



**EZEMVELO
KZN WILDLIFE**

Conservation Partnerships & Ecotourism

HLATIKULU FOREST RESERVE

Protected Area

MANAGEMENT PLAN



HLATHIKHULU FOREST RESERVE

Protected Area Management Plan



Conservation, Partnerships & Ecotourism

Prepared by

Ezemvelo KZN Wildlife

Protected Area Management Planning Unit

& Hlathikhulu Forest Reserve Planning Committee

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PREFACE

Ezemvelo KZN Wildlife has adopted an overarching protected area management strategy that focus on developing, together with stakeholders - a Protected Area Management Plan for Hlathikhulu Forest Reserve. This management plan is the primary and overarching management document and sets out the desired state for Hlathikhulu Forest Reserve and the objectives to achieve this desired state. It forms the framework within which the protected area will be managed and developed towards the achievement of its management objectives, derived in collaboration with the protected area's stakeholders during November 2016 and January 2017.

The protected area management planning process has been designed to meet the statutory requirements of the National Environmental Management Protected Area Act No. 57 of 2003 and other relevant legislation. It further requires participation from the protected area's stakeholders, the general public and specialists during the various stages of the development and implementation of the plan. An annual review process of the management plan and its subsidiary plans 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 protected area's objectives. Ezemvelo KwaZulu-Natal Wildlife, as the appointed Management Authority for Hlathikhulu Forest Reserve, hereby commits itself to the implementation of this plan.

Dr. D Mabunda
Acting Chief Executive Officer

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The Protected Area Management Plan for Hlathikhulu Forest Reserve is recommended by the Hlathikhulu Forest Reserve Planning Committee, a multi-disciplinary team consisting of:


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EXECUTIVE SUMMARY

Introduction

The 1213 hectare Hlathikhulu Forest Reserve lies approximately 25 km north-west of the town of Jozini, south east of the South African and Swaziland border. The reserve abounds the eastern shores of the Phongolo Nature Reserve in two places with a thin sliver of land in between, where some homesteads have been built. The reserve falls within the UMkhanyakude District Municipality under the Jozini Local Municipality.

A district road (D1837) follows along the western boundary and provide access to the reserve before leading further north, this district road runs more or less parallel to the Swaziland border line.

The forest form part of the IUCN recognised Maputaland Centre of Plant Endemism (Van Wyk & Smith, 2001) and it is critical that the associated biodiversity and features in this international hotspot are afforded the appropriate levels of protection. Presently however, very little is known about these elements and species, their distribution and status as well as the integrity of the habitat.

The crest and east facing slopes of the Lebombo Mountains is classified as Scarp Forest, Lebombo Summit Sourveld also occurs on the crest of the Lebombo Mountains but falls mostly outside the Hlathikhulu Forest Reserve. The reserve protects a section of the Lebombo Mountain which forms part of the IUCN Maputaland Centre of plant endemism.

Cultural Heritage Value exist in close proximity to the protected area and the royal grave of King Dingane as well as the grave site of Nkosi Nyawo are the most important of these features.

The Hlathikhulu Forest Reserve was identified as early as 2004 as part of the buffer area to the proposed Nsubane – Pongola Transfrontier Conservation Area. Despite many regional and trans-frontier initiatives tourism in the region remains a priority that has not fully been capitalised on.

Public consultation for the development of this protected area management plan commenced in November 2016 when a stakeholder workshop was advertised provincially and locally. A second meeting was facilitated on request of the community in January 2017. The consultation process provided valuable input into this draft plan.

Vision and objectives of Hlathikhulu Forest Reserve

The vision for the Hlathikhulu Forest Reserve is to:

Protect the Hlathikhulu Forest and its associated biodiversity

This vision for Hlathikhulu Forest Reserve is supported by a number of key objectives. The implementation of these objectives are facilitated through a set of specific strategic outcomes that are linked to time bound, prioritised management activities and linked through the annual plan of operation to a specific target with a budget allocated to it.

Currently the reserve is extremely underfunded and also do not have capacity in terms of human resources, the identified objectives as well as the strategic outcomes and management actions will only be achieved when these resources are made available. The objectives that were identified include:

- Comply with and enforce legislation pertaining to the protection, development and management of Hlathikhulu Forest Reserve.
- Enable effective stakeholder relations through communication and collaboration with stakeholders.
- Protect the biodiversity and cultural heritage assets of Hlathikhulu Forest Reserve by promoting compatible landuse, activities and water-use in areas surrounding the protected area.
- Actively promote an understanding and appreciation of the values of Hlathikhulu Forest Reserve.
- Investigate, and if feasible, maintain sustainable nature based tourism in Hlathikhulu Forest Reserve to provide a high quality visitor experience whilst promoting the natural and cultural values of the protected area.
- Ensure the protection and public appreciation of all cultural and heritage resources within the Hlathikhulu Forest Reserve in accordance with statutory requirements.
- Protect the ecological integrity of Hlathikhulu Forest Reserve through active interventions based on principles of

adaptive and ecosystem based management.

Management issues, challenges and opportunities at Hlathikhulu Forest Reserve

The Hlathikhulu Forest Reserve is important in terms of both biodiversity and cultural heritage features, yet the management authority face many challenges in managing this reserve. The most pressing of these challenges is the lack of specific budget provision, funds are gleaned from the operational budget of Phongolo Nature Reserve, and the same is relevant to human resources. This critical challenge affects all other management activities as well as management effectiveness of the protected area.

Although the reserve has significant biodiversity value, there is a lack of understanding of both natural and cultural aspects of the reserve that have to inform management decisions such as sustainable harvesting of resources. The biodiversity assets are further threatened by illegal resource use and poaching. Furthermore the illegal resource harvesting that takes place in the reserve is increasing with no resources to address this issue.

Potential opportunities for low impact eco-tourism and environmental awareness and interpretation, could not previously be capitalised on due to lack of financial and human resources. In 2009 the then National Department of Environmental Affairs and Tourism through their Social Responsibility Programme funded the Hlathikhulu Trail Camp, under the jurisdiction of the Jozini Local Municipality.

Phase 1 was completed in 2009 and included a communal ablution and kitchen block that supports 3 tents. Phase 2 included the revamp of various management structures as well as additional chalets in the forest. Since then the project has been terminated as no Environmental Authorisation has been given. The project is now stagnant pending the outcome of a Section 24 G application that was lodged with DEA. In the meanwhile there are concerns about the workmanship of the project and since it is currently not used or maintained the infrastructure is in a serious state of disrepair. This strained the relationship with the community as the camp was a community based project. Hlathikhulu Forest Reserve is in an isolated location and will only appeal to a very specific and relatively small tourist market.

Managing the issues, challenges and opportunities at Hlathikhulu Forest Reserve

The three most critical issues that need to be addressed in Hlathikhulu Forest Reserve include the resourcing of the reserve in terms of finances as well as staffing, and the resolution of the Section 24 G application for the community tented camp based in the reserve. None of these are easily resolved but until such time as they are addressed the management effectiveness of the reserve will be compromised. Open and regular communication with the community is another critical aspect that needs to be addressed to improve management effectiveness and improve relationships with the neighbouring community.

Financial resource needs as determined by this management plan and contained in the financial plan in the appendices, determination of the budget requirement of the protected area to ensure the implementation of the strategic outcomes in the management plan.

In terms of the 24 G application, this is a legal process and Ezemvelo will await and implement the outcome of this process.

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. This will guide implementation and monitoring of the management plan.

ABBREVIATIONS

AMAFA	Amafa aKwaZulu-Natali (KwaZulu-Natal Provincial Heritage Agency)
APO	Annual Plan of Operation
CARA	Conservation of Agricultural Resources Act No. 43 of 1983
CCA	Community Conservation Area
CDP	Conservation Development Plan (Component of Ezemvelo KZN Wildlife protected area management plan)
CEO	Chief Executive Officer
CMS	Co-management Structure
DCO	District Conservation Officer
DEA	National Department of Environmental Affairs
DWAS	Department of Water Affairs and Sanitation
EDTEA	Department of Economic Development, Tourism and Environmental Affairs
EIA	Environmental Impact Assessment
Ezemvelo	Ezemvelo KwaZulu-Natal Wildlife
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EWT	Endangered Wildlife Trust
FP	Financial Plan
FPA	Fire Protection Association
GDP	Gross Domestic Product
GIS	Geographical Information System
HFR	Hlathikhulu Forest Reserve
IDP	Municipal Integrated Development Plan
IUCN	International Union for the Conservation of Nature
KZN	KwaZulu-Natal Province of the Republic of South Africa
KZNCMA	KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997
KZNHRA	KwaZulu-Natal Heritage Resources Act No. 10 of 1997
MEC	Member of the Executive Council
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
MP	Management Plan
NEMA	National Environmental Management Act No. 107 of 1998
NEMBA	National Environmental Management: Biodiversity Act No. 10 of 2004
NEMPA	National Environmental Management: Protected Areas Act No. 57 of 2003
NHRA	National Heritage Resources Act No. 25 of 1999
NPAES	National Protected Area Expansion Strategy

NR	Nature Reserve
NRPC	Nature Reserve Planning Committee
NSBA	National Spatial Biodiversity Assessment
OCNPA	Operations Committee Northern Protected Areas
PA	Protected Area
PFMA	Public Finance Management Act No. 1 of 1999
PPC	Park Planning Committee
SA	Republic of South Africa
SAHRA	South African Heritage Resources Agency
SANDF	South African National Defence Force
SAPPI	South African Pulp and Paper Industry
SAPS	South African Police Service
SDF	Municipal Spatial Development Framework
SMME	Small, Micro and Medium Enterprises
SWOT	Strengths, weaknesses, opportunities and threats analysis
TFCA	Transfrontier Conservation Area
TFP	Transfrontier Park
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WWF	World Wildlife Fund

1 INTRODUCTION

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 and the National Forest Act No. 84 of 1998;
- provide the primary strategic tool for management of Hlathikhulu Forest 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 Hlathikhulu Forest Reserve;

- provide for capacity building, future thinking and continuity of management and
- enable Ezemvelo KZN Wildlife to develop and manage Hlathikhulu Forest Reserve in such a way that its values and the purpose for which it was established are protected.

1.2 STRUCTURE OF THE PLAN

The management plan has been divided into three main sections to provide an easy to use reference for protected area management. The Context section provide background information to both the protected area and the planning process (Part 1 - 2), the Strategy section provides the 'roadmap' to the management of the protected area (Part 3 – 5) [What is the desired state and how will we get there?] and the Operational section (Part 6 – 8) provides for the implementation of the management plan. This section together with the conservation targets and wildlife management strategies and the Annual Plan of Operation forms the Operational Plan that are extracted in a separate document to facilitate implementation.

Table 1: Structure of the management plan

CONTEXT	
Section 1	Provides an introduction and background to the management plan. It describes the legislative basis and the institutional and policy framework for the management of protected areas. This section also address the planning approach that was followed in the development of the management plan as well as the planning approach for managing the protected area.
Section 2	Establishes the context of the protected area, providing the basis for the strategic and operational management frameworks that follow. It establishes the values and the purpose of the protected area that needs to be addressed in the management plan and requires protection from negative impacts. This section relates directly to site specific context of the protected area.
STRATEGY	
Section 3	Sets out the vision and objectives that must be achieved in efforts to effectively conserve the protected area.
Section 4	Sets out the zonation of the Hlathikhulu Forest Reserve, outlining the permissible land uses in particular zones. It also established principles for the buffer areas contiguous to the protected area.
Section 5	Describes the administrative structure required to effectively manage Hlathikhulu Forest Reserve. It indicates both current structure and required structure for the effective management of the protected area.

OPERATIONS	
Section 6	Sets out the detailed management targets that must be achieved in managing the protected area. These are provided in the management tables which are the operational or implementing component of the management plan.
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.

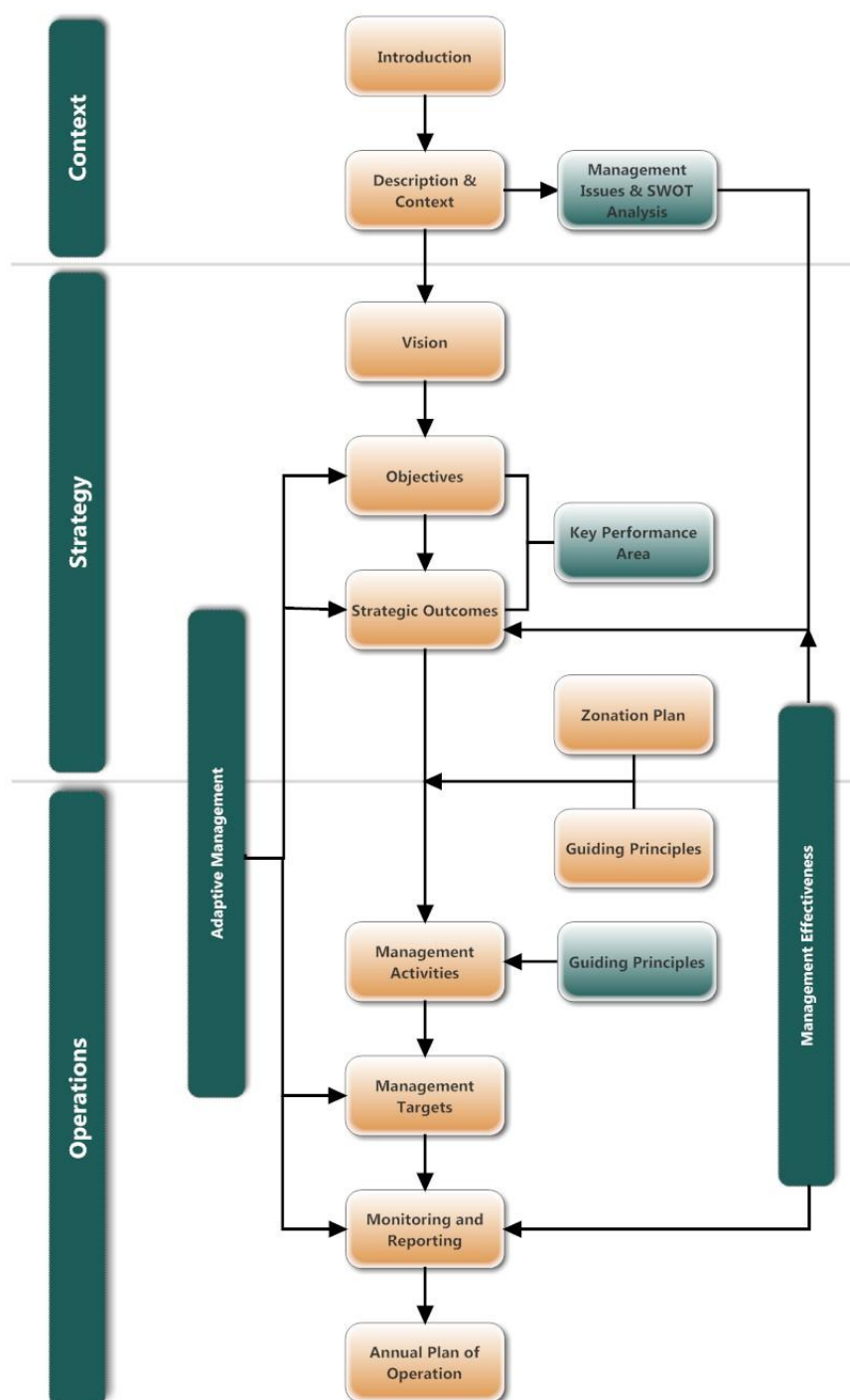


Figure 1: Structure of the protected area management plan

1.3 THE LEGISLATIVE BASIS FOR THE MANAGEMENT OF PROTECTED AREAS

There is a large body of legislation that is relevant to the management of protected areas in South Africa, but the primary legislation guiding the management of protected areas is the National Environmental Management: Protected Areas Act No.57 of 2003 (NEMPA) and the National Forest Act No.84 of 1998.

NEMPA 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”*. It 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 C. Managers are required to familiarise themselves with the purpose and contents of the statutes and their subsequent amendments and regulations.

Section 76 of the National Environmental Management: Biodiversity Act No. 10 of 2004, requires the management authority of a protected area to incorporate an invasive species control and eradication strategy in the management plan. This plan still needs to be developed for the Hlathikhulu Forest Reserve.

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 R.985, 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 D are proposed in the protected area, 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 protected area or its buffer areas will thus also require environmental authorisation.

1.4 INSTITUTIONAL FRAMEWORK FOR THE MANAGEMENT OF PROTECTED AREAS IN KWAZULU-NATAL

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.

Management of Hlathikhulu Forest 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 Hlathikhulu Forest 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 protected area through the relevant provincial departments, district and local municipalities.

1.5 THE POLICY FRAMEWORK GUIDING THE MANAGEMENT OF PROTECTED AREAS

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:

- White Paper on the Conservation and Sustainable Use of South Africa’s Biological Diversity of 1997.
- Bioregional Approach to South Africa’s Protected Areas, 2001/2002.
- Community Based Natural Resource Management Guidelines, 2003.
- National environmental management principles set out in section 2 of the National Environmental Management Act.

Within the province, Ezemvelo KZN Wildlife has adopted a Five Year Strategic Plan and Performance Plan for 2015-2020, which has developed the following corporate strategic profile:



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

1.6 PLANNING APPROACH

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

1.6.1 Public Trust Doctrine

Section 3 of the National Environmental Management: Protected Areas Act No. 57 of 2003 mandates 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]

1.6.2 Ecosystem-based Management

Decision-making associated with the protection of protected area's ecosystems will be scientifically based on internationally accepted principles and concepts of conservation biology. The Protected area ecosystems will be managed with minimal interference to natural processes. Specific management may be desirable, when the structure or function of a habitat or ecosystem has been significantly altered by way of human induced impacts or previous management. Specific management will only be considered when this option is the only possible alternative available to restore ecological integrity.

Provided that park ecosystems will not be impaired, the manipulation of naturally occurring processes (e.g. creation of firebreaks, management of damage causing animals) may take place when no reasonable alternative exists and when monitoring has demonstrated, that without direct intervention:

- there will be serious adverse effects on neighbouring lands; or
- protected area's facilities, public health or safety will be threatened; or
- the objectives of a protected area's management plan prescribing how certain natural features or cultural resources are to be maintained cannot be achieved.

Where directed management is required, it will be based on scientific research and adaptive management, and will employ techniques that emulate natural processes as closely as possible.

Ezemvelo KZN Wildlife will strive to be exemplary in the implementation of conservation and other environmental legislation including but not limited to environmental impact assessment and review.

Within the protected area, effort must be directed at maintaining ecosystems in as natural a state as possible and human induced disturbance must primarily be avoided. Where in those rare circumstances avoidance cannot be achieved the disturbance must be mitigated and ameliorated in compliance with Ezemvelo KZN Wildlife's conservation policies and norms and standards, and in particular the Integrated Environmental Management Policy.

