EZEMVELO KZN WILDLIFE™
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KENNETH STAINBANK NATURE RESERVE

Protected Area

MANAGEMENT PLAN





KENNETH STAINBANK NATURE RESERVE

KwaZulu-Natal
South Africa

Protected Area Management Plan

Prepared by
Ezemvelo KwaZulu-Natal Wildlife Protected Area Management Planning Unit and the Kenneth Stainbank Nature Reserve Planning Committee

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PREFACE

This Protected Area Management Plan for Kenneth Stainbank Nature Reserve is its primary and overarching management document. 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 November 2013.

The protected area management planning process has been designed to meet the statutory requirements of the National Environmental Management: Protected Areas Act and other relevant legislation.

The protected area management planning process requires participation from the protected area's stakeholders, the general public and specialists during the various stages of plan development and implementation. Although the management plan and its sub-components are 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 an Annual Plan of Operation. A Financial 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.

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

Dr. Bandile Mkhize
Chief Executive Officer

EXECUTIVE SUMMARY

Introduction

Kenneth Stainbank Nature Reserve (KSNR) is situated in Yellow Wood Park, south west of Durban. It lies 6.5 km north of the old Durban International Airport and falls within the EThekwini Metropolitan Municipality. KSNR covers 253 Ha and was proclaimed in 1963 as a nature reserve. The KSNR was established as a result of a legacy of land from Mr Kenneth Stainbank with the aim to protect the flora and fauna of the nature reserve. Mr Kenneth Stainbank gave the land with the condition that it remained as a nature reserve and no further activities are to take place.

Two sets of low hills, Durban Bluff and Berea-Jacobs-Montclair separate the Nature Reserve from the sea which is just over 6.3 km to the east. One of the major physical features in the reserve is the Gorge of the Mhlathuzana River passing through on the northern boundary of the Reserve between the rolling hills of the KwaZulu-Natal Coastal belt and Coastal Forest, and the national road (N2) running adjacent to the reserve on the east.

The reserve has various tourism activities such as hiking trails, biking trails, a disabled trail and picnic sites. It also hosts various cross country and cycling events annually. Previous eco-tourism activities include camping sites and night drives which have been stopped.

Strategic management framework

The following vision has been adopted for Kenneth Stainbank Nature Reserve:

A well-managed and protected nature reserve providing sustainable benefits to residents, neighbours, visitors and the metropolitan area through biodiversity conservation, environmental awareness and appropriate access to the cultural and natural resources.

An objective has been identified for each of Kenneth Stainbank Nature Reserve's key performance areas, which relate to the important functions and activities necessary to achieve the vision and protect, develop and manage the nature reserve effectively. The objectives have then been translated into strategic outcomes, which form the basis for the management activities and targets set out in the operational management framework.

Management issues, challenges and opportunities at Kenneth Stainbank Nature Reserve

The following key issues have been identified at Kenneth Stainbank Nature Reserve:

- The legal lease requirement for blocks 24 (6.9Ha) and 25 (6.6Ha) within the reserve.
- Security problems (crime) within the reserve and along the reserve boundary.
- AMAFA (Heritage KwaZulu-Natal) need to give input regarding the old building and structures on the property.
- A legal agreement between farm workers living within the nature reserve needs to be developed and the way forward discussed.

- Lack of environmental education initiatives.
- The soil erosion along the cycling tracks, hiking trails and roads present within the reserve needs to be addressed.
- The invasive alien plant species found in the reserve need to be reduced to maintenance level and controlled.
- Bush encroachment of the grasslands.
- The waste and pollution from the informal communities living within the nature reserve needs to be managed and removed more effectively.

Managing the issues, challenges and opportunities at Kenneth Stainbank Nature Reserve

The following specific strategic outcomes have been identified for Kenneth Stainbank Nature Reserve:

- Ensure adequate law enforcement within the nature reserve.
- Development and adoption of formal agreements between Ezemvelo KZN Wildlife and eThekwini Metropolitan Municipality pertaining to the management of municipal land (Management blocks 24 & 25).
- Develop and implement procedures and agreements between Ezemvelo and the remaining farm workers that reside within the nature reserve relating to the possibility of being relocated for the future benefit of both parties.
- Constructive community involvement in the nature reserve's management through an effectively functioning Community Liaison Forum.
- Incorporation of the Kenneth Stainbank Nature Reserve's requirements into municipal and regional planning documents such as IDP's and SDF's.
- Development and implementation of an environmental interpretation and education programme.
- Achievement of maintenance level of invasive plant infestations in the nature reserve.
- Identify and rehabilitate areas that have been affected by soil erosion as a result of various trails or roads.
- All facilities and infrastructure in the nature reserve are adequately maintained.

Monitoring and reporting

Monitoring and reporting is a critical component of the adaptive management cycle. It enables the effective assessment of management interventions and, if necessary, can be used to direct modifications of management in an effort to achieve the outcomes required. An annual monitoring schedule for Kenneth Stainbank Nature Reserve, which conforms to the norms and standards for surveillance and monitoring (Goodman 2011), has been developed, based on the management targets contained in the operational management framework.

Annual plan of operation

Each year an annual plan of operation will be prepared, based on the objectives, strategic outcomes, management activities and targets contained in the management plan. The annual plan of operation should be prepared, based on the findings of the previous year's management plan implementation review. The annual plan of

operation will be tied to staff performance contracts, and goals set in them will be categorised in the same key performance areas as the management plan.

ABBREVIATIONS

Amafa	Amafa aKwaZulu-Natali (KwaZulu-Natal Provincial Heritage Agency)
CCA	Community Conservation Area
CDP	Concept Development Plan (Component of Ezemvelo protected area management planning process)
CEO	Chief Executive Officer
CRMP	Cultural Resource Management Plan
CMS	Co-management Structure
DAEA	KwaZulu-Natal Provincial Department of Agriculture and Environmental Affairs.
DCO	District Conservation Officer
DEA	National Department of Environmental Affairs
DWA	National Department of Water Affairs
EIA	Environmental Impact Assessment
Ezemvelo	Ezemvelo KwaZulu-Natal Wildlife
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EWT	Endangered Wildlife Trust
FPA	Fire Protection Association in terms of the National Veld and Forest Fire Act (No.1 of 1998)
FP	Financial Plan (component of Ezemvelo protected area management planning process)
GDP	Gross Domestic Product
GIS	Geographical Information System
IDP	Municipal Integrated Development Plan
IUCN	International Union for the Conservation of Nature
KSNR	Kenneth Stainbank Nature Reserve
MCM	National Department of Marine and Coastal Management
MEC	Member of the Executive Council
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEMA	National Environmental Management Act
NPAES	National Protected Area Expansion Strategy
NRPC	Ntsikeni Nature Reserve Planning Committee
NSBA	National Spatial Biodiversity Assessment
OIC	Officer in Charge
OPSCOMM	Ezemvelo Operations Committee
PA	Protected Area
ROS	Recreational Opportunity Spectrum
SAHRA	South African Heritage Resources Agency
SAPPI	South African Pulp and Paper Industry
SDF	Municipal Spatial Development Framework
SMP	Strategic Management Plan (component of Ezemvelo protected area management planning process)
SWOT	Strengths, weaknesses, opportunities and threats analysis
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WWF	Word Wildlife Fund

1) BACKGROUND

1.1 Purpose of the plan

Protected area management plans are high-level, strategic documents that provide the direction for the development and operation of protected areas. They inform management at all levels, from the staff on-site through to the CEO, the Board and the MEC. The purpose of the management plan is to:

- Facilitate compliance with the National Environmental Management: Protected Areas Act (No. 57 of 2003).
- Provide the primary strategic tool for management of Kenneth Stainbank Nature Reserve, informing the need for specific programmes and operational procedures.
- Provide motivations for budgets and provide indicators that the budget is spent correctly.
- Build accountability into the management of Kenneth Stainbank Nature Reserve.
- Provide for capacity building, future thinking and continuity of management.
- Enable Ezemvelo KZN Wildlife to develop and manage Kenneth Stainbank Nature Reserve in such a way that its values and the purpose for which it was established are protected.

The Kenneth Stainbank management plan will ultimately provide conservation guidelines which will enable Ezemvelo KZN Wildlife to develop and manage the reserve in a manner which protects the values of the reserve and the purpose for which it was established.

1.2 Structure of the plan

Section 1:	Provides an introduction and background to the management plan and Kenneth Stainbank Nature Reserve.
Section 2:	Establishes the context of the nature reserve, providing the basis for the strategic and operational management frameworks that follow.
Section 3:	Sets out the vision and objectives that must be achieved in efforts to effectively conserve the nature reserve.
Section 4:	Sets out the zonation of the nature reserve, outlining the permissible land uses in particular zones.
Section 5:	Describes the administrative structure required to effectively manage Kenneth Stainbank Nature Reserve.
Section 6:	Sets out the detailed management targets that must be achieved in managing the nature reserve.
Section 7:	Sets out the monitoring measures required to determine if management targets are being met and the requirements for reporting on performance in implementing the plan.
Section 8:	Describes the components that must be included in the annual plan of operation.

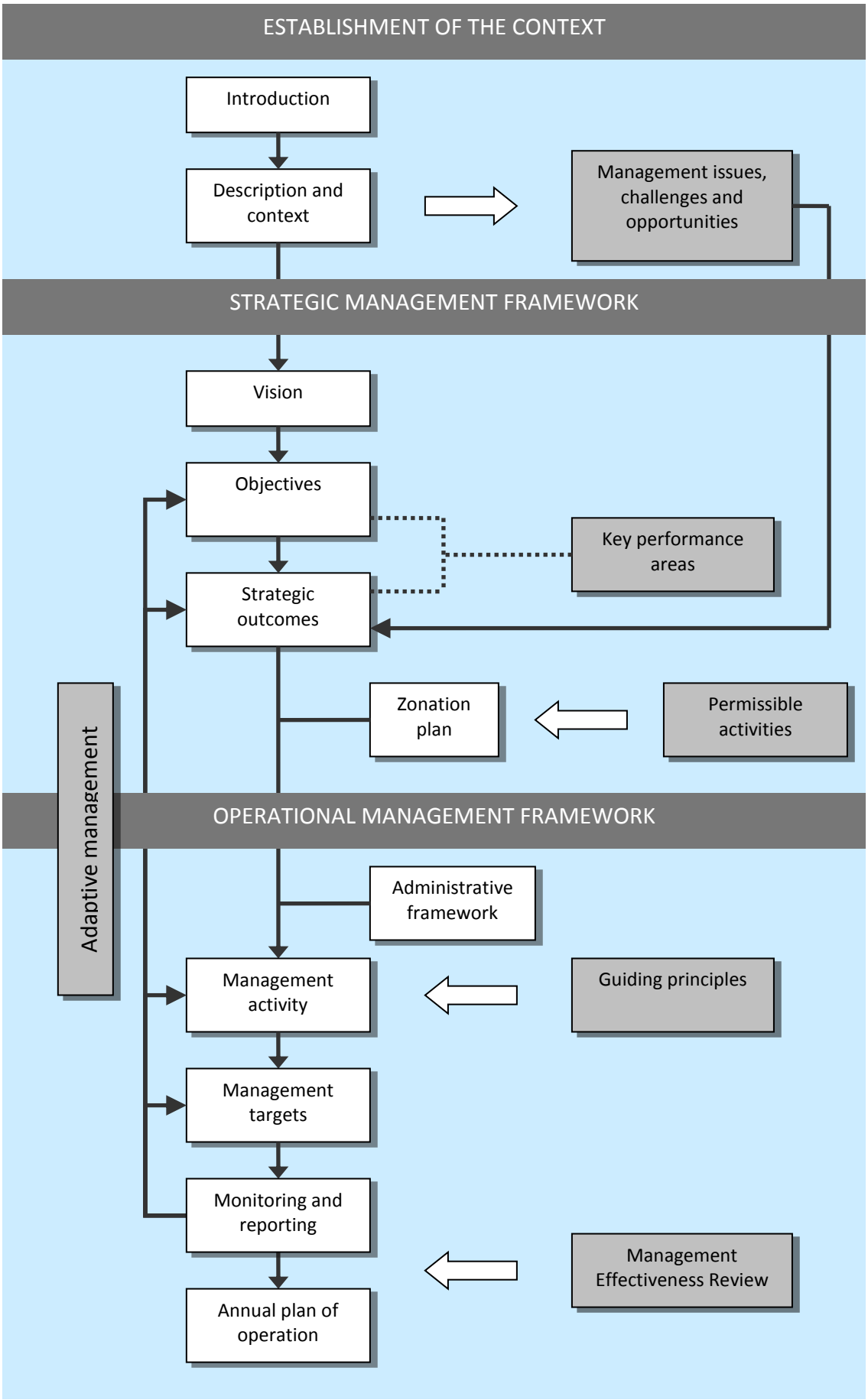

Figure 1.1 Structure of the Protected Area Management Plan

1.3 Introduction

Kenneth Stainbank Nature Reserve (KSNR) is a 210 ha protected area situated in the suburb of Yellowwood Park, 10km south west of Durban Central. KSNR lies 6.5km north of the old Durban International Airport and the nature reserve falls within the jurisdiction of the eThekwini Metropolitan Municipality. The nature reserve is situated within a residential area alongside the Centre for Rehabilitation of Wildlife (CROW). The reserve was formally proclaimed in 1963 re-proclaimed in 1981. KSNR is accessed via Coedmore Road which lies on the eastern boundary of the reserve.

Other reserves in the area include: North Park Nature Reserve (7km - north west) and Bluff Nature Reserve (6km - south east). The Mhlathuzana River passes alongside the northern boundary of the nature reserve.

The reserve has various tourism activities such as hiking trails, biking trails, a disabled trail and picnic sites. It also hosts various cross country and cycling events annually. Previous eco-tourism activities include camping sites and night drives as result of social issues such as excessive use of alcohol, inappropriate behavior in public and inability to maintain game drive vehicles.

KSNR forms part of the Durban Metropolitan Open Space System (D'MOSS) which was previously known as the eThekwini Environmental Services Management Plan (EEMP). This system of open spaces constitutes of 74 000ha of land and water that incorporates areas of high biodiversity value.

KSNR also falls within the Maputaland – Pondoland - Albany hotspot which is described as a center of plant endemism. This region is home to a wide variety of endemic and near endemic fauna and flora. This resulted from the geographical location of this region and exceptional influence from the temperate zone. Kenneth Stainbank Nature Reserve contributes towards the land that is formally protected towards the Maputaland – Pondoland – Albany hotspot.

The nature reserve protects a portion of the Southern Moist Coastal Lowlands Forest, Southern Mesic Coastal Lowlands Forest, Coastal Belt Grasslands and Coastal Belt Thornveld. Plant species of importance include *Celtis mildbraedii, Eriosema latifolium* and *Cola natalensis* which are protected, whilst important fauna species include the vulnerable Blue Duiker (*Philantomba monticola bicolor*), the Southern Reedbuck (*Redunca arundinum arundinum*) and the Thick-tailed Bushbaby (*Otolemur crassicaudatus crassicaudatus*).

Various important bird species are present in the nature reserve such as the endangered Spotted Ground-Thrush (*Zoothera guttata*). The Pygmy Goose (*Nettapus auritus*), Lanner Falcon (*Falco biarmicus*), Black Stork (*Ciconia nigra*) and the Bush Blackcap (*Lioptilus nigricapillus*) are near threatened.

KSNR is also home to a host of reptiles and amphibians such as the Natal Leaf-folding Frog (*Afrixalus spinifrons spinifrons*), Natal Tree Frog (*Leptopelis natalensis*) and the Painted Reed Frog (*Hyperolius marmoratus marmoratus*) which is near-endemic to KwaZulu-Natal. The Black-headed Dwarf Chameleon (*Bradypodion melanocephalum*) is restricted to KwaZulu-Natal whilst the Pondo Flat Gecko (*Afroedura pondolia*) and the Natal Black Snake (*Macrelaps microlepidotus*) are near-endemic to KwaZulu-Natal.

Kenneth Stainbank Nature Reserve also provides the perfect habitat for a host of insects such as the Pennington's Forest-king Charaxes (*Charaxes xiphares penningtoni*) which is endemic to KwaZulu-Natal. The Spotted Buff (*Pentila tropicalis tropicalis*), Coast Purple Tip (*Colotis erone*), Brown-lipped Agate Snail (*Metachatina kraussi*) and the Bronze pinwheel (*Trachycystis aenea*) are all near-endemic to KwaZulu-Natal. There have been records of the KwaZulu-Natal Yellowfish (*Labeobarbus natalensis*), present in the nature reserve.

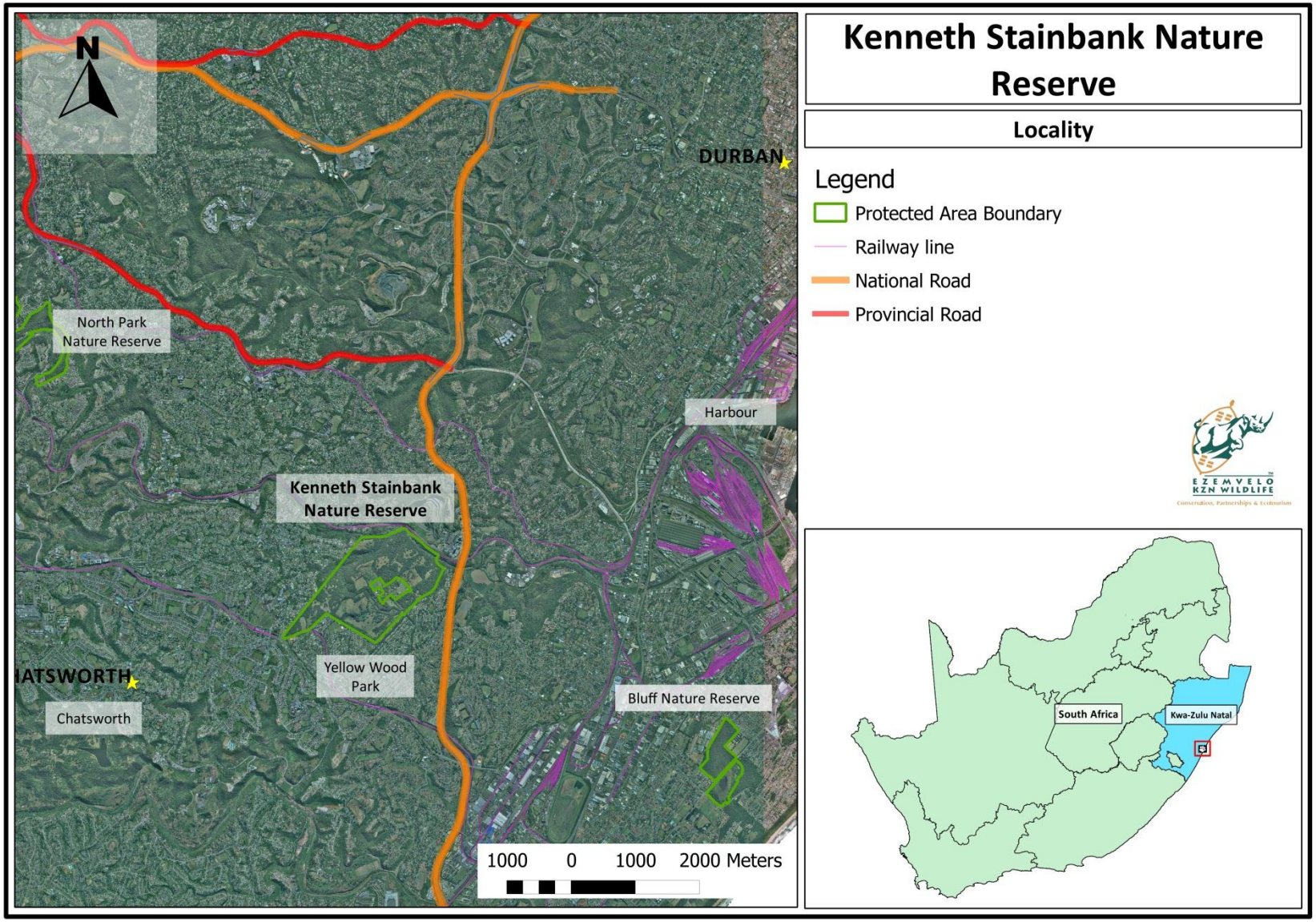

Figure 1.2 Regional location of Kenneth Stainbank Nature Reserve

1.4 The values of Kenneth Stainbank Nature Reserve

The values of a place are those remarkable attributes that exemplify it and are largely the reason that it has been proclaimed as a protected area. The values are important in planning and management, as they are the aspects of the place that must be protected. The values of Kenneth Stainbank Nature Reserve include:

Natural values	▪ It's an area of unique natural beauty; ▪ The Umhlatuzana River forms the northern boundary of the reserve; ▪ Kenneth Stainbank Nature Reserve has rich biodiversity and a number of key species including threatened, protected and endemic species; ▪ Important habitats present in the reserve include KwaZulu-Natal Coastal Belt Grassland, Kwazulu-Natal Coastal belt thornveld, KwaZulu-Natal Coastal Forest: Southern Mesic Coastal Lowlands Forest and the KwaZulu-Natal Coastal Forest: Southern Moist Coastal Lowlands Forest. ▪ The nature reserve supports a population of Blue Duiker (*Philantomba monticola bicolor*), Thick-tailed bushbaby (*Otolemur crassicaudatus crassicaudatus*) and Southern Reedbuck (*Redunca arundinum arundinum*) and a number of other rare and threatened species. ▪ There have been sightings and presence of various bird species such as the Spotted Ground-Thrush (*Zoothera guttata*), African Pygmy-Goose (*Nettapus auritus*), Black Stork (*Ciconia nigra*) and the Bush Blackcap (*Lioptilus nigricapillus*). ▪ The dam present in the reserve provides an area of refuge for many water birds such as ducks and cranes.
Ecosystem service values	▪ The small dam located in the reserve acts as a filtration system. ▪ Forms a stepping stone for migratory birds linking natural land in an ecological network ▪ Important role in carbon sequestration ▪ Important role in gas and nutrient regulation ▪ Refugium function - living area for wild flora and fauna ▪ Ecotourism and educational value
Eco-cultural tourism values	▪ Provides opportunities for eco-tourism ▪ The reserve is well known for its extensive bird life and is highly regarded by local bird enthusiasts. ▪ Provides an outdoor educational centre for schools where students can learn first-hand from experienced field rangers. ▪ Trail running, road running and cycling events pass through the reserve annually.
Cultural and historic values	▪ Provides a glimpse into the past, at the beautiful rolling hills, before urbanisation and industrialisation expanded throughout Durban ▪ Rich pre-European and post-European history with the land being utilised by the Zulu's under the reign of King Shaka in

	the 1800's.
Social values	▪ Provides opportunities for environmental education and awareness. ▪ Provides both permanent and temporary job creation opportunities. ▪ Provides opportunities for environmental education and awareness. ▪ It is an area of tranquillity where locals can come to relax and view the natural biodiversity available. ▪ The reserve has great aesthetical value which is beneficial to all visitors to the reserve.

Consistent with Section 17 of the Protected Areas Act, the purpose of Kenneth Stainbank Nature Reserve is to:

- Preserve the ecological integrity of the area;
- Conserve the important biodiversity in KSNR;
- Protect areas representative of ecosystems, habitats and species naturally occurring in KSNR;
- Protect KSNR's endangered and vulnerable species;
- Assist in ensuring the sustained supply of environmental goods and services specifically relating to water provision;
- Create a destination for nature based tourism;
- Manage the interrelationship between natural environmental biodiversity, human settlement and economic development;
- Contribute to human, social, cultural, spiritual and economic development.

1.5 Planning approach

The preparation of this management plan has been undertaken based on the following guiding principles.

1.5.1 Adaptive management

Adaptive management is a structured, iterative process in which decisions are made using the best available information, with the aim of obtaining better information through monitoring of performance (Figure 1.3). In this way, decision making is aimed at achieving the best outcome based on current understanding, whilst accruing the information needed to improve future management. Adaptive management can lead to revision of a part or if necessary the whole management plan.

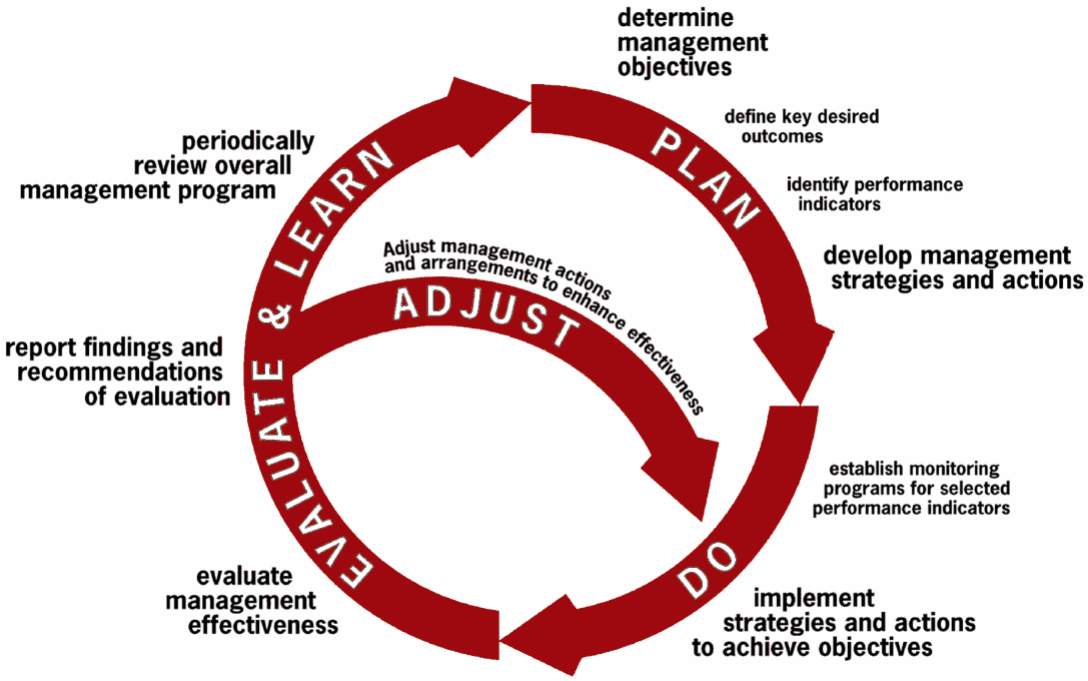

Figure 1.3 The adaptive management cycle

Adaptive management enables protected area managers to:

i) Learn through experience.

ii) Take account of, and respond to, changing factors that affect the protected area.

iii) Continually develop or refine management processes.

iv) Demonstrate that management is appropriate and effective.

1.5.2 Collaboration and transparency

Stakeholder involvement and support is an important aspect of effective protected area management. It is also a requirement in terms of Sections 39(3) and 41(2)(e) of the National Environmental Management: Protected Areas Act (No.57 of 2003). Accordingly, the development of this

management plan has been undertaken through a collaborative process, involving local communities and other key stakeholders.

Public consultation has been undertaken through a series of meetings and discussions with key stakeholders culminating in a key stakeholder workshop, held on the 27th of November 2013 at the Wilderness School Board Room (Located in Kenneth Stainbank Nature Reserve). The discussions focussed on the purpose of management plans, the vision of the nature reserve, the values of the nature reserve and the ideas, issues, threats and opportunities. Furthermore, the draft management plan has been made available for public review and comment prior to its finalisation. This process has ensured a great deal of valuable input into the development of the management plan, the outcomes of which have been incorporated into it. A detailed public participation report is available upon request from the nature reserve management.

2) DESCRIPTION OF KENNETH STAINBANK NATURE RESERVE AND ITS CONTEXT

2.1 Institutional and administrative framework for the management of Kenneth Stainbank Nature Reserve

The KwaZulu-Natal Nature Conservation Board, established in terms of the KwaZulu-Natal Nature Conservation Management Act No.9 of 1997, was appointed by the KwaZulu-Natal MEC: Agriculture and Environmental Affairs as the management authority for all provincial protected areas in KwaZulu-Natal. The Board's implementing agency is Ezemvelo KZN Wildlife (Ezemvelo).

Management of Kenneth Stainbank Nature Reserve will be undertaken in accordance with relevant legislation and the management policies of Ezemvelo KZN Wildlife, which includes a commitment to maintain the character and ecological, cultural and aesthetic integrity of the site.

The KwaZulu-Natal Nature Conservation Board will be responsible for reporting on the management of Kenneth Stainbank Nature Reserve to the designated KwaZulu-Natal Provincial Member of the Executive Committee (MEC) and the Premier thus ensuring coordination of those matters that may affect the nature reserve through the relevant provincial departments, district and local municipalities.

2.2 The legislative basis for the management of Kenneth Stainbank Nature Reserve

There is a large body of legislation that is relevant to the management of Kenneth Stainbank Nature Reserve, but the primary legislation guiding the management of protected areas is the National Environmental Management: Protected Areas Act (No.57 of 2003).

The Protected Areas Act establishes the legal basis for the creation and administration of protected areas in South Africa, as its objectives include provisions "for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes". The Act sets out the mechanisms for the declaration of protected areas and the requirements for their management.

A detailed list of relevant legislation is provided in Appendix B. Managers are required to familiarise themselves with the purpose and contents of the statutes and their subsequent amendments and regulations.

