNR
23	6.4.2.1 (i)	Develop an oribi management program for the PA based on the Oribi Conservation Plan
28	6.4.3.2 (ii)	Develop a control program for alien animals present in or entering into the PA
29	6.4.4 (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. Control will be implemented on a priority/budget based level
35	6.8 (i)	Identify research needs and priorities, and the scope for addressing them in NNR
36	6.9 (i)	Develop and implement an appropriate monitoring and evaluation programme for the PA, especially to address fire impacts on, and medicinal plant harvesting from the forest
2) Ensure that the protected area is effectively managed and resourced (this includes: equipment, finances, human and institutional)		
1	2.1.1 (i)	Seek assignment from the MEC by re-appointing EKZNW as the management authority for NNR in terms of Section 38(2) of NEMPAA
5	3.4.1 (i)	Record basic weather statistics such as min/max temperatures and rainfall for NNR
17	6.1.1 (i)	Develop a five-year Strategic Management Plan and Business Plan for the PA
19	6.1.2 (i)	Fulfil outstanding staffing requirements, namely an Administration Clerk, two General Assistants and a Second In Charge (Conservation Manager) based at Chelmsford Nature Reserve, and three Field Rangers based permanently in Ncandu Nature Reserve
21	6.3 (i)	Develop an integrated security strategy for the PA that ensures collaboration with all relevant institutions
22	6.4.1 (i)	Develop a Fire Management Plan for the PA to outline: fire management objectives, scientific understanding, management actions, legal compliance, fire contingency plan, personnel training requirements, monitoring and research required

Biodiversity Objectives		
No.	Action Project No.	Project Description (Goal)
27	6.4.3.2 (i)	Develop a new, equitable policy for keeping personal and official domestic animals and livestock in the PA that includes procedures for dealing in a consistent manner with alien animals that stray into the PA. This policy will, <i>inter alia</i> clearly address: <ul style="list-style-type: none"> • 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 and may be taken (e.g. where people may walk their dogs) • The proper and hygienic care of these animals • Minimum standards (aesthetic acceptability, sizes, neatness and cleanliness) of facilities housing these animals (e.g. cages, camps and stables) • Disciplinary measures for staff transgressing these regulations
40	6.10.2 (i)	Ensure that there is sufficient and appropriate signage to identify the PA and address security (i.e. illegal access) concerns
41	6.10.4 (i)	Appropriately fence the PA to address biodiversity (e.g. oribi conservation) access and security (i.e. illegal access) concerns
42	6.10.5 (i)	Review the condition of staff housing, identify and address immediate requirements set by EKZNW's Technical Division, and develop a long term maintenance plan
43	6.10.6 (i)	Develop an infrastructural maintenance plan in line with the CDP to ensure compliance with Occupational Health and Safety standards
44	6.10.9.1 (i)	Develop an integrated waste management plan for the PA
45	6.10.9.1 (ii)	Develop, install and maintain effective standardised solid waste receptacles for the PA that are animal proof
46	6.10.9.2 (i)	All sewage systems in the PA 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
47	6.10.9.3 (i)	Review potential to install a solar panel based electricity system and implement if feasible
48	8.1 (i)	The PAMC will undertake a five-yearly review of this IMP to revise and amend the IMP for the following five years
49	8.2 (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
3) Ensure that the protected area and buffer zone are free from the negative impacts of <u>alien species</u>		
24	6.4.3 (i)	Undertake a full species survey for alien plant species present in NNR
25	6.4.3.1 (i)	Develop a phased three year plan to address the existing non-invasive alien plants in the PA
26	6.4.3.1 (ii)	Develop and implement an ongoing time-bound program to effectively control declared alien weeds and invader plants within the PA and 1 km (buffer area) of the PA boundary
4) Ensure that the <u>extractive use of natural resources</u> is equitable and sustainable		
15	4.5 (i)	Develop conservation and monitoring strategies for all species for which conservation targets have been set
5) Establish and maintain effective linkages with neighbouring communities and other stakeholders to achieve an effective protected area through collaborative management		
2	2.3 (i)	Management in collaboration with other relevant EKZNW officials, is mandated with active participation in the review processes of the municipal Integrated Development Plans (IDP's) and Spatial Development Frameworks (SDF's) in order to ensure an effective buffer zone surrounding NNR through an alignment of appropriate land use adjacent to the Nature Reserve and ensure municipal service delivery
3	2.5 (i)	Review all formal and informal local agreements, leases, servitude arrangements <i>etc.</i> pertaining to NNR and document, update, maintain and monitor these appropriately authorised agreements and ensure compliance with all conditions and rights in law. All informal and revised agreements will be formalised and approval sought from the Board
4	2.6 (i)	Encourage neighbouring landowners to establish private nature reserves and / or enter into co-management agreements, utilising incentives provided through the KZN Biodiversity Stewardship Programme
20	6.2.5 (i)	Identify environmental education opportunities that may be associated with the proposed development of the Ncandu Dam