It is recognised that the Hlathikhulu Forest Reserve does not contain complete or unaltered ecosystems. This, combined with increasing and cumulative disturbances from sources outside of the protected area such as adjacent land use, upstream effects of pollution, colonisation of invasive and alien species, and visitor use, is likely to result in irreversible degradation of the protected area's ecosystems, the loss of biodiversity and impoverishment of gene pools.

Ecosystem management must be derived from a conceptual and strategic basis for the protection of park ecosystems which is based on sound research and monitoring. It must involve a holistic view of the natural environment ensuring that all management decisions take into consideration the complex interactions and dynamic nature of the ecosystems and their limited capacity to withstand and recover from human induced disturbance.

It is recognised that the Ezemvelo KZN Wildlife's protected areas are becoming increasingly important, if not vital, in national and international efforts to maintain biodiversity and genetic resources of South Africa. Thus the management of the protected areas ecosystems must be credible and solidly based in science and best management practice. In this, a rigorous application of conservation science in the collection and interpretation of research and monitoring data must be achieved.

It is further recognised that, in particular cumulative, human induced disturbance or poor management practices have far-reaching, long-lasting and potentially irreversible negative impacts effects on species, habitats, ecosystems and the protected area as a whole and a cautious approach must be exercised.

1.6.3 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 2). 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.

Adaptive management enables protected area managers to:

- Learn through experience.
- Take account of, and respond to, changing factors that affect the protected area.
- Continually develop or refine management processes.
- Adopt best practices and new innovations in biodiversity conservation management.
- Demonstrate that management is appropriate and effective.

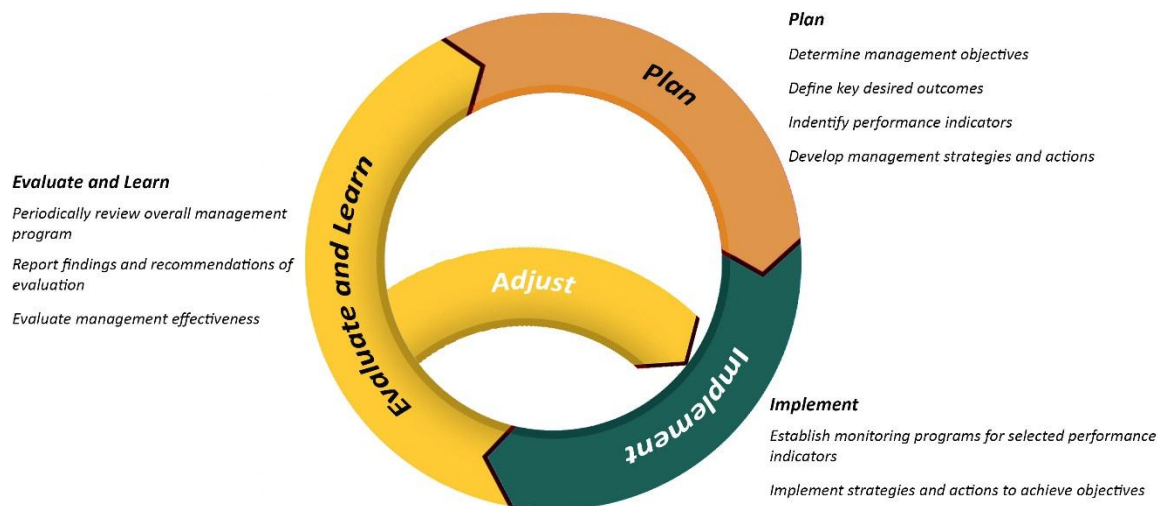


Figure 2: The adaptive management cycle

1.6.4 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.

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 protected area management, once all input have been finalised.

Public consultation has been undertaken through a series of meetings and discussions with key stakeholders culminating in a key stakeholder workshop, held on the 3rd of November 2016 and a second meeting in January 2017. Furthermore, the draft management plan has been made available

2 DESCRIPTION OF HLATHIKHULU FOREST RESERVE AND ITS CONTEXT

2.1 BACKGROUND TO HLATHIKHULU FOREST RESERVE

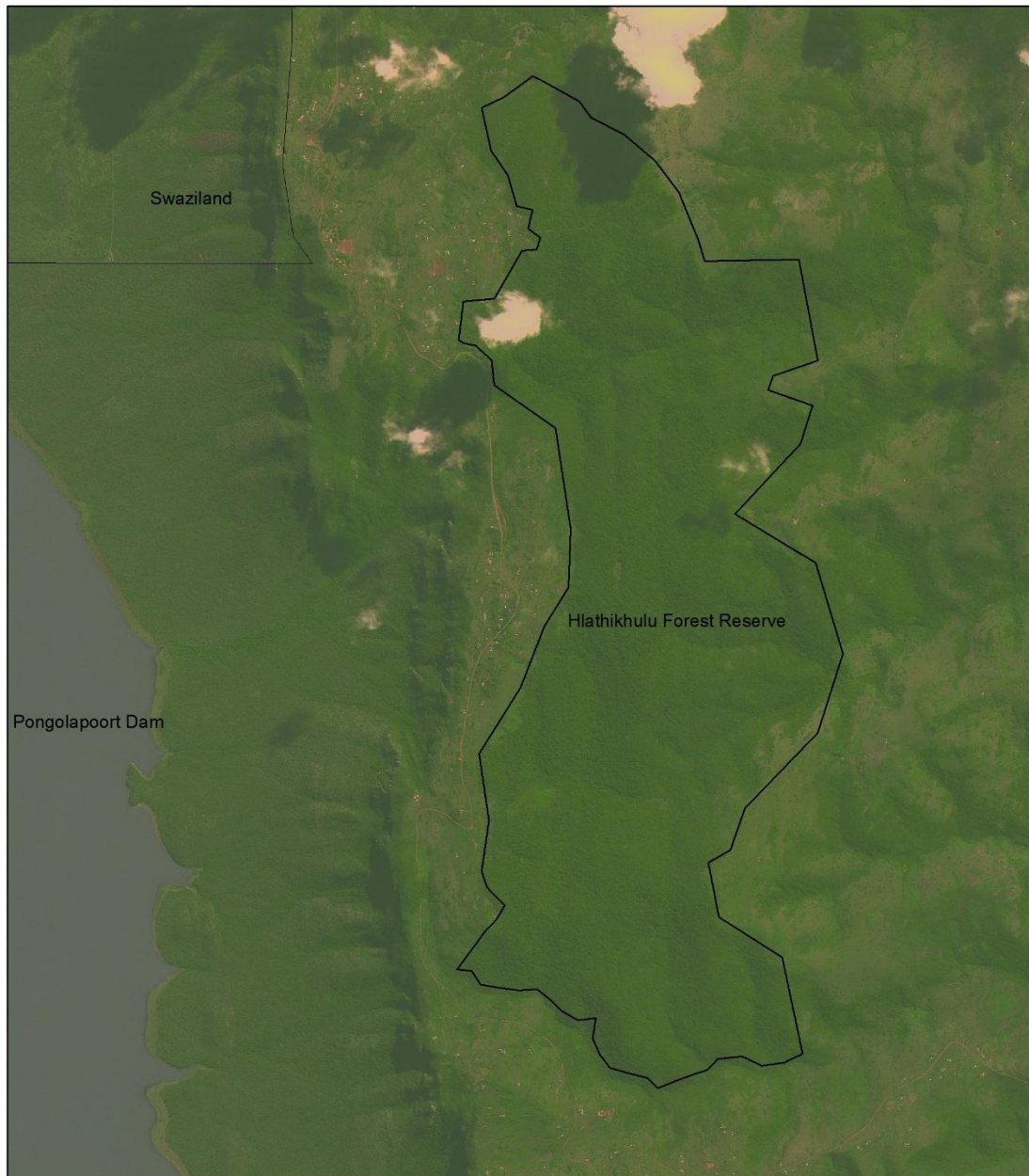
The Hlathikhulu Forest Reserve lies approximately 25 km north west of the town of Jozini, south-east of the Swaziland border. The reserve abounds the eastern shores of the Phongolo Nature Reserve in two places with a thin sliver of land that has subsequently been encroached and some homesteads have been established. The reserve falls within the UMkhanyakude District Municipality and within the Jozini Local Municipality. The crest and east facing slopes of the Lebombo Mountains is classified as Scarp Forest, Lebombo Summit Sourveld also occurs on the crest of the Lebombo Mountains but falls mostly outside the Forest Reserve.

The forest form part of the IUCN recognised Maputaland Centre of Plant Endemism (Van Wyk & Smith 2001). It is critical that the associated biodiversity and features are afforded the appropriate levels of conservation. Presently, how-ever little is known about these elements / species, their distribution and status as well as the integrity of the associated habitat.

A district road (D1837) forms the western boundary of the reserve and provide access to the reserve before leading further north - more or less parallel to the Swaziland border line.

See Map 1 for the locality of Hlathikhulu Forest Reserve.


Map 1: Locality of Hlathikhulu Forest Reserve



Legend

 HFR boundary

Kilometers
0 0.25 0.5 1 1.5 2



2.2 THE VALUES OF HLATHIKHULU FOREST 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 reserve that must be protected.

The protected area's values, in particular those that underlie the functioning of its ecosystems, will be given the highest degree of protection to ensure the persistence of these systems.

Table 2: Values of Hlathikhulu Forest Reserve

Natural values	<ul style="list-style-type: none"> ▪ Hlathikhulu Forest Reserve and the slopes of the Lebombo Mountain range form part of the IUCN recognised Maputaland Centre of Plant Endemism. ▪ Contribute to protection of important Forest vegetation, habitat types and associated species ▪ High biodiversity value with many plant and animal species that are endemic to KZN ▪ Ecosystem goods and services (Resources, water, soil etc.)
Heritage values	<p>Cultural Heritage Value exist within and in close proximity to the protected area, the royal grave of King Dingane as well as the grave site of Nkosi Nyawo are the most important of these features.</p>
Socio-economic values	<ul style="list-style-type: none"> ▪ Contribute to the local economy through seasonal job opportunities and potential for sustainable resource harvesting ▪ Environmental and cultural awareness value

2.3 THE PURPOSE OF HLATHIKHULU FOREST RESERVE

Consistent with Section 17 of the Protected Areas Act, the purpose of Hlathikhulu Forest Reserve is to:

- protect the Hlathikhulu Forest and its associated biodiversity;
- protect ecologically viable areas representative of KwaZulu-Natal's biological diversity and its natural landscapes;
- preserve the ecological integrity of the area;
- conserve the important biodiversity in the province of KwaZulu-Natal;
- protect areas representative of ecosystems, habitats and species naturally occurring in the province;
- protect KwaZulu-Natal's rare or vulnerable species – specifically the near-threatened *Pachycarpus leboemoensis*;
- protect an area which is vulnerable or ecologically sensitive;
- assist in ensuring the sustained supply of environmental goods and services;
- provide for the sustainable use of natural and biological resources;
- contribute to human, social, cultural, spiritual and economic development; and
- rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

Proclamation status of Hlathikhulu Forest Reserve

The 1 213 ha Hlathikhulu Forest Reserve (listed in the Second Schedule to the KZN Conservation Management Act as Hlatikhulu Forest [sic]), was originally proclaimed as the Hlatikhulu (sic) Forest Reserve in accordance with the then Forestry Act by Government Notice No. 902 of 1948. In 1987. Whilst under the jurisdiction of the 'homeland' Government of KwaZulu, its name was changed to the Hlathikhulu Nature Reserve by Government Notice No. 95 of 1987 of the KwaZulu Nature Conservation Act No. 8 of 1975. In terms of Section 23 (5) of the National Environmental Protected Areas Act No. 57 of 2003 'an area which was a nature reserve immediately before this section took effect must for purposes of this section be regarded as having been declared as such in terms of this section'.

A copy of the proclamation of Hlathikhulu Forest Reserve is contained in Appendix B.

2.4 THE REGIONAL AND LOCAL PLANNING CONTEXT OF HLATHIKHULU FOREST RESERVE

A Biodiversity Sector Plan was approved in 2014 by the Ezemvelo board for the Umkhanyakude District Municipality. This plan provides for a 5 km buffer for the protected area as well as corridors to facilitate connectivity.

2.4.1 Protected Area Expansion

Despite the identification of areas around Hlathikhulu Forest Reserve as areas of priority for expansion and areas of high biodiversity value, the reality is that there are no longer any expansion opportunities as the reserve is surrounded with increased developmental and homestead encroachment.

2.5 CULTURAL CONTEXT OF HLATHIKHULU FOREST RESERVE

The historical grave site of King Dingane of the Zulu nation is located close to the Hlathikhulu Forest Reserve on the eastern banks of the Pongolapoort Dam. A small commemorative plaque has been placed close to the actual site. The grave site of the Nyawo Chief, Sambane, and his successors are also in close proximity to the Hlathikhulu Forest.

2.6 THE HISTORY OF HLATHIKHULU FOREST RESERVE

2.6.1 History of Conservation in Hlathikhulu Forest Reserve

The Hlathikhulu Forest Reserve is currently managed by staff and with budget from the Phongolo Nature Reserve. There is a need to further research the conservation history of the reserve.

2.6.2 History of Tourism in Hlathikhulu Forest Reserve

The Hlathikhulu Forest Reserve historically had no tourism facilities. In 2009 the then National Department of Environmental Affairs and Tourism through their Social Responsibility Programme funded the Hlathikhulu Trail Camp under the jurisdiction of the Jozini Local Municipality.

Phase 1 was completed in 2009 and included a communal ablution and kitchen block that supports

3 tents. Phase 2 included the revamp of various management structures as well as additional chalets in the forest. Since then the project has been stopped as no Environmental Authorisation has ever been given. The project is now standing pending the outcome of a 24 G application that was lodged with DEA. In the meanwhile there are concerns about the workmanship of the project and since it is currently not used or maintained the infrastructure is in a serious state of disrepair. This strained the relationship with the community as the camp was a community based project.

2.7 SOCIO-ECONOMIC CONTEXT¹

The Hlathikhulu Forest Reserve falls within the Jozini Local Municipality (KZ 272), one of five local municipalities under the Umkhanyakude District Municipality, which is the second largest municipality in KwaZulu-Natal. The 2015/2016 Integrated Development Plan of Umkhanyakude District Municipality indicates that the town Jozini to the south east of Hlathikhulu is one of four towns in an otherwise rural landscape, with the key drivers of the local economy being agriculture and tourism. Stimulation of the tourism potential and development thereof will be a main focus area for the District Municipality in the coming year.

Large areas in the Umkhanyakude District's Spatial Development Framework are zoned as 'priority conservation areas' and 'biodiversity priority areas' which are considered during sustainable development and are also the focus for potential tourism developments to encourage local economic growth. The municipality recognise the following strategies in terms of biodiversity in the area:

- Continual invasive removal programmes
- Land care programmes
- Environmental campaigns to minimise biodiversity loss
- Environmental education and awareness

Demographic information

The STATSSA 2011 census data indicates that Jozini Local Municipality has a population of 186 502 people. In 2011 46 % of the population were male versus 54% female. One of the critical challenges in the area remains the unemployment rate that

¹ The Socio Economic Context has been extracted from the uMkhanyakude Draft Integrated

Development Plan Review 2015/16 and the Jozini Integrated Development Plan Review 2015/16

affects the population in this urban landscape. The unemployment rate in the Jozini Local Municipality according to the 2011 Census is 30.4%, which is higher than the provincial unemployment rate of 28.5% in 2011. High levels of illiteracy in the district exacerbates the unemployment challenge.

Infrastructure

Water infrastructure or the lack thereof is one of the critical challenges that affects especially the rural areas in the district, this is closely followed by the challenge of electricity provision and insufficient road infrastructure in these isolated areas.

The major routes in the Jozini Local Municipality include the National N2 (North Coast road) and the R22 that links Jozini to Manguzi in the Umhlabuyalingana Municipality. District roads are mostly dirt roads and these are in poor condition and difficult to traverse during the rainy season.

General

The broader area is commonly known as the fruit basket with sugar cane fields and forestry important agricultural activities. The reserve itself is in a rural area with limited services and no formal agricultural or other sectoral developments.

The Jozini Local Municipality identify land conversion, climate change, unsustainable harvesting of natural resources and wide spread alien invasions as the biggest threats to biodiversity in the municipal area.

2.8 ECOLOGICAL CONTEXT OF HLATHIKHULU FOREST RESERVE

2.8.1 Climate and Weather

The climate of the area is subtropical with warm to hot summers, warm, frost-free winters and generally high humidity; the mean annual temperature is 20°C. Rainfall is fairly low and summer seasonal with almost 80% falling between October and March. Annual rainfall in the Lebombo Mountains are on average 800 mm. The rains usually occur in the form of thundershowers, especially during the months of November to February. The driest months are from June to August, when less than 20 mm rain usually recorded per month. The Lebombo Mountains also have a high frequency of mist and cloud due to the effects of topography and the orographic lift of moisture laden air.

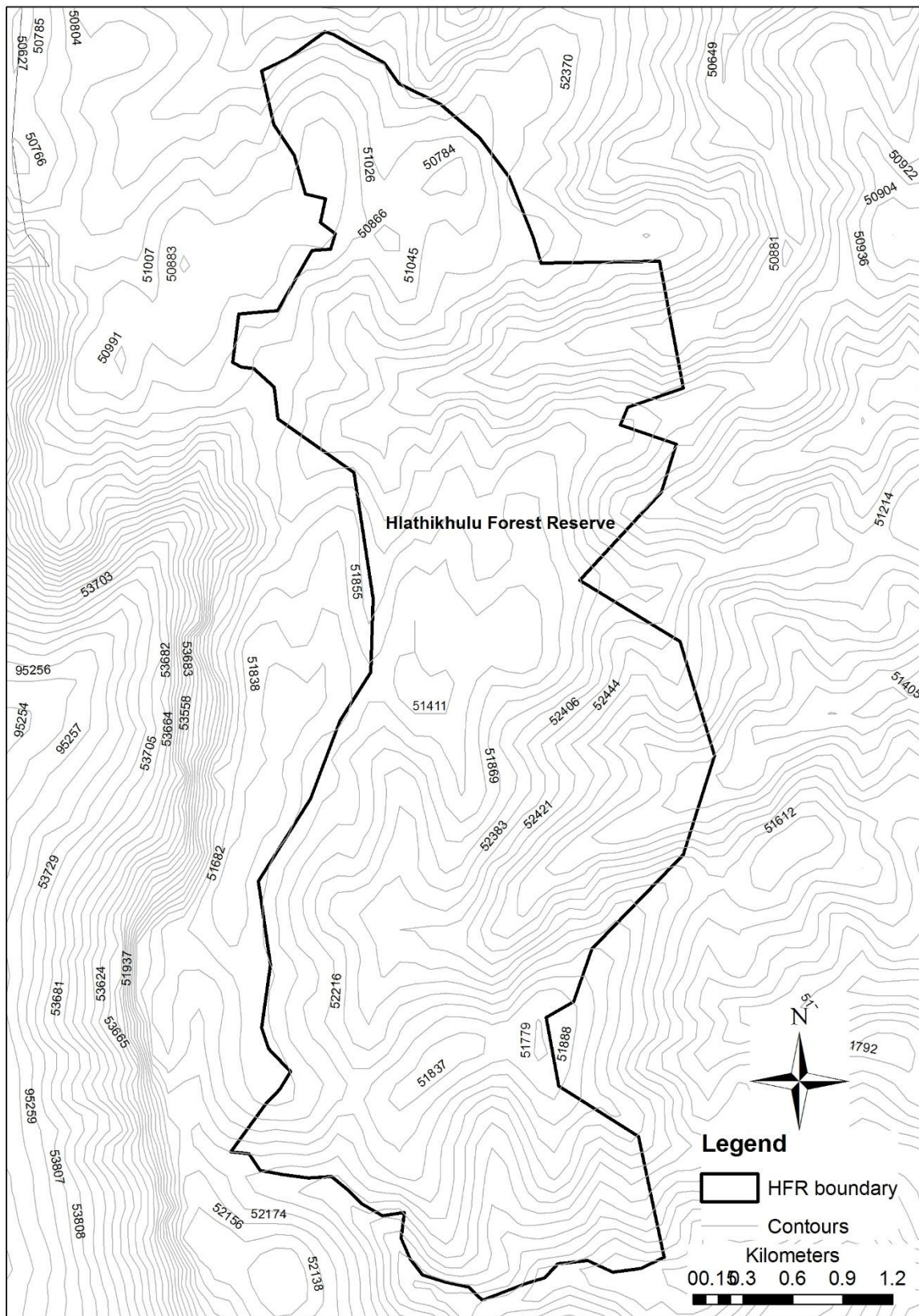
2.8.2 Topography

The Hlathikhulu Forest Reserve is located on the slopes of the Lebombo mountain range, a 800 km mountain range that span from Zululand in KZN north west wards to Limpopo province.