2.2.1 Proclamation status of Kenneth Stainbank Nature Reserve

The proclamation for Kenneth Stainbank Nature Reserve (KSNR) was published in Gazette Notice No. 11 of 1963. (See Appendix C – Proclamation of Kenneth Stainbank Nature Reserve).

The reserve was initially proclaimed as the 'Stainbank Nature Reserve' on the 12th of February 1963 and comprised of two properties donated by Mr Kenneth Lyne Stainbank. These properties included Sub 3 of A of the farm Bellair No. 823 and Sub 3 of Stainbank of the farm Bellair No. 823.

On the 3rd of November 1964 the name 'Stainbank Nature Reserve' was amended and the reserve was proclaimed as the 'Kenneth Stainbank Nature Reserve'. KSNR was then officially opened to the public on the 8th of July 1967. On the 17th of November 1969, KSNR was extended in size to over 135 hectares after three more plots of land were donated by Mr K.L. Stainbank. The proclaimed land included Sub 7 of Stainbank, Sub 4 of A and the remainder of Sub G.

On September 28th 1972, two more plots of land were donated to the Natal Parks Board (now known as Ezemvelo KZN Wildlife) by Mr K.L Stainbank. The plots proclaimed included Sub 10 and Sub 11 of Stainbank of the farm Bellair No. 823 and increased the reserve size to over 212 hectares. The last donation of land by Mr K.L Stainbank was made on June 29th 1981 and this land proclaimed included Sub C of Stainbank of the farm Bellair No. 823 and Sub B of 7 of Stainbank of the same farm.

The land donation by Mr K.L Stainbank to the Natal Parks Board were done subject to conditions agreed upon by both the transferor (Mr Stainbank) and the transferee (Natal Parks Board) including,

- Subject to a Pipeline Servitude 6.10 m wide in favor of the City Council of the City of Durban.

- Subject to a servitude in favor of the Transferor and his successors in title as owner of the Remainder of Stainbank of the farm Bellair No. 823, of the right to the construct, install and maintain a pipeline over the property, of a width not exceeding 3.05 m, for the conveyance of water over the property, along a mutually convenient route with the necessary rights of access thereto.

- Subject to the condition that the Sub 10 and Sub 11 of the farm Bellair No. 823 shall be held in perpetuity as a Nature Reserve and shall not be used for any other purpose whatsoever nor shall there be any subdivision thereof nor the grant of any Servitude thereon of there over for any purpose inconsistent with such use, without the written consent of the Transferor or his successors in title as the Owner of the Remainder of the farm Bellair No. 823.

- Notwithstanding the foregoing restriction upon the use to which the properties may be put, the Transferee may select not exceeding 2, 0234 Ha in extent for the establishment of a school or institution (including the necessary building) whose sole purpose shall be to impart knowledge and instruction relating to the preservation, propagation and protection of wildlife.

- Subject to servitude in favor of the Transferor and his Successors in Title that adequate fencing shall be erected and maintained between the property hereby transferred and the said Remainder and along such other boundaries as may be found mutually convenient.

- Subject to the condition that upon the lapsing of the Notarial Deed of Cession of Usufruct, the existing stone buildings upon Sub 10 of the farm Bellair No. 823 shall be preserved by the Transferee and its successors in title for some Public use or function other than residential.

Details on the rights and privileges of the Usufructuaries are recorded in the Notarial Deed of Cession of Usufruct in File 5/2 – KEN – Acquisition of Land and kept at Head Office. They are of little direct consequence in the management of the reserve.

2.2.2 Public Trust Doctrine

Section 3 of the National Environmental Management: Protected Areas Act Nu. 57 of 2003 mandate the State, and hence Ezemvelo KZN Wildlife to act as the trustee of protected areas. This trusteeship is derived from the Public Trust Doctrine, which in this context obligates the Ezemvelo KZN Wildlife to support the management of all protected areas and the resources therein for the benefit for current and future generations (the beneficiaries of the Public Trust). Thus it is incumbent on Ezemvelo KZN Wildlife to use all practical means to fulfil its responsibilities as trustee of the protected area for current and succeeding generations.

[See White Paper on Environmental Management — Policy for South Africa GG 749 OF 1998]

2.2.3 Invasive species control in terms of the Biodiversity Act

In terms of Section 76 of the National Environmental Management: Biodiversity Act (No.10 of 2004), the management authority of a protected area must incorporate an invasive species control plan in the protected area management plan. This is addressed in Section 6.6.2 – Invasive Species Control.

2.3 The policy framework guiding the management of Kenneth Stainbank Nature Reserve

In conserving and managing the biodiversity of KwaZulu-Natal, Ezemvelo KZN Wildlife operations are undertaken within a broad framework of policies. At a national level, overarching policy is set out in:

i) The White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity of 1997.

ii) The Bioregional Approach to South Africa's Protected Areas, 2001/2002.

iii) Community Based Natural Resource Management Guidelines, 2003.

iv) National environmental management principles set out in section 2 of the National Environmental Management Act.

v) Relevant norms and standards set by the Minister and MEC in terms of the Protected Areas and Biodiversity Acts.

Within the province, Ezemvelo KZN Wildlife has adopted a Strategic and Performance Plan, which has developed the following corporate strategic profile:

Vision	
"To be a world renowned leader in the field of biodiversity conservation"	
Mission statement	
"To ensure effective conservation and sustainable use of KwaZulu-Natal's biodiversity in collaboration with stakeholders for the benefit of present and future generations."	
Strategic goals	
i)	To conserve indigenous biodiversity in KwaZulu-Natal both within and outside of protected areas.
ii)	To be a sustainable, well-resourced and capacitated biodiversity conservation and ecotourism organisation.
iii)	To foster the value of biodiversity conservation with stakeholders.
iv)	To be an efficient, effective and compliant organisation with good governance.
v)	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.

A number of policies, specific to particular areas of operation, have also been developed by Ezemvelo KZN Wildlife (Appendix B). These policies have been considered and applied within the plan, where relevant. The nature

reserve's managers are required to be familiar with them and to apply them in managing Kenneth Stainbank Nature Reserve.

This management plan has utilised this body of policies to develop a strategic and operational management framework for Kenneth Stainbank Nature Reserve that is consistent with the broad goals and specific policy requirements of Ezemvelo KZN Wildlife.

2.4 The regional and local planning context of Kenneth Stainbank Nature Reserve

In terms of the natural environment, eThekwini is situated at the centre of the Maputaland-Pondoland-Albany Region, which is described by Conservation International as a "Biodiversity Hotspot". The eThekwini Municipal area is characterised by diverse topography, from steep escarpments in the west, to a relatively flat coastal plain in the east. It incorporates 98 km of coastline, 18 major catchments and 16 estuaries, 4,000 km of river, and nearly 75,000 hectares of land identified as part of the Durban Metropolitan Open Space System (D'MOSS) (adopted December 2010). D'MOSS supports a wide variety of terrestrial and aquatic ecosystems, thereby attempting to meet biodiversity conservation objectives, while aiming to secure the supply of the ecosystem services that are provided freely by these ecosystems to the people of Durban. Ecosystem services, and their associated biodiversity, provide probably the most significant buffering effect against the negative impacts of climate change for local communities and infrastructure.

Notwithstanding their value, natural environments in eThekwini have been severely impacted by landscape change, invasive alien species, over exploitation and pollution. Climate change is a significant and increasing threat. Many people have benefited over the last century from the conversion of natural ecosystems to human-dominated ecosystems and from the exploitation of biodiversity. However, these gains have been achieved at growing cost in the form of losses in biodiversity, degradation of many ecosystem services, and the exacerbation of poverty for other groups of people (Millennium Ecosystem Assessment, 2005). The situation in Durban is no different to the global assessment and suggests that current policy, law, governance and environmental management efforts have been inadequate to prevent this degradation.

Virtually every terrestrial habitat in eThekwini has undergone significant levels of transformation and, as a result, every vegetation type requires some level of protection. KZN Sandstone Sourveld, North and South Coast Bushveld, and North and South Coast Grassland in particular, are vegetation types that are significantly transformed and classified as endangered and require particular attention.

Habitat destruction (land transformation), invasive alien species and pollution are regarded as the greatest threats to biodiversity and associated delivery of ecosystem services. At present, a mere 14 % of the D'MOSS area

is protected through appropriate conservation zoning, conservation services and land acquisition, whilst only 9.3 % is managed for conservation. Therefore, increasing the total area of D'MOSS that is protected and managed for conservation is critical if the biodiversity of eThekwini and its associated ecosystem goods and services is to be protected. This is an enormous challenge, considering the rapid urbanisation and transformation that is taking place, as well as growing threats, such as alien species invasion and climate change, but some gains have been made.

The river and estuary ecosystems of Durban are in a particularly poor state. The municipality found in 2010 that 71 of 175 (40 %) of its monitoring sites on rivers were in poor condition and only six (just over 3 %) were classified as near natural. Rivers were found to be experiencing multiple impacts, including spills and illegal discharges, solid waste dumping, wastewater treatment works not operating to specification or license conditions, sand mining, realignment of watercourses, flow reduction through dams, removal of riparian flora, and infestation by alien flora and fauna. In a survey of the 16 estuaries in eThekwini published in 2010, only three, together making up 10 % of the total municipal estuarine area, were classified as in good condition (none were classified as excellent). Because of the condition of the larger systems, such as the uMgeni and Durban Bay, a total of 50 % of the municipal estuarine area must be considered highly degraded. Expert opinion would suggest that, based on the current ecological condition of Durban's aquatic ecosystems, they are amongst the lowest ranked systems in the country.

2.4.1 The National Protected Area Expansion Strategy

A National Protected Area Expansion Strategy (NPAES) was developed and approved (at a national ministerial level) to address a lack of effective protection and representation of all vegetation types within the protected areas system (DEAT 2008). The NPAES uses two factors, importance and urgency, to selected areas for terrestrial protected area expansion. The main purpose of the NPAES is to provide a national framework for the expansion and consolidation of the protected area system, focussing on priority areas for representation and persistence of biodiversity.

In terms of the NPAES – areas far off to the south west of Kenneth Stainbank Nature Reserve are identified as priorities for protected area expansion which falls within Region 11 (Eastern valley Bushveld) of the National Protected Area Expansion Strategy focus areas.

2.4.2 The Provincial Protected Area Expansion Plan

The KwaZulu-Natal Protected Area Expansion Plan (Ezemvelo KZN Wildlife 2010) also identified the areas around KSNR as priorities for protected area expansion as the nature reserve forms a key hub of the D'MOSS where it assists in the connection of the regions protected area's and natural lands. Any surrounding land identified as a priority for protected area expansion may be incorporated and managed by KSNR through land acquisition, or the

introduction of stewardship programs and agreements established in conjunction with individual landowners or the local communities.

Pieces of land surrounding KSNR is however characterised by high levels of irreplaceability, and falls within the D'MOSS zone.

2.4.3 EIA Regulations in terms of NEMA

In terms of the National Environmental Management Act (No.107 of 1998) environmental impact assessment (EIA) Regulations, various activities require environmental authorisation before they may commence. In addition, in terms of Regulation RN.546, Listing Notice No.3, there are a number of activities that require environmental approval *specifically* as a result of their proximity to a protected area. The implication of this is that if any of the activities listed in Appendix E are proposed in the nature reserve, or within five kilometres of it, they will be subject to either a basic assessment or a full scoping and EIA process. A number of general activities and those proposed for either tourism development or operational management within the nature reserve or its buffer areas will thus also require environmental authorisation.

2.5 The history of Kenneth Stainbank Nature Reserve

2.5.1 Origins of the name of Kenneth Stainbank Nature Reserve

The reserve was initially proclaimed as the 'Stainbank Nature Reserve' however this was amended and the reserve was renamed the 'Kenneth Stainbank Nature Reserve' after Mr Kenneth Lyne Stainbank, the former owner of the three divisions of land which now make up the nature reserve. Each portion of land was donated to the Republic of South Africa with the sole purpose of conserving natural habitats through the formation of a nature reserve.

2.5.2 History of conservation in Kenneth Stainbank Nature Reserve

The Kenneth Stainbank Nature Reserve was officially opened to the public on the 8th July 1967. The reserve aims to conserve small populations of indigenous fauna and constitutes the largest climax of coastal forest in the greater Durban region. This area of coastal forest is only a small remnant of a once widespread habitat and contrasts greatly with the built-up land found immediately outside the boundary fence.

Mr K. L. Stainbank donated the three portions of land to the Province of Natal to provide a sanctuary for the protection of the fauna and flora present on the farms. He believed that each farm had a great historical context, dating back to 1857 when Mr K. L. Stainbank's father, Dering Lee Warner Stainbank first joined his brother, Henry Ellerton, to farm in Bellair.

All three land donations were made subject to the condition 'that it shall be held in perpetuity as a nature reserve and shall not be used for any other

purpose whatsoever, nor shall there be any subdivision thereof nor the grant of any servitude thereon for any purpose inconsistent with such use without the written consent of the owner of the Remainder of A of the farm Bellair No. 823 and the Remainder of Stainbank of the farm Bellair No. 823'.

Over the past 46 years, the reserve has undergone substantial change with regards to the vegetation cover and fauna present. Anthropogenic disturbance has been the main culprit behind this change however external factors such as climate change have also contributed to this transformation.

KSNR is very important for the conservation of the KwaZulu-Natal Coastal Forest: Southern Moist Coastal Lowlands Forest which is currently critically endangered. The conservation target set for this vegetation type is 71.69%, and when the study was completed in 2011, only 7.9% of the vegetation was conserved in Protected Areas.

KSNR is equally important for the conservation of KwaZulu-Natal Coastal Belt Grassland which is also critically endangered. The conservation target set for this grassland is 30.31%, with only 5.5% being conserved in protected Areas.

2.5.3 History of eco-tourism in Kenneth Stainbank Nature Reserve

Since the Kenneth Stainbank Nature Reserve opened to the public in 1967, several different tourism ventures were given the go ahead to attract visitors to the reserve. An 8.5 km trail system was introduced to allow visitors to hike through the reserve and experience the natural beauty on offer. Guided walks by honorary officers take place on the first Saturday of each month and these have been well received by the public.

In 1993 a 400 m 'disabled trail' was introduced which provides elderly and disabled visitors with a cemented path through a section of the reserve to view the indigenous fauna and flora present. The trail also boasts brail boards at different sections providing information about the reserve to blind visitors. Picnic sites were opened around the reserve allowing visitors to relax in both the natural grasslands and coastal forests present.

Night-drives were introduced in 1993 and although this venture was well attended, financial and staffing issues contributed to its discontinuation in the year 2000. Camping was introduced in 2000 however this venture, proved to have more negative effects then positive effects due to social issues such as the use of illegal substances which in turn led to public indecency and noise pollution. Therefore camping was discontinued in 2005. Mountain biking was first permitted in the reserve in 2005 and this venture initially attracted a large visitor base however, security problems and the introduction of a mountain biking park nearby contributed to a decrease in numbers.

Trail runs and a 15km run pass through the Nature reserve annually and these have received good reviews from all the participants involved.

2.6 Ecological context of Kenneth Stainbank Nature Reserve

2.6.1 Climate and weather

The climate of this region is consistent with that of the KwaZulu-Natal coastal belt which is described by the Köppen Climate Classification as a humid sub-tropical climate characterized by hot, humid summers and mild to warm, dry winters (Hunter 1988).

The bulk of the following information was obtained from the following website: http://www.ceroi.net/reports/durban/index.htm.

Durban has a humid subtropical climate, with relatively high rainfall, primarily falling in the summer months. The prevailing winds are north-east and south-west.

Daytime temperatures are typically between 18 and 26°C, with summer maximum temperatures reaching the lower thirties. Night-time temperatures seldom fall below 10°C, even in winter. Relative humidity levels are typically between 50 % and 70 %.

Durban lies within the southern subtropical high pressure belt, coming strongly under the influence of eastward migrating high pressure systems. Parallel winds dominate the coastline, with south-westerly and north-easterly winds roughly balanced in frequency. There is generally high wind variability.

2.6.1.1 Temperature

Temperatures in Durban are mild in winter and warm-to-hot in summer. The mean annual temperature is 20.4°C and the annual range is 8.0°C. Highest mean temperatures are experienced in February and lowest mean temperatures in July. The highest maximum temperatures occur in October, in association with Berg wind conditions. Temperature is however highly variable in any particular area of Durban as a result of topography, type of surface cover, and artificial heat production due to combustion activities in industries and motor vehicles. The presence of green areas, such as Kenneth Stainbank Nature Reserve, assists in mitigating the extremes.

Month	Mean (°C)	Average of daily max (°C)	Average of daily min (°C)	Highest Max (°C)
January	**24.4**	**27.8**	**21.1**	**36.2**
February	**24.6**	**28.0**	**21.1**	**33.9**
March	**23.9**	**27.7**	**20.2**	**34.8**
April	**21.7**	**26.1**	**17.4**	**36.0**
May	**19.1**	**24.5**	**13.8**	**33.8**

June	**16.8**	**23.0**	**10.6**	**35.7**
July	**16.6**	**22.6**	**10.5**	**33.8**
August	**19.9**	**22.8**	**12.5**	**35.9**
September	**19.3**	**23.3**	**15.3**	**36.9**
October	**20.4**	**24.0**	**16.8**	**40.0**
November	**21.8**	**25.2**	**18.3**	**33.5**
December	**23.4**	**26.9**	**20.0**	**35.9**
MEAN	**20.8**	**25.2**	**16.5**	**40.0**

Table 1: Monthly mean temperatures and temperature ranges at Durban International Airport

2.6.1.2 Humidity

The relative humidity in Durban is usually fairly high, owing to the supply of moisture from the adjacent ocean. This is higher during summer months as warmer air can hold more moisture.

	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
RH (%)	70	70	68	65	61	54	56	60	66	69	71	69

Table Error! No text of specified style in document.**2: Monthly mean relative humidity (%) at 14:00 at Durban International Airport (1986)**

2.6.1.3 Rainfall

The total annual rainfall in Durban is usually greater than 1,000 mm, of which the majority is received in summer. Approximately 60 % of the annual precipitation occurs between November and March and the driest month is July. The heavy summer rains can often result in flooding and landslides, causing damage to property and sometimes life. Fogs are absent and hail is rare.

Month	**Mean**	**No. of rain .**	**Max. in 24 hrs**
January	134	15	110
February	113	13	197

March	120	13	160
April	73	9	106
May	59	7	111
June	28	5	109
July	39	5	69
August	62	7	91
September	73	11	132
October	98	15	105
November	108	16	94
December	102	15	163
TOTAL	**1,009**	**130**	**197**

Table 3: Monthly mean rainfall (mm) for Durban and the maximum experienced in 24 hours (1986)

2.6.1.4 Sunshine

The amount of sunshine Kenneth Stainbank Nature Reserve (Durban) receives is related to the amount of cloud cover. In winter, with the persistence of high pressure systems and cloud-free skies, Durban receives 60-70 % of possible sunshine. In spring and summer, this figure drops to 50 % of possible sunshine as cloud cover builds up.

2.6.1.5 Radiation

The receipt of solar radiation by Durban varies between seasons, ranging from 1.13 x 10^{7} Jm^{-2} day^{-1} in June to 2.14 x 10^{7} Jm^{-2} day^{-1} in January. Many people in Durban are involved in outdoor recreational activities, which increases their exposure to harmful UV-A and UV-B radiation, potentially causing cancer and eye cataracts.

2.6.1.6 Wind

The prevailing wind directions of the KwaZulu-Natal coastal belt are predominately from the north-east and south-west. Winds from these broad sectors occur with frequencies in excess of 255 days a year. South-westerly winds are generally stronger and may be accompanied by rain. Mean monthly wind speeds are lowest in May and June. Highest mean wind speeds occur in September and October, a transitional period at the end of winter. Maximum wind speeds occur in the early afternoon (14:00) and minimum wind speeds between 06:00 and 08:00.

The so called 'coastal low' is probably the best studied weather system affecting the coastline. Its formation is due to the interaction between large-scale atmospheric flow and the marked South African escarpment. These systems propagate around South Africa, moving northwards in an anticlockwise direction and are often associated with strong south-westerly

gusts, termed 'busters'. Rare north-westers in spring bring short periods of hot, dry conditions.

Due to the latitudinal position of the region, it is influenced by both tropical and temperate weather systems. Intense frontal systems, combined with the poleward flowing Agulhas Current, can cause high energy swells along the coastline. Tropical cyclones are relatively rare, but events such as Demoina and Imboa, with the accompanying floods and gale force winds, have caused severe catchment and coastal damage.

Local land/sea breezes and topographically-induced circulations are also significant wind systems, in view of their effect on human climatic comfort and the dispersion or accumulation of air pollutants. Sea breezes, which are onshore north-easterly winds, blow for most of the day along the KwaZulu-Natal coast, particularly during the summer months. They strengthen the prevailing north-easterly gradient winds, which are associated with typical anticylclonic circulation. They ventilate the coastal belt, and because they are associated with unstable atmospheric conditions, they favour the dispersion of pollutants. Sea breezes are known to extend inland as far as Cato Ridge and could thus move pollutants, generated at the coast, inland.

Land breezes develop at night and blow offshore as a north-westerly wind. They are light winds (1-2 ms^{-1}) and develop in a stable atmosphere. They combine with topographically induced winds to produce mountain-plain winds. At night, cooling leads to the development of mountain winds, which blow down the longitudinal axes of the valleys. Under suitable conditions, these winds deepen during the night and overflow their interfluves, so that a sheet of cold, stable air now moves across KwaZulu-Natal towards the coast. This regional wind is known as the mountain-plain wind. It combines with the land breeze near the coast and so the offshore nocturnal wind at Durban may be a very deep stable layer.

The implications for air pollution dispersion are very important. Pollutants released in the interior of KwaZulu-Natal may travel vast distances towards the coast and, because the air is stable, they are transported as thin fanning plumes, for considerable distances, without dispersion. By day, the circulation reverses and plain-mountain winds develop, which blow from the coast to the interior. They are frequently not as well developed as their nocturnal counterparts.

2.6.2 Topography, Geology and Soils

The major physical feature of the Kenneth Stainbank Nature Reserve is the Gorge of the Little Umhlatuzana River which has incised the rolling hills that are so typical of the KwaZulu-Natal coastal belt. At its lowest point, the Gorge is 30 m above sea level and the sides rise up to approximately 150 m above sea level. The remaining landscape found in the reserve is moderately undulating.

The reserve is underlain by Table Mountain Sandstone, which in the absence of accurate dating by fossils, has been presumed to be about 300 million years old (King 1972). The soils of the northern and western sections of the reserve are derived mostly from the Table Mountain Sandstones and as such are essentially sandy, grey-brown fersiallitic in nature. These soils are partly leached due to the effect of high rainfall in the summer months. The soil in the eastern section of the reserve is a deep black loam.

There has been no major soil erosion in the reserve, however each year, great precaution is taken to prevent minor erosion from taking place along the fence line, trail system and roads.

Quarrying above Shaka's krantz was first carried out in around 1882 for stone to build the Stainbank Castle store. Stones were also quarried from this point for the building of the entrance gate and some of the roads were also underlain with material quarried from within what is now the reserve, but these areas are now overgrown with vegetation. No dredging or quarrying has been carried out in recent years.

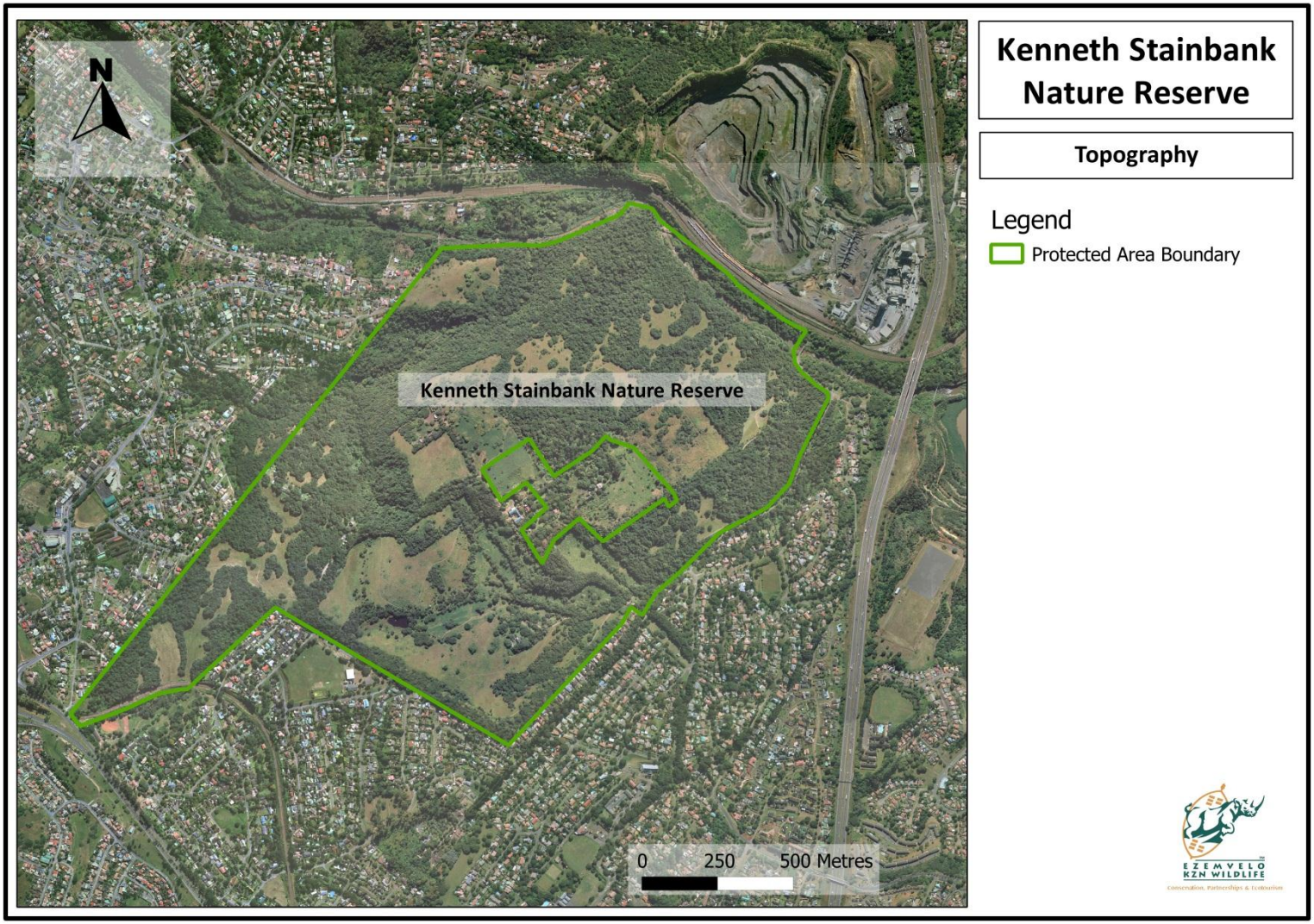

Figure 2.1 Topographical Map of Kenneth Stainbank Nature Reserve

2.6.3 Hydrology

The Umhlatuzana River, which forms the northern boundary of the Kenneth Stainbank Nature Reserve, rises on the KwaZulu-Natal coastal plains and flows in an easterly direction into the Durban bay. It is a small, seasonal river with a fluctuating flow rate and is joined by one of its main tributaries (which rise in Chatsworth) within the reserve. Both these rivers flow through informal settlements where waste management techniques are not practiced and this often leads to the rivers being highly polluted after heavy rains. The Umhlatuzana River has also had problems in the past with burst sewage pipes flowing into the river and this has led to health-threatening levels of *E.coli*. Both streams carry heavy loads of silt, arising in the upper reaches, which have changed the character of the rivers remarkably. Fifty years ago there were rocks, rapids and deep pools whereas today the rivers are shallow and flat with sandy beds.

A dam is located in the south-west section of the reserve however it is not large enough to have a major influence on the reserves hydrology and instead functions as a sanctuary for various water birds.

2.6.4 Vegetation

The reserve falls into Acocks (1953) veld type No. 1, i.e. the Coastal Forest and Thornbush, and Phillips (1973) bio-climatic group No. 1: Coast Lowlands: Evergreen Forest, tall Thicket, and Tall Woodland/Open Woodland.

The vegetation limited to the woody plants, has been described by Campbell (1966), who recognises four vegetation types:

- Hygrophilous woodland lining the stream banks and found wherever the water table is high;
- Climax forest, which, with its seral stages, covers most of the reserve. In addition to these types, there is:-
- Grassland in the forest area dominated by *Aristida junctiformus* and
- Old lands which carry a variety of grasses such as *Digitaria smutsii, Setaria sp.* and *Rynchelitrum repens*.

Man has modified the vegetation, often in ways now difficult to recognise. Until the late 1950s dairy farming was the main activity. Clearing and burning to maintain grazing land was practiced over a substantial portion of the reserve, and has resulted in an open parkland.

Until recently, cattle grazed through the wooded areas as well. The road that was built into the kloof for removal of timber is still in use as a foot trail, while fire scars on the tree clumps and their precursors are obvious. Selective felling, which was probably discontinued before the turn of the century, has resulted in less perceptible changes. The successional movement is strong, though seral stages are stabilised by fire and mowing.

