Witsand Nature Reserve

Northern Cape Province, South Africa

Integrated Management Plan

Planned cycle: 2025 -2030

AUTHORIZATION

This Integrated Management Plan (IMP) for the Witsand Nature Reserve (WNR) was drafted by the Reserve Planning Team (RPT), a multi-disciplinary team in consultation with all stakeholders, for approval in terms of sections 39 and 41 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

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FOREWORD

The Northern Cape Provincial Nature reserves have numerous benefits to both humans and natural ecosystems. They contribute directly to local, regional and national economies through tourism, employment and expenditure on reserve management. Nature reserves also facilitate complementary private sector investments, such as infrastructure and commercial services, which includes enabled industries such as the hospitality industry. Important social benefits to the public include the provision of an educational resource; indigenous and heritage values; and in increased quality of life, health and wellbeing.

Nature reserves are established in Northern Cape Province as a strategy to conserve and protect the natural environment for the benefit, enjoyment and welfare of present and future generations from a healthy environment.

In 2004, the 7th Conference of Parties decided that all member states of the Convention on Biological Diversity should develop and apply methodologies and criteria that would enable them to measure the effectiveness of nature reserve (protected area) management in the conservation and protection of biodiversity. South Africa has endorsed the World Wide Fund for Nature (WWF) Management Effectiveness Tracking Tool (METT-SA) in this regard, which is being used in Northern Cape Province to measure management effectiveness in nature reserves.

Management effectiveness evaluations of nature reserves are vital for the measurement and improvement of the performance of each provincial nature reserve against set management objectives.

The management plans that have been developed for Northern Cape Province include:

- Conservation and tourism objectives for the effective management of the nature reserves that fall under the jurisdiction of Northern Cape Province;
- Visitor marketing and the facilitation of investment opportunities;
- Capacity building and tourism transformation;
- METT indicators to ensure the continuous improvement of the management of these nature reserves; and
- Provision of mechanisms for collaboration with communities and neighbours for harmonious co-existence and beneficiation to the province and the country.

By developing these management plans, the Department has ensured:

- That Northern Cape Province meets its obligatory implementation of international agreements; the Convention on Biological Biodiversity; the provisions of the Constitution of the Republic of South Africa, 1998 (Act No. 108 of 1998) and the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) through which natural resources are managed.
- The provision of ecosystem services for everyone in order to facilitate employment, exports, economic growth and a good quality of life.
- That the sourcing of funds for the management of nature reserves beyond the scope of formal Treasury allocations is enhanced.

HONOURABLE GALEREKWE MASE MANOPOLE
MEMBER OF EXECUTIVE COUNCIL: DAERDLR

ABBREVIATIONS AND PLANNING TERMS

ABBREVIATIONS:

APO	Annual Plan of Operations
BCEA	Basic Conditions of Employment Act, 1997 (Act No. 75 of 1997)
CAPEX	Capital Expenditures
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
DEA	Department of Environmental Affairs
DAERL	Department Agriculture, Environmental Affairs, Rural Development & Land Reform
DFFE	Department of Forestry, Fisheries and the Environment
DMRE	Department Mineral Resources and Energy
DRPW	Department of Roads and Public Works
DWAS	Department of Water and Sanitation
EEA	Employment Equity Act, 1998 (Act No. 55 of 1998)
EMF	Environmental Management Framework (Local Authority CBA's))
EPWP	Extended Public Works Program
EWT	Endangered Wildlife Trust
FEPA	Freshwater Ecosystem Priority Area
FPA	Fire Protection Association [in terms of the National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)]
HDI	Historically Disadvantaged Individual
HO	Head Office
HOD	Head of Department
HR	Human Resources
HRD	Human Resources Development
IBA	Important Bird Area
IDP	(municipal) Integrated Development Plan
IT	Information Technology
IUCN	International Union for the Conservation of Nature
KPA	Key Performance Area
LRA	Labour Relations Act, 1995 (Act No. 66 of 1995)
MEC	Member of the Executive Council
METT	Management Effectiveness Tracking Tool
METT-SA	Management Effectiveness Tracking Tool for South Africa
NBRBSA	National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 58 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NVFFA	National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)
NWA	National Water Act
OHSA	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
OPEX	Operating Expenditures
PAAC	Protected Area Advisory Committee
PAM	Protected Area Management
PFMA	Public Finance Management Act, 1999 (Act No. 1 of 1999)
PPP	Public Private Partnership
PSA	Public Service Act, 1994 (Act No. 103 of 1994)

RMP	Reserve Management Plan
RPT	Reserve Planning Team
SANParks	South African National Parks
SAQA	South African Qualifications Authority
SANS	South African National Standard
SDA	Skills Development Act, 1998 (Act No. 97 of 1998)
SEMP	Integrated Environmental Management Plan (Local Authority)
SIS	Security and Investigation Services
SKDR	State of Knowledge Data Repository
SONR	State-owned Nature Reserves
SP	Integrated Plan
TOR	Terms of Reference
TFCA	Trans Frontier Conservation Area
TFP	Trans Frontier Park
THETA	Tourism and Hospitality Education and Training Authority
UNESCO	United Nations Educational, Scientific and Cultural Organization
UZM	Use Zone Map
VCA	Veld Condition Assessment
WfW	Working for Water
WHS	World Heritage Site
WNR	Witsand Nature Reserve
WOF	Working on Fire
WSA	Water Services Act, 1997 (Act No. 108 of 1997)