The topography of HFR is high undulating hills on the top of the Lebombo escarpment. The altitude in the reserve ranges from X to 732 m.a.s.l.

See Map 2 Topography of Hlathikhulu Forest Reserve.

Map 2: Topography of Hlathikhulu Forest Reserve



2.8.3 Geology and Soils

The reserve consist mainly of rhyodacite of the Jozini formation, Lebombo Group, with intercalated pyroclastic flows, acid lava, dacitic glass and vitreous tuff, basalt, andesite and dolerite dykes that gives origin to rocky areas with miscellaneous soils. Interspersed with this there are four intrusions of Glenrosa and/or Mispah forms (other soils may occur), with lime rare or absent in the entire landscape.

The Lebombo Mountains are a tilt block comprised of rhyolite (Jozini formation of the Lebombo Group). On the slopes of the Lebombo Mountains soils are shallow and well-drained; they are derived from both basalt and rhyolite. Higher up the mountains the rhyolite derived soils are very shallow and rocky, with only small pockets of deep soil.

2.8.4 Hydrology

There are no major rivers or wetlands inside HFR, but due to the topography, several small streams form after rainfall.

2.8.5 Vegetation

The Hlathikhulu Forest Reserve consist mainly of Eastern Scarp Forests: Northern Zululand Lebombo Scarp Forest with intrusions of Southern Lebombo Bushveld in the eastern and southern side, as well as small intrusions of Lebombo Summit Sourveld on the northern, north-eastern and western boundary. The Lebombo Summit Sourveld on the western side occurs mostly outside of the protected area in the slither of land between Phongolo NR and Hlathikhulu Forest Reserve, this area are already being encroached with several homesteads and families staying on it.

Both Eastern Scarp Forests: Northern Zululand Lebombo Scarp Forest and Southern Lebombo Bushveld are listed as Least Threatened, whilst Lebombo Summit Sourveld is listed as Endangered. The near-threatened *Pachycarpus lebomboensis* occur in the protected area.

The following vegetation description was extracted from the KZN Provincial Pre- Transformation Vegetation Map².

Eastern Scarp Forests: Northern Zululand Lebombo Scarp Forest

Refer to Mucina and Rutherford (2006) pg 602, Figure 12.14.

Distribution:

Eastern Cape, KwaZulu-Natal and Mpumalanga Provinces as well as in Swaziland (and possibly also in Mozambique): An archipelago of scattered patches (some of them large, such as Ongoye) spanning southern Mpumalanga (Crocodile River Gorge), the southern part of Lebombo Mountains (KwaZulu-Natal) and reaching nearly as far as Kei River Mouth on the Transkei coast. Patches of this forest lie as far as 140 km inland (Mpumalanga), but extend increasingly closer to the sea in a southward direction—in Pondoland, and southern Transkei they occur at the coast or in deep gorges, often associated with krantzies, scarps and coastal platforms. Most of the patches occur at low altitudes between 50 and 600 m.

Vegetation and Landscape features:

*Tall (15 – 25 m), species-rich and structurally diverse, multi-layered forests, with well-developed canopy and understory tree layers, but a poorly developed herb layer. Buttressed stems are common in the Scarp Forest. The most conspicuous trees are *Buxus macowanii*, *B. natalensis*, *Drypetes gerrardii*, *Englerophytum natalense*, *Harpephyllum caffrum*, *Heywoodia lucens*, *Memecylon natalense*, *Millettia grandis*, *Oricia bachmannii*, *Philenoptera sutherlandii*, *Rinorea angustifolia*, *Rothmannia globosa* and *Umtiza listeriana*.*

There are five subtypes (Scott-Shaw (2011b) :

- *Eastern Scarp Forests : Ngome-Nkandla Scarp Forest*
- *Eastern Scarp Forests : Northern Coastal Scarp Forest*
- *Eastern Scarp Forests : Northern Zululand Lebombo Scarp Forest*
- *Eastern Scarp Forests: Southern Coastal Scarp Forest*
- *Pondoland Scarp Forests*

² Scott-Shaw, C.R. and Escott, B.J. (Eds) (2011) KwaZulu-Natal Provincial Pre-Transformation Vegetation Type Map – 2011. Unpublished GIS Coverage [kznveg05v2_1_11_wll.zip],

Southern Lebombo Bushveld

Refer to Mucina and Rutherford (2006) pg 501, Figure 9.57.

Distribution:

Mpumalanga and KwaZulu-Natal Provinces and Swaziland: From Komatipoort, widening southwards into Swaziland, including the Mbuluzi River Gorge, through Siteki and across the Isuthu

Altitude 100–600 m. Small patches are unmapped between the Mkuze and Msunduzi Rivers.

Vegetation and Landscape features:

Open Bushveld with dominant Acacia and Combretum species. Themeda triandra is the dominant grass on undisturbed sites. On very shallow soils (e.g. slopes of deep gorges or exposed ridges) with Aloe marlothii, Euphorbia confinalis and thickets of Olea europea subsp. Africana and Combretum woodii. Combretum woodii. Dry slopes may be dominated by Androstachys johnsonii in the northern parts.

Lebombo Summit Sourveld:

Refer to Mucina and Rutherford (2006) pg 502.

Distribution: *KwaZulu-Natal Province with small parts in Mpumalanga Province and Swaziland: Localised high points on the crest of the Lebombo Mountains from Mbuzini (Mpumalanga) in the north to the Ubombo area immediately north of Mkuze River Gorge in the south. Also occurs in Mozambique in a very limited area north of Namaacha. Altitude mostly from above 600 to 803 m at the summit of Mananga Mountain.*

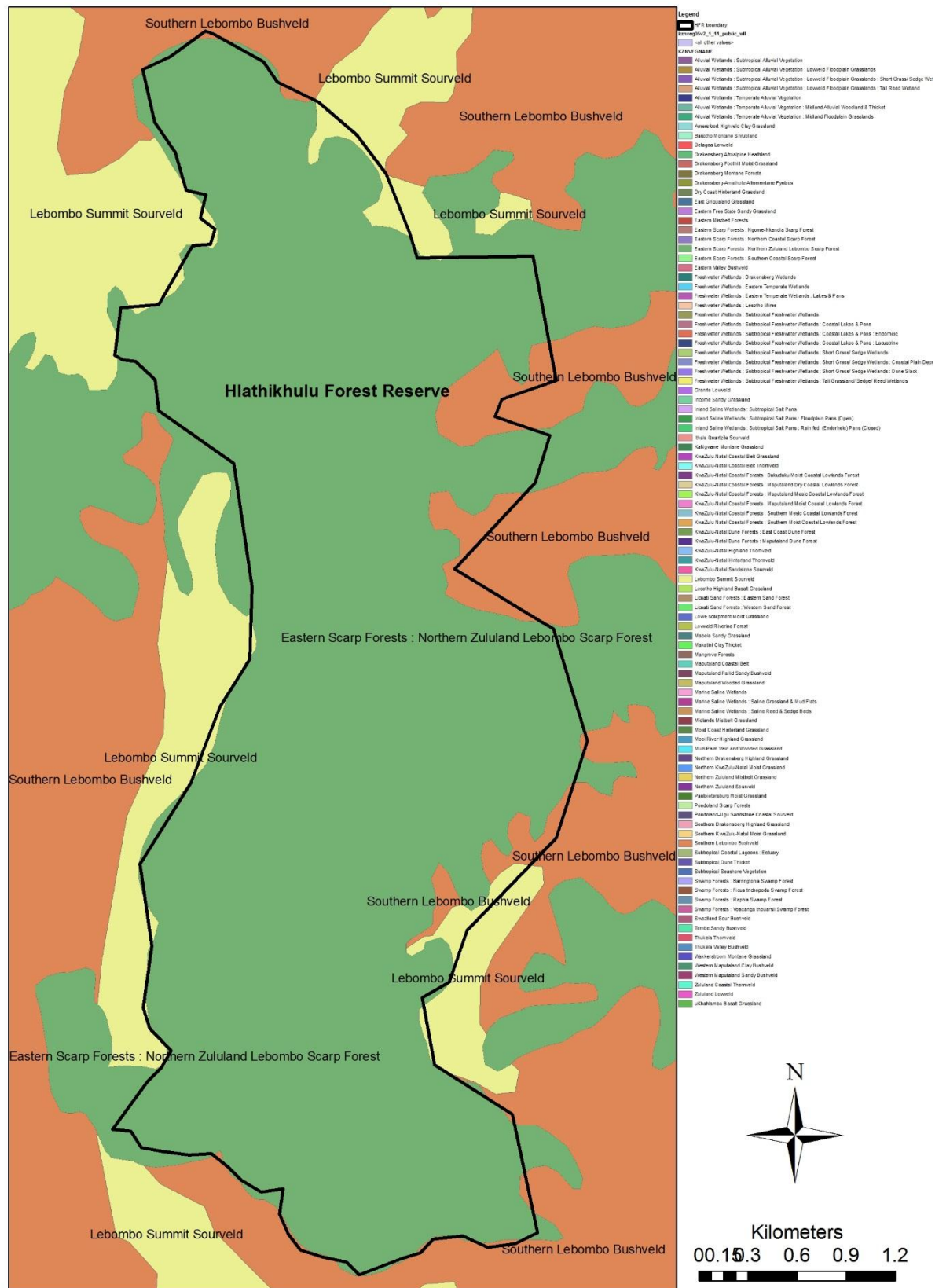
Vegetation and Landscape features:

Ridge plateaus and adjacent slightly sloping flanks covered with open, tall, sour, wiry grasslands, often dotted with low bushes and solitary savanna trees.

River Gorge into KwaZulu- Natal, extending east of Mkuze and terminating about 10 km north of Hluhluwe in the south. The high-altitude sourvelds are excluded and are SVI 17 Lebombo Summit Sourveld. Relatively small parts of this unit extend into Mozambique, mainly at the northern end.

See Map 3 for vegetation of Hlathikhulu Forest Reserve.

Map 3: Vegetation of Hlathikhulu Forest Reserve



2.8.6 Fire Regime

Because HFR consist of forest, fire is not a conservation tool. Fuel loads are managed by cutting around relevant infrastructure such as housing and along fence lines.

2.8.7 Invasive Species

Invasive species that threatens the biodiversity include the following species:

- *Caesalpinia decapetala* (Mauritius Thorn)
- *Chromolaena odorata* (Triffid weed)
- *Datura spp.*
- *Lantana camara* (Common lantana)
- *Solanum mauritianum* (Bugweed)
- *Psidium guajava* (Guava)
- *Ricinus communis* (Caster-oil plant) and
- *Melia azedarach* (Syringa)
- *Parthenium*

An ongoing control programme initiated in 2007 targeted initially mostly sections of *Chromolaena odorata*, the programme expanded from 2009 onwards to include other species. The control programme focus on the southern section of the protected area but also follows roads and drainage lines where invasions occur.

Parthenium is abundant outside the reserve and specifically along the roads leading to the reserve, there is a risk and in fact a high probability that this invasive is also present in the protected area.

2.8.8 Mammalian Fauna

The forest provide habitat for Red duiker (*Cephalophus natalensis natalensis*) and Bushbuck (*Tragelaphus scriptus sylvaticus*). Although the forest provide habitat for many other small mammal species information on these are not available. This information gap needs to be addressed through relevant biodiversity surveys. Appendix F contains the mammal species list for Hlathikhulu Forest Reserve.

2.8.9 Avifauna

Although one can expect many forest bird species a bird list does not exist. Similar than with mammals

this information gap needs to be addressed urgently.

2.8.10 Herpetofauna (reptiles and amphibians)

Reptiles and amphibians form an important part of the ecosystem and certain species serve as bio-indicators due to their sensitivity to environmental factors. Much remains to be discovered about the reptile and amphibian species complement of the area, their life histories, inter-relationships and contributions to the functioning of its ecosystems. Appendix F indicates the reptile and amphibian species list for Hlathikhulu Forest Reserve.

The forest provides habitat to a variety of reptiles and amphibians including the Delicate leaf folding frog (*Afrixalus delicatus*) listed as least concern by the IUCN and the Vulnerable Spotted Shovel-nosed Frog (*Hemisis guttatus*).

2.8.11 Invertebrates

Invertebrate fauna constitutes the greatest component of species diversity in natural systems but it is often poorly understood while their role in ecosystems is important and often overlooked. In terms of biodiversity and the provision of ecosystem services however, it is important to acknowledge that they are fundamentally important. Invertebrates form important components of food webs, assist nutrient cycling and aeration of soil, decomposition and pollination of plants and trees. For many of these invertebrate species habitat conservation is the most important management intervention required with habitat loss being the biggest threat to their survival. Appendix F indicates the Invertebrate species list for Hlathikhulu Forest Reserve. Species of importance include the Hlathikhulu earthworm (*Proandricus Hlathikhulu*) that is endemic to KZN, as well as the rare and KZN restricted Albatross White (*Appias sabina phoebe*) butterfly.

2.9 OPERATIONAL MANAGEMENT CONTEXT OF HLATHIKHULU FOREST RESERVE

2.9.1 Infrastructure

The Hlathikhulu Forest Reserve has limited infrastructure. A staff house, office and community trail camp at the entrance gate all have no electricity and no potable water. Fencing around the periphery of the protected area is non-existent

or dilapidated and will require a substantial capital layout. Whilst awaiting the outcome of the Section 24 G application the community trail camp remain unfinished and deteriorating.

2.9.2 Staffing Establishment

Hlathikhulu Forest Reserve is currently managed from Phongolo Nature Reserve with only one section ranger stationed at the reserve.

In order to effectively manage the Hlathikhulu Forest Reserve the following proposed additional staff structure will be required:

- Senior Field Ranger
- 3 X Field Rangers
- Labour Supervisor
- 3 X General Assistants

2.9.3 Funding Levels at Hlathikhulu Forest Reserve

Currently the Hlathikhulu Forest Reserve do not have a separate budget, funds for critical management activities are gleaned from the Phongolo Nature Reserve budget. Appendix G contains the financial plan for Hlathikhulu Forest Reserve and it is clear that in order to effectively manage the reserve an annual budget of at least R1 300 000 will be required. A further capital investment will be required to fence the protected area.

2.9.4 Management Effectiveness in Hlathikhulu Forest Reserve

As with all Ezemvelo protected areas, the intention is to continually improve management effectiveness of protected areas in line with the levels adopted for all protected areas within the KZN protected area network. In 2010 Ezemvelo KZN Wildlife conducted management effectiveness assessments for all of its protected areas (Carbutt & Goodman, 2010) and these assessments have subsequently been done on an annual basis. Management effectiveness assessments consider protected area design, the appropriateness of management systems and processes, and delivery of protected area objectives. These assessments assist with the following:

- Promote adaptive management
- Improve project planning
- Promote accountability

Such assessments are intended to enable conservation organisations to refine their strategic, system-wide responses to the most pervasive threats and management weaknesses (Carbutt & Goodman, 2010). They are not performance assessments of individuals but serve to reflect an organisation's proficiency for protected area management as a whole. The assessments for Hlathikhulu Forest Reserve are peer reviewed and evidence based.

The Hlathikhulu Forest Reserve scored 22.9% during the 2016 Management Effectiveness Assessment. This score reflects the lack of financial and human resources to effectively manage and implement critical management activities in the reserve. The reserve scored particularly low in the following critical areas:

- Lack of sufficient financial and human resources to effectively manage the protected area.
- Lack of a formal cultural heritage assessment.
- Lack of appropriate protected area planning across the board include lack of a buffer and protected area expansion plan.
- Infrastructure and equipment related requirements cannot be appropriately addressed due to the lack of resources.
- Absence of an effectively functioning liaison forum that will facilitate effective communication with stakeholders.
- Lack of Information Technology systems, this is mostly due to the remoteness of the protected area and the lack of an electricity supply to the reserve.
- The lack of an appropriate environmental education programme.

2.9.5 Risk assessment

Pressures and threats (Ervin, 2003) are defined as follows:

Pressure: a force, activity, or event that have already had a detrimental impact on the integrity of the protected area over the past five years. Threat: potential or impending pressures in which a detrimental impact is likely to occur or continue to occur in the future, over the next five years.

Table 3 indicates the Pressures, threats and management issues identified by the management team in 2016.

Table 3: Management effectiveness assessment - Pressures, threats and issues

PRESSURES	THREATS
Poaching	Alien and invasive species
Illegal resource use	PA isolation
Alien and invasive species	
PA isolation	

2.10 SUMMARY OF MANAGEMENT ISSUES – STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT)

Figure 3 provides a summary of key management issues, strengths, weaknesses, opportunities, and threats which will be addressed through this management based on the descriptions and issues highlighted in the sections above.



Figure 3: Summary of Key Management Issues (SWOT)

3 STRATEGIC MANAGEMENT FRAMEWORK

In an effort to ensure that Hlathikhulu Forest 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 protected area over the next five years and has been prepared collaboratively through a process involving stakeholders within Ezemvelo KZN Wildlife, the communities around the protected area, local and provincial government departments and other stakeholders.

The vision describes the overall long-term goal for the operation, protection and development of Hlathikhulu Forest 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 issues, strengths, weaknesses, opportunities and threats and described in Section 2 above.