From Dering Stainbank's diaries, it has been noted that he mentions the planting of Yellowwoods (*Podocarpus* spp.) in 1875-76 and 1885-86, and *Calodendrum capense* (wild chestnut) in February 1886. Of the trees which have been planted, *Podocarpus latifolius* and *P. falcatus* have spread. Mr K. L. Stainbank planted strips of Kauri pine (*Agathis australis*) during the 1920's. Some young trees of this species have become established in the vicinity of their parents. Other exotics such as *Psidium guajava* (guava), *bamboos*, *Lantana camara, Chromolaena odorata* and *Pereskia aculeate* have all had some effect on the vegetation.

Kenneth Stainbank Nature Reserve has been classified into the following vegetation types according to the KZN Vegetation Map 2011:

- KwaZulu-Natal Coastal Forests : Southern Mesic Coastal Lowlands Forest
- KwaZulu-Natal Coastal Forests : Southern Moist Coastal Lowlands Forest
- KwaZulu-Natal Coastal Belt Thornveld

- KwaZulu-Natal Coastal Belt Grassland

The following vegetation descriptions have been extracted from the KwaZulu Natal Vegetation Type Description Document for Vegetation Map 2011:

2.6.4.1 KwaZulu-Natal Coastal Forests: Southern Mesic Coastal Lowlands Forest/ Southern Moist Coastal Lowlands Forest

- **Distribution:**

Found in KwaZulu-Natal and (to a very small extent) Eastern Cape Province: Especially along the seaboards of Indian Ocean of KwaZulu-Natal Province and particularly well-developed in Maputaland. Few patches of the dune forest also occur on the Wild Coast of Transkei (Eastern Cape Province). Beyond South Africa these forests occur throughout the Mozambican seaboard as far as southern Tanzania. They occur at low altitudes, from about 10 to 150 m.

- **Vegetation and Landscape features:**

It is a species-rich, tall/medium-height subtropical coastal forests occur on coastal (rolling) plains and stabilised coastal dunes. Forests of the coastal plains are dominated by *Drypetes natalensis, Englerophytum natalense, Albizia adianthifolia, Diospyros inhacaensis* etc. The low-tree and shrubby understoreys are species-rich and comprise many taxa of (sub) tropical provenience. On dunes, these forests have well tree, shrub and herb layers. *Mimusops caffra, Sideroxylon inerme, Dovyalis longispina, Acacia kosiensis and Psydrax obovata subsp. Obovate* are the most common constituents of the tree layer. *Brachylaena* discolour var. discolour, *Chrysanthemoides monilifera subsp. rotundata, Carissa bispinosa subsp. bispinosa subsp. bispinosa, Euclea natalensis, E. racemosa, Eugenia capensis, Gymnosporia nemorosa, Kraussia floribunda, Peddiea Africana, Strelitzia nicolai and Dracaena aletriformis* are frequent in the understorey. The herb layer usually contains by *Asystasia gangetica, Isoglossa woodii, Microsporum scolopendria, Zamiculas zamiifolia and Oplismenus hirtellus*. Herbaceous vines and woody climbers (*Acacia kraussiania, Artabotrys monteiroae, Delbergia armata, Landolphia, kirkii, Monothotaxis caffra, Rhoicissus tomentose, Rhus nebulosa, Scutia myrtina, Uvaria caffra, Gloria superba* etc.) are important structural determinants in these forests.

2.6.4.2 KwaZulu-Natal Coastal Belt Thornveld

- **Distribution:**

Found in KwaZulu-Natal Province: From near Mandini in the north to Oribi Gorge in the south. Occurs at an Altitude of 30-500 m.

- **Vegetation and Landscape features:**

It is characterised by steep valley sides and hilly landscape mainly associated with drier larger river valleys in the rain shadow of the rain bearing frontal

weather systems from the east coast. Bushed grassland, bushland and bushland thicket and open woodland.

2.6.4.3 KwaZulu-Natal Coastal Belt Grassland

- **Distribution:**

It is found in the KwaZulu-Natal Province: Long and in places broad coastal strip along the KwaZulu-Natal coast, from near Mtunzini in the north, via Durban to Margate and just short of Port Edward in the south. Altitude ranges from about 20–450 m.

- **Vegetation and Landscape features:**

It characterized by highly dissected undulating coastal plains which presumably used to be covered to a great extent with various types of subtropical coastal forest (the remnants of one of which are described in Chapter 12 as Northern Coastal Forest). Some primary grassland dominated by *Themeda triandra* still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu – Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary Aristida grasslands, thickets and patches of coastal thornveld.

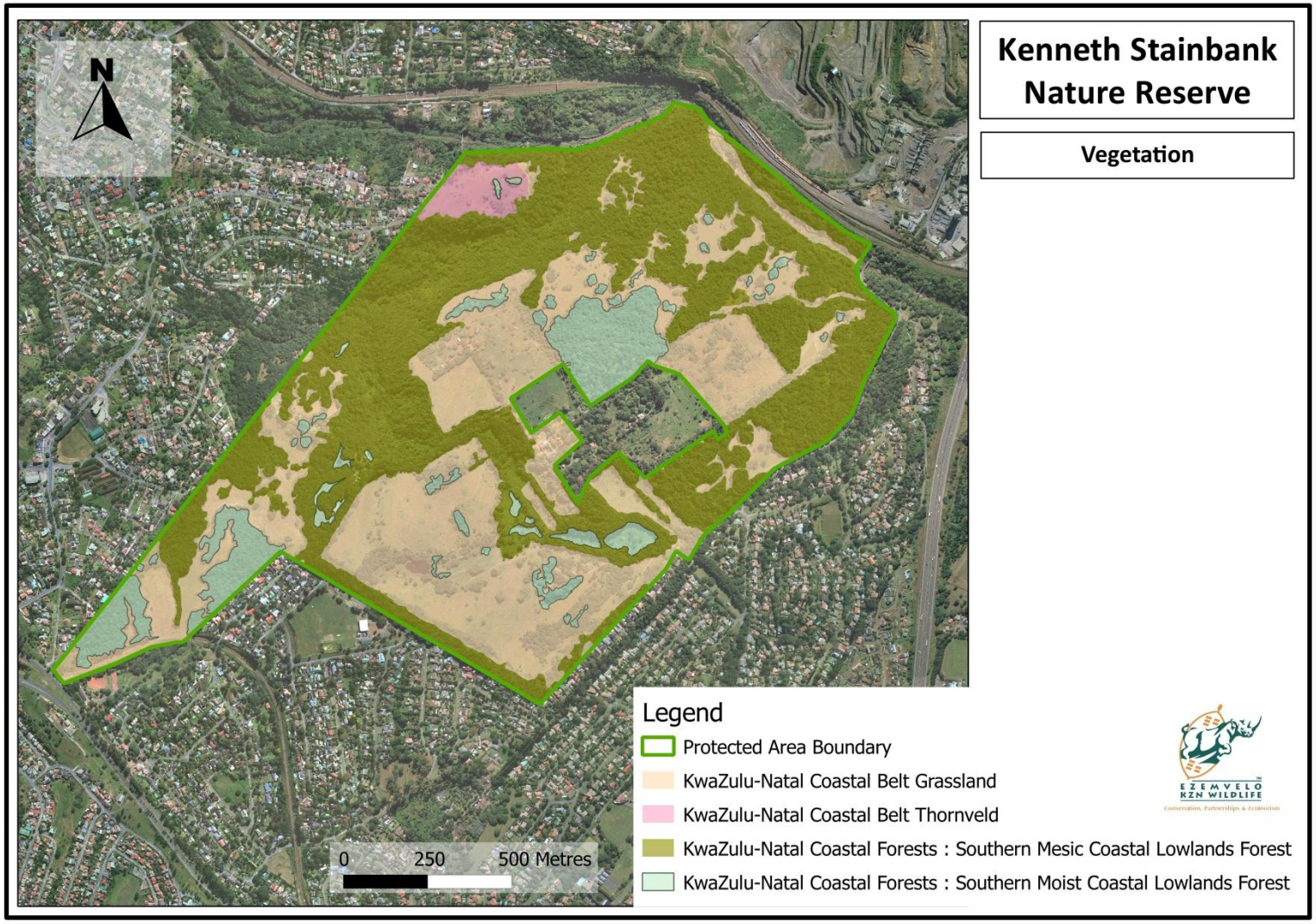

Figure 2.2 Vegetation Map of Kenneth Stainbank Nature Reserve

2.6.5 Fire regime

Prior to donation of the reserve to Ezemvelo KZN Wildlife (then Natal Parks Board), burning was done on an irregular basis between May and September, but no accurate records were kept.

Since 1963, the grasslands in the reserve have been burnt to keep the grazing animals out of the forest environment. There was no actual plan based on the desirability of burning the veld, but emphasis was placed on protecting the forest margins. In September of 1966, parts of the reserve were burnt whilst in 1967; other grassland areas were burnt in May, June and September. During the winter of 1974, a runaway fire in the Loerries Crest area caused extensive damage to the forest margins.

In 1976, the forest areas were burnt bi-annually until 1980. All the old cane lands were mowed two or three times during summer. This served to control exotic weeds as well as to maintain a healthy grass sward. All picnic areas were mown regularly to keep the grass short.

In spring 1981, all forest margins except for the mown areas, which were showing signs of fire abuse, were rested and all grasslands accessible to the tractor and mower were mown leaving a 2-3 m margin uncut to enable forest precursors to re-establish and form a closed margin. A few cool burns were carried out. Acacia seedling growth was encouraged in the area adjacent to the old rhino boma which itself was being rested.

By July 1982, all the forest margins became moribund and were burnt off using a cool, burn by means of burning in the early morning. Once these margin strips were burnt off round all forest and forest patches, the remaining centre was given a fairly hot burn.

Current practice at KSNR, allows grassland patches to be burnt every alternate year.

2.6.6 Invasive species

See also 6.6.2 Invasive Plant Control

Invasive species have been one of the major problems present at the Kenneth Stainbank Nature Reserve. In the past, the most important exotics included *Lantana camara* (Spanish Flag), *Chromolaena odorata* (Triffid Weed) and Pereskia aculeate (Leaf Cactus), however with the exception of *P. aculeate*, the reserve managed to complete a successful control program and follow-up programs are maintained. Almost 1000 *Phenrica* beetles were released on *P. aculeate* in field 24 during 2011 to see if a beetle population would establish and help reduce the *P. aculeate* infestations. To date holes in the leaves where the beetles have fed can be seen but there has been no noticeable increase in the beetle population and this is believed to be because of external climate factors and predation.

There is a need to develop an alieplant control plan as this would aid in the identification of invasive species, infestation densities, control methods, monitoring programs and help develop objectives which would need to be completed.

See Appendix F 5 for a complete list of Invasive Alien Species.

2.6.7 Mammalian fauna

The larger mammal species which occurred when the reserve was proclaimed have been augmented by the reintroduction of red duiker, blue duiker and grey duiker, and the introduction of zebra, impala, nyala, giraffe and white rhino. Unfortunately giraffe and white rhino are no longer present in the reserve with the last two giraffes found dead in 1984.

Records of births, deaths and total numbers have been kept for selected species of large mammals including impala, giraffe, zebra, nyala and white rhino. The numbers of game species that have been removed from and added to the reserve have also been recorded. During the removal process, smaller species are hand captured while larger species are captured by chemical immobilisation.

Game counts of Blue Duiker, Red Duiker, Grey Duiker and Bushbuck are conducted annually (usually over a two-three day period) while the reserve field rangers regularly conducts counts of impala and zebra present in the reserve. The reserve is currently looking at implementing more effecient methods for forest mammals.

Smaller mammals present in the reserve include five species of mongoose, three species of bats, the thick-tailed bushbaby and the South African large-spotted genet. Many rodent species should also be found in the reserve however these have not been recorded.

Mammal species listed as important on the Ezemvelo KZN Wildlife database include, Blue duiker (SARDB-Vulnerable), Southern reedbuck (IUCN-Lower risk, conservation dependent) and Thick-tailed bushbaby (CITES-Appendix II).

For a complete list of mammal species present in KSNR, see Appendix F1: Species list - Mammals.

2.6.8 Avifauna

KSNR is a well-known birding location in the greater Durban region with over 180 bird species currently recorded in the reserve. The reserve is a rich and important feeding and mating ground for water and terrestrial birds residing in the surrounding areas and forms an ecologically necessary stepping stone linking ‘islands’ of natural land in a both residential and industrial areas.

The natural grasslands are environmentally important for the avifauna present in the reserve. Birds commonly seen in the grassland habitat include, the Yellow-rumped Tinkerbird, Rattling Cisticola, Black Cuckooshrike, African Harrier-Hawk, Olive Sunbird and the Lesser Honeyguide. A weaver colony,

consisting of both Village and Yellow Weavers, is present in the middle of the dam and these birds can be seen building their impressive, complex nests during the breeding season. Recently the spotted ground thrush has been identified as a priority species due to its endangered statues.

Bird species listed as important on the Ezemvelo KZN Wildlife database include, Spotted ground-thrush (SARDB and IUCN-Endangered), Southern-ground hornbill (SARDB-Vulnerable, ToPS-Endangered) and the Grey crowned crane (SARDB-Vulnerable, ToPS-Endangered).

For a detailed list of both important avifauna and all avifauna present in KSNR please refer to Appendix F 1.

2.6.9 Herpetofauna (reptiles and amphibians)

Both reptiles and amphibians play an important role in natural ecosystems with certain species serving as bio-indicators due to their high sensitivity to changing environmental factors. The variety and importance of these fauna are poorly studied and little understood especially for the smaller, lesser known species such as the Argus reed frog.

One particular reptile of interest is the KwaZulu (Black-Headed) Dwarf Chameleon (*Bradypodion melanocephalum*). This species is endemic to KwaZulu-Natal and is found inhabiting the dense vegetation along river valleys. Over the past 30 years its population numbers have plummeted and this has led to its distribution becoming very patchy and it becoming a threatened species. The major threats causing its population to decline are habitat destruction (due to urban and agricultural expansion) and anthropogenic disturbance (motor vehicles, human induced pollution, domestic animals and human superstition).

Herpetofauna species listed as important on the Ezemvelo KZN Wildlife database include, Natal leaf-folding frog (SARDB and IUCN-Vulnerable) and the South African python (SARDB-Vulnerable, CITES-Appendix II).

For a complete list of herpetofauna species present in KSNR, see Appendix F.

2.6.10 Invertebrates

Although invertebrate fauna species constitute the greatest component of biodiversity in natural ecosystems, they are usually the most poorly understood. This is the case presently in KSNR with little information available on both the terrestrial and aquatic invertebrates inhabiting the reserve, except for some documented research by Mr J. Wyatt (OIC in 1982) on three shrimp species present namely; *Macrobrachium petersi, Caradina typus* and *C. africana*. Professor M.J. Samways (Department of Conservation Ecology and Entomology at Stellenbosch University) stated that the reserve is also home to many key dragonfly species, which inhabit the area as refuge from the surrounding high use zones.

In terms of their utilitarian and intrinsic value, it is important that the invertebrate fauna species found in KSNR are protected and conserved and

this is consistent with the role of a PA highlighted by section 17 of the Protected Areas Act (No.57 of 2003).

Invertebrate species listed as important on the Ezemvelo KZN Wildlife database include, Coast purple tip (SARDB-Restricted), Pennington's Forest-king Charaxes (Endemic to KZN) and Krauss's hunter snail (Restricted and Endemic in KZN).

For a complete list of insect species present in KSNR, see Appendix F.

2.6.11 Fish

A small pan is present in KSNR, located to the south west region of the reserve. Fish species sampled in the past and those they may occur in the dam and in the Umhlatuzana River (northern boundary of the reserve) and its tributary are listed in Appendix F. The reserve dam was sampled with a shocker and generator in July 1982 however since then, no sampling has been done.

Research on the fish species present in KSNR (including the Umhlatuzana River) should be conducted in the near future in order to increase awareness and protect a large range of biodiversity.

Fish species listed as important on the Ezemvelo KZN Wildlife database include, KwaZulu-Natal Yellowfish (Endemic to KZN).

For a detailed list of important fish species please refer to Appendix F.

2.7 Cultural context of Kenneth Stainbank Nature Reserve

The Kenneth Stainbank Nature Reserve was proclaimed in 1963 on land with a rich history dating back to the early 1800's. Not much is known about the land prior to its European influence; however the surrounding region (now known as Durban) fell within the historical Zulu Kingdom, ruled at the time by the great King Shaka Zulu (1816-1828). The lands original name, Ndabenkulu, relates to an old kraal where King Shaka was believed to have kept cattle, looted from enemy tribes in the south, before distributing the herds amongst his military regiments. For years this site has only been recognised by a clearance in the forest and the presence of the perennial climber, Dalbergia armata and other than a few pieces of unbaked clay pottery (collected in June 1967), no remains of pre-European occupation have ever been found.

In 1824, two European adventurers by the names of Lieutenant Francis Farewell and Henry Fynn, were generously granted land by King Shaka. These men posed at envoys on the British monarch and initiated a period in Durban history dominated by European influence.

In 1847, the original farm Bellair No. 823 (which now forms a section of the reserve), was granted to Robert Dunn, the son-in-law of a fellow voortrekker settler, Alexander Bigger. Dunn had no relation with the Zulu Kingdom, however his son John was later awarded chief status by Zulu king Cetshwayo (1856-1884) and was granted land within the Zulu Kingdom, north of the

Tugela River. After a few months, Dunn disposed of Bellair No. 823 to Thomas Eaton, and he together with J. A. Ross and George Dimock (all prominent residents of early Durban) was early owners of the Bellair farm and its subdivisions.

1857 saw the first member of the Stainbank family acquire property on Bellair land, when Henry Ellerton Stainbank purchased the portion, Sub. 'A' from Captain Walter Lloyd. This portion of land was identified as the area north of the Umhlatuzana River and was given the name 'Coedmore' by Lloyd. Henry Stainbank was sent to South Africa from his native England to take care of his families shipping business as their two sailing vessels 'The Lady of the Lake' and 'The Lady Franklin' regularly sailed between Gravesend on the Thames River and Port Natal.

Henry's younger brother, Dering Lee Warner Stainbank (father of Kenneth Lyne Stainbank), soon joined him in Durban, arriving on July 24th 1857. Dering initially farmed at 'Hopewell' in the Montclair region, but left in favour of the Bellair land, south of the Umhlatuzana, in 1860. This area of land, previously known as Ndabenkulu, now forms part of the reserve known as Coedmore. In 1882, Derring Lee selected two Scotsmen to begin working on the farm buildings. These men went on to build the present house, known as Coedmore Castle, which was completed in 1885.

Throughout his years at Coedmore, Dering Stainbank gradually purchased more available land and increased his farming practices. Dering harvested various crops including coffee, which was a success and tea, which failed to thrive. For many years citrus was profitably farmed, while dairy farming was a relatively recent venture, only started towards the end of the 1950's. Milling was also seen as a small profitable venture with the water furrow and mill site still visible on the Umhlatuzana River, outside the north-east boundary of the reserve.

Sadly, Dering Lee passed away in 1907 at the age of 66. He left behind his wife, Ethel Lyne, and their five sons and two daughters. After his death, the ownership of land remained in his name until being passed into the hands of one of his sons, Kenneth Lyne Stainbank, in 1944.

Kenneth Stainbank then donated two properties (Sub 3 of A and Sub 3 of Stainbank) to the State in 1959 and this led to the proclamation of the 'Stainbank Nature Reserve' in 1963. As previously mentioned, this was amended and changed to the Kenneth Stainbank Nature Reserve in 1964. Since then, further donations and extensions of land have occurred in 1969, 1972 and 1981 and this has led to an increase in the reserves size.

On the 12th November 1982, Mr Kenneth Stainbank passed away at the age of 87. Ownership of the land surrounding the reserve was passed into the hands of Kenneth Stainbank's daughter, Elizabeth Keith.

2.8 Socio-economic context

The Kenneth Stainbank Nature Reserve falls within the eThekwini 'Durban' Metropolitan Municipality which includes an area of roughly 2,297 km2, along the KwaZulu-Natal coastline, and is home to approximately 3.5 million people.

EThekwini is an ethnically diverse municipality, with a rich cultural blend of mixed beliefs and traditions. The main populations currently inhabiting the municipality include Black African (predominantly Zulu) (71 %), Indian (19 %), White (8 %) and Coloured (2 %) with the greatest population concentrations occurring in the northern and central regions (From Durban City into Zululand). Many members of this society face social, economic and environmental challenges on a daily basis, with a 2010 study suggesting that 30.5% of eThekwini's Black African population battle the effects of poverty, as opposed to 19.5 % of the Coloured population, 9.2 % of the Asian population and only 0.3 % of the White population. This uphill battle is widely accepted to still relate to the apartheid era, which led to a major economic separation between the different racial groups residing in South Africa.

From an economic perspective, eThekwini is far less diverse (in terms of activity spread throughout the sector) than KwaZulu-Natal and South Africa as a whole and this can be attributed to the Municipality high dependence on the tertiary sector. Nevertheless, on the whole, economic growth in eThekwini outperformed that of the province and country.

The vision of eThekwini is to create the 'reputation of being Africa's most caring and liveable City, where all citizens live in harmony' and the city aims to achieve this feat through the implementation of an eight-point plan which deals with environmental sustainability, social sustainability, economic sustainability and good governance.

KSNR falls into this plan and has a responsibility to contribute fully to eThekwini's environmental and social sustainability through the protection and conservation of ecosystem functions and services. KSNR is one of the only true urban nature reserves in the eThekwini Municipality and is surrounded by residential properties and industrial development. Its location within the 'urban jungle' gives it great aesthetic value and its high biodiversity needs to be maintained to continue to draw individuals searching for the quiet only nature can provide. This close proximity to a large pool of urban residents presents the reserve with numerous opportunities which have to be capitalised on in order to benefit both the reserve and its visitors.

From a size perspective, KSNR is substantially larger then both North Park Nature Reserve (53 Ha) and Bluff Nature Reserve (45 ha) which are established in close proximity. This allows the reserve to conserve a greater range of biodiversity and effectively forms an important habitat island in a landscape surrounded by expanses of culturally modified habitats (Pickett &

Thompson 1978). Due to its sheer size, KSNR could be an important source of species diversity for emigration to surrounding smaller sink islands' of natural land (Pulliam 1988). KSNR also forms an important extension of eThekwini's D'MOSS system which was created by the municipality for both social and ecological enhancement through an integrated approach to urban open space establishment and management (Whitmore, Crouch & Slotow 2002). This D'MOSS system connects natural areas in an ecological network which allows species to migrate, immigrate and emigrate between natural landscapes. The creation of this system also promotes health and recreation amongst both locals and tourists with activities such as hiking and mountain biking available in many areas within the system.

2.9 Operational management within Kenneth Stainbank Nature Reserve

2.9.1 Infrastructure

Effective operational management within the nature reserve is dependent on its staff, the equipment and infrastructure. Infrastructure located in the Kenneth Stainbank Nature Reserve is outlined below and indicated on Map 2.3 – Infrastructure of Kenneth Stainbank Nature Reserve.

Management Infrastructure:

- Main entrance gate and building
- Officer in Charges(CM) Office and carport
- The Dive (prefab hut at CM office)
- 2 x Workshops
- 3 x Storerooms
- 2 Sheds (mower and tractor)
- Old squaredavel
- 4 Rondavels
- Gas storage (at scrapyard)
- Fencing- maintained by the reserve manager and staff

Staff accommodation:

- CSC house and carport
- Flatlet at CSC
- Reserve Managers house and garage

- Staff accommodation complex
- Field ranger kitchen
- Bottom staff housing and carport

Tourism Infrastructure:

- 3 Picnic sites
- 3 ablution facilities (at car park, top picnic site and Idube picnic site)
- Boma (at top picnic site)

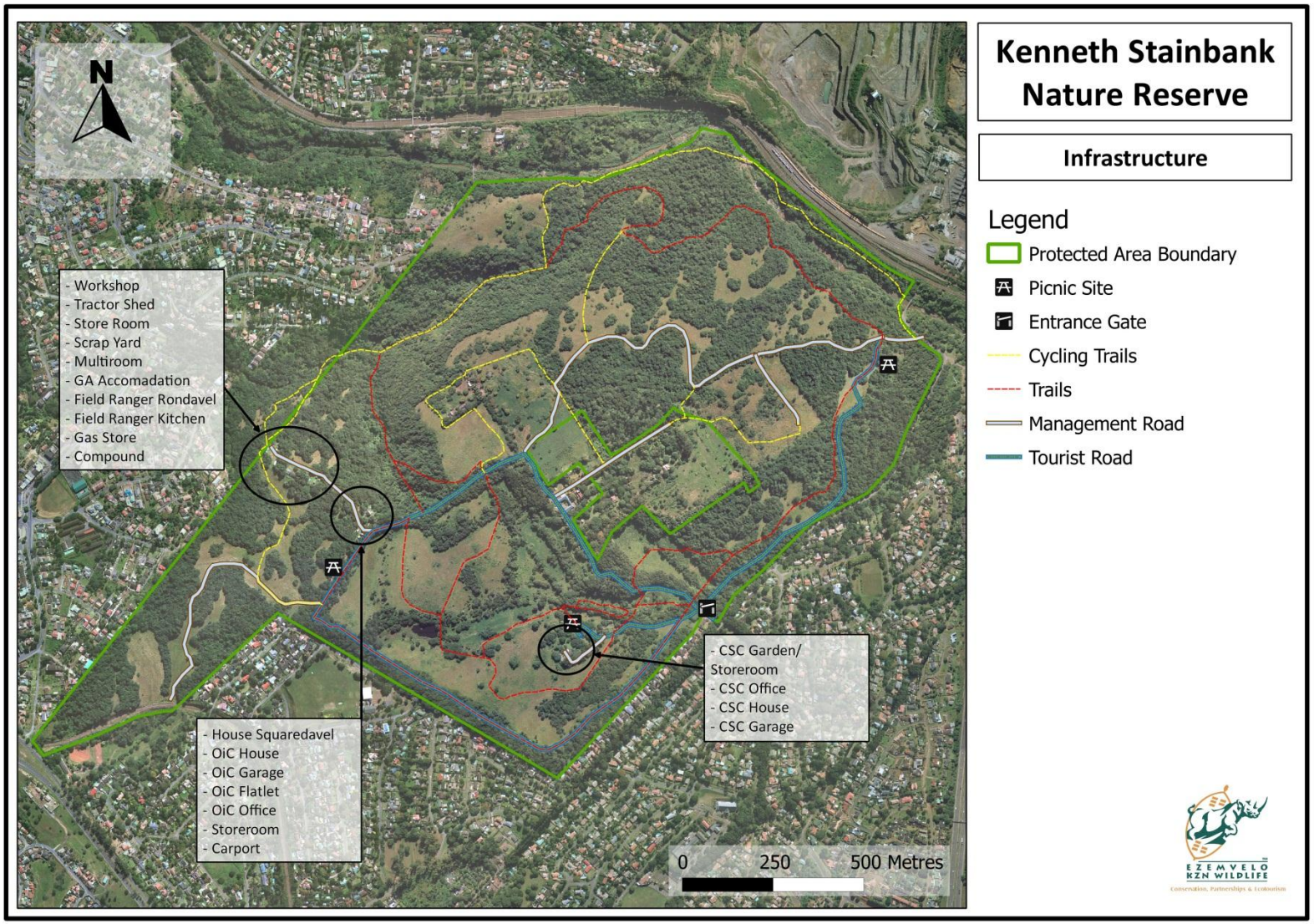

Figure 2.3 Infrastructure of Kenneth Stainbank Nature Reserve

2.9.2 Staffing establishment

Currently there are 16 permanent employees based at the Kenneth Stainbank Nature Reserve and temporary workers are occasionally employed as required.

The permanent staff compliment consists of:

- 1 x Officer in Charge
- 1 x Principal Field Ranger
- 5 x Field Rangers
- 1 x Tractor driver
- 1 x General Assistant Induna
- 6 x General Assistants
- 1x Handyman

The nature reserve is adequately staffed.

2.9.3 Funding levels at Kenneth Stainbank Nature Reserve

The management effectiveness assessment conducted by Carbutt and Goodman in 2010 indicated the funding levels at Kenneth Stainbank Nature Reserve has as operational budget of R 2520.37 per hectare and a total budget of R597 328.00.

2.9.4 Management effectiveness in Kenneth Stainbank Nature Reserve

The IUCN's World Commission on Protected Areas (WCPA3) defined management effectiveness as an assessment of how well a PA is being managed towards protecting its values and achieving its goals and objectives (Hockin et al. 2000). Ezemvelo conducted management effectiveness assessments on all of the PA's they manage, for the first time, in 2010. This assessment was then aimed to be repeated on an annual basis, to maintain an adaptive management approach.

Management effectiveness assessments generally consider four areas: PA design, delivery of PA objectives, the appropriateness of management systems and processes and ecological integrity (Carbutt & Goodman 2010). The outcomes of these assessments are intended to enable conservation organisations to enhance their conservation strategies, re-allocate budget expenditures where necessary, and develop strategic, system-wide responses to the most pervasive threats and management weaknesses (Carbutt and Goodman 2010). They are not individual performance assessments but instead are conducted to reflect an organisation's proficiency for PA management as a whole.

The 2010 results revealed KSNR to have a management effective score of 70%, placing KSNR in the top 5 position, out of all PA's managed by Ezemvelo. However, this score was below the minimum required score of 77% for Ezemvelo KZN Wildlife PA's and so issues were identified that needed to be reformed in order to reach the minimum requirement and improved the management effectiveness of KSNR.