Biodiversity Objectives		
No.	Action Project No.	Project Description (Goal)
32	6.7 (i)	Develop a NNR environmental awareness education programme specifically for surrounding neighbouring communities and the general public interest groups
33	6.7 (ii)	Develop an interpretation programme in a standard format for the Nature Reserve
34	6.7 (iii)	Investigate the possibility of combining environmental awareness programmes with social programmes offered by other institutions in the general area of the Nature Reserve
6) Provide adequate protection for the <u>cultural heritage features</u> of the protected area		
13	3.4.7 (i)	Develop a strategy for the protection of cultural heritage resources in the PA, in conjunction with AMAFA and SAHRA and implement an appropriate resource management plan
	3.4.8 (i)	Undertake a study to adequately document the Socio-Cultural History of the NNR and surrounding area
7) Retain the <u>natural character</u> (sense-of-place) of the forest and grassland ecosystems		
16	5 (i)	Revise the existing NNR zonation plan in accordance with the new EKZNW standard zonation system as soon as it is developed and approved
37	6.10 (i)	Develop a Concept Development Plan (CDP) for the PA that includes conservation and eco-cultural tourism management facilities
38	6.10 (ii)	Develop and maintain a NNR Infrastructure database and map
39	6.10 (iii)	Review the desirability and effectiveness of all present infrastructure associated with the Nature Reserve with regard to: <ul style="list-style-type: none"> • Adequacy • State of repair • Existing maintenance plans and programs • Visitor and staff use, requirements and values • Financial • Environmental impact (negative and positive) • Possibilities of outsourcing
8) Support the local and regional economy by providing <u>eco-tourism</u> opportunities		
14	3.4.10 (i)	Develop eco-cultural tourism infrastructure and activities for NNR in line with the Concept Development Plan for the Nature Reserve
18	6.1.1 (ii)	Initiate a resource economics study of the Nature Reserve to determine its economic importance and value regarding the provision of ecosystem services and its contribution to the local and regional economy
30	6.5 (i)	Conduct a project to identify end users of the ecosystem services provided by the PA
31	6.6 (i)	Cognisant of the NNR IMP and CDP policy guidelines, develop a NNR Eco-cultural Tourism Development and Marketing Strategy that addresses: <ul style="list-style-type: none"> • 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
9) Offer appropriate <u>recreational opportunities</u> for a diversity of people		

8 IMP REVIEW AND AMENDMENT PROCEDURES

8.1 Five-Yearly Review and Amendment Procedures

This NNR IMP will be reviewed every five years to revise and amend the IMP for the following five years, namely 2014 – 2018. If deemed appropriate by the PAMC, the review can 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 / Minister.

Action Project 8.1 (i): The PAMC will undertake a five-yearly review of this to revise and amend the IMP for the following five years.

8.2 Annual Review and Amendment Procedures

The PAMC will convene annually 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:

- 4 Any recommended **minor amendments or corrections** to the IMP that do not affect the substance of the Mission, Management Objectives, Zonation, Management Policy Framework and Guiding Principles;
- 4 The result of an annual evaluation by the PAMC of the Management Effectiveness Level achieved for UMNr. This will be calculated using the World Bank Protected Area Management Effectiveness Evaluation Tool (Stolton *et al*, 2007);
- 4 The cumulative number of Action Projects per Management Objective that have been completed, activated or not activated; as well as
- 4 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 NNR 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 Planning Co-ordinator will furthermore be responsible to ensure that website / intranet copies are updated at the same time.

Action Project 8.2 (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.

9 PERFORMANCE REVIEW ON AN ANNUAL BASIS

9.1 *Annual Financial Plan*

To be submitted to ROC not later than 30 days (by end February) before the end of each financial year for the next financial year.