DEFINITION OF KEY PLANNING TERMS:

Activities	Activities are management tasks required to collectively realize the objectives.
Domain (Planning domain)	Planning domain include areas not declared in terms of NEMPAA where DAERL is appointed as management authority as a result of ownership or co-management agreements with planned protected area expansion for next 5-year planning period.
Estate	Estate is the area declared in terms of NEMPAA and where DAERL is appointed as management authority as a result of ownership or co-management agreements.
Guiding principles	Guiding principles provide overall direction to the implementation of activities
Monitoring	Monitoring is the collection of data and information in a consistent manner over time for the purpose of evaluation.
Objectives	Objectives are derived from the vision. They represent key areas in which achievements must be obtained in total, or in some combination, to give direction to the management aspiration (the vision).
Outcomes	Ideally outcomes are benefits produced from objectives and activities.
Outputs	Outputs are tangible results produced by activities.
Performance	Performance assessment is a measurement of accomplishment assessment against a set of pre-determined criteria (e.g., efficiency or effectiveness).
Performance indicator	A performance indicator is a measurement used to evaluate the success in achieving targets and realizing objectives.
Resources	Resources include the people, materials, technologies, money, etc. required to implement the activities.
Target	Targets are set for particular aspects of performance – financial returns, efficiency, and quality of services, etc. – against which performance is monitored and measured.
Conservation Development Framework (CDF)	A CDF is a spatial framework that includes a use zone map (zoning) that guides and co- ordinates conservation and development activities in a protected area.
Value	A value is a specific attribute or feature (cultural, ecological or recreational) within a reserve that may require additional/special consideration during the planning process and subsequent management.
Vision	Vision indicates the direction of management aspiration.
Zone of Influence	Shows the areas within which surrounding land-use changes could affect the reserve. Reserve boundaries are not static and there are factors beyond the current or future boundaries that can influence the Reserve.

EXECUTIVE SUMMARY

The following Executive Summary provides an overview of the 5-Year Integrated Management Plan (IMP) of Witsand Nature Reserve.

i. Purpose of the plan

The IMP sets out the ambitions for the Witsand Nature Reserve (WNR), as articulated through the vision and objectives for the nature reserve for the next 5-year period 2025 - 2030. The plan sets out how these ambitions will be achieved and delivered through a range of management guidelines and actions.
The Integrated Plan strives to:

- Identify the defining qualities and characteristics of the reserve (i.e. what makes it special and unique);
- Describe the reserve's management issues and challenges;
- Set out medium- and long-term ambitions for the desired state of the reserve;
- Provide a five-year implementation framework for delivering this desired state
- Describe the specific activities to be implemented on an annual basis;
- Identify the measures required to evaluate if the management actions are collectively contributing to achieve the desired state; and
- Describe the institutional, human resource and budget requirements for implementing the management plan.

ii. Reserve context

The WNR covers an area of 3 232 ha and was declared as a Nature Reserve in April 1994 in terms of Section 6(1) of the Nature and Environmental Conservation Ordinance (Ordinance 19 of 1974) proclamation number 37/1994 and is therefore legally defined as a provincial nature reserve in terms of Section 12 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA).
The WNR is located 80 km South of Olifantshoek and 70 km south-west of Postmasburg of Northern Cape Province. The reserve was primarily established for the conservation of components and processes associated with the dune ecosystem and the biotic communities that converge in that area.
The reserve has become renowned because of the white sand surrounded by red Kalahari sand. The habitat diversity and variety of endemic plant species offer opportunities to study biological processes.
The current staff complement of the WNR comprises 6 staff members, which is 18 staff members short of the full staff complement required to manage the reserve effectively.

Some archaeological finds have been made on the reserve dating from the Stone Age. Evidence of Stone Age herders, like the Korana using the area, were seen in stone tools that were dated within the period of the 17th to 19th AD. Bushman also lived in the area as was reported by a visiting geologist George Stow in 1872. Two colonial wars were fought in the region in 1878 and 1896/97.

The reserve falls within an area with an average annual rainfall between 130mm and 300mm. The Kalahari has the highest means of daily maximum temperatures in the country during January. The temperature ranges with lows from -10˚C in the winter to summer highs of 45˚C.

The reserve is situated about 5km to the west of the Langberg Mountain. The dunes (for which the reserve is known) is on the western part of the reserve. The Witsand dune complex overlies two natural basins, formed in the quartzite, gray subwacke and conglomerate of the Matsap formation, which are fed by the ephemeral drainage lines on the western slopes of the Langberg range. The volume of water contained in the southernmost basin is estimated at 1 211 million cubic meters. Although surface water in the surrounding area is very scarce and subterranean water is very deep, the water table at Witsand is high (approximately 2m) and natural seeps occur at several places in the dunes.