The 2013 management effectiveness assessment took place on the 26th February at KSNR. The reserve scored 73.51% which shows an improvement from 2010 (70%) however the minimum required score for a PA has been reduced to 67% to follow national standards.

The following issues were highlighted in the 2013 assessment:

- Reserve design – Currently limits the reserve from achieving its objectives. This concern was also highlighted in the 2010 assessment and additional land was identified to rectify the issue however to no avail.
- Reserve buffers – One of the major concerns identified in both the 2010 and 2013 assessment was the lack of buffer zones (on all sides) separating the reserve from potentially incompatible land uses.
- Environmental awareness and education plan – Implementation is necessary at KSNR. This can occur through the addition of upgraded facilities, programs and signage.
- Water-use plan – This plan is necessary to manage this resource more effectively on the reserve.
- Management Plan – Update currently in progress.
- Community and advisory forums – KSNR needs to meet and engage with the local community and stakeholders on a more regular basis to keep them up-to-date with the happenings at the reserve.

Issues improved on from the 2010 assessment include:

- Cultural heritage knowledge and understanding
- Research and monitoring projects
- Tourism infrastructure

2.10 Summary of management issues, challenges and opportunities

Table 2.9.1 Management challenges and issues

Key performance area	Issue that must be addressed
Legal compliance and law enforcement	▪ Absence of legal agreements between Ezemvelo and eThekwini Municipality regarding the management of blocks 25 and 26. ▪ Absence of legal agreements between previous farm workers and Ezemvelo pertaining to them residing within the reserve or seeking alternative accommodation. ▪ Security problems (crime) within and along the reserve boundary.
Stakeholder engagement	▪ Absence of a liaison forum between KSNR and South African Police Services (SAPS), Yellowwood Park 'Park Patrol' and Bellair CPF (Community Policing Forum), Montclair and Yellow Wood Park Rate Payers Association (MWRPA) ▪ Lack of a stakeholder database
Buffer zone protection and regional management	▪ Possibility of land extension to the northern and eastern boundary of the nature reserve (See legal Compliance) ▪ Alignment of municipal planning documents including IDPs and SDFs with the requirements of the nature reserve.
Eco-cultural tourism development	▪ Absence of signs to display the cultural history of the reserve (See Operational Management). ▪ The 'disabled trail' needs to be repaired and maintained to avoid any accidents from taking place (See Operational Management). ▪ The information boards along the 'disabled trail' need to be repaired and/or replaced (See Operational Management). ▪ Tourism activities such as mountain biking and hiking need to be promoted and marketed in the local community. ▪ Alignment of tourism facilities with municipal development plans. ▪ Potential of using the nature reserve as an outdoor classroom. ▪ Past tourism ventures such as the night drives and camping should be reconsidered as these exciting ventures are not often possible in urban areas and therefore if promoted correctly, could be financially very sustainable which would benefit the reserve. ▪ The reserve needs to be better marketed and sign posted as directions to the reserve are limited (See Operational Management). ▪ Environmental awareness programmes need to be implemented at the reserve explaining its importance as a D'MOSS zone.
Conservation management	▪ Issues of soil erosion along cycling tracks, hiking trails and roads. ▪ Presence of alien plants within the nature reserve. ▪ Issues of bush encroachment taking place. ▪ Frequent issues with domestic animals entering the nature reserve. ▪ Increased build-up of solid waste within the nature reserve from the communities that resides inside the protected area. ▪ Hydrological features such as the Umhlatuzana River is often polluted with solid waste and alien invasive plant species.

Operational management	▪ Inadequate funds to maintain the nature reserve and carry out operational management duties. ▪ Staff accommodation and office buildings require minor maintenance. ▪ Lack of differentiation between visitor and staff roads within the reserve – Linked to lack of signage ▪ Staff vehicles and other reserve equipment needs to be maintained and should undergo regular testing. ▪ Old cultural buildings and structures are becoming a hazard to tourist at the nature reserve. ▪ Lack of signage in the nature reserve (See Eco-cultural tourism development). ▪ Lack of signage directing tourist to the nature reserve (See Eco-cultural tourism development).

3) STRATEGIC MANAGEMENT FRAMEWORK

In an effort to ensure that Bluff Nature Reserve is effectively managed, the following strategic framework has been developed. It is aimed at providing the strategic basis for the protection, development and operation of the nature reserve over the next five years and has been prepared collaboratively through a process involving stakeholders within Ezemvelo KZN Wildlife, the communities around the nature reserve, local and provincial government departments and other stakeholders.

The vision describes the overall long-term goal for the operation, protection and development of Bluff Nature Reserve. The objectives and strategic outcomes that follow are intended to provide the basis for the achievement of the vision. The objectives provide a broad description of the goals for each key performance area. The strategic outcomes, which flow from the objectives, set out what is needed to achieve the objectives, based on the management challenges, issues and opportunities described in Section 2 above.

3.1 Kenneth Stainbank Nature Reserve vision

A well-managed and protected nature reserve providing sustainable benefits to residents, neighbours, visitors and the metropolitan area through biodiversity conservation, environmental awareness and appropriate access to the cultural and natural resources.

3.2 Objectives and strategic outcomes

An objective has been identified for each of Kenneth Stainbank Nature Reserve key performance areas, which follow from the management challenges, issues and opportunities, and relate to the important functions and activities necessary to protect, develop and manage it effectively. The objectives have then been translated into strategic outcomes, which form the basis for the management activities and targets set out in the operational management framework, described in Section 6 below. Table 3.1 sets out the key performance areas, the objective for each key performance area and the strategic outcomes, required to realise the objectives.

Table 3.1 Objectives and strategic outcomes for Kenneth Stainbank Nature Reserve

Key performance area	Objective	Strategic outcome
Legal compliance and law enforcement	Maintain a high level of security and fulfil all legal requirements within Kenneth Stainbank Nature Reserve in order to protect its integrity and natural environment in collaboration with the justice system.	▪ There is adequate law enforcement within the nature reserve. ▪ Development and adoption of formal agreements between Ezemvelo KZN Wildlife and eThekwini Metropolitan Municipality pertaining to the management of municipal land. ▪ Develop and implement procedures and agreements between Ezemvelo and the remaining farm workers that reside within the nature reserve relating to the possibility of being relocated for the future benefit of both parties.
Stakeholder engagement	Establish and maintain effective and cordial relations with neighbouring communities and stakeholders in order to ensure effective management of the nature reserve to the benefit of the environment and surrounding neighbours.	▪ Constructive community involvement in the nature reserve's management through an effectively functioning Community Liaison Forum. ▪ Facilitate research and partnerships with educational institutions.
Buffer zone protection and regional management	Integration of the nature reserve requirements into regional and municipal plans and protect the biodiversity of KSNR from activities, processes and land uses outside its boundaries that may threaten it.	▪ Incorporation of the Kenneth Stainbank Nature Reserve's requirements into municipal and regional planning documents such as IDP's and SDF's.
Eco-cultural tourism development	Promote opportunities for eco-tourism and environmental awareness.	▪ Determination of a tourism market profile, through tourism market research for the nature reserve. ▪ Promote tourism in the area through collaboration with local municipality tourism initiatives and Ezemvelo marketing programme. ▪ Development and implementation of an environmental interpretation and education programme.
Conservation management	Protect the ecosystem functioning, ecological integrity and species of the reserve through interventions based on principles of adaptive management	▪ Development and implementation of the comprehensive fire management plan for the nature reserve. ▪ Adequate fire safety within the nature reserve is ensured.

		▪ Achievement of maintenance level of invasive plant infestations in the nature reserve. ▪ Identify and rehabilitate areas that have been affected by soil erosion as a result of various trails or roads. ▪ Implementation of procedures to manage alien animals found within the nature reserve. ▪ Determine the value of the Eco-system goods and services that Kenneth Stainbank Nature Reserve provides. ▪ If extractive resource use is undertaken, it is done legally and conforms to NEMBA Chapter 6, and the nature reserve's zonation plan. ▪ If bioprospecting is undertaken, it is done legally and conforms to NEMBA Act Nu 10 of 2004 Chapter 6, and the nature reserve's zonation plan. ▪ Implement a strategy for the management of wildlife in the nature reserve in accordance with Ezemvelo KZN Wildlife policies. ▪ Implementation of the strategy for human animal conflict. ▪ Gain a better understanding of flora and fauna within the nature reserve. ▪ Processes are established to determine the success of management interventions in protecting the ecosystems, communities and species of the nature reserve. ▪ Ensure the conservation targets of endangered and threatened species are met. ▪ Rare and endangered species management is undertaken based on the best available scientific knowledge.
Operational management	Provide adequate human resources, equipment and funding to enable the effective protection, development and management of KSNR.	▪ Implementation of the financial plan that identifies the resource needs to achieve the objectives for the nature reserve. ▪ All facilities and infrastructure in the nature reserve are adequately maintained. ▪ The nature reserve is adequately staffed for its effective management and operation.

4) ZONATION PLAN

The purpose of zonation within a protected area is to identify types and levels of usage that are acceptable based on an area's sensitivity and resilience, and to manage visitor experience and inter-user conflict. Zonation is used to identify areas in which infrastructure may be located.

4.1 Zonation of Kenneth Stainbank Nature Reserve

A standardised zonation system has been developed for all of Ezemvelo KZN Wildlife's protected areas. This system enables a protected area to be zoned according to six categories, which are spread along a continuum, starting from pristine wilderness. The zonation system recognises and reflects:

- Sensitive features associated with a protected area (i.e. biophysical, cultural and sense of place).
- A general gradation in the zonation categories, in which the next use level provides a buffer to the lower use level.
- Influence of existing and historic facilities, infrastructure and use.
- Opportunities and constraints (biophysical, social or managerial constraints) for use.

The final management zonation is a composite of ecological zonation (based on natural resource sensitivity), sense of place, cultural features, patterns of environmental settings, and existing development and use patterns. The final zonation map is represented as a desired state, i.e. directing management towards a vision for each zone, which reflects and respects the broader conservation and eco-tourism objectives for the protected area. Biophysical features that are readily located on the ground have been used to demarcate and delineate the zone boundaries.

The criteria used to determine each zone are described as:

Key feature protection overlay	▪ An area that is vulnerable or scientifically important where specific additional controls are imposed in order to prevent undesirable impacts. ▪ This zone overlay other zones instituting site specific rules and regulations in addition to the restrictions of the underlying zone.

Low use zone	▪ An area where the ecotourism principles of low human impact will prevail. ▪ This area is characterised by facilities of a rustic nature such as overnight hiking huts. ▪ Motorised access is low key and there are limited management roads and tracks.
Moderate use zone	▪ This is also an area in which the ecotourism principles of low human impact will prevail, but higher levels of usage are permitted. ▪ This area includes the main tourism road network, including access and game viewing roads. ▪ Infrastructure is accessible by motorised access in this area.
Tourism development node	▪ This is a node within the moderate use zone, which includes commercial tourism developments such as lodges, picnic and camping sites.
Park management node	▪ This is a node within the moderate use zone, which includes facilities for staff accommodation, administrative offices and operational infrastructure.
Preliminary buffer zone	▪ This is outside of a protected area, where actions and agreements are taken to protect its integrity. ▪ It is an area in which the protected area managers work collaboratively with neighbours and municipalities to try to ensure land uses that are compatible with the protected area.

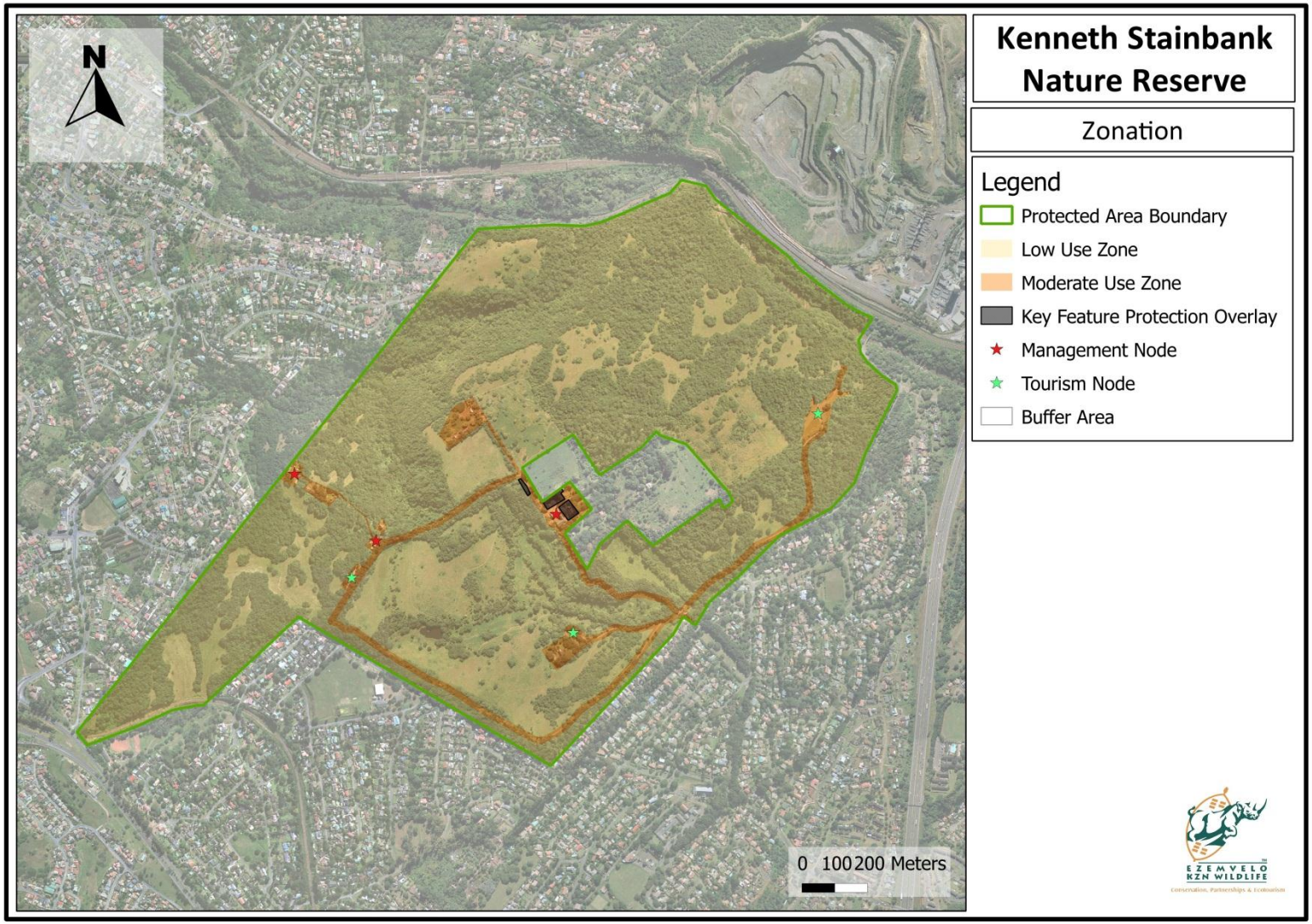

Figure 4.1 Zonation map of Kenneth Stainbank Nature Reserve

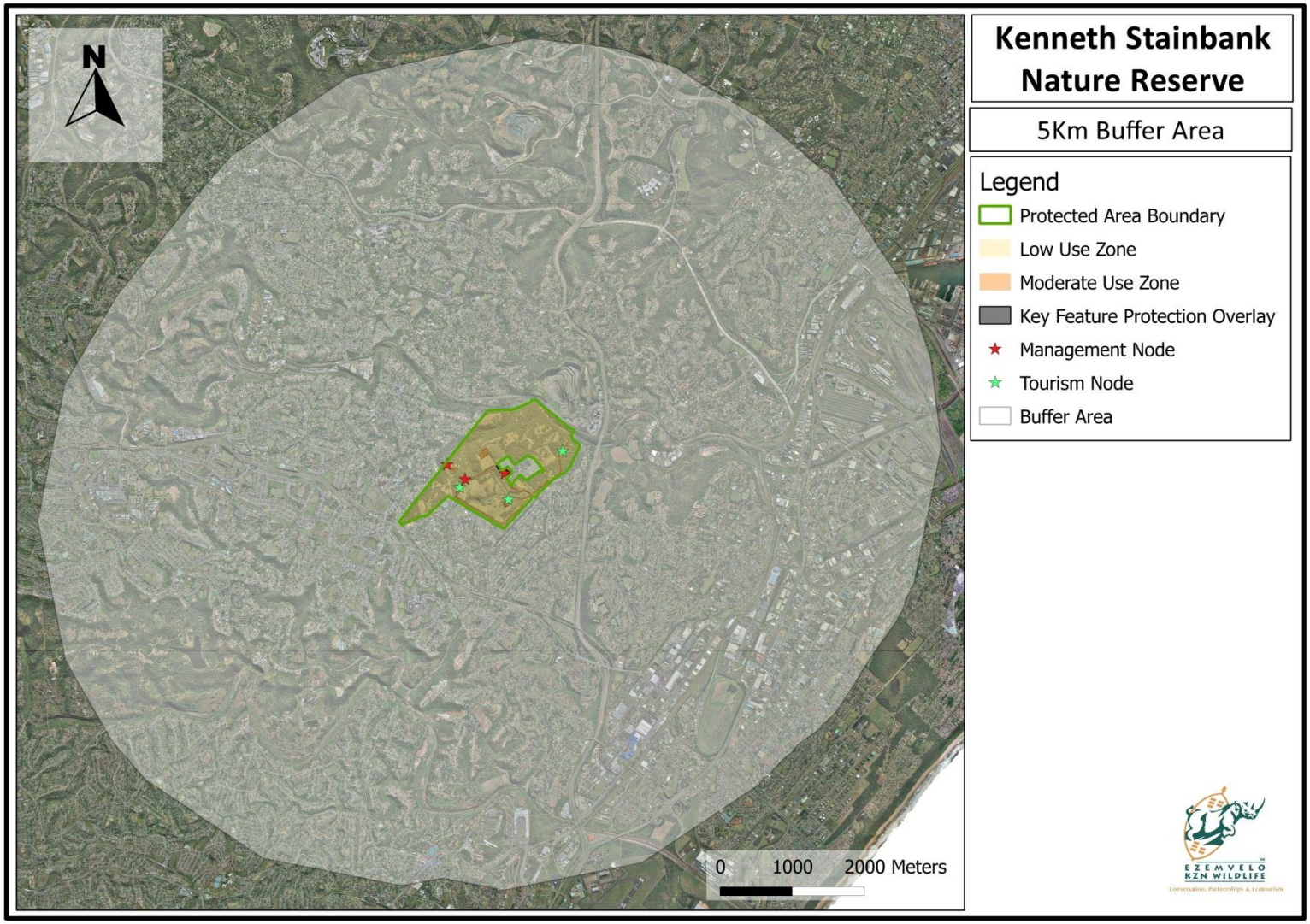

Figure 4.2 Buffer Zone of Kenneth Stainbank Nature Reserve

4.2 Concept development guidelines

The purpose of the zonation of Kenneth Stainbank Nature Reserve is to control the intensity and type of use within it, in efforts to ensure the overriding goals of biodiversity conservation are met whilst enabling acceptable levels of eco-tourism and other resource use. On this basis, within some zones, the permissible intensity of use will be relatively higher than in others.

<table>
<tr><th colspan="2">Key Feature Protection Overlay</th></tr>
<tr><td colspan="2">Description:
An area that is vulnerable and or scientifically important that require specific additional controls to prevent undesirable impacts on identified sensitive or threatened species, habitats, ecosystems, bio-control release sites, research sites, archaeological, living heritage and paleontological sites.</td></tr>
<tr><td colspan="2">Objective:
This zone is for permanent, temporary or seasonal protection of important core protected area values and aims to provide additional protection for the integrity of key areas.</td></tr>
<tr><th>Permissible activities and infrastructure</th><th>Constraints and implementation</th></tr>
<tr><td>▪ The zone may overlay other zones where a range of infrastructure may already exist.
▪ In addition to restrictions of the underlying zone, site specific rules and regulations may apply.</td><td>▪ This is a protection zone and would only allow for access and development under site specific constraints.
▪ This zone does not cater for further developments or resource utilization.
▪ This zone provides a higher level of protection than the underlying zone.
▪ Could be for permanent, temporary or seasonal protection.
▪ Changes to this overlay can be implemented through the Park planning committee and the annual management meeting and recorded as such
▪ No extractive resource use.</td></tr>
<tr><th colspan="2">Low Use Zone</th></tr>
<tr><td colspan="2">Description:
An area where there is little evidence of modification of natural processes and landscapes, that is more sensitive than the moderate use zone and where the ecotourism principles of low human impact will prevail. The zone also serves as a buffer to the wilderness zone.</td></tr>
<tr><td colspan="2">Objective:
To designate an area for tourism experiences and management activities that are focused primarily on low impact activities and where general sensitivity requires that management and tourism impacts on the natural landscape should be mitigated.</td></tr>
<tr><th>Permissible activities and infrastructure</th><th>Constraints and implementation</th></tr>
<tr><td>▪ Facilities of a rustic nature such as small bush camps, rustic overnight hiking huts, hides and trails.
▪ Motorized access is low key and 4 x 2 access provided to points where trails start or to tourist facilities.
▪ 4 x 4 tracks are allowed in this zone (number of tracks and frequency of use limited) as per site specific rules and regulations.
▪ Hiking and formalised trails.
▪ Management activities must focus on protecting</td><td>▪ Activities are mostly low impact and low density.
▪ No modern facilities such as restaurants and shops are permissible in this zone.
▪ Where possible, facilities should be developed on the periphery of the zone towards the less sensitive adjacent zone.</td></tr>
</table>

park resources and core values. ▪ Limited management roads and tracks. ▪ Controlled extractive resource use in line with Ezemvelo policies and norms and standards.	
Moderate Use Zone	
Description:	
An area where natural processes and the landscape may be altered to support protected area operation. This zone is less sensitive than the low use zone and this is where experiences, facilities, infrastructure and services are provided to visitors and where general park management activities can take place.	
Objective:	
▪ To designate a tourism area that is primarily focused on visitor experience while still securing the values of the protected area. ▪ To designate an area that serves the operational and support functions of the protected area.	
Permissible activities and infrastructure	**Constraints and implementation**

▪ Hiking on formalised trails.
▪ The tourism road network including access roads and game viewing roads.
▪ Traditional game viewing routes with associated more formalized infrastructure.
▪ Infrastructure is accessible by motorized access.
▪ Management roads and tracks.
▪ Management activities are directed to maintaining park infrastructure for biodiversity conservation, park operations, equipment and material storage.
▪ Controlled extractive resource use.
	▪ Within the moderate use zone a specific **Tourism development node** will be defined which could include areas of commercial use.
	▪ Where possible this node should be outside the protected area.
	▪ The node should preferably be on the periphery of the Moderate and Low use zone, this will ensure a quality visitor experience in the lower use zone but place the bulk of the impact e.g. access roads and services in the Moderate use zone.
	▪ This node should be developed in the less sensitive part of the moderate use zone.
	▪ The Tourism development node can only be developed in areas where it does not compromise the values of the protected area.
	▪ The node must have a specified footprint.
	▪ Examples of developments in a Tourism development node include:
	  ▪ Small, medium and large resorts.
	  ▪ Lodges
	  ▪ Rock Art Centre
	  ▪ Restaurants
	  ▪ Picnic Areas
	  ▪ Camping sites
	▪ **Park Administrative Node** (Within the Moderate use zone)
	▪ Facilities include staff accommodation, administrative offices, other operational required infrastructure, bomas and waste handling sites etc.
	▪ Wherever possible facilities and infrastructure related to park operations should be located outside of the protected area. If not possible they will form part of this node.
	▪ The node must have a specified area as a footprint.

Protected Area Buffer Zone	
Description:	

An area outside the boundary of the protected area where actions are taken and agreements are made to protect the integrity of the protected area and to enhance the livelihoods of protected area neighbours.

Objective:

To influence land use adjacent to the protected area to manage external pressures and threats that may threaten its values and objectives.

Permissible activities and infrastructure	Constraints and implementation
Each protected area must define these activities in terms of its specific values and objectives and taking into consideration the following: ▪ Alien and invasive species ▪ Pollution ▪ Impact on sense of place or wilderness ▪ Habitat fragmentation and isolation ▪ Water resource protection ▪ Damage causing animal management ▪ Climate change adaptation ▪ Compatible land use ▪ Priority species management	▪ It is desirable for the intensity of land use to decrease closer to the protected area. ▪ Discourage activities that are not compatible with the adjacent protected area zonation. ▪ Management activities will focus on: ▪ Strategically promoting and monitoring compatible land-use and land-care on adjacent lands and upstream catchments ▪ Integrated alien species control ▪ Biodiversity stewardship and environmental awareness ▪ Working collaboratively with neighbours to secure sensitive sites that contribute to the protection of values and objectives of the protected area. ▪ Influencing and input into the municipal and regional planning tools such as SDF's, Schemes, IDP's and Bioregional plans. ▪ Park management is responsible for the buffer zone management and planning. ▪ The Buffer should spatially indicate the 5km and 10 km border of listed activities as per National Environmental Management Act No. 107 of 1998 Notice 3 of 2010.

5) ADMINISTRATIVE STRUCTURE

A recommended organisational structure for Kenneth Stainbank Nature Reserve is set out in Figure 5.1. The figure represents the staff complement and positions that are required to enable the effective operation, management and protection of Kenneth Stainbank Nature Reserve.

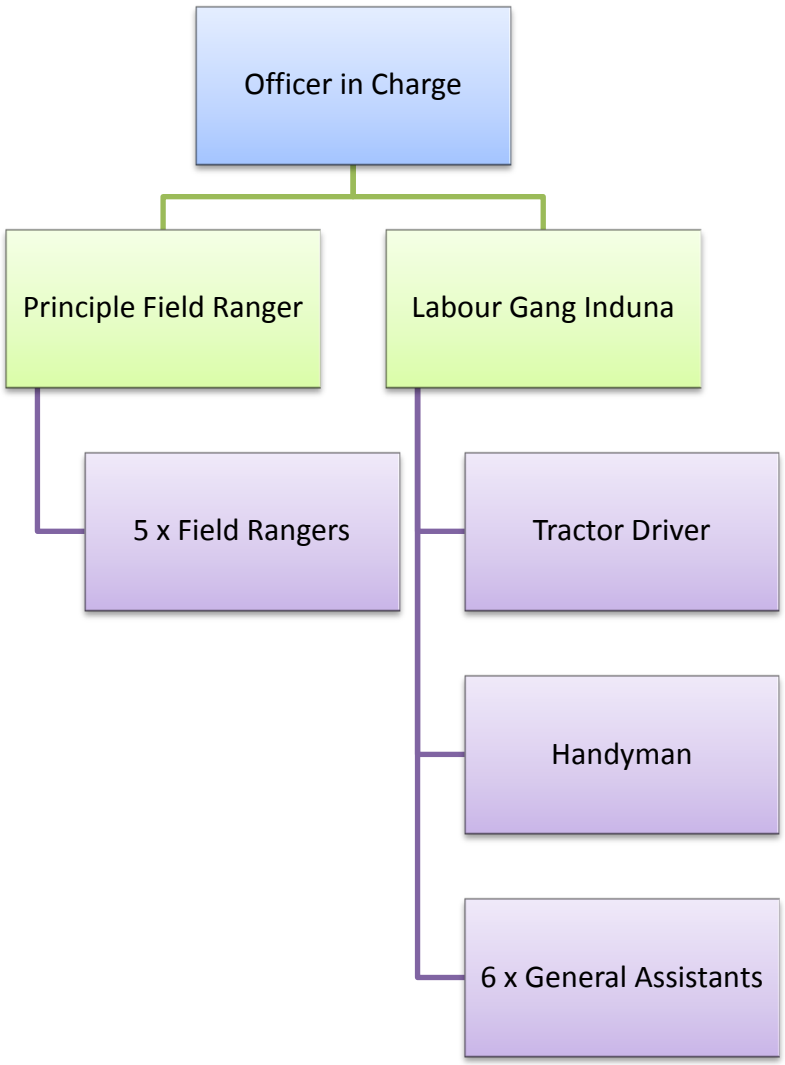

Figure 5.1 Recommended organisational structure for Kenneth Stainbank Nature Reserve

6) OPERATIONAL MANAGEMENT FRAMEWORK

This section translates the strategic framework described in Section 3 above into management activities and targets, which will be used to inform annual plans of operation and the resources required to implement them. The management targets will form the basis for monitoring of performance in implementing the plan and are thus measurable.

6.1 Determination of priorities for strategic outcomes

In the tables that follow in this section, a column has been included entitled "Priority", which is intended to convey the level of priority attached to its strategic outcome. The purpose of prioritising activities is to direct funds and resources to the most important activities, in the event that there are insufficient funds or resources to undertake all of the activities outlined in a particular year. Priorities are ordered in five categories, which have been determined on the following basis:

Priority 1:	A management target that is central to the responsibilities and mandate of Ezemvelo or that addresses an aspect of management that is fundamental to the protection of the values and purpose of Kenneth Stainbank Nature Reserve.
Priority 2:	A management target that addresses an aspect of management that contributes towards community involvement and support for the conservation of Kenneth Stainbank Nature Reserve, which is a key principle of effective protected area management.
Priority 3:	A management target that indirectly contributes towards the protection of biodiversity or the development of social and/or economic benefits and opportunities for Kenneth Stainbank Nature Reserve, and/or its surrounding local communities.