3.1 HLATHIKHULU FOREST RESERVE VISION

To protect the Hlathikhulu Forest and its associated biodiversity

3.2 OBJECTIVES AND STRATEGIC OUTCOMES

An objective has been identified for each of Hlathikhulu Forest 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 4 sets out the key performance areas, the objective for each key performance area and the strategic outcomes, required to realise the objectives.

Table 4: Objectives and strategic outcomes for Hlathikhulu Forest Reserve

KEY PERFORMANCE AREAS	OBJECTIVES	STRATEGIC OUTCOMES
Legal Compliance and Law Enforcement	Comply with and enforce legislation pertaining to the protection, development and management of Hlathikhulu Forest Reserve.	<ul style="list-style-type: none"> ▪ Ensure that the full extent of the Hlathikhulu Forest Reserve is appropriately demarcated. ▪ Ensure there is adequate law enforcement within the Hlathikhulu Forest Reserve. ▪ Ensure effective control of access in Hlathikhulu Forest Reserve.
Stakeholder Engagement	Enable and maintain effective stakeholder relations through communication and collaboration.	Constructive community involvement in the protected area's management through an effectively functioning Liaison forum.

KEY PERFORMANCE AREAS	OBJECTIVES	STRATEGIC OUTCOMES
Buffering Mechanisms & Regional Management	Protect the biodiversity and cultural assets of Hlathikhulu Forest Reserve by promoting compatible Land-use, activities and water-use in areas surrounding the protected area.	<ul style="list-style-type: none"> ▪ Determination of the buffer zone / zone of influence requirements around the Hlathikhulu Forest Reserve ▪ Ensure that water-use planning and landuse planning take cognisance of the Hlathikhulu Forest Reserve objectives.
Environmental Education & Awareness	Actively promote an understanding and appreciation of the values of Hlathikhulu Forest Reserve.	Implement an effective Environmental education and awareness programme linked to the objectives of Hlathikhulu Forest Reserve focussed on the surrounding communities and neighbours
Tourism Management & Development	Investigate, and if feasible maintain sustainable nature based tourism in Hlathikhulu Forest Reserve to provide a high quality visitor experience whilst promoting the natural and cultural values of the protected area.	Ensure that any potential tourism development is in line with relevant legislation and policies.
Cultural Heritage Resource Management	Ensure the protection of all cultural and heritage resources within the Hlathikhulu Forest Reserve in accordance with statutory requirements.	Ensure the protection and the improved awareness of the cultural, heritage and living heritage values of Hlathikhulu Forest Reserve.
Biodiversity Resource & Conservation Management	Protect the ecological integrity of Hlathikhulu Forest Reserve through active interventions based on principles of adaptive and ecosystem based management.	<ul style="list-style-type: none"> ▪ Adequate fire safety within the Hlathikhulu Forest Reserve is ensured ▪ Development and implementation of an invasive species control plan for the protected area. ▪ Achievement of a significant reduction in levels of invasive plant infestations in the protected area. ▪ Implementation of procedures to identify, rehabilitate and manage areas that have been significantly impacted by soil erosion ▪ Implementation of procedures to manage alien animals found within the protected area. ▪ If extractive resource use is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy. ▪ If bioprospecting is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy ▪ Ensure that there is sufficient information and understanding of biodiversity in Hlathikhulu Forest Reserve to inform and support the achievement of specific biodiversity objectives

KEY PERFORMANCE AREAS	OBJECTIVES	STRATEGIC OUTCOMES
		<ul style="list-style-type: none"> ▪ Processes are established to determine success of management interventions in protecting the ecosystems, communities and species of the protected area
Operational Management	Provide adequate human resources, equipment, infrastructure and funding to enable the effective protection, development and management of Hlathikhulu Forest Reserve.	<ul style="list-style-type: none"> ▪ Ensure that the protected area is adequately resourced in terms of financial and human resources, for its effective management and operation. ▪ Development and implementation of a five-year financial plan that identifies the resource needs to achieve the objectives for the protected area ▪ Ensure that the protected area is resourced with a sufficient staff establishment for its effective management and operation ▪ Ensure that there is an effective staff management programme in place ▪ Ensure that the protected area is compliant with the Occupational Health and Safety Act No 85 of 1993 ▪ Ensure that facilities and infrastructure in the protected area are adequately maintained

3.3 CONSERVATION DEVELOPMENT FRAMEWORK

The purpose of the zonation of Hlathikhulu Forest 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-cultural tourism and other resource use. On this basis, within some zones, the permissible intensity of use will be relatively higher than in others.

General principles of zonation:

- There is a general gradation in the zonation categories ranging from high to low protection.
- An overlay zone provides additional protection and may be overlaid onto another zone in order to strengthen the protection e.g. Key Feature Protection Zone.
- A node is an area where tourism, management and service infrastructure can be developed and that has a specified footprint.
- The Wilderness Zone will be buffered by the Low Use Zone.
- Where possible both management and tourism infrastructure should be developed outside the protected area.
- Development of infrastructure should preferably be on the periphery of the zone towards a higher impact/less sensitive adjacent zone.
- Deviations or exceptions in any zones require approval from the management authority. (Operations Committee level)
- Any activities permitted in a category of higher protection are also permitted in a category of lower protection, e.g. activities permitted in the Low Use Zone can also be permitted in the Moderate Use Zone.

All activities and/or developments that take place must be in accordance with the legislative framework, Ezemvelo KZN Wildlife policies, norms and standards and the local protected area rules and regulations.

3.3.1 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 and/or activities may be located or take place.

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, from pristine wilderness to higher intensity nature-based uses. 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.

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-cultural tourism objectives for the protected area.

Not all zonation categories have been applied in determining the system of zonation for Hlathikhulu Forest Reserve, as some are not appropriate to it.

It is unlikely that a protected area will have all of the zones presented below – only those that are relevant should be presented. In addition, if there is an inland aquatic environment (dam), or a marine or estuarine environment, additional zones should be added in accordance with the Ezemvelo KZN Wildlife zonation system (2011).

Map 4: Zonation of Hlathikhulu Forest Reserve

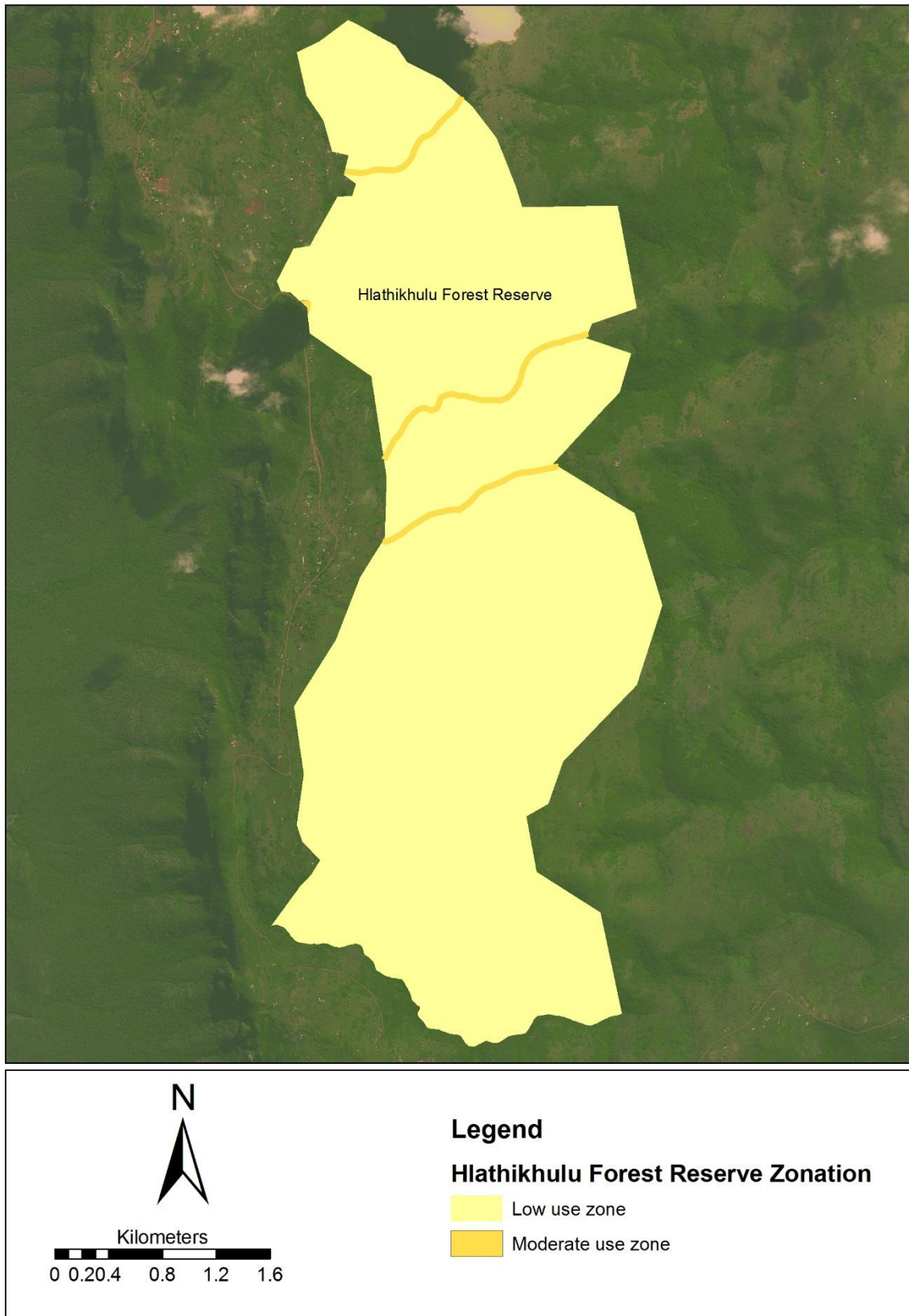


Table 5: Zonation categories for Hlathikhulu Forest Reserve

Low use zone	
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.
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.
Activities and infrastructure	<ul style="list-style-type: none"> ▪ 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 is provided to points where trails start or to tourist facilities. ▪ 4 x 4 tracks are allowed in this zone (limit to number of tracks and frequency of use) as per site specific rules and regulations. ▪ Hiking and formalised trails. Management activities must focus on protecting park resources and core values. ▪ Limited management roads and tracks. ▪ Controlled extractive resource use in line with Ezemvelo KwaZulu-Natal Wildlife policies and norms and standards.
Constraints and implementation	<ul style="list-style-type: none"> ▪ 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.
Moderate use zone	
Description	An area where natural processes and the landscape may be altered to support protected area operations. 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 and an area that serves the operational and support functions of the protected area.
Activities and infrastructure	<ul style="list-style-type: none"> ▪ 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. ▪ Hiking on formalised trails. ▪ Infrastructure is accessible by motorised access.

	<ul style="list-style-type: none"> ▪ Traditional game viewing routes with associated more formalised infrastructure. ▪ Infrastructure is accessible by motorised access.
Constraints and implementation	<ul style="list-style-type: none"> ▪ 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 Zones, to ensure a quality visitor experience in the lower use zone but with the bulk of the impact e.g. access roads and services in the higher 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 picnic areas, camping sites and interpretation centre. ▪ Park Administrative Node (within the Moderate use zone) caters for facilities such as staff accommodation, administrative offices, other operational required infrastructure, 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 / Zone of influence	
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.
Activities and infrastructure	<p>The Park management must define these activities in terms of its specific values and objectives and taking into consideration the following:</p> <ul style="list-style-type: none"> ▪ Alien and invasive species management ▪ Pollution control and prevention ▪ Impact on sense of place ▪ Habitat fragmentation and isolation ▪ Water resource protection ▪ Human/ Wildlife conflict ▪ Climate change adaptation

	<ul style="list-style-type: none"> ▪ Compatible land use ▪ Priority species management
Constraints and implementation	<p>It is desirable for the intensity of land use to decrease closer to the protected area. Activities that are not compatible with the adjacent protected area zonation must be discouraged.</p> <p>Management activities will focus on:</p> <ul style="list-style-type: none"> ▪ 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 SDFs, Schemes, IDPs and Bioregional Plans.

3.4 ADMINISTRATIVE STRUCTURE

A recommended organisational structure for Hlathikhulu Forest Reserve is set out in Figure 4. The figure represents the staff complement and positions that are required to enable the effective operation, management and protection of Hlathikhulu Forest Reserve.

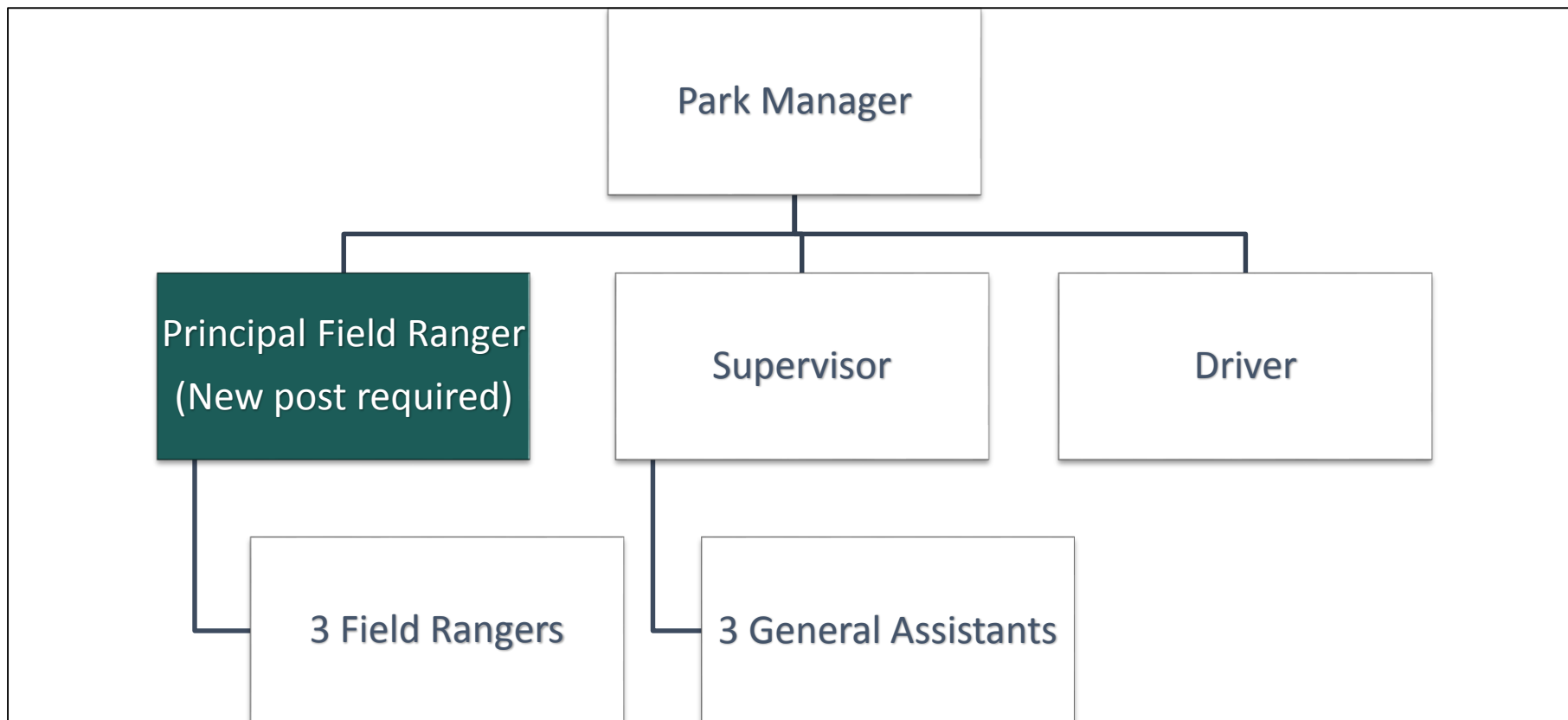


Figure 4: Proposed Organisational Structure for Hlathikhulu Forest Reserve

4 OPERATIONAL MANAGEMENT FRAMEWORK

This section translates the strategic management 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.

Areas that are shaded light grey indicates operational sections that relate to the METT assessment and implementing these sections of the Operational Management Framework should lead directly to an improvement of the METT score for the Hlathikhulu Forest Reserve.

4.1 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 management target. 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 three categories, which have been determined on the following basis:

Priority 1:	A management target that is central to the responsibilities and mandate of Ezemvelo KZN Wildlife or that addresses an aspect of management that is fundamental to the protection of the values and purpose of Hlathikhulu Forest Reserve.
Priority 2:	A management target that addresses an aspect of management that contributes towards community involvement and support for the conservation of Hlathikhulu Forest 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 Hlathikhulu Forest Reserve and/or its surrounding local communities.

4.2 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 Hlathikhulu Forest 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 protected area.
- 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 protected area will be undertaken through surveillance, monitoring and appropriate reaction in the event of an offence.
- Managers should familiarise them with all relevant legislation and legal agreements and apply this to their management actions

The detailed operational requirements for Legal compliance and law enforcement are set out in Table 6 below.

Table 6: Framework for Legal Compliance and Law Enforcement

Strategic Outcome	Management Activities	Management Target	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
LEGAL COMPLIANCE AND LAW ENFORCEMENT						
Ensure that the full extent of the PA is appropriately demarcated and that the demarcation is known by surrounding communities.	<ul style="list-style-type: none"> Upgrade or replace where necessary 12 km boundary fence and provide signage at entry gates Communicate and create awareness of boundary of protected area through presentations/maps at the PA Liaison forum and other relevant fora with stakeholders 	<ul style="list-style-type: none"> Appropriate demarcation of boundaries. (In Hlathikhulu Forest Reserve this will be a 12 km cattle fence and signage at the entry gates) Public knowledge of the boundary and specifically the local community 	<ul style="list-style-type: none"> PA map Signage at main access areas Fence specifications and monitoring reports Minutes and presentations at meetings 	<ul style="list-style-type: none"> The boundary is not appropriately demarcated to achieve its management objectives The protected area boundary is not known by the general public and local communities 	Year 2	Park Manager
Ensure that there is adequate law enforcement within the Hlathikhulu Forest Reserve	Develop and implement a security strategy (Integrated Compliance Plan) for the Hlathikhulu Forest Reserve, which ensures collaboration with all relevant institutions such as SAPS etc.	<ul style="list-style-type: none"> Creation of cooperative structures with local communities and law enforcement officials Informant networks Co-ordinated security efforts 	<ul style="list-style-type: none"> Minutes and attendance registers of meetings of cooperative structures Integrated Compliance Plan 	Increased security breaches in the protected area	Year 2	Park Manager
	Ensure that there is sufficient law enforcement capacity including staff numbers, skills, equipment and support	Capacitated work force that can fulfil the organisation's mandate in terms of law enforcement	<ul style="list-style-type: none"> Organogram Asset register Skills audit Occupational health and safety file Training records 	PA management lacks the capacity or is constrained by limited capacity to enforce the law in keeping with the organisation's mandate	Year 3	Park Manager with relevant regional and support services staff

Strategic Outcome	Management Activities	Management Target	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
	<ul style="list-style-type: none"> Regular patrols covering the full extent of the Hlathikhulu Forest Reserve Prosecution of any offender caught committing an offence 	Legal protection of the full extent of Hlathikhulu Forest Reserve in terms of NEMPA and the National Forest Act	<ul style="list-style-type: none"> Park specific rules Standard Operating Procedure Patrol book/reports Occurrence book records Fire records (arson fires) Incident reports 	<ul style="list-style-type: none"> Increase or frequent recovery of snares Increase in security breaches Recorded losses of game species and/or losses of rare and endangered plants Increase in arson fires 	Ongoing	Park Manager
Ensure effective control of legitimate access in Hlathikhulu Forest Reserve.	Develop and implement Standard Operating Procedures /Station orders for gate access and control	Effective control measures for protected area access	<ul style="list-style-type: none"> Standard operating Procedures / Station orders Gate records Records of the key register Occurrence books records 	<ul style="list-style-type: none"> Ineffective or partially effective control measures to control protected area access. Increase in illegal entry incidents. 	Ongoing	Park Manager

4.3 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 protected area and its managers. The following guiding principles should be adhered to:

- Efforts should be made to ensure that the communities living around the protected area 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 protected area, within the communities, and support for its biodiversity conservation objectives.
- A common understanding of the issues that affect both the protected area and the surrounding communities should be developed and efforts to resolve them should be undertaken cooperatively.