The Witsand Nature Reserve is known for an acoustical phenomenon which occurs in the accumulation of whitish and light yellowish sands with a dune-like appearance. The dunes make a roaring sound when disturbed. The roaring sands (Brulsand) occur at the edge of the dunes with an average angle of 30˚ and mainly the dunes that face a southerly direction.

Witsand is situated on the border of two different biomes; the Nama-Karoo and the Kalahari Savanna Biome. The area is in which WNR is situated is classified as part of the Shrubby Kalahari Dune Bushveld. The reserve falls within the boundaries of the Griqualand West Centre of plant endemism. According to Veldsman (2003) the vegetation of the WNR comprises of seven different plant communities.

Brachiaria dura var. pilosa (Locally to Witsand) as the most prominent diagnostic species within the Dune vegetation, and *Stipagrostis amabilis* is the dominant species within this plant

community. Other important species in this community include *Crotolaria species, Eragrostis pallens and Selago welwitschii*. The dune vegetation community compares slightly to a vegetation type described by Leistner & Werger (1973). This alliance mainly occurs on dune crests, and is widely found throughout the southern Kalahari duneveld (Veldsman 2008). The main difference between this vegetation type and the community found at Witsand is that the species *Brachiaria dura var. pilosa* occurs on the dunes at Witsand and not at all within the Kalahari duneveld.

Mammal species seen at WNR, include the South African Hedgehog, the Common Slit-faced Bat, African Wild cat, Black-backed Jackal, Cape Fox, Bat-eared Fox, Aardwolf, Vervet Monkey, Common Duiker and Gemsbok.

More than 170 bird species have been sighted in the reserve, including Black Eagle, and Tawny Eagle. Pigmy Falcon, Secretary bird and Lapetfaced Vulture. Many other birds occur at Witsand, most of which are superbly adapted to live in a semi-desert environment. Sandgrouse are one of the most interesting and uniquely adapted of these desert birds (Mark D. Anderson).

Reptiles include the Serrated Tortoise, as well as lizard, agama and gecko species including the Karoo Girdled Lizard (*Cordylus aridus*) as well as the Common Flap-necked Chameleon (*Chamaeleo dilepis dilepis*). The most common snake species are the Black Necked Spitting Cobra, Cape cobra, Rhombic Egg-eater, Puff Adder and Whip Snake.
The Karroo Toad, Guttural Toad and Common Platanna are frequently found in or near the vlei areas.

Witsand NR falls within the Siyancuma Local Municipality within the Pixley Ka Seme District municipality. With regard to socio-economic context, the Siyancuma Local Municipality was the largest municipality in 2001 in terms of population. However, it

has since fallen to the second biggest municipality within the Pixley Ka Seme district municipality with a population of 37 076 people (2011). It includes the major towns of Douglas, Griekwastad and Cambell and covers approximately 16 753 square kilometers. The population density is also more than 2 persons per square kilometer. The unemployment rate increased from 25.3% in 2001 to 28.2% in 2011. Siyancuma is one of the municipalities with the highest unemployed people in the district.

The administrative hub of the WNR is located on the reserve which includes a small office block, with two offices and a reception area that is currently shared with Northern Cape Economic Development Trade and Investment Promotion Agency (NCEDA).

The road network within the WNR is in a fair condition, but some areas in the reserve are only accessible with a 4x4 vehicle. Signage within the reserve is adequate, but directional signage from both the N8 and N14 to the entrance of the reserve can be improved.

Tourism facilities include a picnic site for day visitors and a basic campsite and chalets for overnight visitors. These tourist facilities are under management by NCEDA.

Staff accommodation is provided on the reserve due to the distance the reserve is from the closest town settlement.
The local authority supplies electricity to the administrative hub as well as the tourist facilities and staff accommodation, and water is provided by bore holes on the reserve equipped with electrical pumps.

An expansion project has also been identified for the WNR by the Management Authority. The vision is to expand the WNR to include the Langberg which is 5 km to the east of the reserve
.

iii. Reserve values

The following section outlines the key values that have been identified during the situational assessment and refined through a series of stakeholder workshops. Values have been prioritized through stakeholder input to inform implementation and planning.

Institutional

- The reserve potential to demonstrate the efficacy and benefits of functional partnerships between DAERL, NGO's, Private landowners and other State Departments across provincial boundaries in the collaborative administration and management of WNR.
- The reserve is committed to management in accordance with best practice and rationally driven by current knowledge.
- The reserve is committed to good administration and the efficient use and good maintenance of resources.
- The reserve is committed to being a good employer and socially affirmative neighbour in the local communities.

Ecological

- The WNR is of biodiversity significance because it falls within the Griqualand West center of plant endemism.
- The unique dune system of the reserve makes it of great ecological value.
- A diverse number of bird species are found within the reserve.