The priorities are presented in the tables below using the colour system above, which depicts the level of priority shown for the particular strategic outcome. In addition, a date is indicated in the priorities column for each strategic outcome, which is intended to convey the end date by which the management target must have been achieved.

6.2 Legal compliance and law enforcement

Through its mandate to undertake the conservation and management of protected areas in KwaZulu-Natal, Ezemvelo KZN Wildlife must ensure that the province's protected areas are appropriately legally protected and that the laws governing the use of protected areas and the prohibition of particular activities are enforced. In fulfilling this role, the managers of Kenneth Stainbank Nature Reserve will adhere to the following guiding principles:

- All reasonable efforts must be made to ensure the effective conservation of biodiversity within and on the boundaries of the nature reserve.
- Cooperative structures should be established to enable participation by key stakeholders such as local communities and the South African Police Service in addressing offences and breaches of the law.
- Law enforcement within the nature reserve will be undertaken through surveillance, monitoring and appropriate reaction in the event of an offence.

6.3 Stakeholder engagement

Constructive relationships with adjacent landowners and communities are an important aspect of the effective conservation of protected areas. Stakeholder engagement should be aimed at developing a strong sense of partnership between the neighbours and communities around the nature reserve and its managers. The following guiding principles should be adhered to:

- Efforts should be made to ensure that the communities living around the nature reserve are aware of the role that it fulfils in biodiversity protection and the provision of ecosystem services to the region.
- Stakeholder engagement should be undertaken to engender a sense of ownership of the nature reserve, within the communities, and support for its biodiversity conservation objectives.
- A common understanding of the issues that affect both the nature reserve and the surrounding communities should be developed and efforts to resolve them should be undertaken cooperatively.

6.3.1 Liaison Forum

Kenneth Stainbank Nature Reserve is relatively small in size however there are a number of various stakeholders associated with the nature reserve. There is currently no community liaison forum present for the reserve and relevant stakeholders. The management team should champion the development of a community liaison forum where all external issues and ideas will be discussed.

The operational requirements for legal compliance and enforcement, and stakeholder engagement are set out in Table 6.1 below.

Table 6.1 Framework for legal compliance and law enforcement, and stakeholder engagement

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
LAW ENFORCEMENT					
There is adequate law enforcement within the nature reserve.	▪ Develop an integrated security strategy for the nature reserve, which ensures collaboration with all relevant institutions.	▪ Creation of cooperative structures with local communities and law enforcement officials.	▪ Frequent recovery of snares. ▪ Arson fires. ▪ Recorded losses of game species. ▪ Recorded losses of known rare and endangered plant species. ▪ Reports of criminal incidents within and around the reserve. ▪ Inappropriate behaviour by patrons visiting the nature reserve	***Year 2***	Officer in Charge, District Conservation officer
	▪ Ensure that staff are equipped and trained to undertake patrols within the nature reserve for law enforcement purposes. ▪ Implement a programme of patrols of the nature reserve and its boundaries.	▪ Regular patrols covering the full extent of the nature reserve. ▪ Prosecution of any offender caught committing an offence.		***Year 1- on-going***	Officer in Charge
Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
STAKEHOLDER ENGAGEMENT					
Constructive community involvement in the nature reserve's management through an effectively functioning Community Liaison Forum.	▪ Collate a database with the contact details of relevant stakeholders. ▪ Develop a community liaison forum for the nature reserve and surrounding communities. ▪ Conduct regular meetings in order to incorporate community-related management issues. ▪ Ensure open lines of communication between members of the local communities and the nature reserve's management.	▪ A database of all stakeholders affiliated with the nature reserve. ▪ A fully developed community liaison forum for KSNR. ▪ Quarterly meetings of the KSNR community liaison forum. ▪ Easy communication between the nature reserve management and local communities.	▪ Not all stakeholders affiliated with the nature reserve are consulted. ▪ Lack of regular meetings. ▪ Community dissatisfaction with the nature reserve. ▪ No input from the local community.	***Year 1- on-going***	Officer in Charge and Community Conservation Officer
Facilitate research and partnerships with educational	▪ Identify possible co-learning opportunities with various relevant institutions & partner organizations. ▪ Prioritize and communicate relevant co-learning opportunities to	▪ Priority research and programme list.	▪ Inability to meet the learning outcomes and opportunities of the	***on-going***	Officer in Charge and Community

institutions.	relevant institutions and organisations.		nature reserve. ▪ Unclear understanding of the functioning of the nature reserve.		Conservation Officer
Develop and implement procedures and agreements between Ezemvelo and the remaining farm workers that reside within the nature reserve relating to the possibility of being relocated for the future benefit of both parties.	▪ Contact all inhabitants of the nature reserve and build up a stakeholder database for them. ▪ Develop a map depicting infrastructure associated with the farm workers. ▪ Workshop the requirements of the nature reserve, alternatives and the way forward. ▪ Formalize agreements between the remaining farm workers and Ezemvelo.	▪ Develop a stakeholder database for the remaining farm workers. ▪ A map depicting all infrastructures relating to the farm workers. ▪ A workshop to discuss the requirements of the nature reserve, alternatives and the way forward. ▪ A fully developed legal agreement between Ezemvelo and each family residing on the reserve.	▪ Increased number of members in each farm workers family. ▪ Increased amount of solid waste produced. ▪ Increased impacts on the nature reserve resulting from an increase in population numbers within the nature reserve. ▪	***Year 1- on-going***	Officer in Charge, Regional Management.

6.4 Buffer zone protection and regional management

6.4.1 Local and regional planning

It is important, in managing the buffer areas around the nature reserve, that Ezemvelo KZN Wildlife work with local government authorities to ensure that their land use planning considers the biodiversity conservation imperatives of Kenneth Stainbank Nature Reserve. In this regard it is necessary to ensure that buffer zone considerations are captured in planning tools such as IDPs and SDFs. In developing relationships with the local and district municipality, Ezemvelo KZN Wildlife will adhere to the following guiding principles:

- Relationships with local government and other provincial and national departments will be developed in the spirit of cooperative governance.
- Ezemvelo KZN Wildlife will endeavour to assist the local and district municipality in determining appropriate land uses and development strategies in the areas surrounding the nature reserve.
- Ezemvelo KZN Wildlife will endeavour to align its plans and strategies with the programmes and strategies of the local and district municipality, where appropriate.

The detailed operational requirements for buffer zone protection and regional management are set out in Table 6.2 below.

Table 6.2 Framework for buffer zone protection and regional management

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
PROTECTED AREA EXPANSION AND LOCAL AND REGIONAL PLANNING					
Development and adoption of formal agreements between Ezemvelo KZN Wildlife and eThekwini Metropolitan Municipality pertaining to the management of municipal land (See also: Buffer zone protection and regional management)	▪ Contact relevant authorities regarding municipal land and spatial planning from eThekwini Metropolitan Municipal offices. ▪ Set up a meeting to discuss the way forward and implement. ▪ Formalize legal agreements between Ezemvelo and eThekwini Metropolitan Municipality.	▪ Minutes of the meeting between Ezemvelo and eThekwini Municipality. ▪ A fully developed legal agreement between both parties.	▪ Developments taking place around the nature reserve that is incompatible to that of the requirements of the nature reserve. ▪ Land invasion by informal settlements. ▪ Clearing of vegetation from areas around the nature reserve that falls within the expansion area.	***Year 1- on-going***	Officer in Charge, Regional Management.
Incorporation of the Kenneth Stainbank Nature Reserve's requirements into municipal and regional planning documents such as IDP's and SDF's.	▪ Make inputs into the development of local and district municipality IDPs and SDFs in an effort to avoid environmentally harmful land uses in close proximately to KSNR. ▪ In collaboration with the planning department of the Metropolitan Municipal offices, make joint decisions regarding the best land use practices surrounding the nature reserve.	▪ Adoption of environmentally appropriate land uses in IDPs and SDFs in the areas immediately surrounding the nature reserve. ▪ Retention of existing benign land uses in the areas immediately surrounding the nature reserve.	▪ Identification/approval of environmentally harmful land uses on the boundaries of the nature reserve.	***Annually***	Officer in Charge, Regional Management

6.5 Eco-cultural tourism development and management

6.5.1 Tourism product development and Management

Ezemvelo KZN Wildlife has the mandate to sustainably develop Kenneth Stainbank Nature Reserve to fully realise its eco-tourism and associated income-generating potential, within the context of protecting its biodiversity and cultural values. Several nature-based tourism products have been developed within the nature reserve and there is the potential to further develop nature-based and cultural-based tourism products. In further developing tourism within the nature reserve, the following guiding principles should be adhered to:

- Tourism products managed within the nature reserve must be appropriate to the values and purpose for which the nature reserve has been proclaimed and must not threaten its biodiversity or ecological function.
- Tourism products should be designed to capitalise on the unique beauty and biodiversity features of the nature reserve.
- Tourism products should be managed in response to tourism market demands and opportunities within the nature reserve and should be carefully assessed to determine their viability.
- The management of tourism products within the nature reserve must be integrated with tourism strategies and plans in the region.
- Tourism should be used as a tool for the generation of economic activity and employment in the communities surrounding the nature reserve.

6.5.2 Environmental interpretation and education

Environmental interpretation and education of Kenneth Stainbank Nature Reserve natural and cultural resources will be aimed at creating awareness, understanding and appreciation of its biodiversity and ecological function, and their significance. In developing an environmental interpretation and education programme, the following guiding principles should be adhered to:

- There should be a strong focus on neighbouring communities, in efforts to engage, inform and benefit them.
- Wherever possible, local community members should be trained to assist and operate environmental interpretation and education tours.

The detailed operational requirements for eco-tourism development and environmental interpretation and education are set out in Table 6.3 below.

Table 6.3 Framework for eco-tourism

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
TOURISM PRODUCT DEVELOPMENT AND MANAGEMENT					
Determination of a tourism market profile, through tourism market research for the nature reserve.	▪ Capture visitor information and statistics in order to better understand the nature reserve's tourist numbers and market. ▪ Develop an understanding of tourism in the region in order to inform the types of products and activities that may be offered.	▪ An understanding of annual tourist numbers and a tourism market profile for the nature reserve.	▪ Declining tourist numbers. ▪ Unhappy tourist.	***Year 3***	Ezemvelo KZN Wildlife Ecotourism and Marketing Unit
Promote tourism in the area through collaboration with the eThekwini Municipality tourism initiatives and Ezemvelo marketing programme.	▪ Re-introduce previous tourist activities based on the outcomes of the tourism market profile. ▪ Develop and implement a marketing strategy to be incorporated in the Ezemvelo marketing programme. ▪ Promote tourism activities of the nature reserve with the aid of eThekwini Municipality tourism marketing. ▪ Engage regularly with the eThekwini Municipality to ensure that any planned tourism activities are aligned with regional tourism initiatives.	▪ A marketing strategy to be incorporated into Ezemvelo marketing programme. ▪ Report on the increase of visitor numbers.	▪ Declining tourist numbers.	***After the implementation of new tourism products***	Officer in Charge, Ezemvelo Marketing Unit and eThekwini Municipality Tourism Body.
ENVIRONMENTAL INTERPRETATION AND EDUCATION					
Development and implementation of an environmental interpretation and education programme.	▪ Focus on environmental interpretation and education amongst the nature reserve's neighbouring communities and visitors. ▪ Employ and train members of the local community to assist in and to implement the programme.	▪ Provision of an environmental interpretation and education tour to each school in the neighbouring local communities.	▪ Lack of interest in implementing the programme.	***Year 3***	Ezemvelo KZN Wildlife Community Conservation Officer

6.6 Conservation management

6.6.1 Fire management

Fire plays an important role in the ecological dynamics of grasslands and wetlands, and has important effects on vegetation composition, primary productivity and nutrient cycling. In developing burning and fire management strategies for the nature reserve, the following guiding principles should be adhered to:

- Burning should be undertaken in such a way that it maintains spatial and temporal heterogeneity within the landscape.
- A patch mosaic of burnt and un-burnt areas should be maintained.
- The burning of areas should be undertaken in such a way that promotes patchy burns (i.e. within the block being burnt, some patches will remain un-burnt rather than aiming for a complete burn).
- Burning must be undertaken with due consideration to the biodiversity conservation requirements of the nature reserve and the need to protect rare and endangered species.
- Burning and fire management must be undertaken in a safe manner that is legally compliant with the National Veld and Forest Fire Act (No.101 of 1998).

In terms of Section 17 of the National Veld and Forest Fires Act, a landowner (in this case the nature reserve) must have such equipment, protective clothing and trained personnel for extinguishing fires as may be prescribed or, if not prescribed, reasonably required in the circumstances. It is therefore necessary to consider the following in relation to fire fighting:

- The need to maintain a system of firebreaks to enable the management of controlled burns and to effectively fight wildfires.
- The size of the nature reserve and the requirements necessary to access different areas in the event of a wildfire. This relates to both roads and vehicles.
- The number of personnel necessary to effectively fight wildfires.
- The equipment necessary to effectively fight wildfires. This would include:
    - Water tankers and pressure pumps mounted on or pulled behind tractors.
    - Fire fighting equipment mounted on the backs of vehicles.
    - Backpack sprayers.
    - Beaters.
    - Safety equipment for personnel involved in fire fighting.

The detailed operational requirements for fire management are set out in Table 6.4 below.

Table 6.4 Framework for conservation management – fire management

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
FIRE MANAGEMENT					
Development of a comprehensive fire management plan for the nature reserve.	▪ The fire management plan must address: ○ Fire management objectives; ○ Scientific understanding; ○ Legal compliance; ○ Equipment, personnel training requirements; ○ Monitoring and research required. ▪ Implement the fire management plan. ▪ Review the previous fire seasons burns in order to determine the burning plan for the coming season.	▪ Adoption and implementation of the fire management plan. ▪ An up to date fire management plan for the nature reserve. ▪ Annual burns are aligned to burning objectives	▪ Burning regimes that result in ecological degradation of the nature reserve. ▪ Unplanned fires. ▪ Burning objectives are compromised	***Year 1***	Officer in Charge and Ecological Advice Unit
Adequate fire safety within the nature reserve is ensured.	▪ Maintain a system of firebreaks within the nature reserve that are of adequate extent, which are prepared at the correct time of the year under the appropriate weather conditions. ▪ Ensure that staffs are trained and that adequate fire fighting equipment is available within the nature reserve.	▪ Enable the nature reserve to have efficient firebreaks in place. ▪ Compliance with the National Veld and Forest Fires Act.	▪ Inadequate personnel, equipment or an inability to communicate effectively in fighting fires. ▪ Wildfires spreading from the nature reserve to neighbouring properties.	***On-going***	Officer in Charge

6.6.2 Invasive plant control

A listed invasive species means any species, which is listed in terms of section 70 of the Biodiversity Act, whose establishment and spread occurs outside of its natural distribution range. Such plants are considered to be a serious threat to the ecological functioning of natural systems and to water production, and must be strictly controlled. In undertaking invasive plant control, the following guiding principles will be adhered to:

- Invasive plant control will require an on-going programme that prioritises key infestations along water courses, drainage lines and upper catchment areas.
- Initial clearing efforts should focus on containing infestations that are most likely to spread into new areas.
- All follow-up requirements must be strictly adhered to otherwise the problem will be exacerbated.
- Strategic partnerships and poverty relief programmes such as the Working for Water programme should be utilised in controlling invasive plants.

An on-going time-bound programme to effectively control these alien weeds and invader plants within Kenneth Stainbank Nature Reserve must be developed and maintained. State poverty relief programmes such as “Working for Water”, “Working on Fire” and “Working for Wetlands” should be used to full effect to complement the nature reserve budget for this management task.

6.6.3 Soil erosion control

Soil erosion is a process, which takes place naturally in the nature reserve. However, in the case of human-induced and / or accelerated soil erosion, appropriate remedial management action must be taken.

Human-induced and / or accelerated soil erosion in the nature reserve is primarily the result of poor alignment and management of footpaths and vehicle tracks as well as the creation of paths by cyclist and trails. Areas that have been cleared of invasive alien vegetation are also at risk and must be rehabilitated as appropriate. If a system of paths or trails is ever to be set up it must be effectively designed in a manner that will require minimal maintenance and to have the lowest possible risk of causing soil erosion.

In addressing soil erosion, the following guiding principles should be adhered to:

- Areas impacted by soil erosion should be stabilised and re-vegetated with indigenous plant species to prevent the spread of listed invasive plant species.
- Areas susceptible to soil erosion, or showing early signs of soil erosion such as loss of vegetation cover, must be managed to prevent soil erosion.

Soil erosion control and rehabilitation measures may include the need to re-vegetate disturbed areas. A detailed assessment of the nature and extent of soil erosion within the nature reserve will determine the appropriate responses required and the costs associated with them.

The detailed operational requirements for invasive plant and soil erosion control are set out in Table 6.5 below.

Table 6.5 Framework for conservation management – invasive plant control and soil erosion control

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
INVASIVE PLANT CONTROL					
Achievement of maintenance level of invasive plant infestations in the nature reserve.	▪ Implement the control plan in collaboration with IASP for the nature reserve. ▪ Implement concerted, sustained control efforts in identified areas of heavy invasive plant infestation. ▪ Implement a phased programme to replace and remove identified alien trees with indigenous species. ▪ Maintain vigilance for any emerging invasive and alien species.	▪ Maintain maintenance levels for all species. ▪ Compliance with the Biodiversity Act.	▪ Further spread of existing levels of infestation of listed invasive species. ▪ Persistence of existing infestations. ▪ New infestations of listed invasive species.	***Year 1***	Officer in Charge, Field Rangers, Ecological Advice Unit and Alien Plant Control Unit
SOIL EROSION CONTROL					
Identify and rehabilitate areas that have been affected by soil erosion as a result of various trails or roads.	▪ Undertake a detailed survey of the nature reserve to identify the extent and severity of soil erosion. ▪ Identify the requirements for soil erosion control and rehabilitation within the nature reserve. ▪ Implement soil erosion control and rehabilitation measures, focussing strategically on key areas such as those impacting on watercourses or that are growing larger. ▪ Undertake preventative measures in areas with low plant cover that may be at risk of soil erosion.	▪ A detailed map depicting areas of soil erosion within the nature reserve. ▪ Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion.	▪ Further erosion of impacted areas. ▪ Sedimentation impacts in watercourses and wetland areas.	***Year 5***	Officer in Charge

6.6.4 Alien animal control

Alien animal species can threaten the ecological, genetic or natural aesthetic integrity of Kenneth Stainbank Nature Reserve and can be vectors for the spread of diseases. In dealing with the control of alien animals, procedures to deal with animals that stray into the nature reserve should be developed. In addressing alien animal control, the following guiding principles should be adhered to:

- Domestic animals such as horses and donkeys will only be allowed if kept at the nature reserve for official purposes such as patrolling.
- Feral animal species that pose a threat to indigenous species will be destroyed (as humanely as practicably possible with due regard to the tourist experience).

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

If neighbouring landowners contact the Kenneth Stainbank Nature Reserve Officer in Charge timorously and are able to demonstrate clearly that animals originating from the nature reserve are causing them damage, the Officer in Charge must attempt to capture or destroy that animal according best-practice guidelines for this type of control work.

Any control actions in terms of Red Data Book species need authorization of the NRPC.

Rabid animals must be destroyed as soon as they are detected.

6.6.5 Resource utilisation

It is an accepted tenet of biodiversity conservation in South Africa and KwaZulu-Natal that the sustainable use of natural and biological resources may be undertaken within a protected area, provided that it does not compromise its ecological functioning or biodiversity conservation imperatives. Accordingly, applications for the extractive use of resources within the nature reserve will be considered, based on the following guiding principles:

- The context of the nature reserve's zonation plan, in particular the ecological sensitivity of particular areas.
- The benefits that such resource use will provide to the neighbouring communities around the nature reserve.
- The equitable access of members of the neighbouring communities to such resource use opportunities.
- Whether activities such as the collection of biological materials/samples are for legitimate scientific purposes, are from *bone fide* South African research institutions and are undertaken in accordance with relevant Ezemvelo KZN Wildlife policies.
- The ability of the nature reserve's managers to effectively control and monitor such resource use.

Ezemvelo will consider requests for extractive use of plant and animal resources provided that the natural and cultural heritage conservation management objectives are not compromised, and there is no long-term detrimental effect on the ecological and managerial functioning of the nature reserve.

Illegal activities within Kenneth Stainbank Nature Reserve and illegal utilization of natural resources are realities that are ever- present. In addition, it must be assumed that such threats have the potential to increase significantly.

It is policy to maintain an on-going vigilance through cost-effective surveillance monitoring programmes and reaction capabilities. It is noted that the neighbours are potentially of key importance in this regard. To further assist in maintaining the ecological integrity of Kenneth Stainbank Nature Reserve, it is essential that the situation be regularly and critically recorded and assessed in terms of a well-kept statistical incident register (See also monitoring and Evaluation under Par. 7).

The main effort towards resolving illegal utilization of natural resources by communities for purposes of subsistence will be to create understanding and awareness through pro-active and reactive environmental awareness programmes. Management will however be ruthless with those that illegally utilize natural resources for commercial or other purposes.

6.6.5.1 Plants and Animals

Extractive resource use applications must be considered within the framework of the Ezemvelo Board: Biodiversity Conservation Operations: Resource-use Corporate Policies No. 3.12 to 3.18 (Appendix D – Ezemvelo Corporate Policies [Norms and Standards]).

The Kenneth Stainbank Nature Reserve Planning Committee must evaluate applications according to accepted guidelines that ensure:

- sustainable and wise use of the resource,
- ecological and social acceptability,
- benefit to neighbouring communities,
- equitable access to the resource,
- that the transaction is within the conditions of the PFMA,
- that the harvesting operations are effectively controlled and monitored,
- a written agreement stipulating resource price and conditions of harvest, and
- Due consideration of alternatives.

6.6.5.2 Bioprospecting

Requests to collect biological material / samples from Kenneth Stainbank Nature Reserve will only be considered in accordance with the Ezemvelo Board: Biodiversity Conservation Operations: Integrated Environmental Management Corporate Policy No. 2.15 (Appendix D – Ezemvelo Corporate Policies [Norms and Standards]) and in accordance with NEMBA chapter 6 (Bioprospecting, Access and Benefit Sharing).

Bioprospecting activities within the nature reserve must be closely monitored and regulated in terms of present environmental legislation.

The detailed operational requirements for alien animal control and resource utilisation are set out in Table 6.6 below.

Table 6.6 Framework for conservation management – alien animal control and resource utilisation

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
ALIEN ANIMAL CONTROL					
Implementation of procedures to manage alien animals found within the nature reserve.	▪ Together with neighbouring communities, agree on the approach to dealing with domestic animals found in the nature reserve, particularly dogs, which may be used for illegal hunting. ▪ Analyse the entry points that may be "soft targets" for alien animals to enter the nature reserve. ▪ Monitor and record the effectiveness of such control measures.	▪ Creation of cooperative structures between Ezemvelo KZN Wildlife, local communities and law enforcement officials. ▪ Control of any alien animals found within the nature reserve. ▪ Continued monitoring of control measures.	▪ Uncontrolled access of domestic animals within the nature reserve. ▪ Incidents are not reported or monitored. ▪ Illegal and unlawful entry into the nature reserve via areas known as "soft targets".	***on-going***	Officer in Charge
RESOURCE UTILISATION					
Determine the value of the Eco-system goods and services that KSNR contributes to.	▪ Initiate a study to identify and quantify the value of the ecosystem goods and services of KSNR and expansion areas.	▪ Concise knowledge of the value of goods and services that KSNR has to offer.	▪ Lack of understanding of the value of the goods and services contributed by the nature reserve.	***Year 4***	Resource Use Ecologist
If extractive resource use is undertaken, it is done legally and conforms to NEMBA Chapter 6 and the nature reserve's zonation plan.	▪ Consider, with relevant scientific and management staff request, for extractive resource use in accordance with relevant National and provincial Legislation, norms, standards and guidelines. ▪ If resource use is approved, communicate with neighbouring communities on the agreed approach to sustainable resource use in the nature reserve. ▪ Approved resource use is managed, monitored and reported. ▪ Ensure that resource use is in line with zonation of nature reserve.	▪ An agreed upon approach to any extractive resource use. ▪ Approved resource use records	▪ Uncontrolled or unsustainable resource extraction ▪ Resource use not monitored or reported.	***If required***	Officer in Charge and Resource Use Ecologist
If bioprospecting is undertaken, it is done legally and conforms to NEMBA Act Nu 10 of 2004 Chapter 6, and the nature reserve's zonation plan.	▪ Only allow the collection of biological materials or samples if the appropriate permits or permission has been given in accordance with Ezemvelo KZN Wildlife policy.	▪ No illegal collection of biological material or samples.	▪ Illegal collection of biological material or samples.	***If required***	Officer in Charge and Resource Use Ecologist

6.6.6 Wildlife management

Management interventions related to indigenous wildlife will be limited to those that are for the purposes of safeguarding populations of rare and endangered species or to meet set conservation targets. Interventions may also be required for problem animal management. In addressing wildlife management, the following guiding principles should be adhered to:

- Wildlife management must be focussed primarily on protecting the ecological functioning of the nature reserve and meeting set provincial conservation targets for species and vegetation types.
- The introduction of indigenous species into the nature reserve must be undertaken in accordance with relevant Ezemvelo KZN Wildlife policies.
- Population management of wildlife species may be required to ensure that such species are not causing ecological degradation of the nature reserve.
- Animals that become a danger or excessive nuisance to persons and property due to either habituation or aberrant behaviour must be managed in accordance with relevant Ezemvelo KZN Wildlife policies.

6.6.7 Conservation targets

The 2011 version of the KwaZulu-Natal systematic biodiversity plan identifies the provincial conservation targets referred to in Section 6.6.6, above. The conservation of Kenneth Stainbank Nature Reserve contributes towards the achievement of a portion of some of these targets. Targets will continue to be updated as knowledge develops about the ecology of areas, connectivity between them, and other process requirements for ecosystems, communities and species. On this basis, the conservation targets should be viewed as a set of working hypotheses around which conservation planning and evaluation can take place. An advantage of developing strategies around targets is that this process highlights critical knowledge deficits thus guiding future research.

Table 6.7 Systematic biodiversity planning conservation targets to which Kenneth Stainbank Nature Reserve contributes

Feature Name	Description	Percentage of target located within Kenneth Stainbank Nature Reserve	Status
Eremidium erectus	Grasshopper	0.54	-
Centrobolus anulatus	Millipede	5.07	-
Doratogonus falcatus	Millipede	1.11	-
Doratogonus natalensis	Millipede	0.64	-

Doratogonus peregrinus	Millipede	2.34	-
Gnomeskelus spectabilis	Millipede	4.38	-
Cochlitoma semidecussata	Molusc	8.54	-
Edouardia conulus	Molusc	0.09	-
Euonyma lymneaeformis	Molusc	0.08	-
Gulella kraussi	Molusc	11.11	-
Barleria natalensis	Plant	1.31	-
Vernonia africana	Plant	1.31	-
Bradypodion melanocephalum	Reptile	5.92	-
KwaZulu-Natal Coastal Forests	Vegetation Type	0.38	Least Threatened
North Coast Grassland	Vegetation Type	0.00	Critically Endangered

The detailed operational requirements for wildlife management and the achievement of conservation targets are set out in Table 6.8 below.

Table 6.8 Framework for conservation management – wildlife management and conservation targets

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
WILDLIFE MANAGEMENT					
Development of a strategy for the introduction and management of wildlife into the nature reserve in accordance with Ezemvelo policies.	▪ Ensure that any proposals for the introduction of wildlife species conform to Ezemvelo KZN Wildlife policies. ▪ Ensure that only species known to have historically occurred in the nature reserve are re-introduced. ▪ Ensure that species introductions are adequately documented.	▪ An agreed upon approach to future wildlife species introductions.	▪ Ad hoc introductions of species, particularly those that may not have historically occurred in the nature reserve.	***Year 5***	Ezemvelo Ecological Advice Unit and Officer in charge
	▪ Ensure that adequate population control measures are included in the strategy for the management of wildlife in the nature reserve.	▪ Control of population numbers of species that are exceeding identified carrying capacities.	▪ Ecological degradation as a result of over-stocking of wildlife species	***Ongoing***	
Implement a strategy for the management of wildlife in the nature reserve in accordance with Ezemvelo policies.	▪ Implement the strategy in order to manage wildlife within the nature reserve in accordance with Ezemvelo norms and standards.	▪ An implemented strategy to manage wildlife present in the nature reserve.	▪ No records of management strategies to base future management on.	***Year 3***	Officer in Charge and Ecological Advice
	▪ Ensure that adequate population control measures are included in the strategy for the management of wildlife in the nature reserve.	▪ Control population numbers of species that are exceeding identified carrying capacities.	▪ Ecological degradation as a result of over-stocking of wildlife species	***Ongoing***	
Development and implementation of a strategy for problem animal control.	▪ Undertake preventative measures, such as boundary fence maintenance, to minimise the need for problem animal control. ▪ Apply appropriately humane methods, if problem animals must be destroyed or captured.	▪ Effective procedures and relationships with neighbours in dealing with problem animal control.	▪ Frequent complaints from neighbours with no clear response.	***Year 1***	Officer in Charge
Gain a better understanding of flora and fauna within the nature reserve.	▪ Conduct a full botanical and faunal inventory survey. ▪ Prioritise the survey for endangered and threatened species.	▪ Botanical inventory survey report on which to base management decisions. ▪ Faunal inventory report on which to base management decisions.	▪ Lack of knowledge regarding the composition of fauna and flora within the nature reserve.	***On-going***	Officer in Charge, Resource Use Ecologist and Ecological Advice

CONSERVATION TARGETS					
Processes are established to determine the success of management interventions in protecting the ecosystems, communities and species of the nature reserve.	▪ Develop surveillance and monitoring plans for key management interventions in accordance with the Ezemvelo policies and norms and standards.	▪ Surveillance and monitoring plans for key threatening processes. ▪ Monitoring plans for key rare and endangered species.	▪ Lack of awareness of the status of key threatening processes including infestations of invasive plant species and severity and extent of soil erosion.	***Year 3***	Ezemvelo Ecological Advice Unit

6.7 Operational management

6.7.1 Financial and human resources

Kenneth Stainbank Nature Reserve cannot be effectively managed without adequate sustained funding and sufficient human resources. In addressing the financial and human resource needs of the nature reserve, the following guiding principles should be adhered to:

- Adequate funding must be provided for the management of the nature reserve to ensure the protection of its biodiversity and cultural values and the continued provision of its ecosystem services.
- Commercial operations within the nature reserve must be self-sufficient and, if profitable, should be used to subsidise its conservation and community programmes.
- A capable, experienced administrator and leader is required to fulfil the position of Officer in Charge.
- Adequate, properly trained and experienced staff must be employed at the nature reserve to undertake the operations required for its effective management.