The detailed operational requirements for Stakeholder engagement are set out in Table 7 below.

Table 7: Framework for Stakeholder Engagement

STAKEHOLDER ENGAGEMENT						
Strategic Outcome	Management Activities	Management Target	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
Constructive interaction and co-operation with community, neighbours and stakeholders	<ul style="list-style-type: none"> ▪ Identify/ update list of key neighbours and stakeholders of Hlathikhulu Forest Reserve ▪ Establish the Hlathikhulu Forest Reserve Liaison Forum ▪ Facilitate annual meetings with the Forum 	<ul style="list-style-type: none"> ▪ Key neighbours have been identified and there is a formalised programme of regular pro-active interaction between PA management and neighbouring land users ▪ The formal community forum provide input into decisions relating to PA management 	<ul style="list-style-type: none"> ▪ Updated list/database with contact details of key neighbours, communities and stakeholders ▪ Terms of reference of the Liaison Forum ▪ Liaison Forum meetings agendas and minutes 	<ul style="list-style-type: none"> ▪ Neighbours, communities and stakeholders is not known to the protected area managers. ▪ No process is in place for engagement with key neighbours, communities and stakeholders. 	Year 1 and then ongoing	Park Manager and Community Conservation Officer

4.4 BUFFERING MECHANISMS & REGIONAL MANAGEMENT

4.4.1 Protected area expansion and buffer zone / Zone of influence management

In terms of Ezemvelo KZN Wildlife's protected area expansion strategy, it has identified a number of areas as priorities for protected area expansion around the protected area. In order to safeguard the biodiversity within the Hlathikhulu Forest Reserve and to counter any threatening processes or edge effects, suitable buffer zones and appropriate land uses in these zones should be identified. Appropriate actions may then be taken to secure these buffer zones through protected area expansion mechanisms and local planning tools, as described in Section 6.5.2 below. In ensuring the protection of its biodiversity, the following guiding principles will be adopted in terms of protected area expansion and buffer zone management:

- If under threat, efforts must be made to formally protect the areas of critical habitat, located outside of the protected area.
- Threatening processes and edge effects on the protected area's boundary and beyond it must be identified.
- Appropriate actions must be taken to manage threatening processes and edge effects on the protected area's boundary and beyond it.

4.4.2 Regional management

It is important, in managing the buffer areas around the protected area, that Ezemvelo KZN Wildlife work with local government authorities to ensure that their land use planning considers the biodiversity conservation imperatives of Hlathikhulu Forest Reserve. In this regard it is necessary to ensure that buffer zone considerations are captured in planning tools such as IDPs, SDF's and Land Use Management Schemes (LUMS). 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 protected area.
- 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 8 below.

Table 8: Framework for Buffering mechanisms & Regional Management

Strategic Outcome	Management Activities	Management Targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
PROTECTED AREA EXPANSION						
Where appropriate capitalise on opportunities for protected area expansion	Investigate and pursuit where relevant opportunities for PA expansion on the eastern side of the protected area	Stewardship agreements or MoU's as per the outcomes of the pa expansion investigation	<ul style="list-style-type: none"> Agreements Maps 	PA isolation	Year 5	Park Manager
LOCAL AND REGIONAL PLANNING						
Determination of the buffer zone / zone of influence requirements around the Hlathikhulu Forest Reserve	<ul style="list-style-type: none"> Determine the ecological impacts and edge effects influencing the ecology of the Hlathikhulu Forest Reserve on its boundary Determine the areas that should be demarcated as buffer zones for the purposes of protecting the biodiversity within the Hlathikhulu Forest Reserve Negotiate protected area buffer and enter into agreements with neighbouring landowners 	<ul style="list-style-type: none"> Knowledge of threatening processes on the Hlathikhulu Forest Reserve's boundary Spatial representation (map) of the protected area buffer Agreements with neighbouring landowners 	<ul style="list-style-type: none"> Analysis of threat/ threatening processes in buffer area Map of protected area buffer MOA's, MOU's with landowners Biodiversity agreements with landowners 	<ul style="list-style-type: none"> No protected area buffer has been established Incompatible land uses that negatively affect the protected area values in areas surrounding the PA. Edge effects such as invasive plant encroachment along the Hlathikhulu Forest Reserve's boundary 	Year 2	Park Manager with Ecological Advice Unit
	Pro-actively encourage neighbours to introduce 'soft' / conservation-friendly land-uses	Conservation friendly/ 'soft' land-uses in areas surrounding the	Minutes of meetings to address land-use issues, and/ or environmental awareness programme	Unsustainable and/ or detrimental land-use in the area surrounding the protected area.	Ongoing	Park Manager with District Conservation Officer and Community

	to facilitate buffering of the protected area.	Hlathikhulu Forest Reserve's boundary	to facilitate an understanding of the need for buffering the protected area			Conservation Officer
Ensure that water-use planning and land-use planning take cognisance of the Hlathikhulu Forest Reserve objectives.	<ul style="list-style-type: none"> ▪ Make inputs into the development of local and district municipality IDP's and SDF's in an effort to avoid environmentally harmful land uses in Hlathikhulu Forest Reserve's buffer zones ▪ Incorporate requirements for the Hlathikhulu Forest Reserve's protection into Land use planning schemes (LUMS) ▪ Input into water-use planning in relevant catchments to ensure that the protected area ecological requirement and infrastructure requirements (potable water) are addressed in the planning process ▪ Active membership of the relevant catchment management forum 	<ul style="list-style-type: none"> ▪ Adoption of environmentally appropriate land uses in IDPs and SDFs in the areas immediately surrounding the protected area ▪ Retention of existing benign land uses in the areas immediately surrounding the protected area ▪ Maintenance of ecological functioning of the protected area in terms of water use ▪ Provision of sufficient good quality water to staff 	<ul style="list-style-type: none"> ▪ 	<ul style="list-style-type: none"> ▪ Identification / approval of environmentally harmful land uses on the boundaries of the Hlathikhulu Forest Reserve. ▪ Adjacent land-use and water-use planning do not consider the protected area's objectives 	Annually	Park Manager with District Conservation Officer and Planning Unit

4.5 ENVIRONMENTAL EDUCATION AND AWARENESS

Environmental interpretation and education of Hlathikhulu Forest Reserve's natural and cultural resources will be aimed at creating awareness, understanding and appreciation of its unique cultural heritage, 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.
- Where possible, partnerships with NGO's should be established to ensure effective environmental education and awareness.
- Opportunities to create awareness based on international initiatives such as Arbor Day should be encouraged.

The detailed operational requirements for Environmental education and awareness are set out in Table 9 below.

(There is currently no Community Conservation Officer, this activity could only take place should there be a CCO appointed)

Table 9: Framework for Environmental Education and Awareness

Strategic Outcome	Management Activities	Management Targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
ENVIRONMENTAL EDUCATION AND AWARENESS						
Implement an effective Environmental education and awareness programme linked to the objectives of Hlathikhulu Forest Reserve and focussed on the surrounding communities and neighbours	<ul style="list-style-type: none"> Compile information and material relating to Hlathikhulu Forest Reserve and its values for presentation to school groups/ communities & stakeholders Collaborate with partners to arrange environmental education and awareness events during national and international environmental days Implement a monitoring programme to assess the effectiveness of the Environmental Education and Awareness programme Facilitate 2 x educational tours from school groups from the surrounding community to Hlathikhulu Forest Reserve Visit schools in surrounding communities 2 x per year. 	<ul style="list-style-type: none"> Increased capacity and understanding of the importance of the protection of Hlathikhulu Forest Reserve by stakeholders and surrounding communities Educational tours x 2 to PA School visits in the surrounding community (2) 	<ul style="list-style-type: none"> Education and awareness programme and attendance lists Effectiveness of assessment / monitoring documentation 	<ul style="list-style-type: none"> Lack of understanding and awareness of the values of the protected area and biodiversity conservation in communities around the protected area Lack of planning for education and awareness Ad hoc education and awareness activities taking place on request Lack of strategy linking the Environmental Education and Awareness to the protected area objectives Lack of assessment of the effectiveness of the Environmental Education and awareness programme 	Year 4	Park Manager and Community Conservation Officer (There is currently no Community Conservation Officer, this activity could only take place should there be a CCO appointed)

4.6 TOURISM MANAGEMENT & DEVELOPMENT

4.6.1 Tourism product development and management

Ezemvelo KZN Wildlife has the mandate to sustainably develop Hlathikhulu Forest Reserve to fully realise its eco-cultural tourism and associated income-generating potential, within the context of protecting its biodiversity and cultural values. In further developing and managing tourism within the protected area, the following guiding principles should be adhered to:

- Tourism products developed within the protected area must be appropriate to the values and purpose for which the protected area has been proclaimed and must not threaten its biodiversity or ecological function.
- In developing tourism products, requirements for environmental authorisation must be considered and adhered to.
- Tourism products should be designed to capitalise on the unique beauty and biodiversity features of the protected area.
- Tourism products should be developed in response to tourism market demands and opportunities within the protected area and should be carefully assessed to determine their viability.
- The development of tourism products within the protected area 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 protected area.
- Tourism infrastructure should be maintained to an acceptable standard based on the Ezemvelo standard and infrastructure must be incorporated in the Scheduled maintenance programme of the protected area.

The detailed operational requirements for Tourism are set out in Table 10 below.

Table 10: Framework for Tourism Management & Development

Strategic Outcome	Management Activities	Management Targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
TOURISM MANAGEMENT & DEVELOPMENT						
Ensure that tourism facilities are legally compliant and maintained to an acceptable standard	Implement the outcome of the Section 24 G application. Depending on the outcome of the Environmental Authorisation the following activities needs to be implemented:	Fully functional, compliant and safe tourism facilities	Environmental authorisation	<ul style="list-style-type: none"> Non-compliance with NEMA and EIA regulations Degradation of conservation values due to tourism operators / visitors impact 	Year 1 then ongoing	Commercial operation
Investigate opportunities to enhance low key tourism opportunities in HFR	Tourism feasibility study	Sustainable tourism facilities	Feasibility report	Tourism not feasible	Year 4	Commercial operation

4.7 BIODIVERSITY RESOURCE & CONSERVATION MANAGEMENT

4.7.1 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 protected area, 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 protected area 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 protected area 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 firefighting:

- The need to maintain a system of firebreaks to enable the management of controlled burns and to effectively fight wildfires.
- The size of the protected area 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.
- Firefighting equipment mounted on the backs of vehicles.
- Backpack sprayers
- Beaters
- Safety equipment for personnel involved in firefighting.

The detailed operational requirements for fire management are set out in Table 11 below.

Table 11: Framework for Biodiversity Resource & Conservation Management - Fire Management

Strategic outcome	Management activities	Management targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
FIRE MANAGEMENT						
Adequate fire safety within the Hlathikhulu Forest Reserve is ensured	<ul style="list-style-type: none"> ▪ Maintain a system of firebreaks within the protected area that are of adequate extent, which are prepared at the correct time of the year under the appropriate weather conditions. ▪ Ensure that staff are trained and that adequate firefighting equipment is available within the protected area. (There is currently no Staff capacity and this activity could only take place should staff be appointed) ▪ Maintain membership of the local Fire Protection Association, or if one does not exist, champion the creation of one. 	Compliance with the National Veld and Forest Fires Act	<ul style="list-style-type: none"> ▪ Fire returns ▪ Letters to neighbours to inform them of burning ▪ Notices placed informing stakeholders of burning ▪ Training registers ▪ Fire Protection Association membership and meeting minutes 	<ul style="list-style-type: none"> ▪ Inadequate personnel, equipment or an inability to communicate effectively in fighting fires. ▪ Wildfires spreading from the protected area to neighbouring properties ▪ Legal actions against Ezemvelo due to non-compliance with the National Veld and Forest Fire Act 	Ongoing	Park Manager

4.7.2 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 ongoing 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.

4.7.3 Soil erosion control

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 protected area 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 12 below.

Table 12: Framework for Biodiversity Resource & Conservation Management - Invasive Plant and Soil Erosion Control

Strategic Outcome	Management Activities	Management Targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
INVASIVE PLANT CONTROL						
Development of an invasive species control plan for the protected area.	<ul style="list-style-type: none"> ▪ Develop an Alien and Invasive Species Eradication and Control Plan for Hlathikhulu Forests Reserve ▪ Develop a detailed inventory of the listed invasive species. ▪ Map the areas and extent of invasive species infestations. ▪ Describe previous efforts to control and eradicate invasive plants. ▪ Cost the alien and invasive control plan to assist with budget submissions and sourcing sufficient funding ▪ Outline the measures required to monitor, control and eradicate the listed invasive species. ▪ Identify measurable indicators of progress and success in implementing the invasive species control plan 		<ul style="list-style-type: none"> ▪ Alien and Invasive Species Eradication and Control Plan ▪ Maps indicating invasive species and infestation densities ▪ Inventory of invasive species ▪ Records of previous control efforts ▪ Monitoring records of control efforts ▪ Photographs of control efforts and fixed point photographs to assess change in infestation over time 	<ul style="list-style-type: none"> ▪ Further spread of existing levels of infestation of listed invasive species ▪ Persistence of existing infestations ▪ New infestations of listed invasive species 	Year 1 and then annually	Park Manager, Ecological Advice Unit and Alien Plant Control Unit
Achievement of a significant reduction in levels of invasive plant	<ul style="list-style-type: none"> ▪ Implement concerted, sustained control efforts in identified areas of invasive plant infestation based on the invasive control plan 	Implement targets set in the Invasive Species Control Plan	<ul style="list-style-type: none"> ▪ Monitoring records and reports of alien 		Year 5	Ezemvelo KZN Wildlife Alien Plant Control

Strategic Outcome	Management Activities	Management Targets	Target Indicator (Evidence)	Indicators of Concern	Priority	Responsibility
INVASIVE PLANT CONTROL						
infestations in the protected area.	<ul style="list-style-type: none"> Undertake suitable rehabilitation measures, including re-vegetation using indigenous plant species, to prevent soil erosion, following clearing of invasive plant species Develop partnerships with Working for Water and other strategic programmes 		<ul style="list-style-type: none"> and invasive plant control efforts Maps and photos indicating changes in infestations due to control efforts 			Unit and Park Manager
SOIL EROSION CONTROL						
Implementation of procedures to identify, rehabilitate and manage areas that have been significantly impacted by soil erosion	<ul style="list-style-type: none"> Undertake a detailed survey of the protected area to identify the extent and severity of soil erosion Identify the requirements for soil erosion control and rehabilitation within the protected area 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 	Effective soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion	<ul style="list-style-type: none"> Records of control efforts implemented A detailed map depicting areas of soil erosion within the protected area Monitoring records including maps and fixed point photographs to measure success of efforts 	<ul style="list-style-type: none"> Further erosion of impacted areas Sedimentation impacts in watercourses and wetland areas 	Year 5	Park Manager

The detailed operational requirements for Alien animal control and Resource utilisation are set out in Table 13 below.

4.7.4 Alien animal control

Alien animal species can threaten the ecological, genetic or natural aesthetic integrity of Hlathikhulu Forest 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 protected area 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 protected area 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).

4.7.5 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 protected area will be considered, based on the following guiding principles:

- The context of the protected area'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 protected area.
- 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 protected area's managers to effectively control and monitor such resource use.

Table 13: Framework for Biodiversity Resource & Conservation Management - Alien Animal Control and Resource Utilisation

Strategic Outcomes	Management Activities	Management target	Target indicator (Evidence)	Indicators of Concern	Priority	Responsibility
ALIEN ANIMAL CONTROL						
Implementation of procedures to manage alien animals found within the protected area.	Develop and implement a strategy to address illegal cattle grazing in Hlathikhulu in collaboration with community leaders and the Department of Agriculture.	<ul style="list-style-type: none"> Creation of cooperative structures between Ezemvelo KZN Wildlife, local communities and law enforcement officials Control of any alien animals found within the protected area 	<ul style="list-style-type: none"> Incident records Occurrence book reports 	Uncontrolled access of domestic animals or livestock within the protected area.	Year2	Conservation Manager
RESOURCE UTILISATION						
If extractive resource use is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy.	<ul style="list-style-type: none"> Develop a Resource Use Plan for the reserve Ensure that any approved extractive resource use is aligned to the protected area zonation plan Communicate the approach for sustainable resource use to the neighbouring communities Record and value all extractive resource use 	Ecologically sustainable extractive resource use that benefits local communities	<ul style="list-style-type: none"> Resource returns Cost reports of natural resource use Minutes of meetings with communities 	Uncontrolled or unsustainable resource extraction	Ongoing	Park Manager
If bioprospecting is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy	Collection of biological materials or samples if the appropriate permits or permission has been given in accordance with Ezemvelo KZN Wildlife policy	Sustainable, legal collection of biological material or samples	<ul style="list-style-type: none"> Permits for bioprospecting Monitoring records/ returns 	Illegal collection of biological material or samples.	If required	Park Manager and Resource Use Ecologist

4.7.6 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 protected area and meeting set provincial conservation targets for species and vegetation types.
- The introduction of indigenous species into the protected area 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 protected area.

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.