9.2 *Strategic Management Plan (5-year)*

Updated SMP to be submitted to ROC not later than 30 days (by end February) before the end of each financial year for the next financial year.

9.3 *Financial Accounting System*

To be submitted to ROC within six months of the end of each financial year.

9.4 *Annual Report*

To be submitted to ROC within six months of the end of each financial year.

9.5 *Protected Area Management Effectiveness Assessment*

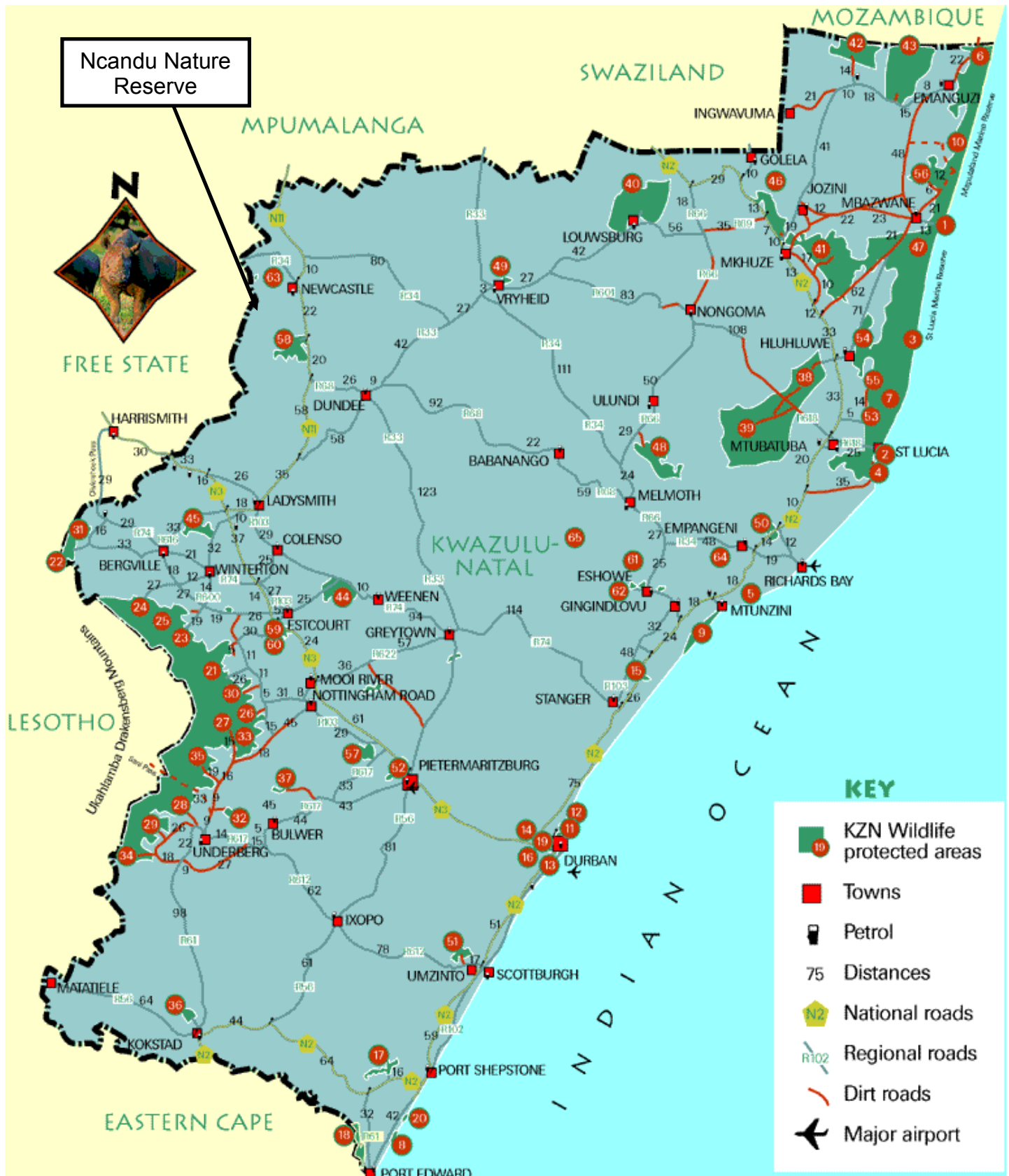
A rapid PA Management Effectiveness Assessment is undertaken every four years based on the WWF/World Bank Management Effectiveness Tracking Tool (METT). This information feeds ultimately into the KZN State of Biodiversity report. An annual PA Management Effectiveness Assessment is being proposed which will be undertaken at a finer level of detail than the four-yearly assessment and will be coordinated by regional PA management staff.