6.7.1.1 Financial Resources

Capital and operational funding for Kenneth Stainbank Nature Reserve is sourced primarily from the KwaZulu-Natal Provincial Government. There is small amount of income from commercial operations such as visitor fees. In order to ensure that the management of the nature reserve is sustained over time it is necessary to develop a realistic financial plan in order to secure the necessary funding on a year-to-year basis.

The value of ecosystem services that the nature reserve provides as well as the direct and indirect economic value of the nature reserve to the local and regional economy must be determined in order to market the nature reserve effectively, ensure continued government funding and where appropriate, attract additional funding from other sources.

6.7.1.2 Human Resources Capacity

The existing human resource structure and capacity are sufficient to meet Kenneth Stainbank Nature Reserve management requirements. The following management functions in particular are emphasised:

- nature reserve security including the control of illegal activities (poaching) within the nature reserve;
- Community liaison forum;
- Research and monitoring (staff may be shared with other nature reserves).

6.7.2 Facilities and infrastructure

In order for Kenneth Stainbank Nature Reserve to operate appropriately, adequate facilities and infrastructure need to be developed and maintained both for management and eco-tourism purposes. In addressing facilities and infrastructure needs in the nature reserve, the following guiding principles will be adhered to:

- Facilities and infrastructure must be maintained to avoid any damage to the environment and ensure the safety of staff and visitors to the nature reserve.
- Facilities and infrastructure must be provided to ensure the effective management and operation of the nature reserve.
- Practical solutions to the provision of electricity should be sought at the nature reserve based on available renewable energy technologies.
- Facilities and infrastructure must be provided to support the eco-tourism activities in the nature reserve.

The detailed operational requirements for financial and human resource, and facilities and infrastructure development and management are set out in Table 6.9 below.

Table 6.9 Framework for operational management – financial and human resources, and facilities and infrastructure

Strategic outcome	Management activities	Management targets	Indicators of Concern	Priority	Responsibility
FINANCIAL RESOURCES					
Implementation of the financial plan that identifies the resource needs to achieve the objectives for the nature reserve.	▪ Request or source additional funding in order to implement the financial plan as per the approximate in Appendix H which will allow for the effective achievement of the nature reserve's objectives.	▪ Implementation of the financial plan through additional or requested funding.	▪ Inadequate funding to effectively protect and operate the nature reserve.	***Year 1***	Ezemvelo Regional Management Unit
HUMAN RESOURCES					
The nature reserve is staffed for its effective management and operation.	▪ Undertake a review of current staffing levels to determine the human resource needs to effectively manage the nature reserve. ▪ Employ sufficient, appropriately skilled staff to meet the management and operational requirements of the nature reserve. ▪ Undertake regular training and skills development to ensure that staff are able to effectively complete their duties.	▪ Appointment of staff in all positions in the nature reserve.	▪ Inadequate staff numbers or skills for the effective management of the nature reserve.	***Year 2***	Ezemvelo Regional Management Unit
FACILITIES AND INFRASTRUCTURE					
All facilities and infrastructure in the nature reserve are adequately maintained.	▪ Ensure that the boundary fence is regularly inspected and adequately maintained to ensure security and to contain game species within the nature reserve. ▪ Develop and implement a schedule maintenance programme to maintain facilities and infrastructure in a condition that meets relevant environmental, health and safety requirements. ▪ All tourism infrastructures are adequately maintained and incorporated into the scheduled maintenenca programme. ▪ Information signboards are to be placed within the the nature reserve. ▪ Ensure that all signage within and outside the nature reserve are adequately maintained.	▪ Regular scheduled maintenance of all facilities and infrastructure. ▪ Signage within and outside the nature reserve. ▪ Information signboards within the nature reserve.	▪ Environmental, health or safety incidents associated with inadequately maintained facilities and infrastructure. ▪ Tourist being lost and cannot find the nature reserve easily.	***Ongoing***	Officer in Charge

7) MONITORING AND REPORTING

Monitoring and reporting is a critical component of the adaptive management cycle. It enables the effective assessment of management interventions and, if necessary, can be used to direct modifications of management in an effort to achieve the outcomes required.

7.1 Annual monitoring

The annual monitoring schedule should be designed to monitor the implementation of aspects of the management plan. It should be designed to be straightforward and relatively easy to implement by on-site staff. In accordance with the Ezemvelo KZN Wildlife norms and standards for surveillance and monitoring (Goodman 2011), monitoring is characterised by:

- An objective, target or desired state of the attribute or resource (as described in the management targets in Section 6 above).
- Being part of a formalised adaptive management cycle.
- Establishing and repeatedly evaluating the measures of success of conservation project or management intervention.

Records should be maintained of all key management interventions and of problem events or incidents such as uncontrolled access, poaching, illegal plant collection or uncontrolled/arson fires. In terms of the norms and standards set for surveillance and monitoring (Goodman 2011) these incidents would be deemed to be surveillance.

Scientific monitoring programmes may be established to monitor specific management interventions such as measures for the protection of flagship species. Not all of the management interventions will be monitored through the monitoring schedule. Most of the outcomes of the monitoring process will be captured in an annual report, which will be used to inform the following year's annual plan of operation.

On this basis, a monitoring schedule for Kenneth Stainbank Nature Reserve is set out in Table 7.1.

Table 7.1 Annual surveillance and monitoring schedule for Kenneth Stainbank Nature Reserve

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
Law enforcement	Schedule of patrols	Written record	Weekly	Officer in Charge	Annual report
	Recovery of snares	Photographs/written record	Weekly		Annual report
	Illegal incidents	Photographs/written record	Per event		Record of event
	Arrests and/or summons issued	Written record	Quarterly		Annual report
	Fines issued (admission of guilt etc.)	Written record	Quarterly		Annual report
	Criminal Cases / Dockets opened	Written record	Quarterly		Annual report
	Civil Actions taken (interdicts etc.)	Written record	Quarterly		Annual report
Stakeholder engagement	Minutes of meetings of the local board and community trust	Written record	Quarterly	Officer in Charge	Annual report
Buffer zone management	Influx of listed invasive vegetation on the nature reserve's boundaries.	Surveillance plan	To be determined	Officer in Charge supported by Ecological Advice Unit	Annual report
Local and regional planning	Land uses that are approved in the areas around the nature reserve in local and regional IDPs and SDFs	Written record	Annually	Ezemvelo KZN Wildlife Senior Conservation Manager	Annual report
Eco-tourism	Visitor statistics	Completion of questionnaire	Ongoing	Officer in Charge	Annual report
Fire management	Burning of firebreaks as part of fire management	Written record/map/photography	Annually	Officer in Charge	Annual report
	Burning of blocks as part of controlled burning		Annually		Annual report
	Unplanned wildfires	Written record/map/photography	Per event		Record of event
Invasive plant control	Areas subject to invasive plant control	Monitoring plan	To be determined	Officer in Charge supported by Ecological Advice Unit	Annual report
	State of areas in which invasive plants have been eradicated				
	Records of labour hours/days	Written record	Annually		Annual report
	Herbicide usage	Written record	Annually		Annual report

Table 7.1 (cont.)

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
Soil erosion control	Areas subject to erosion control	Monitoring plan	To be determined	Officer in Charge supported by Ecological Advice Unit	Annual report
	State of rehabilitated areas of erosion				Annual report
Conservation targets	Incidents related to flagship species	Photographs/written record	Per event	Officer in Charge	Record of event
	Status of key rare and endangered species, particularly those for which conservation targets have been set	Monitoring plan	To be determined	Officer in Charge supported by Ecological Advice Unit	Annual report
Resource utilisation	Extraction of resources from the nature reserve	Photographs/written records	Per event	Officer in Charge	Annual report
Human resources	Staffing levels	Number of full-time staff	Annually	Officer in Charge	Annual report
Facilities and infrastructure	State of roads and paths	Photographs/written records	Quarterly	Officer in Charge	Annual report
	State of the boundary fence	Photographs/written records	Monthly		Annual report
	Weather data	Surveillance plan	To be determined	Ezemvelo KZN Wildlife Ecological Advice Unit	Annual report
	State of facilities and service infrastructure	Maintenance schedule/written records	Monthly	Officer in Charge	Annual report
	Pollution events	Photographs/written records	Per event		Record of event

As set out in Table 7.1 the following issues require a surveillance plan:

- The influx of listed invasive vegetation on the nature reserve's boundaries.
- The capture of weather data – it is recommended that the Ezemvelo KZN Wildlife Ecological Advice Unit approach the South African Weather Service to request that they install a proper weather station at the nature reserve.

In addition, the following issues require a monitoring plan:

- Measures taken to control invasive plant species.
- Measures taken to control soil erosion.
- Measures taken to manage rare and endangered species, particularly those for which conservation targets have been set.

These surveillance and monitoring plans must be developed and implemented in accordance with the Ezemvelo KZN Wildlife Norms and Standards: Surveillance and Monitoring Plans for Biodiversity (Goodman 2011).

The preparation of these plans must be undertaken by the Ezemvelo KZN Wildlife Ecological Advice Unit with the support of the Surveillance and Monitoring Working Group of Ezemvelo KZN Wildlife.

7.2 Annual protected area management plan implementation review

The purpose of undertaking an annual performance review of implementation of the protected area management plan will be to:

- Determine how effectively the management plan has been implemented.
- Assist in determining the focus for the annual plan of operation and the setting of appropriate time frames and budgets.
- Enable effective adaptive management by identifying changes and modifying management interventions.

The report produced from the annual protected area management plan implementation review should be submitted to the Regional Operations Committee, prior to the annual management meeting for Kenneth Stainbank Nature Reserve, for its review and comment. Records of recommendations for update/changes to the management plan should be kept so that when the plan is revised, these recommendations can be assessed and included where necessary. This should be undertaken in the form of a running list, which is updated in each annual report so that the final annual report before the review of the management plan contains the complete list of recommendations. The review process should include:

- Any recommended minor amendments to the management plan that do not affect the substance of the vision, objectives or zonation.
- The results of an evaluation of the management effectiveness achieved for the protected area, calculated using the WWF and World Bank Protected Area Management Effectiveness Tool (Stolton *et al*. 2007).

Any proposed significant changes to the management plan that are likely to result in amendment to the vision, objectives and zonation must be supported by the Regional Operations Committee and the Operations Committee Meeting (OPSCOMM) before being subjected to the appropriate stakeholder participation process and before OPSCOMM recommends that the proposed amended protected area management plan be submitted for authorisation to the Ezemvelo KZN Wildlife Board and to the MEC.

8) KENNETH STAINBANK NATURE RESERVE ANNUAL PLAN OF OPERATION

Each year an annual plan of operation will be prepared, based on the objectives, strategic outcomes, management activities and targets contained in the protected area management plan.

8.1 Implementation of the protected area management plan

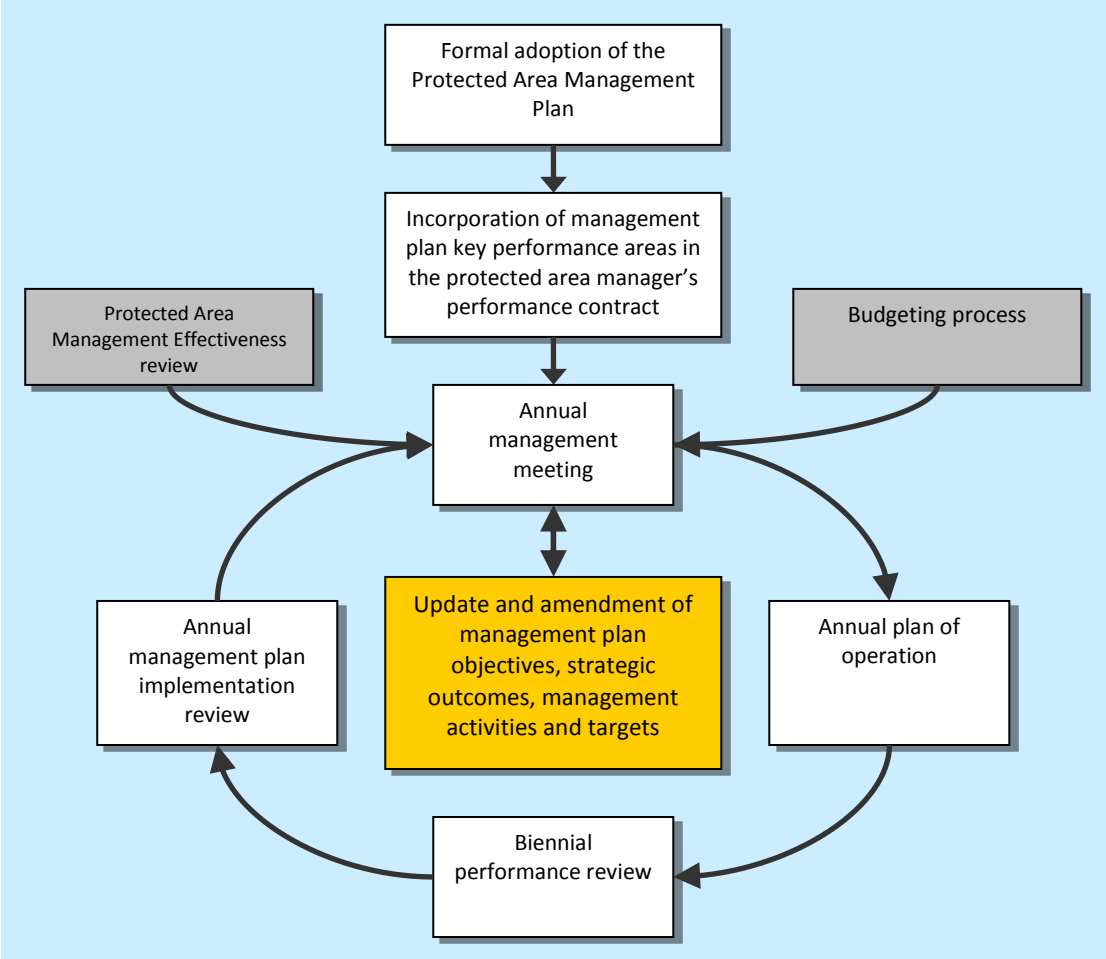

Figure 8.1 Process for the implementation of Protected Area Management Plans

Each year an annual management meeting is held for each protected area managed by Ezemvelo KZN Wildlife. In terms of the implementation of the protected area management plan, the purpose of the annual management meeting for Kenneth Stainbank Nature Reserve will be to:

- Finalise the annual report, as part of the annual protected area management plan implementation review described in Section 7.2 above.
- As part of the annual performance review, determine the need to modify or change any of the management plans objectives, strategic outcomes, management activities or targets.

- Determine management activities for the coming year and to set goals for each quarter, based on the key performance areas set out in the management plan, in accordance with the Kenneth Stainbank Officer in Charge's performance contract.
- Determine how budgets will be spent in an effort to achieve the goals for each of the quarters of the coming year.

The minutes and notes of the annual management meeting will be compiled in an annual plan of operation, which will include all of the information, set out above, and will determine what management activities need to be completed for the coming year, based on the management plan. The annual plan of operation will be tied to staff performance contracts, and goals set in them will be categorised within the same key performance areas as the integrated management plan. A pro forma annual plan of operation is set out in Appendix G.

8.2 Responsibilities in implementing the protected area management plan

In the tables in the operational management framework, the responsibilities for the completion of management activities are identified. In many cases the people responsible for implementing the activities will be in attendance at the annual management meeting and the requirements for the achievement of the management activities can be discussed and agreed to at the meeting. In some cases, however, the management activities may be required to be referred to the Regional Operations Committee and the Operations Committee Meeting (OPSCOMM) in order to assign responsibility for the completion of the management activity. In the case of Kenneth Stainbank Nature Reserve, an example of this would be the development of legal agreements relating to land owned by the eThekwini Municipality but managed Ezemvelo KZN Wildlife where no legal agreement stands. In this instance an action of the annual management meeting would be to refer this management activity to the OPSCOMM so that the correct unit can be assigned responsibility to complete the management activity.

8.3 Kenneth Stainbank Nature Reserve resource requirements

In developing annual plans of operation for Kenneth Stainbank Nature Reserve the resource requirements, associated with management activities and targets set out in the operational management framework must be considered and budgeted for. The following section broadly identifies the issues that must be considered in determining adequate human resources, funds and equipment for the nature reserve.

8.3.1 Staff and equipment

Annual plans of operation must consider the staff and equipment needs to undertake the following activities:

- Administration and management of the nature reserve.
- Patrolling of the nature reserve and its boundaries.
- An annual burning programme and fire fighting response to wildfires.
- An on-going invasive plant species control programme.
- An on-going soil erosion control and rehabilitation programme.
- Ecological monitoring and data capture.
- Maintenance of roads, paths and fences within the nature reserve.
- Maintenance of facilities and infrastructure within the nature reserve.
- Capture of visitor information and statistics.
- Admitting visitors to the nature reserve and charging entrance fees.
- Community liaison and cooperation.
- Environmental interpretation and education.

8.3.2 Projects

In addition to the requirements for annual recurrent funding for the issues outlined above, there will be a need to identify funding requirements for the following capital projects:

- Equipment and infrastructure required to undertake appropriate waste management practices within the nature reserve.
- Upgrade of staff houses and administrative facilities within the nature reserve.
- Installation of signage directing tourists to the nature reserve.
- Installation of directional and interpretive signage within the nature reserve.
- Refurbishment of the Kenneth Stainbank Castle.
- The possible re-introduction of game species into the nature reserve.

8.4 Annual financial plan

The annual plan of operation must contain a financial plan, which must be approved by the Regional Operations Committee. The annual goals, contained in the annual plan of operation, will be prioritised with the approved budget and guided by the strategic direction of the protected area management plan.

8.5 Financial accounting system

It is accepted that all fiscal management will be guided by the Public Finance Management Act (No.1 of 1999) and the Ezemvelo KZN Wildlife Financial Policy and Procedures directive. Funding sources not generated internally

will be accounted for in the prescribed process as determined by the donor source.

8.6 Financial reporting

Annual and quarterly fiscal reports will be submitted as directed by the Regional Operations Committee.

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DEFINITIONS OF TERMS

Alien species	Species or genotypes, which are not indigenous to Kenneth Stainbank Nature Reserve and the surrounding area including hybrids and genetically altered organisms.
Biodiversity	The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004]).
Bioprospecting	In relation to indigenous biological resources, means any research on, or development or application of, indigenous biological resources for commercial or industrial exploitation, and includes – the systematic search, collection or gathering of such resources or making extractions from such resources for purposes of such research, development or application (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004])
Board	The KwaZulu-Natal Nature Conservation Board as defined by the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No.9 of 1997).
Buffer zone	An area surrounding Ntsikeni Nature Reserve that has restrictions placed on its use or where collaborative projects and programmes are undertaken to afford additional protection to the nature reserve.
Co-management	The term 'Co-management' must be understood within the context of Section 42 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
Cultural heritage	As defined in Article 1 of the World Heritage Convention (UNESCO) 1972 , 'cultural heritage' is considered as "monuments, architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of (…) value from the point of view of history, art or science, groups of buildings, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of significance from the point of view of history, art or science, sites, works of man or the combined works of nature and man, and areas including archaeological sites which are of (…) value from the historical, aesthetic, ethnological or anthropological point of view." For the purpose of this IMP, living heritage features such as mountains, pools, rivers, boulders, etc. as well as paleontological features are included under this definition.
Eco-cultural Tourism (ecotourism):	The travel to natural areas to learn about the way of life and cultural history of people, the natural history of the environment, while taking care not to change the environment and contributing to the economic welfare of the local people (adapted from a definition of ecotourism by Hecto Ceballos Lascurain).
Ecological integrity	The sum of the biological, physical and chemical components of an ecosystem and its products, functions and attributes (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Ecosystem	A dynamic complex of animal, plant and micro-organism communities and their non-living environment interacting as a functional unit (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).

Ecosystem services	As defined in Section 1 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) as "environmental goods and services" meaning: a. Benefits obtained from ecosystems such as food, fuel and fibre and genetic resources. b. Benefits from the regulation of ecosystem processes such as climate regulation, disease and flood control and detoxification. c. Cultural non-material benefits obtained from ecosystems such as benefits of a spiritual, recreational, aesthetic, inspirational, educational, community and symbolic nature;" For the purposes of this IMP, sustainable water production is also specifically included under this definition.
Environmental degradation	The deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the loss of species or undesirable reduction of species population numbers from a specific area from an environmental health perspective
Ezemvelo KZN Wildlife	Nature Conservation Service as established in terms of the KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997.
Indigenous species	In relation to a specific protected area, means a species that occurs, or has historically occurred, naturally in a free state of nature within that specific protected area, but excludes a species introduced in that protected area as a result of human activity (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Invasive species	Means any species whose establishment and spread outside of its natural distribution range – a. Threaten ecosystems, habitats or other species or have a demonstrable potential to threaten ecosystems, habitats or other species. b. May result in economic and environmental harm or harm to human health. (As per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Joint management	The agreed co-ordination of management and/or management actions by landowners and/or mandated managers on their individual or combined properties in order to achieve common management objectives.
Local community	Any community of people living or having rights or interests in a distinct geographical area (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Management	In relation to a protected area, includes control, protection, conservation, maintenance and rehabilitation of the protected area with due regard to the use and extraction of biological resources, community-based practices and benefit sharing activities in the area in a manner consistent with the Biodiversity Act (as per the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

Management authority	In relation to a protected area, means the organ of state or other institution or person in which the authority to manage the protected area is vested (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Monitoring	The collection and analysis of repeated observations or measurements to evaluate change in status, distribution or integrity in order to track the impacts of directed management implemented to achieve a stated management objective.
Nature conservation	The conservation of naturally occurring ecological systems, the sustainable utilisation of indigenous plants and animals therein, and the promotion and maintenance of biological diversity (as per the KwaZulu-Natal Nature Conservation Management Act, 1997 [Act No.9 of 1997]).
Neighbouring community	the communities and people permanently living in the local municipal area/s bordering onto the Nature Reserve.
Natural heritage	As defined in Article 2 of the World Heritage Convention (UNESCO) 1972 'natural heritage' is as: "natural features consisting of physical and biological formations or groups of such formations, which are of (…) value from the aesthetic or scientific point of view, geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of (…) value from the point of view of science or conservation, natural sites or precisely delineated natural areas of (…) value from the point of view of science, conservation or natural beauty." For the purposes of this IMP, this would include the required ecological integrity of the protected area for the production of ecosystem services.
Partnerships	A co-operative and / or collaborative arrangement between the Game Reserve management / EZEMVELO and a third party that supports the achievement of the Game Reserve management objectives.
Protected areas	• Means any area declared or proclaimed as such in terms of section 3 or listed in the Second Schedule to the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997); or • Means any of the protected areas referred to in section 9 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
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.
Ramsar Convention	Means: "The Convention on Wetlands of International Importance, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources." (There are presently 158 Contracting Parties to the Convention, the Convention has broadened its scope to cover all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities.)

Stakeholders/ interested parties	These are interested individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, consumers, environmental interest groups and the general public. According to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), "stakeholder" means a person, an organ of state or a community contemplated in section 82 (1) (a), or an indigenous community contemplated in section 82(1) (b).
Surveillance	The collection and analysis of single or repeated measurements to establish status or distribution or integrity at a point in time in the absence of a specific management context or objective.
Sustainable	In relation to the use of a biological resource, means the use of such resource in a way and at a rate that would not lead to its long-term decline; would not disrupt the ecological integrity of the ecosystem in which it occurs; and would ensure its continued use to meet the needs and aspirations of present and future generations of people (as per National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
Wilderness area	Means an area designated in terms of section 22 or 26 for the purpose of retaining an intrinsically wild appearance and character, or capable of being restored to such and which is undeveloped and roadless, without permanent improvements or human habitation (as defined by the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
World heritage site	Means a World Heritage Site as defined in the World Heritage Convention Act, No. 49 of 1999 under Chapter 1, section 1 subsection (xxiv).

LIST OF STATUTES TO WHICH THE KENNETH STAINBANK NATURE RESERVE IS SUBJECT

Biodiversity and Cultural Resource Management and Development:

- Animals Protection Act [No. 71 of 1962]
- Atmospheric Pollution Prevention Act [No. 45 of 1965]
- Conservation of Agricultural Resources Act [No. 43 of 1983]
- Constitution of the Republic of South Africa [No. 108 of 1996]
- Criminal Procedures Act [1977]
- Environment Conservation Act [No. 73 of 1989]
- Forest Act [No. 122 of 1984]
- Hazardous Substances Act [No. 15 of 1973]
- KwaZulu Nature Conservation Act [No. 8 of 1975]
- KwaZulu-Natal Heritage Management Act [No. 10 of 1997]
- KwaZulu-Natal Nature Conservation Management Act [No. 9 of 1997]
- National Environmental Management Act [No. 107 of 1998]
- National Environmental Management: Biodiversity Act [No. 10 of 2004]
- National Environmental Management: Protected Areas Act [No. 57 of 2003]
- National Forests Act [No. 84 of 1998]
- National Heritage Resources Act [No. 25 of 1999]
- National Water Act [No. 36 of 1998]
- National Water Amendment Act [No. 45 of 1999]
- National Veld and Forest Fire Act [No 101 of 1998]
- Nature Conservation Ordinance [No. 15 of 1974]

General Management:

- Development Facilitation Act [No. 67 of 1995]
- Disaster Management Act [No. 57 of 2002]
- Fire Brigade Services Act [No. 99 of 1987]
- Local Government: Municipal Systems Act [No. 32 of 2000]
- National Road Traffic Act [No. 93 of 1996]
- National Building Standards Act [No. 103 of 1977]
- Natal Town Planning Ordinance [No. 27 of 1949]
- Occupational Health and Safety Act [No. 85 of 1993]
- KwaZulu-Natal Planning and Development Act [No. 5 of 1998]
- Water Services Act [No. 108 of 1997]

Financial Management:

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

Human Resource Management:

- Basic Conditions of Employment Act [No. 75 of 1997]
- Broad-Based Black Economic Empowerment Act [No. 53 of 2003]
- Compensation for Occupational Injuries and Diseases Act [No. 130 of 1993]
- Employment Equity Act [No. 55 of 1998]
- Labour Relations Act [No. 66 of 1995]
- Occupational Health and Safety Act [No. 85 of 1993]
- Pension Funds Act [No. 24 of 1956]
- Skills Development Act [No. 97 of 1998]
- Skills Development Levies Act [No. 9 of 1999]
- Unemployment Insurance Act [No. 63 of 2001]

COPY OF KENNETH STAINBANK NATURE RESERVE PROCLAMATION

†*No. 11, 1963.

[English text signed by the Administrator.]

PROCLAMATION

By the Honourable Theunis Johannes Adelbo Gerdener, Administrator of the Province of Natal

WHEREAS by Section 2 (1) (c) of Ordinance No. 25 of 1947 (the Natal Parks, Game and Fish Preservation Ordinance, 1947), I, acting on the advice and with the consent of the Executive Committee, am empowered to proclaim that any place upon land acquired by the Natal Provincial Administration shall be a nature reserve, to assign a name to such nature reserve and to define the boundaries thereof;

AND WHEREAS by Section 2 (2) of the said Ordinance, I, acting on the advice and with the consent of the Executive Committee, am empowered to declare that any nature reserve proclaimed in terms of Section 2 (1) (c) of the aforesaid Ordinance shall be deemed to be private property;

NOW, THEREFORE, I, acting on the advice and with the consent of the Executive Committee, do hereby proclaim and declare that the property described in the schedule hereto shall be a nature reserve known as the Stainbank Nature Reserve and shall be deemed to be private property for the purpose of Ordinance No. 25 of 1947.