4.7.7 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 Hlathikhulu Forest 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 14: Systematic Conservation Targets to which Hlathikhulu Forest Reserve contributes³

Feature	Description	Percentage of target located within Hlathikhulu Forest Reserve	Notes
<i>Proandricus Hlathikhulu</i>	Annelid	100	
<i>Charaxes xiphares penningtoni</i>	Butterfly	1.88	
<i>Centrobolus rugulosus</i>	Millipede	3.22	
<i>Doratogonus major</i>	Millipede	49.51	
<i>Orthoporoides corrugatus</i>	Millipede	0.32	
<i>Ulodesmus robustus</i>	Millipede	100	
<i>Zinophora laminata</i>	Millipede	0.03	
<i>Pachycarpus lebomboensis</i>	Plant	21.29	Near Threatened
<i>Lycophidion pygmaeum</i>	Reptile	0.17	
Eastern Scarp Forests : Northern Zululand Lebombo Scarp Forest	Vegetation Type	23.87	
Lebombo Summit Sourveld	Vegetation Type	0.72	
Southern Lebombo Bushveld	Vegetation Type	0.18	

The detailed operational requirements for wildlife management and the achievement of conservation targets are set out in Table 15 below.

³ These are modelled distributions except for species and features indicated with a *

Table 15: Framework for Biodiversity Resource & Conservation Management - Wildlife Management and Conservation Targets

Strategic Outcomes	Management Activities	Management Targets	Target Indicators (Evidence)	Indicators of Concern	Priority	Responsibility
CONSERVATION TARGETS						
Ensure that there is sufficient information and understanding of biodiversity in Hlathikhulu Forest Reserve to inform and support the achievement of specific biodiversity objectives	<ul style="list-style-type: none"> Identify priority / key species, habitats and ecosystems Identify gaps in available knowledge with regard to these species Develop internal and external partnerships to address these gaps Ensure that the abovementioned data is in an understandable format and readily accessible for decision making purposes to the Park Manager. 	Priority species, habitats and ecosystems has been identified and information is available on site to support planning and decision making	<ul style="list-style-type: none"> Priority species, habitat and ecosystem conservation targets List of required information/ research needs Information management system containing supporting information 	<ul style="list-style-type: none"> Priority species, habitats and ecosystems have not been identified <p>Information is not sufficient to support planning and decision making</p>	Year 1 and then annually	Park Manager and Eco Advice Unit
Processes are established to determine success of management interventions in protecting the ecosystems, communities and species of the protected area	Develop surveillance and monitoring plans for key management interventions in accordance with the Ezemvelo KZN Wildlife policies and norms and standards, specifically for <i>Parthenium</i>	Achievement of protected area conservation targets	<ul style="list-style-type: none"> 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 KZN Wildlife Ecological Advice Unit

4.7.8 Cultural Heritage Management

According to the National Heritage Resources Act No. 25 of 1999 the 'conservation, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance'.

The Hlathikhulu Forest Reserve has both natural and cultural values that need to be protected. In addressing Cultural heritage management, the following guiding principles should be adhered to:

- Access to cultural heritage sites must be of a nature that considers the safety of the visitors.
- The cultural heritage sites including grave sites needs to be properly demarcated in order to prevent accidental damage by fire or other means.
- Sites (if required and based on the AMAFA recommendation) must be cleared of excess vegetation to reduce fire risk.

In managing the cultural assets of Hlathikhulu Forest Reserve, in accordance with the National Heritage Resources Act the following guiding principles will apply:

- All Cultural resources must be carefully managed to ensure their survival.
- Heritage resources contribute significantly to research, education and tourism and must be managed and used in a way that ensures respect for cultural values.
- Promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs.
- Heritage resources must be researched, documented and recorded.

The detailed operational requirements for wildlife management and the achievement of conservation targets are set out in Table 16 below.

Table 16: Framework for Biodiversity & Conservation Management - Cultural Heritage Management

Strategic outcome	Management activities	Management targets	Target indicator (Evidence)	Indicators of Concern	Priority	Responsibility
CULTURAL HERITAGE MANAGEMENT						
Ensure that there is sufficient information and understanding of cultural heritage in Hlathikhulu Forest Reserve to inform and support their management	Undertake a formal cultural heritage investigation	Developing a critical set of cultural heritage information to support planning and decision making	<ul style="list-style-type: none"> Cultural heritage values included in protected area management plan Cultural heritage report for Hlathikhulu Forest Reserve 	<ul style="list-style-type: none"> Cultural heritage sites not known Lack of sufficient cultural heritage knowledge to base planning and decision making 	Year 1	Park Manager with AMAFA
	Facilitate in partnership with AMAFA the identification and recording of all cultural heritage sites and values within the Hlathikhulu Forest Reserve		<ul style="list-style-type: none"> Photographic and descriptive records of heritage sites Maps indicating cultural heritage List of required information/ research needs Information management system containing supporting information 	No cultural heritage investigation has been undertaken and therefore no management of these resources are taking place.	Year 2	Park Manager with AMAFA
Ensure the protection and the improved awareness of the cultural heritage resources and values of Hlathikhulu Forest Reserve	Develop & implement site specific management plans including a Collections plan for all cultural heritage sites of significance in Hlathikhulu Forest Reserve	Effective guidelines for management of all cultural heritage sites in Hlathikhulu Forest Reserve	Management guidelines for each heritage site	Vandalism or damage to heritage sites due to inappropriate tourism or management activities	Year 5	Park Manager with Amafa
	Assess the effectiveness of cultural heritage management through a cultural heritage condition assessment	Management effectiveness assessment for cultural heritage management	Cultural heritage management condition assessment report	Cultural heritage sites not effectively managed	Ear 5	External specialist

4.8 OPERATIONAL MANAGEMENT

4.8.1 Financial and human resources

Hlathikhulu Forest Reserve cannot be effectively managed without adequate sustained funding and sufficient human resources. In addressing the financial and human resource needs of the protected area, the following guiding principles should be adhered to:

- Adequate funding must be provided for the management of the Hlathikhulu Forest Reserve to ensure the protection of its biodiversity and cultural values and the continued provision of its ecosystem services.
- Commercial operations within the Hlathikhulu Forest Reserve must be self-sufficient and, if profitable, should be used to subsidise its conservation and community programmes.
- Adequate, properly trained and experienced staff must be employed at the Hlathikhulu Forest Reserve to undertake the operations required for its effective management.

4.8.2 Facilities and infrastructure

In order for Hlathikhulu Forest Reserve to operate appropriately, adequate facilities and infrastructure need to be developed and maintained both for management and eco-cultural tourism purposes. In addressing facilities and infrastructure needs in the protected area, 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 protected area.
- Facilities and infrastructure must be provided to ensure the effective management and operation of the protected area.
- Practical solutions to the provision of electricity should be sought at the protected area based on available renewable energy technologies.
- Facilities and infrastructure must be provided to support the eco-cultural tourism activities in the protected area.

The detailed operational requirements for financial and human resource, and facilities and infrastructure development and management are set out in Table 17 below.

Table 17: Framework for Operational Management - Financial, Human Resources and Infrastructure

Strategic outcome	Management activities	Management target	Target indicator (Evidence)	Indicators of Concern	Priority	Responsibility
FINANCIAL RESOURCES						
Development and implementation of a five-year financial plan that identifies the resource needs to achieve the objectives for the protected area	Develop a five-year projection of income and expenditure targets that will allow for the effective achievement of the protected area's objectives	An understanding of the PA's financial requirements with an separate annual budget request	<ul style="list-style-type: none"> Budget proposals and budget allocations Income generation statistics Commitment register 	Inadequate funding to effectively protect and operate the protected area	Year 1	Ezemvelo KZN Wildlife Regional Management Unit and Park Manager
	<ul style="list-style-type: none"> Develop and submit annual budget requests based on the Annual plan of operation and the financial plan Manage the budget in line with the park management plan and the Public Finance Management Act No 1 of 1999 	Secure and sufficient budget approved to address critical protected area needs	<ul style="list-style-type: none"> Budget request Annual plan of operation Commitment ledger 	<ul style="list-style-type: none"> No operational budget Inadequate operational budget 	Annual	Ezemvelo KZN Wildlife Regional Management Unit and Park Manager
HUMAN RESOURCES						
Ensure that the protected area is resourced with a sufficient staff establishment for its effective management and operation	<ul style="list-style-type: none"> Undertake a review of current staffing levels to determine the human resource needs to effectively manage the Hlathikhulu Forest Reserve Employ sufficient, appropriately skilled staff to meet the management and operational requirements of the Hlathikhulu Forest Reserve Undertake regular training and skills development to ensure that staff are able to effectively complete their duties 	<ul style="list-style-type: none"> Staff establishment that is adequate for the achievement of critical management needs Protected area staff adequately skilled for the execution of their duties 	<ul style="list-style-type: none"> Organogram Training requests, records and registers 	<ul style="list-style-type: none"> Staff establishment is inadequate for the achievement of critical management needs Protected area staff lack skills for protected area management No skills development programme 	Year 2	Ezemvelo KZN Wildlife Regional Management Unit and Park Manager

Strategic outcome	Management activities	Management target	Target indicator (Evidence)	Indicators of Concern	Priority	Responsibility
Ensure that there is an effective staff management programme in place	<ul style="list-style-type: none"> Effective supervision of staff and continual assessment of standard of work Implementation of a performance management system 	Fully implemented staff management system ensuring that staff execute duties to a high standard	Staff work plans, attendance records and performance assessments	No staff management programme is in place and unacceptable standard of work	Ongoing	Park Manager
Ensure that the protected area is compliant with the Occupational Health and Safety Act No 85 of 1993	<ul style="list-style-type: none"> Appoint Health and safety representatives Provide training in work considered Listed work under the act as well as first aid training Identify hazards and evaluate risks for listed work Provide safety equipment where required Keep record of any incidents including Injury on Duty Collaborate with OH&S representatives to minimise risks to employees Implement a formal programme for hazardous substances with the relevant infrastructure to keep these securely Provide such facilities, assistance and training as a health and safety representative may reasonably require and as have been agreed upon for the carrying out of his functions Ensure that any chemical or listed substances that are required to be stored or handled by protected area staff are stored and handled in a safe way 	PA management effectively and fully implement the requirements in the Occupational Health and safety Act No 85 of 1993	<ul style="list-style-type: none"> Occupational Health and Safety Files Training records of first aiders Inspection sheets for OH&S representatives Incident reports Injury on duty documentation Hazardous substance programme documentation 	Noncompliance with the Occupational Health and safety Act No 85 of 1993	Ongoing	Park Manager

Strategic outcome	Management activities	Management target	Target indicator (Evidence)	Indicators of Concern	Priority	Responsibility
FACILITIES AND INFRASTRUCTURE						
Ensure that facilities and infrastructure in the protected area are adequately developed and maintained	<ul style="list-style-type: none"> Ensure that the boundary fence is regularly inspected and adequately maintained to ensure security and to contain game species within the protected area Develop and implement a schedule maintenance programme to maintain facilities and infrastructure in a condition that meets relevant environmental, health and safety requirements 	Regular scheduled maintenance of all facilities and infrastructure	<ul style="list-style-type: none"> Fence inspection reports and maps Infrastructure schedule and inspection reports 	<ul style="list-style-type: none"> Environmental, health or safety incidents associated with inadequately maintained facilities and infrastructure Regular escape of key species due to inadequate fencing 	Ongoing	Park Manager
	<ul style="list-style-type: none"> Implement the outcome Environmental Authorisation of the Tented Camp at Hlathikhulu Forest Reserve 	Compliant and sustainable tourism infrastructure	Environmental Authorisation	Contravention and non-compliance of the EIA regulations	Upon receipt of Environmental Authorisation	Park Manager, Projects & Planning

5 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.

5.1 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.
- 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 Hlathikhulu Forest Reserve is set out in Table 18.

Table 18: Annual Surveillance and Monitoring Schedule

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
Law enforcement	Schedule of patrols	Written record	Weekly	Park Manager	Monthly report
	Recovery of snares	Photographs/written record	Weekly		Monthly report
	Illegal incidents	Photographs/written record	Per event		Record of event
Stakeholder engagement	Minutes of meetings of the liaison forum	Written record	Bi-annually	Conservation Manager	Annual report
Buffer zone management	Influx of listed invasive vegetation on the protected area's boundaries.	Surveillance plan	To be determined	Conservation Manager supported by Ecological Advice Unit	Annual report
Local and regional planning	Land uses that are approved in the areas around the protected area in local and regional IDPs and SDFs	Written record	Annually	Ezemvelo KZN Wildlife Senior Park Manager	Annual report
Fire management	Burning of firebreaks as part of fire management	Written record/map/photography	Annually	Park Manager	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	Park Manager supported by Ecological Advice Unit	Monthly report
	State of areas in which invasive plants have been eradicated				
	Records of labour hours/days	Written record	Annually		Monthly report
	Herbicide usage	Written record	Annually		Monthly report
Soil erosion control	Areas subject to erosion control	Monitoring plan	To be determined	Park Manager supported by	Monthly report
	State of rehabilitated areas of erosion				

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
				Ecological Advice Unit	Monthly report
Conservation targets	Incidents related to flagship species	Photographs/written record	Per event	Park Manager	Record of event
	Status of key rare and endangered species, particularly those for which conservation targets have been set	Monitoring plan	To be determined	Park Manager supported by Ecological Advice Unit	Annual report
Resource utilisation	Extraction of resources from the protected area	Photographs/written records	Per event	Park Manager	Monthly report
Human resources	Staffing levels	Number of full-time staff	Annually	Park Manager	Annual report
	State of facilities and service infrastructure	Maintenance schedule/written records	Monthly	Park Manager	Monthly report
	Pollution events	Photographs/written records	Per event	Park Manager	Per event

As set out in Table 20 the following issues require a surveillance plan:

- The influx of listed invasive vegetation on the Hlathikhulu Forest Reserve's boundaries.

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.

5.2 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 Hlathikhulu Forest Reserve, for its review and comment. Records of recommendations for update/changes to the five-year plan should be kept on record so that when the five-year plan is revised for the subsequent five years, 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 five-yearly 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.
- 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 relevant Operations Committee before being subjected to the appropriate stakeholder participation process and before recommends that the proposed amended protected area management plan be submitted for authorisation to the Ezemvelo KZN Wildlife EXCO Committee, Board and to the MEC.

6 Hlathikhulu Forest 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.

6.1 IMPLEMENTATION OF THE PROTECTED AREA MANAGEMENT PLAN

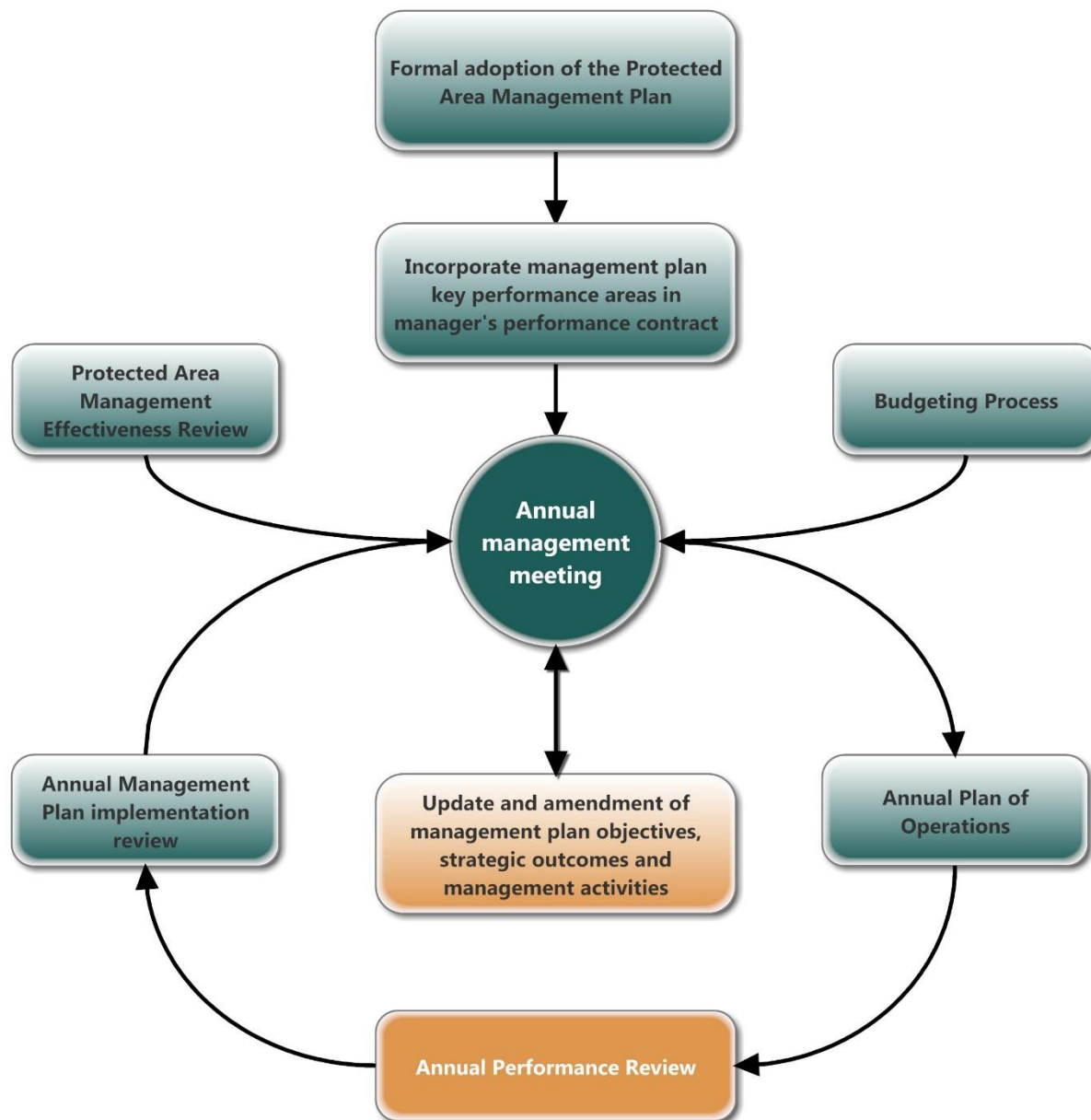


Figure 5: Process for the Implementation of Protected Area Management Plans

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 Hlathikhulu Forest Reserve will be to:

- Finalise the annual report, as part of the annual protected area management plan implementation review described 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 the year, based on the key performance areas set out in the management plan, in accordance with the Hlathikhulu Forest Reserve manager'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 management plan.

6.2 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 relevant Operations Committee in order to assign responsibility for the completion of the management activity.

6.3 HLATHIKHULU FOREST RESERVE RESOURCE REQUIREMENTS

In developing annual plans of operation for Hlathikhulu Forest 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 protected area.

6.3.1 Staff and equipment

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

- Administration and management of the protected area.
- Patrolling of the protected area and its boundaries.
- Firefighting response to wildfires.
- An ongoing invasive plant species control programme.
- An ongoing soil erosion control and rehabilitation programme.
- Ecological monitoring and data capture.
- Maintenance of roads, paths and fences within the protected area.
- Maintenance of facilities and infrastructure within the protected area.
- Community liaison and cooperation.
- Environmental interpretation and education.