10 REFERENCES

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- ROS User Guide, United States Forest Service, as in the Advanced Wilderness Course Manual
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APPENDIX 1: MAPS

Map 1: Locality Map



Map 2: Ncandu Nature Reserve Zonation Map



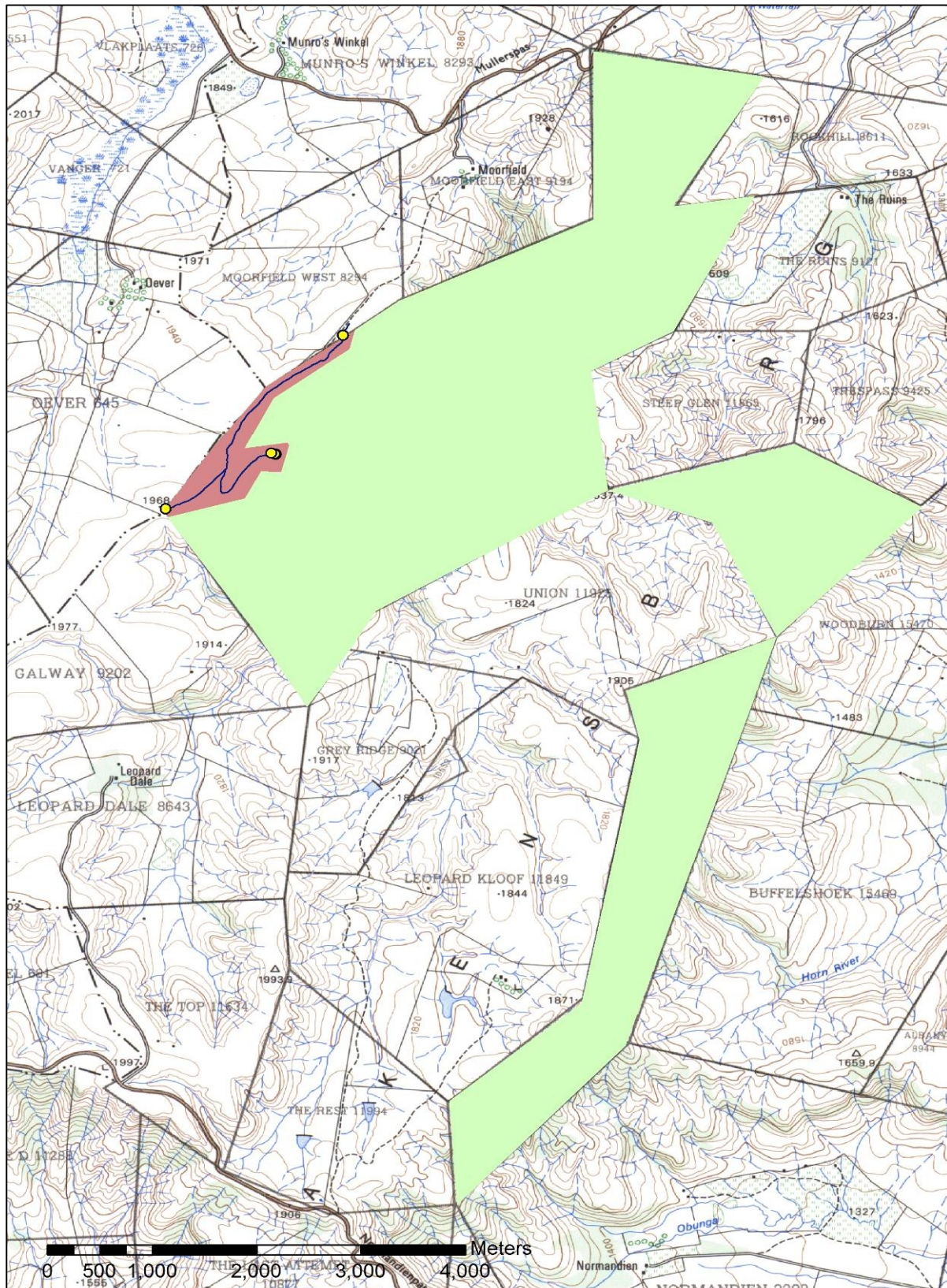
Legend

- Roaded Natural
- Roads
- Rural
- Officers Houses

REFERENCE

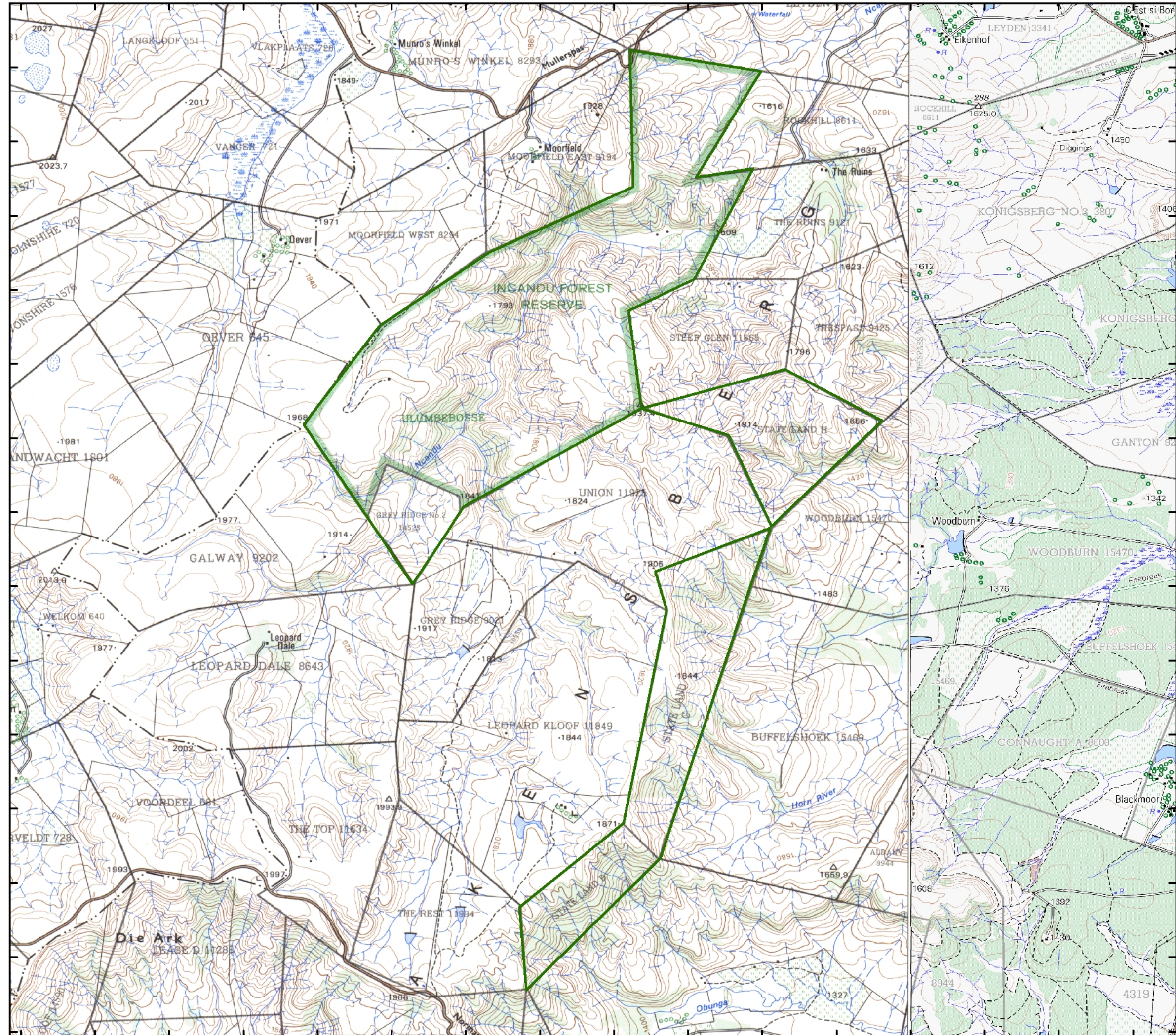
International Boundary and Beacon	-----	Internasionale Grens en Baken
Provincial Boundary	-----	Provinsiale Grens
Protected Area	-----	Bewarings Gebied
Perennial River	-----	Standhoudende Rivier
Non-perennial River	-----	Nie-standhoudende Rivier
Non-Perennial Water	-----	Nie-standhoudende Water
Dry Water Course	-----	Droë Loop
Dry Pan	-----	Droë Pan
Marsh and Vlei	-----	Mors en Vlei
Pipeline (above ground)	-----	Pylyn (bo die grond)
Water Tower; Reservoir; Water Point	-----	Wateroring; Reservoir; Waterpunt
Coastal Rocks	-----	Kuierroes
Prominent Rock Outcrop	-----	Prominente Klipbank
Erosion; Sand	-----	Erosie; Sand
Woodland	-----	Bosveld
Cultivated Land	-----	Bewerkte Land
Orchard or Vineyard	-----	Boord of Wingerd
Recreation Ground	-----	Ontspanningsplein
Row of Trees	-----	Rye Bome