Given under my hand at Pietermaritzburg, Natal, this 12th day of February, One Thousand Nine Hundred and Sixty-three.

T. J. A. GERDENER,
Administrator.

SCHEDULE.

STAINBANK NATURE RESERVE.

The Reserve comprises the following properties:—

(a) Sub 3 of A of the farm Bellair No. 823, in extent 2.5167 acres as shown on diagram No. 3028/63 attached to Deed of Transfer No. 9084 dated 27th November, 1962.

(b) Sub 4 of Stainbank of the farm Bellair No. 823 in extent 195.4750 acres as shown on diagram No. 3027/63 attached to Deed of Transfer No. 9084 dated 27th November, 1962,

such situate in the County of Durban, Province of Natal.

†*No. 88, 1964.

[English text signed by the Administrator.]

PROCLAMATION

By the Honourable THEODOR JOHANNES ADOLPH GERDENER, Administrator of the Province of Natal.

WHEREAS by Section 2 (3) of Ordinance No. 35 of 1947 (the Natal Parks, Game and Fish Preservation Ordinance, 1947), the Administrator is empowered to amend by a subsequent proclamation any proclamation relating to any place mentioned in Section 2 (1) of the aforesaid Ordinance;

AND WHEREAS Proclamation No. 11 of 1963 is such a proclamation;

NOW, THEREFORE, I, acting on the advice and with the consent of the Executive Committee, do hereby proclaim and declare that Proclamation No. 11 of 1963, promulgated in the *Official Gazette* of the Province of Natal No. 3138 dated the 14th day of February, 1963, is hereby amended, by the insertion before the words "Stainbank Nature Reserve" of the word "Kenneth".

Given under my hand at Pietermaritzburg, Natal, this 3rd day of November, One Thousand Nine Hundred and Sixty-four.

T. J. A. GERDENER,
Administrator.

†*No. 88, 1964.

[Engelse teks deur die Administrateur onderteken.]

PROKLAMASIE

van SY Edele THEODOR JOHANNES ADOLPH GERDENER, Administrateur van die provinsie Natal.

NADEMAAL artikel 2 (3) van Ordonnansie No. 35 van 1947 (Ordonnansie op die Bewaring van Natalse Parke, Wild en Vis, 1947), aan die Administrateur die bevoegdheid verleen om later by proklamasie enige proklamasie betreffende 'n plek vermeld in artikel 2 (1) van voormelde ordonnansie te wysig;

EN NADEMAAL Proklamasie No. 11 van 1963 so 'n proklamasie is;

SO IS DIT dat ek hierby op raad en met die toestemming van die Uitvoerende Komitee proklameer en verklaar dat Proklamasie No. 11 van 1963, afgekondig in die *Offisiële Koerant* van die provinsie Natal, No. 3138, gedateer die 14de dag van Februarie 1963 hierby gewysig word deur die invoeging van die woord „Kenneth" tussen die woorde „naamruin" en „Stainbank".

Gegee onder my handtekening te Pietermaritzburg, Natal op hede die 3de dag van November eenduisend negehonderd vier-en-sestig.

T. J. A. GERDENER,
Administrateur.

†*No. 193, 1969. 20/11/69

[*Afrikaans text signed by the Administrator.*]

PROCLAMATION

By the Honourable THEODOR JOHANNES APOLLIS GERDENER, Administrator of the Province of Natal

WHEREAS in terms of Section 2 (1) (c) of the Natal Parks, Game and Fish Preservation Ordinance, 1947 (Ordinance No. 25 of 1947), the Administrator may declare by Proclamation in the *Gazette* that any place upon any land acquired by the Natal Provincial Administration shall be a nature reserve;

AND WHEREAS in terms of Section 2 (2) of the said Ordinance, the Administrator may in the same Proclamation declare that such nature reserve shall be deemed to be private property;

NOW THEREFORE, I, acting on the advice and with the consent of the Executive Committee, do hereby proclaim, declare and make known that, in terms of Sections 2 (1) (c) and 2 (2) of the Natal Parks, Game and Fish Preservation Ordinance, 1947 (Ordinance No. 25 of 1947), the land described as

(a) Sub 7 of Stainbank, in extent One Hundred and Thirty-four decimal Seven Six Nought Two (134.7602) acres,

(b) Sub 4 of A, in extent Two decimal One Seven Four Two (2.1742) acres, and

(c) Remainder of Sub G, in extent Two (2) roods, Eight decimal Five Three (8.53) perches,

All of the farm Bellair No. 870, situate in the City and County of Durban, Province of Natal,

shall be a nature reserve and shall form part of the Kenneth Stainbank Nature Reserve and shall be deemed to be private property for the purposes of the said Ordinance with effect from the date of publication of this Proclamation.

Given under my hand at Pietermaritzburg, Natal, this 27th day of November, One Thousand Nine Hundred and Sixty-nine.

T. J. A. GERDENER,
Administrator.

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No. 194, 1972. Gazette 3702 of 12/10/72

[English text signed by the Administrator.]

PROCLAMATION

By the Administrator of the Province of Natal.

UNDER and by virtue of the powers vested in me by Section 2 (1) (c) of the Natal Parks, Game and Fish Preservation Ordinance, 1947 (Ordinance No. 15 of 1947), I, acting on the advice and with the consent of the Executive Committee of the Province of Natal, do hereby proclaim, declare and make known that the properties described as:—

(a) Sub 10, in extent 70,023 5 Hectares
(b) Sub 11, in extent 7,930 3 Hectares

both of Stainbank of the farm Bellair No. 823, situate in the County Durban, Province of Natal, shall be a Nature Reserve with effect from the publication hereof and shall form part of the Kenneth Stainbank Nature Reserve as proclaimed by Proclamation No. 11 of 1963, amended by Proclamation No. 88 of 1964, and extended by Proclamation No. 193 of 1969.

Given under my hand at Pietermaritzburg, Natal, this 28th day of September, One Thousand Nine Hundred and Seventy-two.

W. W. B. HAVEMANN,
Administrator.

*No. 107, 1981

[Engelse teks deur die Administrateur onderteken]

PROKLAMASIE

van die Administrateur van die Provinsie Natal

KRAGTENS die bevoegdhede aan my verleen by artikel 2 van die Ordonnansie op Natuurbewaring, 1974 (Ordonnansie No. 15 van 1974), en handelende op raad en met die toestemming van die Uitvoerende Komitee van die Provinsie Natal, proklameer, verklaar en maak ek hierby bekend dat die eiendomme omskryf as—

(i) Ond C van 3 van Stainbank van die plaas Bellair No. 823 groot 2,1700 ha; en

(ii) Ond B van 7 van Stainbank van die plaas Bellair No. 823 groot 7 796 m².

met ingang van die datum hiervan ophou om deel uit te maak van die Natuurtuin Kenneth Stainbank, soos by Proklamasie No. 11 van 1963 geproklameer, by Proklamasie No. 88 van 1964 gewysig en by Proklamasies Nos. 193 van 1969 en 194 van 1972 uitgebrei.

Gegee onder my handtekening te Pietermaritzburg, Natal, op hede die 29ste dag van Junie eenduisend negehonderd een-en-tagtig.

J. C. G. BOTHA
Administrateur

*No. 107, 1981

[English text signed by the Administrator]

PROCLAMATION

by the Administrator of the Province of Natal

BY virtue of the powers vested in me by section 2 of the Nature Conservation Ordinance, 1974 (Ordinance No. 15 of 1974), I, acting on the advice and with the consent of the Executive Committee of the Province of Natal, hereby proclaim, declare and make known that the properties described as—

(i) Sub C of Stainbank of the farm Bellair No. 823 in extent 2,1700 ha; and

(ii) Sub B of 7 of Stainbank of the farm Bellair No. 823 in extent 7 796 m²

shall with effect from the date hereof, cease to form part of the Kenneth Stainbank Nature Reserve as proclaimed by Proclamation No. 11 of 1963, amended by Proclamation No. 88 of 1964 and extended by Proclamations Nos. 193 of 1969 and 194 of 1972.

Given under my hand at Pietermaritzburg, Natal, this 29th day of June, one thousand nine hundred and eighty-one.

J. C. G. BOTHA
Administrator

Kenneth Stainbank

LIST OF UNPUBLISHED AND SUPPORTING DOCUMENTATION

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

Item:

1. EZEMVELO Corporate Strategic Plan and Performance Plan for 2009 - 2014.
2. Ezemvelo Corporate Policies and Procedures (Norms & Standards) listed in the table below.
3. Ezemvelo Biodiversity Database Checklists for Kenneth Stainbank Nature Reserve.
4. Proclamations of Kenneth Stainbank Nature Reserve
5. Kenneth Stainbank Nature Reserve Public Participation Report, March 2014.

The table below lists the Ezemvelo KZN Wildlife corporate policies (norms and standards) referenced from the intranet that are most relevant to Ezemvelo KZN Wildlife protected area management. It is the responsibility of all management and other personnel associated with management of protected areas to ensure that they familiarise themselves and comply with the most recent versions of all Ezemvelo KZN Wildlife Board Approved Policies.

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

D 1.8	➢ Disposal of Threatened Species.
EZEMVELO CORPORATE POLICIES (NORMS & STANDARDS)	
	BIODIVERSITY CONSERVATION OPERATIONS
	1. NATURAL RESOURCE SUSTAINABILITY
Policy File No.	**Exotic and Invasive Species**
D 1.9	➢ Release of Alien Species.
D 1.10	➢ Control Measures for Red-billed Quelea.
D 1.12	➢ Grass Carp.
D 1.13	➢ Establishment of Alien Plantations.
	➢
Policy File No.	**Migratory Species**
D 1.14	➢ Black Wildebeest and Blue Wildebeest Hybridization and Conservation.
D 1.15	➢ Permit authorising the collection of Biological Material within Board Areas.
	2. CONSERVATION EFFECTIVENESS
Policy File No.	**Strategic Applications**
D 2.1	➢ Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MAB (Man and Biosphere) Programme.
Policy File No.	**Conservation Management: Protected Area Management**
D 2.2	➢ Management of Wilderness Areas.
D 2.3	➢ Protected Area Development.
D 2.4	➢ Prohibition of Works and Servitudes in Board Areas.
D 2.5	➢ Zonation and Regulations for the control of off-road vehicles on beaches controlled by the Board.
D 2.6	➢ Quarries in KZN Protected Areas.
D 2.7	➢ Re-establishment and Management of Vegetation on Development Sites in the Ezemvelo KZN Wildlife Protected Areas.
D 2.8	➢ Ecotourism and Protected Areas.
D 2.9	➢ Solid Waste Management within Protected Areas.
D 2.10	➢ State Security Service Activities within Board Areas.
D 2.11	➢ Shark Nets in or bordering KwaZulu-Natal Nature Conservation Board Controlled Areas.
Policy File No.	**Integrated Environmental Management**
D 2.12	➢ Integrated Environmental Management - incorporating the procedure for the assessment of the impact of proposed development projects on nature conservation concerns.
D 2.13	➢ Precautionary Principle.
D 2.14	➢ Shark Net Installations.
D 2.15	➢ Bioprospecting in KwaZulu-Natal.
D 2.17	➢ Use of Pesticides by the Ezemvelo KZN Wildlife: Safety to Humans and the Environment.
D 2.18	➢ Interference with the Mouth of a Lagoon or River (Breaching).
Policy File No.	***Ex Situ* Wild Animal Management**
D 2.21	➢ Re-establishment of Terrestrial Mammals in Board Areas.
D 2.22	➢ Translocation of Animals.
D 2.25	➢ Elephant Introductions and Elephant in Enclosures.
D 2.27	➢ Introduction and Keeping of Large Predators in Enclosures in KZN.
D 2.28	➢ Use of Narcotic Drugs.
D 2.29	➢ Falconry.

EZEMVELO CORPORATE POLICIES (NORMS & STANDARDS)	
	BIODIVERSITY CONSERVATION OPERATIONS
	2. CONSERVATION EFFECTIVENESS
Policy File No.	**Human Animal Conflict - Inside and Outside Protected Areas**
D 2.30	➢ Disposal of Leopard from Ezemvelo KZN Wildlife Protected Areas.
D 2.31	➢ Problem Animal Control.
D 2.32	➢ Compensation claims in respect of damage caused by Lion, Cheetah, Wild Dog and Elephant to Stock and Crops.
D 2.33	➢ 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.
Policy File No.	**Environmental Awareness**
D 2.34	➢ Environmental Education Policy.
	3. BIODIVERSITY PROTECTION
Policy File No.	**Co-management**
D 3.1	➢ Supply of Game to Conservancies, Community Conservation Areas and Biosphere Reserves in KwaZulu-Natal
D 3.2	➢ Establishment and Management of Community Conservation Reserves (CCR)
D 3.4	➢ Community Conservation Programmes
D 3.5	➢ Neighbours' Access to Board Protected Areas
D 3.6	➢ Relationship with Local Boards
D 3.7	➢ Conservation Partnerships Between KwaZulu-Natal Nature Conservation Board and Adjacent Landowners
D 3.8	➢ Community Trust
D 3.9	➢ Community Levy Policy and Guidelines
D 3.10	➢ Land Claims on Proclaimed and Unproclaimed Provincial and Assigned National Protected areas in KwaZulu-Natal
D 3.11	➢ Amafa Policy Guidelines for the access of rock art sites in KwaZulu Natal
Policy File No.	**Resource-use benefits**
D 3.12	➢ Disposal of Venison from Ezemvelo KZN Wildlife Management Operations.
D 3.13	➢ Sustainable use of wildlife resources.
D 3.14	➢ Freshwater Angling.
D 3.15	➢ Freshwater species utilisation.
D 3.16	➢ Use of plant resources from protected areas.
D 3.17	➢ Use of doomed biological material.
D 3.19	➢ Provision of hunting by Ezemvelo KZN Wildlife.
Policy File No.	**4. RELATIONSHIPS**
D 4.1	➢ Neighbour Relations.
D 4.2	➢ Participation - Non Government Organisations.
D 4.3	➢ Data Access.
D 4.4	➢ Consultation and Communication with Stakeholders: Policy and Guidelines.

EZEMVELO CORPORATE POLICIES (NORMS & STANDARDS)	
Policy File No.	**COMMERCIAL OPERATIONS**
E 1	➢ Concessions for Welfare Groups.
E 2	➢ Hiking and Mountaineering.
E 3	➢ Educational Concessions.
E 4	➢ Club Facilities within Board Areas.
E 5	➢ Hutted Camps.
E 6	➢ Joint Venture Scheme.
E 7	➢ Allocation of Sites in terms of the Joint Venture Scheme.
E 8	➢ Access to Protected Areas through Unofficial Entry Points.
E 9	➢ Visitor Facilities Management by Ezemvelo KZN Wildlife.
E 10	➢ Lease of Lakeshore at State Dam Protected Areas.
E 11	➢ Execution, Control and Management of Leases and Concession Contracts (excluding Biodiversity Conservation Partnerships and Leases of Wildlife).
E 12	➢ Private Sector Reservations Policy.
E 13	➢ Partnerships for Eco-Tourism Development within or Adjacent to Protected Areas.
E 14	➢ Discounting of Tariffs for Walk-in Guests.
E 15	➢ Ecotourism Discounting Strategy.
E 16	➢ Travel Trade Commissions: Tour Operator/ Travel Agency.
E 17	➢ Policy and Procedure for the establishment and monitoring of Commercial Operations Public Private Partnership (PPP) Agreements.
E 18	➢ Administrative and operational policy on Professional hunting in South Africa.
E 19	➢ Commercialisation.

LISTED ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION IN TERMS OF REGULATION R.546, LISTING NOTICE NO.3

If any of the following activities are proposed in a protected area, proclaimed in terms of the Protected Areas Act, or within five kilometres of one, they will be subject to either a basic assessment or full scoping and environmental impact assessment process:

- The construction of billboards exceeding 18 square metres in size.
- The construction of reservoirs for bulk water supply with a capacity of more than 250m^3.
- The construction of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast:
    - Is to be placed on a site not previously used for this purpose.
    - Will exceed 15 metres in height but excluding attachments to existing buildings and masts on rooftops.
- The construction of a road wider than four metres with a reserve less than 13.5 metres.
- The construction of resorts, lodges or other tourism accommodation facilities.
- The conversion of existing structures to resorts, lodges or tourism accommodation facilities that sleep 15 people or more.
- The construction of aircraft landing strips and runways.
- The construction of above ground cableways and funiculars.
- The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good.
- The construction of tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles.
- The clearance of an area of 1ha or more of vegetation where 75% of the vegetative cover constitutes indigenous vegetation, except where such removal is required for:
    - The undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list.
    - The undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No.544 of 2010
- The construction of facilities and infrastructure or structures of any size for any form of aquaculture *(this applies only inside a protected area, not within five kilometres of it)*.

- The construction of:
    - Jetties exceeding 10m^2 in size.
    - Slipways exceeding 10m^2 in size.
    - Buildings with a footprint exceeding 10m^2 in size.
    - Infrastructure covering 10m^2 or more.

  Where such construction occurs within a watercourse or within 32 metres of watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.
- The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250m^3.
- The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded.
- The widening of a road by more than four metres or the lengthening of a road by more than one kilometre.
- The expansion of runways or aircraft landing strips where the expanded runways or aircraft landing strips will be longer than 1.4 kilometres in length.
- The expansion of above ground cableways and funiculars where the development footprint will be increased.
- The expansions of tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles, where the development footprint will be expanded.
- The expansions of facilities or infrastructure for the storage, or storage and handling of a dangerous good.
- The expansion of:
    - Jetties where the jetty will be expanded by 10m^2 in size or more.
    - Slipways where the slipway will be expanded by 10m^2 or more.
    - Buildings where the buildings will be expanded by 10m^2 or more in size.
    - Infrastructure where the infrastructure will be expanded by 10m^2 or more.

  Where such construction occurs within a watercourse or within 32 metres of watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.
- The expansion of facilities, infrastructure or structures of any size for any form of aquaculture *(this applies only inside a protected area, not within five kilometres of it)*.
- Phased activities for all activities listed in the Schedule and as it applies to a specific geographical area, which commenced on or after the effective date of the Schedule, where any phase off the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.

SPECIES LISTS

Appendix F 1: Fauna Species List

Taxon Name	English Name
Amphibians	
Bufo gutturalis	Guttural toad
Afrixalus fornasinii	Greater leaf-folding frog
Hyperolius argus	Argus reed frog
Hyperolius marmoratus	Painted reed frog
Hyperolius pusillus	Water lily frog
Hyperolius tuberilinguis	Tinker reed frog
Leptopelis natalensis	Natal tree frog
Ptychadena oxyrhynchus	Sharp-nosed grass frog
Afrixalus spinifrons spinifrons	Natal leaf-folding frog
Hyperolius marmoratus marmoratus	Painted reed frog
Xenopus laevis laevis	Common platanna
Strongylopus fasciatus fasciatus	Striped stream frog
Birds	
Anas erythrorhyncha	Red-billed Teal
Anas sparsa	African Black Duck
Anas undulata	Yellow-billed duck
Dendrocygna viduata	White-faced Duck
Nettapus auritus	African Pygmy-Goose, Pygmy Goose
Plectropterus gambensis	Spur-winged goose
Ciconia nigra	Black Stork
Ixobrychus minutus	Little Bittern
Falco amurensis	Amur Falcon, Eastern Red-footed Kestrel
Falco biarmicus	Lanner falcon
Falco subbuteo	Eurasian Hobby, Hobby Falcon
Accipiter melanoleucus	Black sparrowhawk
Accipiter tachiro	African Goshawk
Numida meleagris	Helmeted guineafowl
Sarothrura elegans	Buff-spotted Flufftail
Sarothrura rufa	Red-chested Flufftail
Acridotheres tristis	Common Myna, Indian Myna
Acrocephalus baeticatus	African Reed-Warbler, African Marsh Warbler
Acrocephalus gracilirostris	Lesser Swamp-Warbler, Cape Reed Warbler
Acrocephalus schoenobaenus	Sedge Warbler, European Sedge Warbler
Actophilornis africanus	African Jacana
Alcedo cristata	Malachite Kingfisher
Amaurornis flavirostris	Black Crake
Amblyospiza albifrons	Thick-billed Weaver
Andropadus importunus	Sombre Greenbul, Sombre Bulbul
Apalis thoracica	Bar-throated Apalis
Apaloderma narina	Narina Trogon
Aplopelia larvata	Lemon Dove, Cinnamon Dove

Taxon Name	English Name
Apus affinis	Little Swift
Apus barbatus	African Black Swift, Black Swift
Apus caffer	White-rumped Swift
Ardea cinerea	Grey Heron
Ardea melanocephala	Black-headed Heron
Ardea purpurea	Purple Heron
Balearica regulorum	Grey Crowned Crane, Crowned Crane
Batis capensis	Cape Batis
Batis molitor	Chinspot Batis
Bostrychia hagedash	Hadeda Ibis
Bradypterus baboecala	Little Rush-Warbler, African Sedge Warbler
Bubo africanus	Spotted Eagle-Owl
Bubulcus ibis	Cattle Egret
Bucorvus leadbeateri	Southern Ground-Hornbill, Ground Hornbill
Burhinus capensis	Spotted Thick-knee, Spotted Dikkop
Camaroptera brachyura	Green-backed Camaroptera, Bleating Warbler
Campephaga flava	Black Cuckooshrike
Campethera abingoni	Golden-tailed Woodpecker
Caprimulgus europaeus	European Nightjar
Caprimulgus pectoralis	Fiery-necked Nightjar
Centropus burchellii	Burchell's Coucal
Ceryle rudis	Pied Kingfisher
Ceuthmochares aereus	Green Malkoha, Green Coucal
Chlorocichla flaviventris	Yellow-bellied Greenbul, Yellow-bellied Bulbul
Chloropeta natalensis	Dark-capped Yellow Warbler, Yellow Warbler
Chrysococcyx caprius	Diederick Cuckoo, Diederik Cuckoo
Chrysococcyx cupreus	African Emerald Cuckoo, Emerald Cuckoo
Chrysococcyx klaas	Klaas's Cuckoo
Cinnyricinclus leucogaster	Violet-backed Starling, Plum-coloured Starling
Cisticola aberrans	Lazy Cisticola
Cisticola chiniana	Rattling Cisticola
Cisticola fulvicapilla	Neddicky
Cisticola juncidis	Zitting Cisticola, Fan-tailed Cisticola
Colius striatus	Speckled Mousebird
Coracias garrulus	European Roller
Coracina caesia	Grey Cuckooshrike
Corvus albus	Pied Crow
Cossypha caffra	Cape Robin-Chat, Cape Robin
Cossypha dichroa	Chorister Robin-Chat, Chorister Robin
Cossypha natalensis	Red-capped Robin-Chat, Natal Robin
Creatophora cinerea	Wattled Starling
Cuculus clamosus	Black Cuckoo
Cuculus solitarius	Red-chested Cuckoo
Cypsiurus parvus	African Palm-Swift, Palm Swift
Dendropicos fuscescens	Cardinal Woodpecker
Dicrurus adsimilis	Fork-tailed Drongo
Dicrurus ludwigii	Square-tailed Drongo

Taxon Name	English Name
Dryoscopus cubla	Black-backed Puffback, Puffback
Elanus caeruleus	Black-shouldered Kite
Emberiza flaviventris	Golden-breasted Bunting
Estrilda astrild	Common Waxbill
Estrilda perreini	Grey Waxbill
Euplectes ardens	Red-collared Widowbird, Red-Collared Widow
Euplectes axillaris	Fan-tailed Widowbird, Red-shouldered Widow
Euplectes orix	Southern Red Bishop, Red Bishop
Fulica cristata	Red-knobbed Coot
Gallinula chloropus	Common Moorhen
Halcyon albiventris	Brown-hooded Kingfisher
Haliaeetus vocifer	African Fish-Eagle
Hirundo abyssinica	Lesser Striped Swallow
Hirundo fuligula	Rock Martin
Hirundo rustica	Barn Swallow, European Swallow
Indicator indicator	Greater Honeyguide
Indicator minor	Lesser Honeyguide
Indicator variegatus	Scaly-throated Honeyguide
Ispidina picta	African Pygmy-Kingfisher, Pygmy Kingfisher
Jynx ruficollis	Red-throated Wryneck
Kaupifalco monogrammicus	Lizard Buzzard
Lagonosticta rubricata	African Firefinch, Blue-billed Firefinch
Lamprotornis corruscus	Black-bellied Starling
Lamprotornis nitens	Cape Glossy Starling, Glossy Starling
Laniarius ferrugineus	Southern Boubou
Lanius collaris	Fiscal Shrike
Lanius collurio	Red-backed Shrike
Lioptilus nigricapillus	Bush Blackcap
Lophaetus occipitalis	Long-crested Eagle
Lybius torquatus	Black-collared Barbet
Macronyx croceus	Yellow-throated Longclaw
Malaconotus blanchoti	Grey-headed Bush-Shrike
Mandingoa nitidula	Green Twinspot
Melaenornis pammelaina	Southern Black Flycatcher, Black Flycatcher
Merops pusillus	Little Bee-eater
Milvus migrans	Black Kite,Yellow-billed Kite
Mirafra africana	Rufous-naped Lark
Motacilla aguimp	African Pied Wagtail
Motacilla capensis	Cape Wagtail
Motacilla clara	Mountain Wagtail, Long-tailed Wagtail
Muscicapa adusta	African Dusky Flycatcher, Dusky Flycatcher
Muscicapa caerulescens	Ashy Flycatcher, Blue-grey Flycatcher
Muscicapa striata	Spotted Flycatcher
Netta erythrophthalma	Southern Pochard
Onychognathus morio	Red-winged Starling
Oriolus larvatus	Black-headed Oriole
Oriolus oriolus	Eurasian Golden Oriole, European Golden Oriole

Taxon Name	English Name
Parus niger	Southern Black Tit
Passer diffusus	Southern Grey-headed Sparrow, Grey-headed Sparrow
Passer domesticus	House Sparrow
Phalacrocorax africanus	Reed Cormorant
Phoeniculus purpureus	Green Wood-Hoopoe, Red-billed Woodhoopoe
Phyllastrephus terrestris	Terrestrial Brownbul, Terrestrial Bulbul
Phylloscopus trochilus	Willow Warbler
Platalea alba	African Spoonbill
Ploceus bicolor	Dark-Backed Weaver, Forest Weaver
Ploceus cucullatus	Village Weaver, Spotted-backed Weaver
Ploceus ocularis	Spectacled Weaver
Ploceus subaureus	Yellow Weaver
Ploceus xanthops	Golden Weaver
Pogoniulus bilineatus	Yellow-rumped Tinkerbird, Golden-rumped Tinker Barbet
Pogoniulus pusillus	Red-fronted Tinkerbird, Red-fronted Tinker Barbet
Pogonocichla stellata	White-starred Robin, Starred Robin
Prinia subflava	Tawny-flanked Prinia
Prionops plumatus	White-crested Helmet-Shrike, White Helmet-Shrike
Prodotiscus regulus	Brown-backed Honeybird, Sharp-billed Honeyguide
Rallus caerulescens	African Rail
Riparia paludicola	Brown-throated Martin
Sarkidiornis melanotos	Comb Duck, Knob-billed Duck
Scopus umbretta	Hamerkop
Serinus canicollis	Cape Canary
Sigelus silens	Fiscal Flycatcher
Spermestes bicolor	Red-backed Mannikin
Spermestes cucullatus	Bronze Mannikin
Stactolaema leucotis	White-eared Barbet
Streptopelia capicola	Cape Turtle-Dove
Streptopelia semitorquata	Red-eyed Dove
Streptopelia senegalensis	Laughing Dove
Strix woodfordii	African Wood-Owl, Wood Owl
Sylvia borin	Garden Warbler
Tachybaptus ruficollis	Little Grebe, Dabchick
Tchagra senegalus	Black-crowned Tchagra
Tchagra tchagra	Southern Tchagra
Telophorus sulfureopectus	Orange-breasted Bush-Shrike
Terpsiphone viridis	African Paradise-Flycatcher, Paradise Flycatcher
Thalassornis leuconotus	White-backed Duck
Threskiornis aethiopicus	African Sacred Ibis, Sacred Ibis
Tockus alboterminatus	Crowned Hornbill
Trachyphonus vaillantii	Crested Barbet
Trochocercus cyanomelas	Blue-mantled Crested-Flycatcher, Blue-mantled Flycatcher