Socio-Economic

- The reserve is relatively easily accessible by tourists and it offers one of the best bird watching spots in the area.
- Good quality accommodation is available within to reserve.
- The reserve is regarded as playing an important social support role in local and surrounding communities.

iv. Management issues and challenges

The following section outlines the key management issues and challenges facing the reserve that have been identified during the situational assessment and refined through a series of stakeholder workshops. Issues have been prioritized through stakeholder input to inform implementation and planning.

Institutional

- There are insufficient resources and capacity to coordinate and implement effective management of the reserve;
- Centralized budget, and de-capacitated reserve management;
- Lack of supported budget to operate the reserve properly;
- Lack of reserve staff's capacity to ensure law enforcement;
- Staff members do not have uniforms/protective clothing and resources to conduct day to day work;
- Poor quality equipment and infrastructure;
- Poor support from the Department of Roads and Public Works regarding maintenance of reserve infrastructure including buildings, electricity supply and roads;
- Lack of effective communication devices: poor internet facilities; no cell phone reception on portions of the reserve and no two-way radio system;
- There is a need to ensure regular review of management activities and revision of management planning;
- There is a need to improve and formalize NGO and other organs of State agreements and contracts;
- There is potential for greater collaboration with other conservation organizations e.g. SANParks to support management objectives;
- Appropriate institutional arrangements are required to facilitate active involvement of local stakeholders in decision making;
- There is a potential for management objectives to be undermined if not clearly communicated to and supported by institutions responsible for management of the PA and conservation domain.

Ecological

- Formal protection of some sections is required to better secure management of the area;
- The boundary of the reserve is inconsistent, does not adequately incorporate important habitat features and is poorly aligned with existing ecological boundaries;

- Corridors for critical game movement and migration patterns from varying habitats are extremely limited;
- The small size of the reserve could result in edge effects and fragmentation of biological communities. This in turn might lead to a lack of migration, lack of species diversity (especially the terrestrial fauna and flora) and loss of genetic diversity;
- The reserve is registered with a Pixley Ka Seme Fire Protection Association (FPA);
- Uncontrolled fires entering the reserve from neighbouring areas;
- Soils are highly erodible in the low lying areas, and the state of the reserve's erosion control programme is poor;
- There are few biodiversity management procedures in place;
- Ecologically sensitive area and parts are ecologically degraded;
- Nutritional value of the veld type limiting game densities;
- Monitoring is required to improve baseline data and assess changes in the ecosystems responses to management activities;
- There is a need to promote scientific research and disseminate results to better understand the functioning of the ecosystems;
- The reserve does not have maps of the current zoning/ special zones, paths, servitudes, cadastral boundaries, local municipal Strategic Development Framework (SDF) and heritage sites;
- Livestock grazing needs to be appropriately managed as domestic animals detract from the tourism value of the site;
- Appropriate mechanisms of waste management and removal are required to limit waste accumulation;
- Appropriate restrictions are required to prevent unnecessary disturbance of biota as a result of aircraft activities;
- Alien invasive plants need to be controlled in order to maintain and improve integrity of vegetation; and
- There is a need to identify and implement appropriate habitat management prescriptions and practices.

<u>Socio-Economic</u>

- Accessibility on roads in and around the reserve is limited as a result of the poor condition of the roads (especially during the wet season);
- The reserve's remote location makes it less accessible to tourism;
- The range and dimension of products is limited. Currently activities are limited to hiking, camping and bird watching;
- Overall project marketing is fragmented without a consolidated base;
- Individual product marketing is mostly of a low-level nature;
- The product lacks linkages and the perception of this result in the destination being considered inaccessible and remote;
- A focused tourism development plan is required to grow tourism activities associated with the reserve;
- Marketing strategies need to be implemented to encourage tourists to visit the reserve;
- There is a need to ensure that tourism-related benefits accrue to local target communities;

- There is a need to review and refine the reserve conservation development framework (CDF) to manage tourism activities within the reserve;
- There is a need to promote educational activities;
- Access to the site is not adequately monitored and controlled;
- Illegal harvesting of biological, geological and archeological resources from the reserve for the black market;
- Activities associated with agricultural programmes implemented in the catchment areas (e.g. the use of pesticides) could be detrimental to the health of animals and birds that make use of the pan system for drinking water; and
- Potential conflict between conservation and community land use objectives could undermine the proposed expansion of the reserve.

v. Desired condition of the reserve

The vision of the reserve describes the overall long-term goal for the operation, protection and development of the WNR. The following vision was developed by the RPT:

VISION

To restore and conserve the ecological characteristics of its unique dune ecosystem. From this, it is envisaged that the following will be secured:

- ***Conservation of the biodiversity of the WNR and the surrounding area;***
- ***Ensure the continued conservation of the geohydrology of the Witsand aquifer;***
- ***Protection of the reserve's outstanding scenic value;***
- ***Preservation of the bird species of conservation concern found in the area;***
- ***Implementation of an integrated environmental management strategy;***
- ***Preservation of the cultural and historical heritage attributes as well as the aesthetic and spiritual value of the reserve and the surroundings;***
- ***The integrity of the natural environment is protected to sustain its scenic qualities to serve as a basis for tourism;***
- ***Quality of life of rural communities are improved by developing opportunities for tourism; and***
- ***Equitable access to, and responsible use of, the reserve and its natural resources for the benefit of present and future generations through strategic partnerships.***

vi. Key management activities and targets

Twenty-four objectives, grouped according to six key performance areas, is anticipated to contribute to realizing the vision of the WNR. These key performance areas with their objectives as identified by the RPT are as follow:

KPA 1: Biodiversity and Heritage Conservation

Objective 1.1 Biodiversity and Cultural Heritage knowledge
Objective 1.2: Restoration of degraded areas
Objective 1.3: Maintenance of ecological processes in the WNR
Objective 1.4: Maintenance of critical ecosystem services
Objective 1.5: Land use planning and management outside of the protected area
Objective 1.6: Water use planning and management operations influencing the protected area
Objective 1.7: Audit achievement of biodiversity targets

Objective 1.8: Manage and mitigate the environmental impacts of conservation management, tourism, recreation and natural resource use
Objective 1.9: Protect the heritage resources of the WNR

KPA 2: Recreation, Marketing, Education, Awareness and Interpretation
Objective 2.1: Develop, deliver and maintain a diverse range of tourism and recreational services for visitors to the WNR taking into account the criteria for use zones
Objective 2.2: Develop and implement a focused and cost-effective marketing program for the WNR
Objective 2.3: Develop and implement a focused and cost-effective awareness-raising and educational program for the WNR
KPA 3: Enforcement, Security and Access Control
Objective 3.1: Secure the legal tenure of, and management authority for, the WNR
Objective 3.2: Secure the boundaries of, and maintain controlled access to, the WNR
Objective 3.3: Sustain an effective law enforcement and compliance capacity in the WNR
KPA 4: Infrastructure and Equipment
Objective 4.1: Acquire and maintain operational equipment and vehicles for the WNR
Objective 4.2: Construct, maintain and upgrade the administration infrastructure and bulk services infrastructure in the WNR
Objective 4.3: Upgrade and maintain day and overnight visitor buildings and infrastructure in the WNR
KPA 5: Stakeholder Involvement
Objective 5.1: Interaction with stakeholders and communities in the planning, development and management of the WNR
Objective 5.2: Actively participate in local and regional conservation and socio-economic development initiatives that may affect or benefit the WNR
Objective 5.3: Develop, implement and maintain effective mechanisms for ongoing communications with co-management partners
KPA 6: Administration and Planning
Objective 6.1: Institute and maintain an effective management planning capability in the WNR
Objective 6.2: Maintain an adequately equipped, resourced and trained staff complement for the WNR
Objective 6.3: Institute and maintain an effective financial and administration and planning capability in the WNR

vii. Institutional arrangements and budget requirements

The following recommendations regarding the minimum staffing complement and funding required for the successful implementation of the Reserve Management Plan (i.e. the IMP and APO) was made by the RPT making use of the RB Martin formula. Martin has developed formulae which give a crude estimate of the number of field staff, the required operating costs and the necessary capital expenditure for a protected area of any given size.
The RB Martin formula has been used to estimate minimum conservation costs for protected areas and compare these with disclosed budgets, which suggests a 30%

aggregate underfunding of conservation. Conservation functions in provinces appear seriously underfunded, largely because they must vie for provincial allocations along with other critical social functions such as health, education and social welfare. Regardless of the final figure, there appears to be ample evidence from a number of sources that conservation is seriously underfunded in aggregate, and that a comprehensive review of the funding requirements for conservation is required (DEA, 2012).

It is proposed that a total of 24 staff members, (consisting of a reserve manager, assistant reserve manager, 7 field rangers, 6 logistical supporters, 1 administrative officer, 1 messenger, 1 facility manager, 1 artisan, 3 gate guards and 2 cleaners) would be required for the successful implementation of this Integrated Management Plan.

The following capital and operational budgets are proposed for the successful implementation of this IMP:

ECONOMIC CLASSIFICATION - SCOA		*2025-2026*	*1,00*	*2027-2028*	*2028-2029*	*2029-2030*
		Budget	*Budget*	*Budget*	*Budget*	*Budget*
PERSONEEL		*R1 903 249,99*	*R1 977 730,54*	*R2 025 277,65*	*R2 112 671,60*	*R2 203 750,24*
GOODS AND SERVICES		*R624 545,88*	*R821 580,88*	*R570 836,88*	*R575 014,18*	*R638 835,35*
CAPITAL ASSETS >R5000		*R72 500,00*	*R58 500,00*	*R2 500,00*	*R2 500,00*	*R42 500,00*
TOTAAL:		*R2 600 295,87*	*R2 857 811,42*	*R2 598 614,53*	*R2 690 185,78*	*R2 885 085,58*

1. INTRODUCTION

1.1 Integrated Environmental Management System

The Integrated Environmental Management System (IEMS) assists DAERL in managing its ecological, social (including human resources) and financial resources to meet the Nature Reserve management objectives. It is a system that meets the requirements of relevant ISO 14001 standards but also enables the DAERL and its Nature Reserves to plan for and meet strategic (five-year) objectives as well as assist with the implementation of annual planning objectives within a coherent system of continual improvement. Linking the strategic planning cycle and the annual planning cycle enables the Department to ensure that operations are focused to meet Departmental and Nature Reserve strategic objectives. At a Nature Reserve level, the strategic objectives and annual planning objectives will be guided by the Departments objectives within these two cycles of planning.