6.3.2 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:

- Upgrade and or replacement of fenceline. (Cattle fence only).
- Provision of power and water to offices and staff accommodation.
- Installation of signage directing tourists to the reserve once the community camp has been
- Installation of directional and interpretive signage within the nature reserve.
- Development of facilities and infrastructure to support new tourism products identified in the conservation development plan. (This will be subject to the

6.4 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. Appendix G contains the financial plan for Hlathikhulu Forest Reserve.

6.5 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.

6.6 FINANCIAL REPORTING

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

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HLATHIKHULU FOREST RESERVE

Protected Area Management Plan

Appendices



Conservation, Partnerships & Ecotourism

Prepared by

Ezemvelo KwaZulu-Natal Wildlife

Protected Area Management Planning Unit

& Hlathikhulu Forest Reserve Planning Committee

Developed 2016

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APPENDIX A

Appendix A: Definition of terms

Alien species	Species or genotypes, which are not indigenous to Hlathikhulu Forest 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 Hlathikhulu Forest 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 palaeontological 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: <ol style="list-style-type: none"> 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;”

APPENDIX A

	For the purposes of this management plan, 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 – <ol style="list-style-type: none"> 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.

APPENDIX A

Partnerships	A co-operative and / or collaborative arrangement between the Game Reserve management / Ezemvelo KZN Wildlife 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 Conservation Manager.
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).

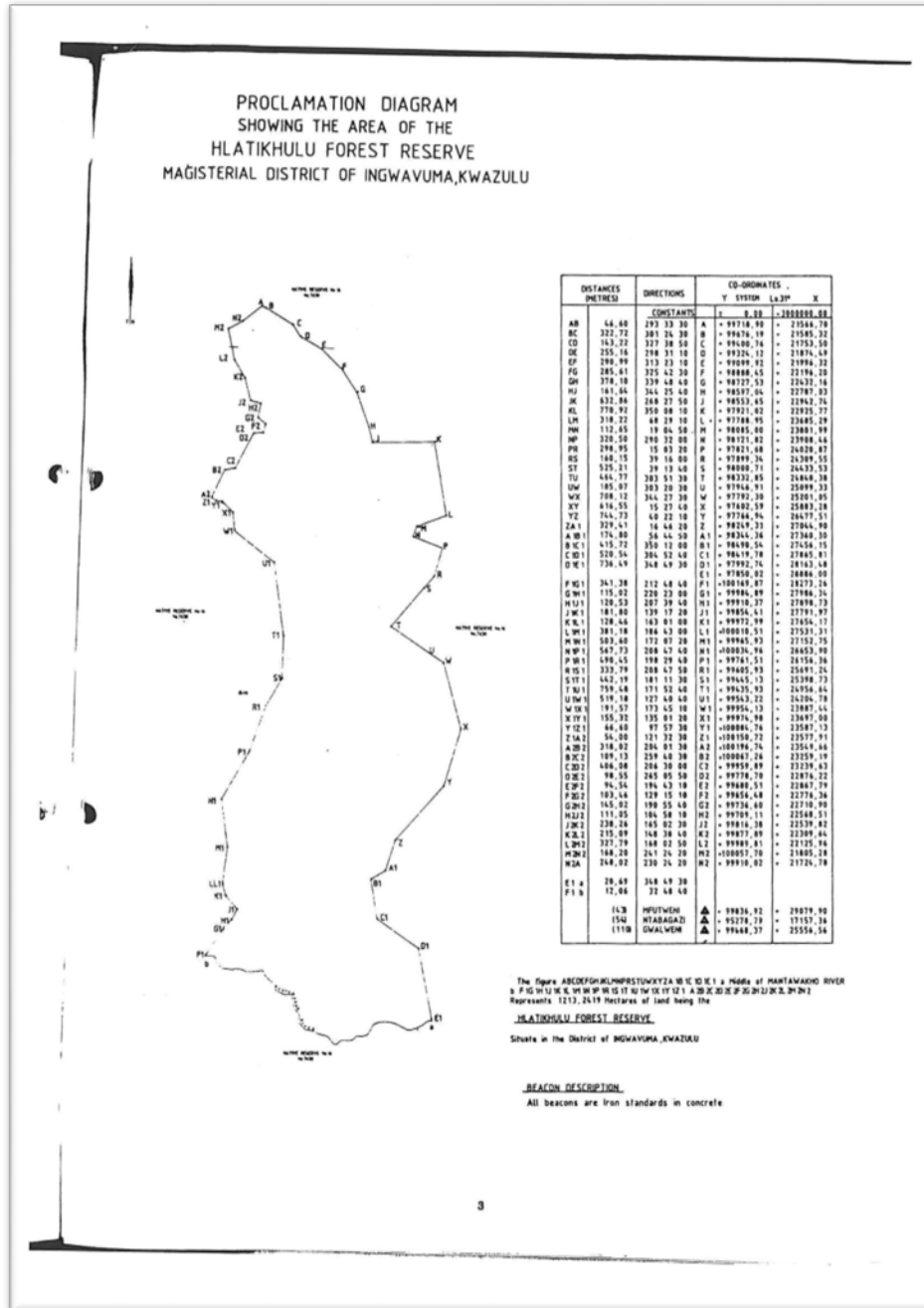
APPENDIX B

Appendix B: Proclamation of Hlathikhulu Forest Reserve

KWAZULU GOVERNMENT NOTICE NO 95 OF 1987 ESTABLISHMENT OF HLATHIKHULU NATURE RESERVE IN THE DISTRICT OF INGWAVUMA, KWAZULU

I, Mangosuthu G. Buthelezi, Minister of Economic Affairs acting under and by virtue of the powers vested in me by section 29 (1) of the KwaZulu Nature Conservation Act, 8 of 1975 as amended hereby determine that the area defined in the accompanying Schedule be known as a nature reserve and that the name Hlathikhulu Nature Reserve be assigned to the said area.

M.G. BUTHELEZI
MINISTER OF ECONOMIC AFFAIRS



APPENDIX C

Appendix C: List of statutes to which protected areas 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]
- Marine Living Resources Act [No. 18 of 1998]
- National Environmental Management Act [No. 107 of 1998]
- National Environmental Management: Biodiversity Act [No. 10 of 2004]
- National Environmental Management Integrated Coastal Management Act [No. 24 of 2008]
- National Environmental Management: Protected Areas Act [No. 57 of 2003]
- National Environmental Management Waste Act [No. 59 of 2008]
- 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]
- World Heritage Convention Act [No. 49 of 1999]

General Management:

- Development Facilitation Act [No. 67 of 1995]
- Disaster Management Act [No. 57 of 2002]
- Fire Brigade Services Act [No. 99 of 1987]
- KwaZulu-Natal Planning and Development Act [No. 5 of 1998]
- Land Reform Labour Tenant Act [No. 3 of 1996]
- 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]
- Promotion of Access to Information Act [No. 2 of 2000]
- Promotion of Administrative Justice Act [No. 3 of 2000]
- Restitution of Land Rights Act [No. 22 of 1994]
- Spatial Planning and Land Use Management Act [No. 16 of 2013]
- Water Services Act [No. 108 of 1997]
- National Tourism Act [No. 3 of 2014]

Financial Management:

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

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]
- 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]

Appendix D: Environmental impact assessment regulations listed activities in terms of R.985, Listing Notice 3

The purpose of this Notice is to list activities where environmental authorisation is required prior to commencement of that activity in specific identified geographical areas only.

The following activities are regulated in terms of Listing Notice 3:

1. The development of billboards exceeding 18 square metres in size outside urban areas, mining areas or industrial complexes.
2. The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.
3. The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower- a) is to be placed on a site not previously used for the purpose; and b) will exceed 15 metres in height - but exclude attachments to existing buildings and masts on rooftops.
4. The development of a road wider than 4 metres with a reserve less than 13,5 metres.
5. The development of resorts, lodges, hotels and tourism or hospitality facilities that sleep less than 15 people.
6. The development of resorts, lodges, hotels and tourism or hospitality facilities that sleeps 15 people or more.
7. The development of aircraft landing strips and runways 1.4 kilometres and shorter
8. The development and related operation of above ground cableways and funiculars.
9. The development and related operation of zip-lines or foefie-slides exceeding 100 metres in length.
10. The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.
11. The development 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.
12. The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.
13. The development and related operation of facilities of any size for any form of aquaculture.
14. The development of - a) canals & channels exceeding 10 square metre in size; b) bridges exceeding 10 square metres in size; c) dams, where the dam including infrastructure & water surface area exceeds 10 square metres in size; d) weirs, where the weir including infrastructure & water surface area exceeds 10 square metres in size; bulk storm water outlet structures exceeding 10 square metres in size; e) marinas, slipways & jetties exceeding 10 square metres in size; f) buildings & boardwalks exceeding 10 square metres in size, g) infrastructure or structures with a physical footprint of 10 square metres or more; Where such a development occurs - a) within a watercourse; b) in front of a development setback; c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; Excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.
15. The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.
16. The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250 cubic metres.
17. The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded.
18. The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.
19. 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.

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20. The expansion and related operation of above ground cableways and funiculars where the development footprint will be increased.
21. The expansion 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.
22. The expansion of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage facilities or infrastructure will be expanded by 30 cubic metres or more but no more than 80 cubic metres.
23. The expansion of - a) canals & channels where the canal or channel is expanded by 10 square metres or more in size; b) bridges expanded by 10 square metres or more in size; c) dams, where the dam is expanded by 10 square metres or more in size; d) weirs, where the weir expanded by 10 square metres or more in size; e) bulk storm water outlet structures where the structure is expanded by 10 square metres or more in size; f) marinas, slipways & jetties where expanded by 10 square metres or more in size; g) buildings & boardwalks where expanded by 10 square metres or more in size; h) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; Where such a development occurs - a) within a watercourse; b) in front of a development setback adopted in the prescribed manner; c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; Excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.
24. The expansion and related operation of facilities of any size for any form of aquaculture.
25. The expansion and related operation of zip-lines or foefie-slides, where the zip-line or foefie-slide is expanded by 100 metres in length or more.
26. Phased activities listed in Listing Notice 3 which commenced on or after December 2014; Phased activities listed in any other NEMA notice on or after the effective date; where any phase of the activity may be below the threshold but where a combination of phases, including extensions or expansions will exceed a specified threshold; Excluding

activities 7, 8, 11, 13, 17,, 20, 21 & 24 in Listing Notice 3.

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Geographical areas based on environmental attributes		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
A protected area identified in terms of NEMPAA																										
A protected area identified in terms of NEMPAA, excluding conservancies																										
World heritage Site																										
Outside urban areas	a) Areas within 10 kilometres from national parks or worl heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve																									
	b) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined																									
	c) Areas within 100 metres of a water course or wetland																									
	d) Areas within 100 metres of a watercourse																									
	e) Areas within 500 metres from protected areas identified in terms of NEMPAA																									
	f) All areas outside urban areas																									
	g) Within areas of indigenous vegetation																									
In urban areas	a) Areas within 100 metres of the edge of a watercourse																									
	a) Areas zoned for use as public open space																									
	b) Areas seawards of the development setback line or within 100 metres from the high-water mark of the sea if no such development setback line is determined																									
	c) Within urban protected areas																									
	d) Areas within 1 kilometre from protected areas identified in terms of NEMPAA																									
	e) Areas within 500 metres from protected areas identified in terms of NEMPAA																									
	f) In an estuarine functional zone																									
	g) A protected area identified in terms of NEMPAA, excluding conservancies																									
	h) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans																									
	i) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority																									
j) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose																										
k) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined																										
l) Areas within 32 metres from the edge of a watercourse																										
Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve																										
Sites or areas identified in terms of an international convention																										
Provincial Protected Area Expansion Strategy Focus areas																										
Trans-frontier protected areas managed under international conventions																										
Community Conservation Areas																										
Biodiversity Stewardship Programme Biodiversity Agreement areas																										
Core areas in biosphere reserves																										
In an estuarine functional zone																										
Within 500 metres of an estuarine functional zone																										
Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose																										
Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined																										
Within any critically endangered or endangered ecosystem listed in terms of Section 52 of NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004																										
Within the littoral active zone or 100 metres inland from the high-water mark of the sea or an estuarine functional zone, whichever distance is greater, excluding where such removal will occur behind the development setback line on erven in urban areas																										
On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning																										
Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined																										
Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans																										
Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans																										
Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority																										

APPENDIX E

Appendix E: List of policies, servitudes, unpublished documents and supporting documentation

Copies available from:

- a) Reserve Management and / or,
- b) Regional Ecologist

Item:

1. Ezemvelo KZN Wildlife Corporate Strategic Plan and Performance Plan for 2015 - 2020
2. Ezemvelo KZN Wildlife Corporate Policies and Procedures (Norms & Standards) listed in the table below
3. Ezemvelo KZN Wildlife Biodiversity Database Checklists for Hlathikhulu Forest Reserve
4. Proclamations of Hlathikhulu Forest Reserve
5. Although there is a district road that go through Hlathikhulu Forest Reserve it is unclear whether a formal servitude agreement exist.
6. Hlathikhulu Forest Reserve Public Participation Report, 2016

Listed below are 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.

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 KZN Wildlife
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
INTERNAL AUDIT	
C 5	Management Control
Biodiversity conservation operations	
1. NATURAL RESOURCE SUSTAINABILITY	
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	Crocodylians
D 1.7	Cycads
D 1.8	Disposal of Threatened Species
Exotic and Invasive species	
D 1.9	Release of Alien Species
D 1.10	Control Measures for Red-billed Quelea

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D 1.12	Grass Carp
D 1.13	Establishment of Alien Plantations
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	
Strategic Applications	
D 2.1	Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MAB (Man and Biosphere) Programme
Conservation Management: Protected Areas 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
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)
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
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

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Environmental Awareness	
D 2.34	Environmental Education Policy
3. BIODIVERSITY PROTECTION	
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 Un-proclaimed 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
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
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
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

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E 18	Administrative and operational policy on Professional hunting in South Africa
E 19	Commercialisation

APPENDIX F

Appendix F: Species list for Hlathikhulu Forest Reserve

The species lists was sourced from the Ezemvelo KZN Wildlife biodiversity database to ensure that the information presented is the most current and accurate, both in terms of the species present or absent in the protected area and their threatened status.

Abbreviations:

DD	Data Deficient
E	Endangered
L	Least Concern
NT	Near Threatened
P	Protected
SARDB	South African Red Data Book
SP	Specially Protected
ToPS	Threatened or Protected Species status in terms of the Biodiversity Act No. 10 of 2004
V	Vulnerable

Scientific name	English name	Conservation status
AMPHIBIANS		
<i>Afrivalus delicatus</i>	Delicate Leaf-folding Frog; Pickersgill's Banana Frog; Delicate Spiny Reed Frog	SARDB LC
<i>Amietophrynus garmani</i>	Eastern Olive Toad; Garman's Toad; Light-nosed Toad	SARDB LC
<i>Amietophrynus gutturalis</i>	Guttural Toad; Common African Toad; Greater Cross-marked Toad	SARDB LC
<i>Breviceps adspersus</i>	Bushveld Rain Frog; Common Rain Frog; Peter's Rain Frog	SARDB LC
<i>Breviceps mossambicus</i>	Mozambique Rain Frog; Flat-faced Frog; Flat-faced Rain Frog	SARDB LC
<i>Cacosternum boettgeri</i>	Boettger's Dainty Frog; Boettger's Caco; Common Caco	SARDB LC
<i>Hemisis guttatus</i>	Spotted Shovel-nosed Frog; Spotted Burrowing Frog; Spotted Shovel-nose Frog	SARB V, Near-endemic to KZN, Endemic to South Africa, Lesotho or Swaziland
<i>Hemisis marmoratus</i>	Mottled Shovel-nosed Frog; Mottled Burrowing Frog	SARDB LC, Restricted in KZN
<i>Kassina senegalensis</i>	Bubbling Kassina; Senegal Kassina	SARDB LC
<i>Phrynobatrachus mababiensis</i>	Dwarf Puddle Frog; Common Cricket Frog; Mababi Puddle Frog	SARDB LC
<i>Phrynobatrachus natalensis</i>	Snoring Puddle Frog; Natal Puddle Frog	SARDB LC
<i>Ptychadena anchietae</i>	Plain Grass Frog; Anchieta's Ridged Frog; Savanna Ridged Frog	SARDB LC
<i>Schismaderma carens</i>	Red toad	SARDB LC
<i>Tomopterna natalensis</i>	Natal Sand Frog; Natal Burrowing Frog	SARDB LC
<i>Xenopus laevis</i>	Common Platanna; African Clawed Frog; Common Clawed Frog	
EARTHWORMS		
<i>Geogenia natalensis</i>	Natal earthworm	Endemic to South Africa, Lesotho or Swaziland
<i>Proandricus hlatikulu</i>	Hlatikulu earthworm	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
MILLIPEDES		
<i>Centrobolus rugulosus</i>	Wrinkled millipede	Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
<i>Doratogonus sp.</i>		

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Scientific name	English name	Conservation status
<i>Spinotarsus silvarum</i>		Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
<i>Spinotarsus sp.</i>		
<i>Ulodesmus robustus</i>		Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
SNAILS		
<i>Euonyma lanceolata</i>	Giant awl snail	Near-endemic (50-75%) to KZN
<i>Gulella crassidens</i>	Fat-toothed hunter snail	Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
<i>Gulella triglochis</i>	Three-toothed hunter snail	Near-endemic (50-75%) to KZN
<i>Laevicaulis natalensis</i>		
<i>Metachatina kraussi</i>	Brown-lipped agate snail	Near-endemic (75-99%) to KZN
<i>Pseudoglessula boivini</i>		
BUTTERFLIES		
<i>Acraea acara acara</i>	Large Spotted Acraea	
<i>Acraea aganice aganice</i>		
<i>Acraea boopis boopis</i>		
<i>Acraea natalica</i>	Natal Acraea	
<i>Acraea neobule neobule</i>	Wandering Donkey Acraea	
<i>Acraea oncaea</i>	Window Acraea	
<i>Acraea rabbaiae rabbaiae</i>	Clear-winged Acraea	
<i>Acraea satis</i>	East-coast Acraea	
<i>Actizera lucida</i>	Rayed Blue	
<i>Amauris albimaculata albimaculata</i>	Layman Friar	
<i>Amauris ochlea ochlea</i>	Novice Friar	
<i>Anthene amarah amarah</i>	Black-striped Hairtail	
<i>Anthene kersteni</i>	Kersten's Hairtail	
<i>Anthene lemnos lemnos</i>	Large Hairtail	
<i>Appias epaphia contracta</i>	Diverse White	
<i>Appias sabina phoebe</i>	Albatross White	Restricted in KZN, SARDB R
<i>Artitropa erinnys erinnys</i>	Bush Nightfighter	
<i>Azanus mirza</i>	Mirza Blue	
<i>Azanus moriqua</i>	Thorn-tree Blue	
<i>Azanus natalensis</i>	Natal Spotted Blue	
<i>Baliochila aslanga</i>	Common Buff	
<i>Belenois aurota aurota</i>	Brown-veined White	
<i>Belenois creona severina</i>	African Veined White	
<i>Belenois thysa thysa</i>	False Dotted Border	
<i>Bicyclus safitza safitza</i>	Common Bush Brown	
<i>Borbo detecta</i>	Rusty Swift	
<i>Borbo fatuellus fatuellus</i>	Long-horned Swift	
<i>Byblia anvatara acheloia</i>	Common Joker	
<i>Cacyreus lingeus</i>	Bush Bronze	
<i>Catacroptera cloanthe cloanthe</i>	Pirate	
<i>Catopsilia florella</i>	African Migrant	
<i>Celaenorrhinus mokeezi mokeezi</i>	Large Sprite	Restricted in KZN
<i>Charaxes brutus natalensis</i>	White-barred Charaxes	
<i>Charaxes candiope</i>	Green-veined Charaxes	
<i>Charaxes castor flavifasciatus</i>	Giant Charaxes	
<i>Charaxes cithaeron cithaeron</i>	Blue-spotted Charaxes	
<i>Charaxes varanes varanes</i>	Pearl Charaxes	