Taxon Name	English Name
Turdus olivaceus	Olive Thrush
Turtur chalcospilos	Emerald-spotted Wood-Dove, Greenspotted Dove
Turtur tympanistria	Tambourine Dove
Tyto alba	Barn Owl
Urocolius indicus	Red-faced Mousebird
Vidua macroura	Pin-tailed Whydah
Zoothera guttata	Spotted Ground-Thrush, Spotted Thrush
Peliperdix coqui	Coqui Francolin
Pternistis natalensis	Natal Spurfowl, Natal Francolin
Alopochen aegyptiaca	Egyptian Goose
Upupa africana	African Hoopoe, Hoopoe
Tachymarptis melba	Alpine Swift
Gallirex porphyreolophus	Purple-crested Turaco, Purple-crested Lourie
Telophorus viridis	Gorgeous Bush-Shrike
Delichon urbicum	Common House-Martin, House Martin
Psalidoprocne holomelaena	Black Saw-wing, Black Saw-wing Swallow
Pycnonotus tricolor	Dark-capped Bulbul, Black-eyed Bulbul
Phylloscopus ruficapilla	Yellow-throated Woodland-Warbler, Yellow-throated Warbler
Zosterops virens	Cape White-eye
Turdus libonyanus	Kurrichane Thrush
Cercotrichas signata	Brown Scrub-Robin, Brown Robin
Cercotrichas leucophrys	White-browed Scrub-Robin, White-browed Robin
Saxicola torquatus	African Stonechat, Stonechat
Cyanomitra olivacea	Olive Sunbird
Cyanomitra veroxii	Grey Sunbird
Chalcomitra amethystina	Amethyst Sunbird, Black Sunbird
Hedydipna collaris	Collared Sunbird
Cinnyris talatala	White-bellied Sunbird
Crithagra mozambicus	Yellow-fronted Canary, Yellow-eyed Canary
Crithagra sulpuratus	Brimstone Canary, Bully Canary
Megaceryle maximus	Giant Kingfisher
Dendropicos griseocephalus	Olive Woodpecker
Buteo vulpinus	Steppe Buzzard
Coccopygia melanotis	Swee Waxbill
Uraeginthus angolensis	Blue Waxbill
Bony fish	
Barbus viviparus	Bowstripe barb
Poecilia reticulata	Guppy
Oreochromis mossambicus	Mozambique tilapia
Eleotris fusca	Dusky sleeper
Clarias gariepinus	Sharptooth catfish
Labeobarbus natalensis	KwaZulu-Natal yellowfish
Earthworms and Leeches	
Amynthas rodericensis	
Pontoscolex corethrurus	

Taxon Name	English Name
Insects	
Acraea natalica	Natal Acraea
Acraea oncaea	Window Acraea
Acraea petraea	Blood-red Acraea
Anax speratus	Orange emperor
Anax tristis	Black emperor
Borbo gemella	Twin Swift
Brachythemis leucosticta	4-square groundling
Catopsilia florella	African Migrant
Ceriagrion glabrum	Orange pond damsel
Chalcostephia flavifrons	Yellow-browed shadow
Charaxes candiope	Green-veined Charaxes
Colotis erone	Coast Purple Tip
Crocothemis erythraea	Scarlet darter
Dasophrys sp 1	
Diplacodes lefebvrii	Black percher
Dixeia pigea	Ant-Heap Small White
Dixeia spilleri	Spiller's Sulphur Small White
Eronia leda	Autumn-Leaf Vagrant
Graphium antheus	Large Striped Swordtail
Hemistigma albipuncta	Pied spot
Hypolimnas misippus	Common Diadem
Ischnura senegalensis	Marsh bluetail
Lachnoptera ayresii	Blotched Leopard
Lestes plagiatus	Highland emerald damsel
Lestes tridens	Spotted emerald damsel
Neptis laeta	Common Sailer
Nesciothemis farinosa	Ashen black-tailed skimmer
Ommatius sp.	
Orthetrum trinacria	Marsh orthetrum
Palpopleura lucia	St Lucia widow
Pantala flavescens	Globe skimmer
Paragomphus cognatus	Brook brown-tail
Phaon iridipennis	Glistening demoiselle
Philonomon luminans	Barbet
Platycypha caligata	Glade jewel
Pseudagrion kersteni	Kersten's sprite
Pseudagrion massaicum	Massai sprite
Rhyothemis semihyalina	Phantom glider
Protogoniomorpha parhassus	Common Mother-of-Pearl
Sevenia natalensis	Natal Tree Nymph
Spialia dromus	Forest Sandman
Sympetrum fonscolombii	Red-veined darter
Tagiades flesus	Clouded Flat
Trithemis annulata	Violet-red dropwing
Trithemis arteriosa	Red-veined dropwing
Urothemis assignata	Crimson basker

Taxon Name	English Name
Urothemis edwardsii	Princes' blue basker
Vanessa cardui	Painted Lady
Zygonyx natalensis	Cascader
Zygonyx torridus	Torrent cascader
Actizera lucida	Rayed Blue
Anthene kersteni	Kersten's Hairtail
Azanus mirza	Mirza Blue
Azanus moriqua	Thorn-tree Blue
Azanus natalensis	Natal Spotted Blue
Azanus ubaldus	Velvet-spotted Blue
Cacyreus lingeus	Bush Bronze
Deudorix antalus	Brown Playboy
Euchrysops barkeri	Barker's Smoky Blue
Euchrysops malathana	Common Smoky Blue
Lachnocnema bibulus	Common Woolly Legs
Lampides boeticus	Lucerne Blue
Cigaritis natalensis	Natal Bar
Zizeeria knysna	Sooty Blue
Telchinia cabira	Yellow-banded Acraea
Telchinia esebria	Dusky Acraea
Telchinia igola	Dusky-veined Acraea
Eudicella smithii	
Mecynorrhina passerinii	
Anisorrhina flavomaculata	
Plaesiorrhinella plana	Yellow-belted fruit chafer
Plaesiorrhinella trivittata	
Raceloma natalensis	
Porphyronota maculatissima	
Elaphinis irrorata	
Cyrtothyrea marginalis	Marginal fruit chafer
Leucocelis aeneicollis	Coppery-necked fruit chafer
Leucocelis rubra	Red fruit chafer
Campsiura cognata	
Trapezostigma continentale	Continental glider
Enallagma nigridorsum	Black-tailed blue
Banyutus lethalis	
Promachus aequalis	
Papilio dardanus cenea	Mocker Swallowtail
Papilio demodocus demodocus	Citrus Swallowtail
Papilio echerioides echerioides	White-banded Swallowtail
Papilio nireus lyaeus	Green-banded Swallowtail
Acisoma panorpoides ascalaphoides	Pintail
Acraea acara acara	Large Spotted Acraea
Acraea neobule neobule	Wandering Donkey Acraea
Amauris albimaculata albimaculata	Layman Friar
Amauris echeria echeria	Chief Friar
Amauris ochlea ochlea	Novice Friar

Taxon Name	English Name
Anax imperator	Blue emperor
Appias epaphia contracta	Diverse White
Belenois aurota aurota	Brown-veined White
Belenois creona severina	African Common White
Belenois gidica abyssinica	African Veined White
Belenois thysa thysa	False Dotted Border
Bicyclus anynana anynana	Squinting Bush Brown
Bicyclus safitza safitza	Common Bush Brown
Borbo fatuellus fatuellus	Long-horned Swift
Byblia anvatara acheloia	Common Joker
Charaxes brutus natalensis	White-barred Charaxes
Charaxes cithaeron cithaeron	Blue-spotted Charaxes
Charaxes varanes varanes	Pearl Charaxes
Charaxes xiphares penningtoni	Pennington's Forest-king Charaxes
Coeliades forestan forestan	Striped Policeman
Colotis euippe omphale	Smoky Orange Tip
Colotis evenina evenina	Common Orange Tip
Danaus chrysippus orientis	African Monarch
Eronia cleodora cleodora	Vine-leaf Vagrant
Eurema brigitta brigitta	Broad-bordered Grass Yellow
Eurema desjardinsii regularis	Angled Grass Yellow
Eurema hecabe solifera	Common Grass Yellow
Eurytela dryope angulata	Golden Piper
Eurytela hiarbas angustata	Pied Piper
Gegenes niso niso	Common Hottentot Skipper
Graphium leonidas leonidas	Veined Swordtail
Graphium policenes policenes	Small Striped Swordtail
Hypolimnas anthedon wahlbergi	Variable Diadem
Leptosia alcesta inalcesta	African Wood White
Libythea labdaca laius	African Snout
Melanitis leda helena	Common Evening Brown
Mylothris agathina agathina	Common Dotted Border
Mylothris rueppellii haemus	Twin Dotted Border
Neptis saclava marpessa	Spotted Sailer
Orthetrum julia falsum	Julia's orthetrum
Phalanta eurytis eurytis	Forest Leopard
Phalanta phalantha aethiopica	African Leopard
Precis octavia sesamus	Gaudy Commodore
Pseudacraea boisduvalii trimenii	Boisduval's False Acrea
Pseudacraea eurytus imitator	False Wanderer
Pseudacraea lucretia tarquinia	False Chief
Sevenia boisduvali boisduvali	Boisduval's Tree Nymph
Trithemis kirbyi ardens	Kirby's dropwing
Anthene amarah amarah	Black-striped Hairtail
Anthene definita definita	Common Hairtail
Cupidopsis jobates jobates	Tailed Meadow Blue
Hypolycaena philippus philippus	Purple-brown Hairstreak

Taxon Name	English Name
Myrina dermaptera dermaptera	Lesser Fig-tree Blue
Myrina silenus ficedula	Common Fig-tree Blue
Pentila tropicalis tropicalis	Spotted Buff
Tuxentius melaena melaena	Black Pie
Telchinia encedon encedon	Common Mimic Acraea
Pachnoda sinuata sinuata	Brown-and-yellow forest fruit chafer
Cymophorus undatus	
Scaptobius natalensis	Natal ant's nest chafer
Pondocoris latebrosus decimus	
Dundocoris callani callani	
Dundocoris natalensis	Natal flat bug
Acleros mackenii mackenii	
Azanus jesous jesous	
Cupidopsis cissus cissus	
Euchrysops osiris osiris	
Leptotes pirithous pirithous	
Acraea cerasa cerasa	Tree-top Acraea
Junonia hierta cebrene	Yellow Pansy
Junonia natalica natalica	Brown Pansy
Junonia oenone oenone	Blue Pansy
Junonia terea elgiva	Soldier Pansy
Anax ephippiger	Vagrant emperor
Scaptobius aciculatus	Finely-streaked ant's nest chafer
Mammals	
Sylvicapra grimmia	Common duiker, Grey duiker
Tragelaphus angasii	Nyala
Tragelaphus scriptus	Bushbuck
Galerella sanguinea	Slender mongoose
Genetta tigrina	South African large-spotted genet
Herpestes ichneumon	Large grey mongoose
Tadarida aegyptiaca aegyptiaca	Egyptian free-tailed bat
Aepyceros melampus melampus	Impala
Cephalophus natalensis natalensis	Red duiker
Philantomba monticola bicolor	Blue duiker
Redunca arundinum arundinum	Southern reedbuck
Atilax paludinosus paludinosus	Water mongoose
Herpestes ichneumon cafer	Large grey mongoose
Mungos mungo taenianotus	Banded mongoose
Nycteris thebaica capensis	Egyptian slit-faced bat
Equus quagga antiquorum	Plains Zebra
Otolemur crassicaudatus crassicaudatus	Thick-tailed bushbaby
Tragelaphus scriptus sylvaticus	Bushbuck
Neoromicia nanus nanus	Banana bat
Potamochoerus larvatus koiropotamus	Bushpig
Millipedes	
Doratogonus cristulatus	Cristulate black millipede

Taxon Name	English Name
Spinotarsus sp.	
Reptiles	
Bradypodion melanocephalum	Black-headed dwarf chameleon
Afroedura pondolia	Pondo flat gecko
Hemidactylus mabouia	Moreau's tropical house gecko
Panaspis wahlbergii	Wahlberg's snake-eyed skink
Macrelaps microlepidotus	Natal black snake
Philothamnus semivariegatus	Spotted Bush Snake
Psammophis brevirostris	Short-snouted grass snake
Dendroaspis polylepis	Black mamba
Naja mossambica	Mozambique spitting cobra
Causus rhombeatus	Rhombic night adder
Chamaeleo dilepis dilepis	Flap-neck chameleon
Python sebae natalensis	Southern African Python
Dispholidus typus typus	Boomslang
Philothamnus natalensis natalensis	Natal green snake
Acanthocerus atricollis atricollis	Southern tree agama
Trachylepis striata	Eastern striped skink
Trachylepis varia	Variable skink
Slugs, snails, limpets	
Gulella kraussi	Krauss's hunter snail
Metachatina kraussi	Brown-lipped agate snail
Trachycystis aenea	Bronze pinwheel

Appendix F 2: Floral Species List

Taxon Name	English Name
Oxyanthus pyriformis pyriformis	
Ficus polita polita	
Indigofera cylindrica	
Rhynchosia totta	
Eriosema cordatum	
Eriosema latifolium	
Baphia racemosa	
Acalypha peduncularis	
Memecylon natalense	
Anastrabe integerrima	
Sporobolus subulatus	
Themeda triandra	
Digitaria setifolia	
Heteropogon contortus	
Acroceras macrum	
Eragrostis chapelieri	
Eragrostis inamoena	
Oxyanthus latifolius	
Aristea woodii	
Dierama sp.	
Hypoxis filiformis	
Hypoxis ludwigii	
Hypoxis neliana	
Cola natalensis	
Strychnos usambarensis	
Mariscus capensis	
Mariscus pseudovestitus	
Bulbostylis contexta	
Cyperus sphaerospermus	
Asclepias flexuosa	
Sisyranthus imberbis	
Gnidia anthylloides	
Gnidia baurii	
Gnidia kraussiana	
Gnidia splendens	
Berkheya rhapontica	
Senecio variabilis	
Ethulia conyzoides	
Helichrysum auriceps	
Helichrysum sp.	
Helichrysum teretifolium	
Celtis mildbraedii	
Rawsonia lucida	
Justicia protracta	

Appendix F 3: Important Fauna Species List

Taxon Name	English Name	Endemism List	SARDB Name	IUCN Name	CITES	ToPS Category
Amphibians						
Leptopelis natalensis	Natal tree frog	Near-endemic (75-99%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Afrixalus spinifrons spinifrons	Natal leaf-folding frog	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland	Vulnerable	Vulnerable		
Hyperolius marmoratus marmoratus	Painted reed frog	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Birds						
Nettapus auritus	African Pygmy-Goose, Pygmy Goose		Near Threatened			
Ciconia nigra	Black Stork		Near Threatened		Appendix II	Vulnerable
Falco amurensis	Amur Falcon, Eastern Red-footed Kestrel				Appendix II	
Falco biarmicus	Lanner falcon		Near Threatened		Appendix II	
Falco subbuteo	Eurasian Hobby, Hobby Falcon				Appendix II	
Accipiter melanoleucus	Black sparrowhawk				Appendix II	
Accipiter tachiro	African Goshawk				Appendix II	
Acridotheres tristis	Common Myna, Indian Myna					
Balearica regulorum	Grey Crowned Crane, Crowned Crane		Vulnerable		Appendix II	Endangered
Bubo africanus	Spotted Eagle-Owl				Appendix II	
Bucorvus leadbeateri	Southern Ground-Hornbill, Ground Hornbill		Vulnerable			Endangered
Cossypha dichroa	Chorister Robin-Chat, Chorister Robin	Endemic to South Africa, Lesotho or Swaziland				
Elanus caeruleus	Black-shouldered Kite				Appendix II	
Haliaeetus vocifer	African Fish-Eagle				Appendix II	

Taxon Name	English Name	Endemism List	SARDB Name	IUCN Name	CITES	ToPS Category
Kaupifalco monogrammicus	Lizard Buzzard				Appendix II	
Lioptilus nigricapillus	Bush Blackcap	Endemic to South Africa, Lesotho or Swaziland	Near Threatened	Near Threatened		
Lophaetus occipitalis	Long-crested Eagle				Appendix II	
Milvus migrans	Black Kite,Yellow-billed Kite				Appendix II	
Passer domesticus	House Sparrow					
Sarkidiornis melanotos	Comb Duck, Knob-billed Duck				Appendix II	
Strix woodfordii	African Wood-Owl, Wood Owl				Appendix II	
Tchagra tchagra	Southern Tchagra	Endemic to South Africa, Lesotho or Swaziland				
Tyto alba	Barn Owl				Appendix II	
Zoothera guttata	Spotted Ground-Thrush, Spotted Thrush		Endangered	Endangered		
Bony fish						
Poecilia reticulata	Guppy					
Labeobarbus natalensis	KwaZulu-Natal yellowfish	Endemic to KZN;				
Earthworms and Leeches						
Amynthas rodericensis						
Pontoscolex corethrurus						
Insects						
Colotis erone	Coast Purple Tip	Near-endemic (75-99%) to KZN; Endemic to South Africa, Lesotho or Swaziland	Restricted			
Leucocelis rubra	Red fruit chafer	Endemic to South Africa, Lesotho or Swaziland				
Amauris echeria echeria	Chief Friar	Endemic to South Africa, Lesotho or Swaziland				
Charaxes xiphares penningtoni	Pennington's Forest-king Charaxes	Endemic to KZN;				
Pseudacraea eurytus imitator	False Wanderer	Endemic to South Africa, Lesotho or Swaziland				
Pseudacraea lucretia tarquinia	False Chief	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Myrina dermaptera dermaptera	Lesser Fig-tree Blue	Endemic to South Africa, Lesotho or Swaziland				
Pentila tropicalis tropicalis	Spotted Buff	Near-endemic (75-99%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Scaptobius natalensis	Natal ant's nest chafer	Endemic to South Africa, Lesotho or Swaziland				
Pondocoris latebrosus decimus	0	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland				

Taxon Name	English Name	Endemism List	SARDB Name	IUCN Name	CITES	ToPS Category
Dundocoris callani callani	0	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Dundocoris natalensis	Natal flat bug	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Scaptobius aciculatus	Finely-streaked ant's nest chafer	Endemic to South Africa, Lesotho or Swaziland				
Mammals						
Philantomba monticola bicolor	Blue duiker		Vulnerable			Vulnerable
Redunca arundinum arundinum	Southern reedbuck			Lower Risk (conservation dependant)		Protected
Otolemur crassicaudatus crassicaudatus	Thick-tailed bushbaby				Appendix II	
Doratogonus cristulatus	Cristulate black millipede	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland				
Reptiles						
Bradypodion melanocephalum	Black-headed dwarf chameleon	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland				
Afroedura pondolia	Pondo flat gecko	Near-endemic (75-99%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Macrelaps microlepidotus	Natal black snake	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland				
Chamaeleo dilepis dilepis	Flap-neck chameleon				Appendix II	
Python sebae natalensis	Southern African Python		Vulnerable		Appendix II	Protected
Slugs, snails, limpets						
Gulella kraussi	Krauss's hunter snail	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland				
Metachatina kraussi	Brown-lipped agate snail	Near-endemic (75-99%) to KZN;				
Trachycystis aenea	Bronze pinwheel	Near-endemic (75-99%) to KZN;				

Appendix F 4: Important Flora Species List

Family	Taxon Name	English Name	Endemism List	SARDB Name	IUCN Name	CITES	ToPS Category	Ordinance
Asclepiadaceae	*Asclepias flexuosa*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Asclepiadaceae	*Sisyranthus imberbis*			Least Concern				
Asteraceae	*Senecio variabilis*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Asteraceae	*Helichrysum auriceps*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Asteraceae	*Helichrysum teretifolium*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Cyperaceae	*Bulbostylis contexta*			Least Concern				
Cyperaceae	*Cyperus sphaerospermus*			Least Concern				
Euphorbiaceae	*Acalypha peduncularis*			Least Concern				
Fabaceae	*Eriosema cordatum*			Least Concern				
Fabaceae	*Eriosema latifolium*		Endemic to South Africa, Lesotho or Swaziland	Vulnerable				Protected
Fabaceae	*Baphia racemosa*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Flacourtiaceae	*Rawsonia lucida*			Least Concern				
Hypoxidaceae	*Hypoxis filiformis*			Least Concern				
Hypoxidaceae	*Hypoxis ludwigii*		Drakensberg CoE;	Least Concern				Specially protected
Hypoxidaceae	*Hypoxis neliana*			Least Concern				
Iridaceae	*Dierama sp.*		Endemic to KZN;					Specially protected
Loganiaceae	*Strychnos usambarensis*			Least Concern				
Melastomataceae	*Memecylon natalense*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Moraceae	*Ficus polita polita*			Least Concern				
Poaceae	*Sporobolus subulatus*			Least Concern				
Poaceae	*Themeda triandra*			Least Concern				
Poaceae	*Digitaria setifolia*			Least Concern				

Family	Taxon Name	English Name	Endemism List	SARDB Name	IUCN Name	CITES	ToPS Category	Ordinance
Poaceae	*Heteropogon contortus*			Least Concern				
Poaceae	*Acroceras macrum*			Least Concern				
Poaceae	*Eragrostis chapelieri*			Least Concern				
Poaceae	*Eragrostis inamoena*			Least Concern				
Rubiaceae	*Oxyanthus pyriformis pyriformis*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Rubiaceae	*Oxyanthus latifolius*			Least Concern				
Scrophulariaceae	*Anastrabe integerrima*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Sterculiaceae	*Cola natalensis*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				Protected
Thymelaeaceae	*Gnidia anthylloides*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				
Thymelaeaceae	*Gnidia baurii*		Endemic to South Africa, Lesotho or Swaziland	Least Concern				Controlled
Thymelaeaceae	*Gnidia splendens*			Least Concern				
Ulmaceae	*Celtis mildbraedii*			Least Concern				Protected

Appendix F 5: Invasive Alien Species List

Species
Acacia mearnsii
Ageratum houstonianum
Arundo donax
Avocado
Bamboo
Banana
Boginvilla
Callisia repens
Canna indica
Canna spp.
Cardiospermum grandiflorum
Catharanthus roseus
Chromolaena odorata
Cinnamomum camphora
Cycil
Delicious Monster
Eucalyptus spp.
Eugenia uniflora
Impatiens spp.
Lantana camara
Lasiandra micrantha
Litsea glutinosa
Mangifera indica
Melia azedarach
Mirabilis salapa
Montanoa hibiscifolia
Morus alba
Nephrolepis exaltata
Opuntia monacantha
Pennisetum purpureum
Pereskia aculeata
Pineapple
Pinus spp.
Psidium guajava
Ricinus communis
Rubus cuneifolius
Schinus terebinthifolius
Senna didymobotrya
Solanum mauritianum
Syzigium cuminii
Thelechitonia trilobata
Ugandan Flame of the Forest

Appendix G

PRO FORMA ANNUAL PLAN OF OPERATION

Notes of a management meeting for Kenneth Stainbank Nature Reserve held at … office on …

Present:

Apologies:

CC:

Appendix G

Management target	2014/15 Progress	2015/16 goals	Completion date	Responsibility	Action
LEGAL COMPLIANCE AND ENFORCEMENT					
Creation of cooperative structures with local communities and law enforcement officials.			Year 2	Ezemvelo KZN Wildlife Planning Unit	
Regular patrols covering the full extent of the nature reserve. Prosecution of any offender caught committing an offence.			**Year 1 – on going**	Officer in Charge	
Creation of cooperative structures with local communities and law enforcement officials.					
Minutes of the meeting between Ezemvelo and eThekwini Municipality.			**Year 1 – on going**	Officer in Charge, Regional Management.	
A fully developed legal agreement between both parties.					
A stakeholder database for the remaining farm workers.					
A map depicting all infrastructures relating to the farm workers.					
Minutes of the workshop to discuss the requirements of the nature reserve, alternatives and the way forward.					
A fully developed legal agreement between Ezemvelo and each family residing on the reserve.					
STAKEHOLDER ENGAGEMENT					
A database of all stakeholders affiliated with the nature reserve.			Year 1 - ongoing	Officer in Charge and Community Conservation	
A fully developed community					

Management target	2014/15 Progress	2015/16 goals	Completion date	Responsibility	Action
liaison forum for KSNR.				Officer	
Quarterly meetings of the KSNR community liaison forum.					
Easy communication between the nature reserve management and local communities.					
Priority research and programme list.			On ongoing		
BUFFER ZONE PROTECTION AND REGIONAL MANAGEMENT					
Adoption of environmentally appropriate land uses in IDPs and SDFs in the areas immediately surrounding the nature reserve.			Annually	Officer in Charge, Regional Management	
Retention of existing benign land uses in the areas immediately surrounding the nature reserve.					
ECO-TOURISM					
An understanding of annual tourist numbers and a tourism market profile for the nature reserve.			Year 3	Ezemvelo KZN Wildlife Ecotourism and Marketing Unit	
A marketing strategy to be incorporated into Ezemvelo marketing programme.			After the implementation of new tourism products	Ezemvelo Marketing Unit and eThekwini Municipality Tourism Body.	
Report on the increase of visitor numbers.					
Provision of an environmental interpretation and education tour to each school in the `neighbouring local communities.			Year 3	Ezemvelo KZN Wildlife Community Conservation Officer	

Management target	2014/15 Progress	2015/16 goals	Completion date	Responsibility	Action
CONSERVATION MANAGEMENT					
Adoption and implementation of the fire management plan.			Year 1	Officer in Charge and Ecological Advice Unit	
An up to date fire management plan for the nature reserve.					
Annual burns are aligned to burning objectives					
Enable the nature reserve to have efficient firebreaks in place.			Ongoing	Officer in Charge	
Compliance with the National Veld and Forest Fires Act.					
Maintain maintenance levels for all species.			Year 1	Officer in Charge, Field Rangers, Ecological Advice Unit and Alien Plant Control Unit	
Compliance with the Biodiversity Act					
A detailed map depicting areas of soil erosion within the nature reserve.			Year 5	Officer in Charge	
Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion.					
Creation of cooperative structures between Ezemvelo KZN Wildlife, local communities and law enforcement officials.			On going		
Control of any alien animals found within the nature reserve.					
Continued monitoring of control measures.					

Concise knowledge of the value of goods and services that KSNR has to offer.			Year 4	Resource Use Ecologist	
An agreed upon approach to any extractive resource use.			If required	Officer in Charge and Resource Use Ecologist	
Approved resource use records					
No illegal collection of biological material or samples.					
An agreed upon approach to future wildlife species introductions.			Year 5	Ezemvelo Ecological Advice Unit and Officer in charge	
Control of population numbers of species that are exceeding identified carrying capacities.			On going		
An implemented strategy to manage wildlife present in the nature reserve.			Year 3	Officer in Charge and Ecological Advice	
Control population numbers of species that are exceeding identified carrying capacities.			On going		
Effective procedures and relationships with neighbours in dealing with problem animal control.			Year 1	Officer in Charge	
Surveillance and monitoring plans for key threatening processes.			Year 3	Ezemvelo Ecological Advice Unit	
Monitoring plans for key rare and endangered species.					
OPERATIONAL MANAGEMENT					
Implementation of the financial plan through additional or requested funding.			Year 1	Ezemvelo Regional Management Unit	

Appointment of staff in all positions in the nature reserve.			Year 2		
Regular scheduled maintenance of all facilities and infrastructure.			On going	Officer in Charge	
Signage within and outside the nature reserve.					
Information signboards within the nature reserve.					

FINANCIAL PLAN

1. Purpose and aim

The National Environmental Management: Protected Areas Act (No.57 of 2003) stipulates that the management plan must contain at least:

"A programme for the implementation of the plan and its costing" for the approval of a Protected Area Management Plan by the MEC or Minister."

Management Effectiveness of protected areas relates directly to the availability of financial resources to achieve biodiversity conservation objectives. It is recognised that most protected areas do not have adequate financial resources to achieve their vision and stated objectives. The Financial plan should be developed in the context of the management plan and should be tied in with management priorities.

This financial plan has been developed in the interests of proper planning and sustained conservation management of the Kenneth Stainbank Nature Reserve. Certain management recommendations have been made in the Management Plan which requires dedicated financial resources which include:

- Upgrade and maintain all building infrastructure (management and tourism).
- Maintenance of roads including tourist and management roads.
- Replace and upgrade the KSNR fence to secure the boundary of the protected area.
- Installation of signage directing tourists to the nature reserve.
- Installation of directional and interpretive signage within the nature reserve.
- Refurbishment of the Kenneth Stainbank Castle.
- The possible re-introduction of game species into the nature reserve.

2. Financial management of Kenneth Stainbank Nature Reserve

The financial objective for the reserve stipulates:

Provide adequate human resources, equipment, infrastructure and funding to enable the effective protection, development and management of Kenneth Stainbank Nature Reserve.

Current income generation activities include:

- Day visitor fees
- Cycling competitions

There are no other potential income generating activities that have been identified for the following five year implementation period.

Current funding is not sufficient to effectively maintain the reserve and of particular concern are the security of fauna, tourism and management infrastructure and the effective maintenance of the road and fence infrastructure. The largest capital requirement would be for the restoration of the Kenneth Stainbank Castle. The table below provides a cost estimate of the requirements for the implementation of the management plan.

Projected income:

Income 2011 to 2014	
2011/2012	R 103 573
2012/2013	R 117 999
2013/2014	R 135 735
Projected Income	
Year 1	R 137 000
Year 2	R 139 000
Year 3	R 141 000
Year 4	R 143 000
Year 5	R 145 000

KENNETH STAINBANK NATURE RESERVE - Cost Estimate

Ezemvelo provincial budget allocation (2013)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
EXPENSES (Projected operational requirement for critical activities per annum)					
Road maintenance					
Fence maintenance					
Building maintenance					
Equipment maintenance					
Alien and invasive plant control					
Fire management					
Erosion control and rehabilitation					
Law enforcement					
Services (gas, electricity, water)					
Vehicle running cost and maintenance					
TOTAL					
TOTAL PAYROLL					
TOTAL EXPENSES (Critical Activities)					

CAPITAL REQUIREMENT (Not included in annual operational requirement)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Roads	300 000	6000	6000	6000	6000
Buildings	4 000 000	100 000	50 000	50 000	50 000
Fences	50 000	5000	5000	5000	5000
TOTAL CAPITAL REQUIREMENT	**4 350 000**	**111 000**	**61 000**	**61 000**	**61 000**