VERKLARING



Map 3: Topography

29°39'0"E 29°39'30"E 29°40'0"E 29°40'30"E 29°41'0"E 29°41'30"E 29°42'0"E 29°42'30"E 29°43'0"E 29°43'30"E 29°44'0"E 29°44'30"E 29°45'0"E 29°45'30"E 29°46'0"E 29°46'30"E



Map

Ncandu Nature Reserve

Topography

Area: 1 875 ha (flat)/ ha (surface)
Boundary length: 40.0 km (flat)/ km (surface)
Highest point: m a.s.l.
Lowest point: m a.s.l.
Centroid: 27d 54m 26s S & 29d 42m 48s E
Geographical extent:
Latitude - 27d 51m 53s S to 27d 58m 12s S
Longitude - 29d 40m 54s E to 29d 44m 48s E

International Boundary and Beacon	.....
Provincial Boundary	.....
Game, Nature Reserve & State Forest Boundary	.....
Perennial River	.....
Non-perennial River	.....
Non-perennial Water	.....
Dry Water Course	.....
Dry Pan	.....
Marsh and Vlei	.....
Pipeline (above ground)	.....
Water Tower; Reservoir; Water Point	.....
Coastal Rocks	.....
Prominent Rock Outcrop	.....
Erosion; Sand	.....
Woodland	.....
Cultivated Land	.....
Orchard or Vineyard	.....
Recreation Ground	.....
Row of Trees	.....
National Freeway; National Route	.....
Arterial Route	.....
Main Road	.....
Secondary Road; Bench Mark	.....
Other Road; Bridge	.....
Track and Hiking Trail	.....
Railway; Station or Siding	.....
Other Railway; Tunnel	.....
Embankment; Cutting	.....
Power Line	.....
Built-up Area	.....
Buildings; Ruin	.....
Post Office; Police Station; Store	.....
Place of Worship; School; Hotel	.....
Fence; Wall	.....
Windpump; Monument	.....
Communication Tower	.....
Mine Dump; Excavation	.....
Trigonometrical Station; Marine Beacon	.....
Lighthouse and Marine Light	.....
Cemetery; Grave	.....

0 125 0.5 0.75 1
Kilometers

Map reference: 2930DB & 2930DD
WGS84 Datum
Compiled by: Ezemvelo KZN Wildlife
Version (2/2009)
Date Modified: October 2009
Data Sources: Ezemvelo KZN Wildlife,
Chief Directorate Surveys & Mapping

APPENDIX 2: LIST OF UNPUBLISHED SUPPORTING DOCUMENTATION

*Copies available from: a) Reserve Management and / or,
b) Regional Ecologist*

Item

1. EKZNW Corporate Strategic Plan and Performance Plan for 2009 - 2014.
2. EKZNW Corporate Policies and Procedures (Norms & Standards) listed in **Table 5** below.
3. EKZNW Biodiversity Database Checklists for NNR.
4. Proclamations of NNR
5. Ncandu Nature Reserve Public Participation Report, January 2010.

Table 5 below lists the EKZNW Corporate Policies (Norms & Standards) referenced from intranet that are most relevant to EKZNW PA management. It is, however, the responsibility of all management and other personnel associated with the management of protected areas to ensure that they familiarise themselves and comply with the most recent versions of all EKZNW Board Approved Policies.