1.2 Integrated Management Planning

The Integrated Management Plan (IMP) is drafted every five years with the involvement of representative stakeholders. The IMP forms a bridge between the long term policy and vision for the Reserve, and the medium term (five year) priorities to attain that vision.

Rather than detailing all operational and potential reactive courses of action in the next five years the IMP focuses on strategic priorities. These priorities are considered strategic because they will shape the future development of the Nature Reserve, as well as ensuring responsible operational management on a day-to-day basis. In drafting the IMP, significant efforts are directed towards integrating the vision with operational reality.

To ensure its survival as an action plan, the IMP is presented as an operational management framework (OMF) with a series of Key Performance Areas, each of which contains objectives that the reserve staff will need to address. For each one of the aforementioned objectives, a number of guiding management principles (i.e. norms and standards by which operational decisions with regard to the reserve will be made); management actions (i.e. key strategic activities to be implemented in order to achieve the reserve's objectives); and management targets were set by the RPT.

Each management action was defined and prioritized as being of a high, medium or low priority for the five-year horizon covered by this Integrated Management Plan. Time frames, targets, key performance indicators and responsibilities were also allocated to each management action, or to a group of linked management actions.

The aforementioned principles, actions and targets will be used to inform the annual plans of operation (APO) of the reserve, as well as the resources required to implement it. To provide a spatial context to the strategic reserve objectives, a Conservation Development Framework (CDF) is formulated to demarcate the reserve into functional areas with a specification of management guidelines for each use zone and to provide a spatial framework for visitor facility provision and access with a specification of management guidelines for the range of visitor sites, facilities and access.

1.2.1 The WNR Management Plan

The Reserve Management Plan (RMP) is the overarching management planning document for the Witsand Nature Reserve (WNR).

The WNR Management Plan comprises two complementary documents[1]:

- An Integrated Management Plan (IMP) including an OMF covering a period of five years (this document); and
- An Annual Plan of Operation (APO) covering the current financial year.

All the information necessary to guide the management of the nature reserve is included in these two documents. The structure used for the WNR IMP (Table 1) is the same as for all DAERL Nature Reserves.

No major decisions potentially affecting the future of the reserve will be taken without reference to the IMP.

Table 1: Structure of the IMP for WNR

SECTION 1	**INTRODUCTION**
This section briefly describes the: (i) planning context for the IMP; (ii) purpose of the IMP; (iii) structure of the IMP; and (iv) approach to developing the IMP.	
SECTION 2	**CONTEXTUAL FRAMEWORK**
This section provides a succinct summary of contextual information about the WNR. Context identify the defining qualities and characteristics of the WNR What makes it special and unique and also describe the WNR's management issues and challenges	
SECTION 3	**STRATEGIC PLANNING FRAMEWORK**
This section defines the ambitions for the WNR, through the formulation of a vision and a set of objectives. This section also spatially represents the desired state of the WNR in the form of a use zone map for the WNR. Strategic planning is an organization's process of defining its strategy, or direction, and making decisions on allocating its resources to pursue this strategy. Set out medium- and long-term ambitions for the desired state of the WNR.	
SECTION 4	**OPERATIONAL MANAGEMENT FRAMEWORK**
This section defines how the vision and the objectives will be delivered. It details the key management guidelines and management actions for six thematic areas (Key Performance Areas). Operations management is a dynamic, iterative and complex process, which is comprised of a series of decisions and activities by managers and employees – affected by a number of interrelated internal and external factors – to turn strategic plans into reality in order to achieve strategic objectives. Operational Management Framework- - Translates the strategic planning framework for each set of objectives into management actions; and management targets to accomplishing objectives and the resources required to implement it, including specific activities to be implemented on an annual basis; - Identify the measures required to evaluate if the management actions are collectively contributing to achieve the desired state; - Describe control mechanisms (legislation, policies, norms and standards) for guiding implementation and decision-making; and - Provide procedures on how to implement operations (standard operating procedures)	
SECTION 5	**RESOURCING AND GOVERNANCE FRAMEWORK**

[1] These two planning documents may, in turn, be supported by a **State of Knowledge Data Repository (SKDR)** and program-specific, more detailed **Subsidiary Plans**.