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Scientific name	English name	Conservation status
<i>Charaxes zoolina zoolina</i>	Club-tailed Charaxes	
<i>Coeliades forestan forestan</i>	Striped Policeman	
<i>Coeliades keithloa keithloa</i>		
<i>Coeliades lorenzo</i>	Lorenzo Red-tab Policeman	Restricted in KZN
<i>Coeliades pisistratus</i>	Two-pip Policeman	
<i>Coenyra hebe</i>		
<i>Colotis antevippe gavis</i>	Red Tip	
<i>Colotis auxo</i>	Sulphur Orange Tip	
<i>Colotis danae annae</i>	Scarlet Tip	
<i>Colotis euipe omphale</i>	Smoky Orange Tip	
<i>Colotis vesta argillaceus</i>	Veined Tip	Restricted in KZN
<i>Cupidopsis jobates jobates</i>	Tailed Meadow Blue	
<i>Danaus chrysippus orientis</i>	African Monarch	
<i>Deudorix antalus</i>	Brown Playboy	
<i>Dixeia pigea</i>	Ant-Heap Small White	
<i>Dixeia spilleri</i>	Spiller's Sulphur Small White	
<i>Eagris nottoana nottoana</i>	Rufous-winged Flat	
<i>Eronia cleodora cleodora</i>	Vine-leaf Vagrant	
<i>Eronia leda</i>	Autumn-Leaf Vagrant	
<i>Euchrysops barkeri</i>	Barker's Smoky Blue	
<i>Euchrysops subpallida</i>		
<i>Eurema hecabe solifera</i>	Common Grass Yellow	
<i>Eurytela dryope angulata</i>	Golden Piper	
<i>Eurytela hiarbas angustata</i>	Pied Piper	
<i>Graphium antheus</i>	Large Striped Swordtail	
<i>Graphium colonna</i>	Mamba Swordtail	Restricted in KZN
<i>Graphium leonidas leonidas</i>	Veined Swordtail	
<i>Graphium morania</i>	White Lady	
<i>Graphium porthaon porthaon</i>	Cream Striped Swordtail	
<i>Hypolimnias anthedon wahlbergi</i>	Variable Diadem	
<i>Hypolimnias deceptor deceptor</i>	Deceptive Diadem	
<i>Hypolimnias misippus</i>	Common Diadem	
<i>Hypolycaena philippus philippus</i>	Purple-brown Hairstreak	
<i>Iolous diametra natalica</i>	Yellow-banded Sapphire	Restricted in KZN, SARDB R
<i>Junonia hierta cebrene</i>	Yellow Pansy	
<i>Junonia natalica natalica</i>	Brown Pansy	
<i>Junonia oenone oenone</i>	Blue Pansy	
<i>Junonia terea elgiva</i>	Soldier Pansy	
<i>Lachnoptera ayresii</i>	Blotched Leopard	
<i>Lampides boeticus</i>	Lucerne Blue	
<i>Leptosia alcesta inalcesta</i>	African Wood White	
<i>Leptotes pirithous pirithous</i>		
<i>Libythea labdaca laius</i>	African Snout	
<i>Metisella metis paris</i>	Gold-spotted Sylph	
<i>Mylothris agathina agathina</i>	Common Dotted Border	
<i>Neptis goochii</i>	Streaked Sailer	
<i>Neptis saclava marpessa</i>	Spotted Sailer	
<i>Papilio constantinus constantinus</i>	Constantine's Swallowtail	
<i>Papilio dardanus cenea</i>	Mocker Swallowtail	
<i>Papilio demodocus demodocus</i>	Citrus Swallowtail	
<i>Papilio nireus lyaeus</i>	Green-banded Swallowtail	

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Scientific name	English name	Conservation status
<i>Pelopidas thrax inconspicua</i>	White-banded Swift	
<i>Phalanta phalantha aethiopica</i>	African Leopard	
<i>Pinacopteryx eriphia eriphia</i>	Zebra White	
<i>Protogoniomorpha parhassus</i>	Common Mother-of-Pearl	
<i>Pseudacraea lucretia tarquinia</i>	False Chief	Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland
<i>Pseudonacaduba sichela sichela</i>	Dusky Blue	
<i>Sarangesa motozi</i>	Forest Elfin	
<i>Sevenia boisduvali boisduvali</i>	Boisduval's Tree Nymph	
<i>Spialia dromus</i>	Forest Sandman	
<i>Spialia spio</i>	Mountain Sandman	
<i>Tagiades flesus</i>	Clouded Flat	
<i>Telchinia cabira</i>	Yellow-banded Acraea	
<i>Telchinia encedon encedon</i>	Common Mimic Acraea	
<i>Telchinia esebria</i>	Dusky Acraea	
<i>Telchinia serena</i>	Dancing Acraea	
<i>Zizeeria knysna</i>	Sooty Blue	
<i>Zizula hylax</i>	Gaika Blue	
BETLES		
<i>Aneilobolus leleupi</i>	Leleup's horned beetle	
<i>Philharmostes sp. nov.</i>		Restricted in KZN; Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
OTHER		
<i>Syneches natalensis</i>	Natal flat-eyed dance fly	Endemic to KZN; Endemic to South Africa, Lesotho or Swaziland
FRESHWATER CRABS		
<i>Potamonautes sidneyi</i>		
MAMMALS		
<i>Cephalophus natalensis natalensis</i>	Red duiker	
<i>Tragelaphus scriptus sylvaticus</i>	Bushbuck	
REPTILES		
<i>Acanthocercus atricollis atricollis</i>	Southern tree agama; Tree agama; Black-necked agama	SARB LC
<i>Acontias plumbeus</i>	Giant legless skink	SARB LC
<i>Afroablepharus wahlbergii</i>	Wahlberg's snake-eyed skink	SARB LC
<i>Afroedura marleyi</i>	Marley's flat gecko	Restricted in KZN; Near-endemic (50-75%) to KZN; Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Afrotyphlops fornasinii</i>	Fornasini's blind snake	SARB LC
<i>Agama atra</i>	South African rock agama; South African mountain agama; Southern rock agama	SARB LC
<i>Aparallactus capensis</i>	Black-headed centipede eater; Cape centipede eater	SARB LC
<i>Bitis arietans arietans</i>	Puff adder	SARB LC
<i>Boaedon capensis</i>	Common house snake; Brown house snake	SARB LC
<i>Cordylus vittifer</i>	Common girdled lizard; Transvaal girdled lizard	SARB LC
<i>Crotaphopeltis hotamboeia</i>	Red-lipped snake; Herald snake	SARB LC

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Scientific name	English name	Conservation status
<i>Elapsoidea sundervallii sundervallii</i>	Natal garter snake	Near-endemic (50-75%) to KZN; Near-endemic (75-99%) to KZN; Endemic to South Africa, Lesotho or Swaziland
<i>Hemidactylus mabouia</i>	Common tropical house gecko; Moreau's tropical house gecko	SARB LC
<i>Leptotyphlops scutifrons scutifrons</i>	Peter's thread snake	SARB LC
<i>Lycophidion capense capense</i>	Cape wolf snake	SARB LC
<i>Lygodactylus capensis</i>	Common dwarf gecko; Cape dwarf gecko	
<i>Matobosaurus validus</i>	Common Giant plated lizard; Giant plated lizard	SARB LC
<i>Naja mossambica</i>	Mozambique spitting cobra	SARB LC
<i>Nucras taeniolata</i>	Albany sandveld lizard; Striped sandveld lizard	
<i>Pachydactylus capensis</i>	Cape gecko; Cape thick-toed gecko	SARB LC
<i>Pachydactylus maculatus</i>	Spotted gecko; Spotted thick-toed gecko	SARB LC
<i>Platysaurus intermedius</i>	Common flat lizard; Natal common flat lizard	
<i>Platysaurus lebomboensis</i>	Lebombo flat lizard	SARB LC
<i>Prosymna stuhlmannii</i>	East African shovel-snout	Restricted in KZN; SARB LC
<i>Psammophis brevirostris</i>	Short-snouted grass snake	SARB LC
<i>Psammophis mossambicus</i>	Olive grass snake	SARB LC
<i>Psammophis subtaeniatus</i>	Western yellow-bellied sand snake; Western stripe-bellied sand snake; Stripe-bellied sand snake	SARB LC
<i>Python natalensis</i>	Southern African Python	SARB LC
<i>Smaug warreni</i>	Warren's girdled lizard	
<i>Smaug warreni warreni</i>	Warren's dragon lizard; Warren's girdled lizard	SARB LC
<i>Thelotornis capensis capensis</i>	Southern twig snake; South-eastern savanna vine snake; Bird snake	SARB LC
<i>Trachylepis capensis</i>	Cape skink	SARB LC
<i>Trachylepis striata</i>	Striped skink; Eastern striped skink	SARB LC
<i>Trachylepis varia</i>	Variable skink	SARB LC
PLANTS		
<i>Acokanthera oppositifolia</i>	Bushman's Poison	SARB LC
<i>Aloe arborescens</i>	Krantz Aloe	SARB LC
<i>Aloe bainesii</i>		
<i>Aloe marlothii marlothii</i>	Mountain Aloe	SARB LC
<i>Aloe sessiliflora</i>		
<i>Atalaya alata</i>		SARB LC
<i>Bolusiella maudiae</i>		Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Brachylaena uniflora</i>		Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Calodendrum capense</i>	Cape Chestnut	SARB LC
<i>Canthium ventosum</i>		Endemic to South Africa, Lesotho or Swaziland
<i>Celtis africana</i>		SARB LC
<i>Celtis gomphophylla</i>		SARB LC
<i>Celtis mildbraedii</i>		SARB LC
<i>Chionanthus foveolatus foveolatus</i>		SARB LC
<i>Cordia caffra</i>		SARB LC
<i>Diospyros lycioides lycioides</i>		SARB LC
<i>Diospyros whyteana</i>		SARB LC
<i>Duvernoia adhatodoides</i>		Endemic to South Africa, Lesotho or Swaziland; SARB LC

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Scientific name	English name	Conservation status
<i>Encephalartos senticosus</i>	Lebombo cycad	Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Encephalartos villosus</i>	Poor man's Cycad, Ground Cycad	Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Euclea natalensis angustifolia</i>		SARB LC
<i>Eugenia natalitia</i>		SARB LC
<i>Eulophia streptopetala</i>		SARB LC
<i>Ficus bizanae</i>		Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Ficus craterostoma</i>		SARB LC
<i>Ficus ingens</i>	Red-leaved fig	SARB LC
<i>Ficus natalensis natalensis</i>		SARB LC
<i>Ficus petersii</i>		SARB LC
<i>Ficus polita polita</i>		SARB LC
<i>Gardenia thunbergia</i>		SARB LC
<i>Heywoodia lucens</i>		SARB LC
<i>Homalium dentatum</i>		SARB LC
<i>Lippia javanica</i>	Fever Tea, Lemon Bush	SARB LC
<i>Mimusops obovata</i>		SARB LC
<i>Mondia whitei</i>		SARDB E
<i>Nuxia congesta</i>		SARB LC
<i>Olea capensis capensis</i>		Endemic to South Africa, Lesotho or Swaziland; SARB LC
<i>Oxyanthus latifolius</i>		SARB LC
<i>Phoenix reclinata</i>		SARB LC
<i>Podocarpus falcatus</i>		SARB LC
<i>Premna mooiensis</i>		SARB LC
<i>Psychotria capensis capensis var. capensis</i>		SARB LC
<i>Rothmannia globosa</i>		SARB LC
<i>Schrebera alata</i>		SARB LC
<i>Strophanthus speciosus</i>		SARB LC
<i>Strychnos decussata</i>		SARB LC
<i>Strychnos henningsii</i>		SARB LC
<i>Strychnos mitis</i>		SARB LC
<i>Strychnos usambarensis</i>		SARB LC
<i>Teclea natalensis</i>		SARB LC
<i>Trema orientalis</i>		SARB LC
<i>Tricalysia capensis var. capensis</i>		SARB LC
<i>Tricalysia lanceolata</i>		SARB LC
<i>Vepris lanceolata</i>	White Ironwood	SARB LC

Appendix G: Financial plan for Hlathikhulu Forest Reserve

Purpose of the financial plan

The National Environmental Management: Protected Areas Act (No.57 of 2003) establishes the need for a costing plan to be prepared 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 has been developed in the context of the management plan in the interests of proper planning and sustained conservation management of the Hlathikhulu Forest Reserve.

Financial management of Hlathikhulu Forest Reserve

The financial objective for the Hlathikhulu Forest Reserve is to:

Provide adequate human resources, equipment, infrastructure and funding to enable the effective protection, development and management of the protected area.

Financial management of the Hlathikhulu Forest Reserve will be done in accordance to the Public Finance Management Act [No. 1 of 1999] and Ezemvelo KZN Wildlife policies.

Special projects:

Current funding is not sufficient to effectively maintain the Hlathikhulu Forest Reserve and the table below provides a cost estimate of the requirements for the implementation of the management plan. Management recommendations in the Management Plan which requires dedicated capital input separate from the normal operational requirement include:

- Replace and upgrade sections (12 km) of the fence to secure the boundary of the protected area (Cattle fence only)
- Provide appropriate signage at access points to the protected area.
- Upgrade staff and management infrastructure and provide electrical connection to these facilities.
- Signage to the protected area.
- Interpretation signage for educational and awareness purposes.

Various NGO's or the private sector could be approached to facilitate these partnerships. The five year budget do not include the capital requirements for the reserve.

Table 1: Hlathikhulu Forest Reserve - a cost estimate

GL Account	Description	Year 1	Year 2	Year 3	Year 4	Year 5
415010	Direct Supplies - Chemicals	R 1 000.00	R 1 050.00	R 1 100.00	R 1 150.00	R 1 200.00
415020	Direct Supplies - Cleaning Materials	R 1 000.00	R 1 050.00	R 1 100.00	R 1 150.00	R 1 200.00
415030	Direct Supplies - Sanitary Products	R 1 200.00	R 1 260.00	R 1 320.00	R 1 400.00	R 1 470.00
415120	Direct Supplies - Protective Clothing	R 2 000.00	R 2 100.00	R 2 200.00	R 2 300.00	R 2 400.00
415150	Direct Supplies - Working Stock	R 2 000.00	R 2 100.00	R 2 200.00	R 2 300.00	R 2 400.00
415160	Direct Supplies - Consumables	R 1 000.00	R 1 050.00	R 1 100.00	R 1 150.00	R 1 200.00
415170	Direct Supplies - Water Treatment Chemicals	R 1 000.00	R 1 050.00	R 1 100.00	R 1 150.00	R 1 200.00
416200	Utility Expenses - Electricity - Diesel	R 2 700.00	R 2 800.00	R 2 900.00	R 3 000.00	R 3 100.00
416600	Utility Expenses - Gas	R 14 000.00	R 14 700.00	R 15 400.00	R 16 200.00	R 17 010.00
417570	Other Services - Fire Extinguisher Services	R 1 500.00	R 1 575.00	R 1 650.00	R 1 730.00	R 1 800.00
448060	Personnel Exp Overtime	R 22 000.00	R 23 100.00	R 24 250.00	R 25 500.00	R 26 700.00
448090	Personnel Exp Subsistence Allowance	R 6 000.00	R 6 300.00	R 6 600.00	R 6 900.00	R 7 300.00
448100	Personnel Exp Standby Allowance	R 24 000.00	R 25 200.00	R 26 500.00	R 27 800.00	R 29 200.00
448150	Personnel Exp Uniform Expenses	R 20 000.00	R 21 000.00	R 22 000.00	R 23 000.00	R 24 000.00
448210	Personnel Exp Night Shift Allowance	R 5 000.00	R 5 800.00	R 6 100.00	R 6 400.00	R 6 700.00
451000	Maintenance costs-Buildings & Structures	R 10 000.00	R 11 000.00	R 12 000.00	R 13 000.00	R 14 000.00
451190	Maintenance - Fencing	R 50 000.00	R 52 500.00	R 55 100.00	R 57 900.00	R 60 800.00
451200	Maintenance - Tools & Equipment	R 5 000.00	R 5 800.00	R 6 100.00	R 6 400.00	R 6 700.00
451240	Maintenance & Repairs - Static Plant	R 4 000.00	R 4 200.00	R 4 400.00	R 4 600.00	R 4 800.00
451260	Maintenance & Repairs - Vehicles	R 12 000.00	R 12 600.00	R 13 200.00	R 13 800.00	R 14 400.00
466510	Electronic Media Exp.- Radio Licence Fees	R 1 600.00	R 1 680.00	R 1 770.00	R 1 860.00	R 1 950.00
475000	Auxiliary Card Costs - Fuel & Oil	R 1 500.00	R 1 575.00	R 1 650.00	R 1 730.00	R 1 820.00
475020	EKZNW Vehicle Running Costs - Fuel & Oil	R 10 000.00	R 10 500.00	R 11 000.00	R 11 500.00	R 12 000.00
475030	EKZNW Vehicle Running Costs - Tyres	R 10 000.00	R 0.00	R 12 000.00	R 0.00	R 14 000.00
475050	EKZNW Vehicle Running Costs - Licences / Registration	R 750.00	R 760.00	R 780.00	R 790.00	R 800.00
475060	Plant Running Costs - Fuel & Oil	R 2 000.00	R 2 100.00	R 2 200.00	R 2 300.00	R 2 400.00

GL Account	Description	Year 1	Year 2	Year 3	Year 4	Year 5
476000	Admin Exp - Printing, Stationery & Photocopy Expenditure	R 200.00	R 210.00	R 220.00	R 230.00	R 240.00
479010	Charges - First Auto	R 120.00	R 120.00	R 120.00	R 120.00	R 120.00
415000	Direct Supplies - Herbicides	R 2 000.00	R 2 100.00	R 2 200.00	R 2 300.00	R 2 400.00
Total		R 213 570.00	R 215 280.00	R 238 260.00	R 237 660.00	R 263 310.00