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

D 1.13	Ø Establishment of Alien Plantations.
	Ø
<u>Policy File No.</u>	Migratory Species
D 1.14	Ø Black Wildebeest and Blue Wildebeest Hybridization and Conservation.
D 1.15	Ø Permit authorising the collection of Biological Material within Board Areas.
	2. CONSERVATION EFFECTIVENESS
<u>Policy File No.</u>	Strategic Applications
D 2.1	Ø Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MAB (Man and Biosphere) Programme.
<u>Policy File No.</u>	Conservation Management: Protected Area Management
D 2.2	Ø Management of Wilderness Areas.
D 2.3	Ø Protected Area Development.
D 2.4	Ø Prohibition of Works and Servitudes in Board Areas.
D 2.5	Ø <u>Zonation and Regulations for the control of off-road vehicles on beaches controlled by the Board.</u>
D 2.6	Ø Quarries in KZN Protected Areas.
D 2.7	Ø Re-establishment and Management of Vegetation on Development Sites in the Ezemvelo KZN Wildlife Protected Areas.
D 2.8	Ø Ecotourism and Protected Areas.
D 2.9	Ø Solid Waste Management within Protected Areas.
D 2.10	Ø State Security Service Activities within Board Areas.
D 2.11	Ø Shark Nets in or bordering KwaZulu-Natal Nature Conservation Board Controlled Areas.
<u>Policy File No.</u>	Integrated Environmental Management
D 2.12	Ø Integrated Environmental Management - incorporating the procedure for the assessment of the impact of proposed development projects on nature conservation concerns.
D 2.13	Ø Precautionary Principle.
D 2.14	Ø Shark Net Installations.
D 2.15	Ø Bioprospecting in KwaZulu-Natal.
D 2.17	Ø Use of Pesticides by the Ezemvelo KZN Wildlife: Safety to Humans and the Environment.
D 2.18	Ø Interference with the Mouth of a Lagoon or River (Breaching).
<u>Policy File No.</u>	Ex Situ Wild Animal Management
D 2.21	Ø Re-establishment of Terrestrial Mammals in Board Areas.
D 2.22	Ø Translocation of Animals.
D 2.25	Ø Elephant Introductions and Elephant in Enclosures.
D 2.27	Ø Introduction and Keeping of Large Predators in Enclosures in KZN.
D 2.28	Ø Use of Narcotic Drugs.
D 2.29	Ø Falconry.
<u>Policy File No.</u>	Human Animal Conflict - Inside and Outside Protected Areas
D 2.30	Ø Disposal of Leopard from Ezemvelo KZN Wildlife Protected Areas.
D 2.31	Ø Problem Animal Control.
D 2.32	Ø Compensation claims in respect of damage caused by Lion, Cheetah, Wild Dog and Elephant to Stock and Crops.

D 2.33	Ø Instances of Death as a result of an Unprovoked Attack by a Wild Animal Normally contained and originating from within a Fenced Protected Area under the Control of the KwaZulu-Natal Nature Conservation Board.
<u>Policy File No.</u>	Environmental Awareness
D 2.34	Ø Environmental Education Policy.
	3. BIODIVERSITY PROTECTION
<u>Policy File No.</u>	Co-management
D 3.1	Ø Supply of Game to Conservancies, Community Conservation Areas and Biosphere Reserves in KwaZulu-Natal
D 3.2	Ø Establishment and Management of Community Conservation Reserves (CCR)
D 3.4	Ø Community Conservation Programmes
D 3.5	Ø Neighbours' Access to Board Protected Areas
D 3.6	Ø Relationship with Local Boards
D 3.7	Ø Conservation Partnerships Between KwaZulu-Natal Nature Conservation Board and Adjacent Landowners
D 3.8	Ø Community Trust
D 3.9	Ø Community Levy Policy and Guidelines
D 3.10	Ø Land Claims on Proclaimed and Unproclaimed Provincial and Assigned National Protected areas in KwaZulu-Natal
D 3.11	Ø Amafa Policy Guidelines for the access of rock art sites in KwaZulu Natal
<u>Policy File No.</u>	Resource-use benefits
D 3.12	Ø Disposal of Venison from Ezemvelo KZN Wildlife Management Operations.
D 3.13	Ø Sustainable use of wildlife resources.
D 3.14	Ø Freshwater Angling.
D 3.15	Ø Freshwater species utilisation.
D 3.16	Ø Use of plant resources from protected areas.
D 3.17	Ø Use of doomed biological material.
D 3.19	Ø Provision of hunting by Ezemvelo KZN Wildlife.
<u>Policy File No.</u>	4. RELATIONSHIPS
D 4.1	Ø Neighbour Relations.
D 4.2	Ø Participation - Non Government Organisations.
D 4.3	Ø Data Access.
D 4.4	Ø <u>Consultation and Communication with Stakeholders: Policy and Guidelines.</u>
<u>Policy File No.</u>	COMMERCIAL OPERATIONS
E 1	Ø Concessions for Welfare Groups.
E 2	Ø Hiking and Mountaineering.
E 3	Ø Educational Concessions.
E 4	Ø Club Facilities within Board Areas.
E 5	Ø Hutted Camps.
E 6	Ø Joint Venture Scheme.
E 7	Ø Allocation of Sites in terms of the Joint Venture Scheme.
E 8	Ø Access to Protected Areas through Unofficial Entry Points.
E 9	Ø Visitor Facilities Management by Ezemvelo KZN Wildlife.