1.2.2 Purpose and structure of the WNR IMP

The National Environment Management: Protected Areas Act No. 57 of 2003 requires that DAERL produces management plans for all Nature Reserves in consultation with relevant stakeholders. The overall aim of the Management Plan as per the Protected Areas Act is to:

- ensure the protected area is managed according to the reason it was declared;
- be a tool to guide management of a protected area at all levels, from the basic operations to the level of the Minister of Environmental Affairs;
- be a tool which enables the evaluation of progress against set objectives;
- be a document which can be used to set up key performance indicators for Reserve staff;
- set the intent of the Reserve, and provide explicit evidence for the financial support required for the Reserve, and
- provide for the scoping process required as part of the Environmental Impact Assessment (EIA) process for development in the Reserve

The purpose of the IMP for the WNR is in line with the aim of the PAA and is to:

- Identify the defining qualities and characteristics of the reserve (i.e. what makes it special and unique);
- Describe the reserve's management issues and challenges;
- Set out medium- and long-term ambitions for the desired state of the reserve;
- Provide a five-year implementation framework for delivering this desired state
- Describe the specific activities to be implemented on an annual basis;
- Identify the measures required to evaluate if the management actions are collectively contributing to achieve the desired state; and
- Describe the institutional, human resource and budget requirements for implementing the management plan.

The overall purpose of the IMP for the WNR is to set out the medium-term ambitions for the reserve. These ambitions are expressed through the **vision** and **objectives**. The IMP then describes how these ambitions will be delivered through a range **of management guidelines** and **management actions**.

Eight basic steps were taken in preparing the IMP for WNR. These steps are outlined in the Table 1 below.

Table 2: The eight basic steps taken in preparing the IMP of the WNR

Step	Purpose of step
STEP 1: Data collection, background research and site visit.	To collect, collate and review the contextual reserve information that informs the reserve management planning process.
STEP 2: Establishment of a Reserve Planning Team (RPT).	To establish an inter-disciplinary team to guide and advise on the preparation, and ongoing review and evaluation, of the IMP.
STEP 3: Identification of the reserve values.	To describe why the reserve was designated, and its associated values and benefits.
STEP 4: Deciding on the desired state for the reserve.	To develop and articulate a desired condition, state or appearance of the reserve (vision, objectives and use zone plan).

STEP 5: Development of an action plan for the reserve.	To identify and develop the key management actions needed to achieve the desired state for the reserve.
STEP 6: Preparation of the first draft of the IMP for the reserve.	To integrate all the information from Step 1 and Steps 3 to 5 into a first draft of the IMP.
STEP 7: Stakeholder consultation.	To create an opportunity for the RPT, and later the general public and other stakeholders/interested parties, to review and comment on iterative drafts of the IMP.
STEP 8: Revision of the IMP to include comments and recommendations from the RPT and other stakeholders.	To revise the draft IMP, taking into account the comments received from the RPT and other stakeholders/interested parties and the public.

1.3 IEMS audit

An audit of the Integrated Environmental Management System is undertaken on an annual basis. An audit is designed to obtain objective information that provides an evaluation of the PA's conformance to the criteria it has set itself. These criteria may include legal compliance, conformance with PA procedures, achievement in Key Performance Areas, and compliance with any other standard the Department may have adopted. The annual management review below and progress against Key Performance Areas forms the basis of the annual IEMS Audit

The results of this process are communicated to management, staff and other stakeholders through the management effectiveness improvement strategy (MEIS).

1.4 Management review

A review of the IEMS is undertaken on an annual basis to prevent it from constraining new initiatives and innovative approaches to challenges that may arise. The review takes account of the changing circumstances that comprise the reserve environment.
In undertaking such a review or assessment, the Protected Area Manager considers the results of the METT-SA, relevant recommendations by Stakeholders, and any other information considered relevant to the review.

The Management review provides the framework within which Protected Areas will develop their Operational Management Framework (OMF) for the following year.

1.5 Operational Management Framework

The PA is required to develop and maintain an Operational Management Framework (OMF) or Annual Plan of Operations (APO). This Framework translates the expectations of the Integrated Management Plan into workable objectives or project areas in a manner that serves the management style of the respective operational sections within the PA. The Operational Management Framework provides an indication of required human and financial resources for each of the objectives or project areas. The development of Operational Management Framework therefore serves as an important interface between the project-planning and budgeting exercises.

1.6 Strategic review

A Strategic Review of the IMP is held every five years and seeks to evaluate the effectiveness, suitability and adequacy of the Integrated Environmental Management

System, within the context of a changing PA environment. The Strategic Review differs from the Management Review in that it includes the participation of relevant stakeholders. The Strategic Review may recommend changes to Policy and Procedures. Participants may also decide to commission further Environmental Reviews (including a Legal Review) to provide information necessary for the assessment. The results of the Strategic Review provide the framework for the development of a five-year Integrated Management Plan for the following 5-year planning cycle of the PA.

1.7 Implementation

Implementation and maintenance of the IMP is the responsibility of all reserve staff. Specific procedures are developed and followed to ensure there is continuity in the implementation.

1.8 Responsibilities

General responsibilities for reserve operations are set out in the Performance Agreements and Work Plans of the reserve staff. An assessment of personal performance in respect of allocated tasks and applicable Key Performance Areas is undertaken on an annual basis for all reserve staff. This is described in the Northern Cape Provincial Administration's Performance Management and Development Policy.

1.9 Training

As part of the Performance Management and Development Policy training needs in relation to Work Plans is described in the Personal Development Plan of staff members. This system aims to ensure that reserve staff is competent to carry out allotted tasks in a manner that supports the goals of the Environmental Policy.