E 10	Ø Lease of Lakeshore at State Dam Protected Areas.
E 11	Ø Execution, Control and Management of Leases and Concession Contracts (excluding Biodiversity Conservation Partnerships and Leases of Wildlife).
E 12	Ø Private Sector Reservations Policy.
E 13	Ø Partnerships for Eco-Tourism Development within or Adjacent to Protected Areas.
E 14	Ø Discounting of Tariffs for Walk-in Guests.
E 15	Ø Ecotourism Discounting Strategy.
E 16	Ø Travel Trade Commissions: Tour Operator/ Travel Agency.
E 17	Ø Policy and Procedure for the establishment and monitoring of Commercial Operations Public Private Partnership (PPP) Agreements.
E 18	Ø Administrative and operational policy on Professional hunting in South Africa.
E 19	Ø Commercialisation.

APPENDIX 3: ROS ZONATION SYSTEM

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

Table 6: ROS Zonation System

Category	Description of Criteria to be used for Zonation	Setting descriptions (as from ROS Handbook)
Pristine Wilderness	<ul style="list-style-type: none"> Unmodified, no development, not impacted by any sights or sounds of people (e.g. formalized trails) No closer than 100m to either side of existing trails No formalized paths, no signage. 	Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low, and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-introduced restrictions and controls. Motorised use not permitted.
Primitive Wilderness	<ul style="list-style-type: none"> Unmodified environment, except for formalized trails being used at a low intensity (no signage) Visual and audio impact from outside, but at a distance (> 10km) 100m buffer of formalized trails passing through the Pristine Wilderness Zones will be Primitive Wilderness. 	Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquillity and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.
Semi-Primitive Wilderness	<ul style="list-style-type: none"> Unmodified environment, near-Wilderness experience, formalized trails used at a medium intensity Concreting or rock-packing of trails allowed where necessary (i.e. areas of medium intensity of use) Signage occur Visual and audio impact from outside, but at medium distance (5 – 10km) Natural environment impact. 	High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquillity, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.
Semi-Primitive Non-motorised	<ul style="list-style-type: none"> 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 characterized 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	<ul style="list-style-type: none"> 4x4 trails and their area of impact (audio and visual) Visitor and management tracks and their 	Area is characterized by predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there

Category	Description of Criteria to be used for Zonation	Setting descriptions (as from ROS Handbook)
	<p>zone of visual and audio impact (GIS to be used to determine exact range of impact, hence an initial distance of 100m other side has been set)</p> <ul style="list-style-type: none"> Rustic accommodation, or low-level, low intensity tourism nodes (no bigger than 10 – 20 beds). 	<p>is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are suitable. Motorised use is allowed.</p>
Roaded Natural	<ul style="list-style-type: none"> Small to medium sized camp nodes (20 – 100 beds), access control points, 2x4 roads (tar & gravel), small to medium management nodes. 	<p>Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of humans. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modifications and utilization practices are evident, but harmonise with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.</p>
Rural	<ul style="list-style-type: none"> A rural recreational node/area, rather than as a nature-based experience. Resort type development rather than a nature-based tourism facility. 	<p>Area is characterized by a substantially modified natural environment. Resource modifications and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident and the interaction between users is often moderate-high. A number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.</p>