1.10 Communications

Communication within the reserve is regarded as a two-way dialogue, and all reserve staff are encouraged to raise issues and concerns they have regarding the operation. Effective communication is seen as imperative in creating a reserve community.

1.11 Documentation and Records

Documentation is maintained to provide management, staff, visitors and other stakeholders with an understanding of the management priorities and systems that operate within the reserve. Wherever possible, documentation is available electronically to facilitate access and avoid unnecessary paper waste. A document control system is employed to ensure documents remain relevant, up-to-date and accessible. All documentation and records form part of the SOKDR of the reserve.

1.12 Monitoring

According to McGeoch et al. (2011) the measurement and monitoring of biodiversity in protected areas is generally aimed at,

- assessing and improving the efficiency and effectiveness of conservation action,
- informing management action and policy at both local and national levels,

- providing evidence of conservation success and
- strengthening the case for conservation among policy makers, funding agencies and land owners

In addition, biodiversity monitoring systems in protected areas are intended to provide early recognition of unforeseen changes that impact on biodiversity, and to contribute to understanding potential impacts of current and new activities on biodiversity. These data will also feed into national and international assessments of the state of biodiversity. Monitoring systems are thus necessary to both identify where policy or management intervention may be required, and to inform and evaluate the effectiveness of any interventions.

DAERL has developed a Biodiversity Monitoring Framework that maps the way forward for biodiversity monitoring in DAERL nature reserves. The monitoring framework provides the principle motivation for the development and implementation of a Monitoring systems (BMS) for DAERL that addresses and prioritises the full range of key biodiversity concerns, conservation, and reporting commitments and obligations across reserves, taxa and environments. As such, it is intended to play a significant role in guiding investment in research, monitoring, and resulting policy and management action in nature reserves for the foreseeable future.

Two main approaches were used to guide the design and development of the DAERL BMS and to identify Biodiversity Monitoring Programmes (BMPs) (Figure 2).
The approach that will be used to track and evaluate progress in the development and adoption of DAERLs' BMS will be based on the evaluation and monitoring principles set for the PA IMP. This approach adopts a logical series of steps to measure progress with the implementation of the BMS. It ensures ongoing assessment of the effectiveness of the framework and its implementation, and ultimately the organisation's mandate to enable informed and accountable decision-making through monitoring and analysis. As part of this process, the BMS should be regularly reviewed and evaluated, as is the case with management plans

2. CONTEXTUAL FRAMEWORK

2.1 Location and interface

The southern Kalahari, stretching through Botswana, Namibia and South Africa, is an area where surface water is scarce. It is part of an area called the Mega Kalahari that lies within the territories of eight countries, from north to south; Gabon, Congo, Republic Congo, Angola, Zambia, Namibia, Botswana and South Africa (IGBP 1997)

The Witsand Nature Reserve (WNR) lies at the southern tip of the southern Kalahari. It gained nature reserve status on proclamation in April 1994 and was established primarily for the conservation of components and processes associated with the dune ecosystem and the biotic communities that converge in that area. The reserve has become renown because of the white sand surrounded by red Kalahari sand. The habitat diversity and variety of endemic plant species offer opportunities to study biological processes. The Witsand Nature Reserve also has a major source of water with a shallow water table which is visible in some parts of the reserve. When the reserve was proclaimed the vegetation was very disturbed by human activity,

overgrazing, trampling by animals and the unregulated movement of motor vehicles (Bosch 1996).

Witsand Nature Reserve is situated 80 km south of Olifantshoek and 70 km south – west of Postmasburg in the Northern Cape Province. The topographical location is 28˚34' S 22˚29' E. The altitude is approximately 1200 m above sea level.

In managing a site of this nature, it is important that the site boundaries are clearly established and communicated between relevant parties. The reserve is about 3 200 ha in size of which the dunes comprise 2 000 ha (Badenhorst et al.1999) and consists of portions of the properties as indicated in Table 3.

Table 3: Properties of WNR

Farm	Size Ha	Tile deed	Landowner	Declaration No.
Hay RD 598	3207.5648	T3445/2003	Province Northern Cape	No 37/1994

2.2 Legal status

The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (''the Act'') has as one of its aims the protection of conservation and ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes and makes provision for the declaration of various types of protected areas. Section 9(a) provides for special nature reserves, national parks, nature reserves (including wilderness areas) and protected environments and Section 9(c) provides for Marine protected Areas.

The WNR covers an area of 3207.5648 ha and was declared as a Nature Reserve in 1994 in terms of Section 6(1) of the Nature and Environmental Conservation Ordinance (Ordinance 19 of 1974) proclamation number 37/1994 and is therefore legally defined as a provincial nature reserve in terms of Section 12 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA).

In addition to the Protected Areas Act, a Reserve Management Plan must comply with other related national legislation such as the National Environmental Management: Biodiversity Act (NEMA: BA), national policy and international conventions that have been signed and ratified by the South African Government. The key national, provincial and local legislation that has a direct influence on management activities are provided for in the Operational Management Framework.

Figure 1: Witsand Nature Reserve Interface

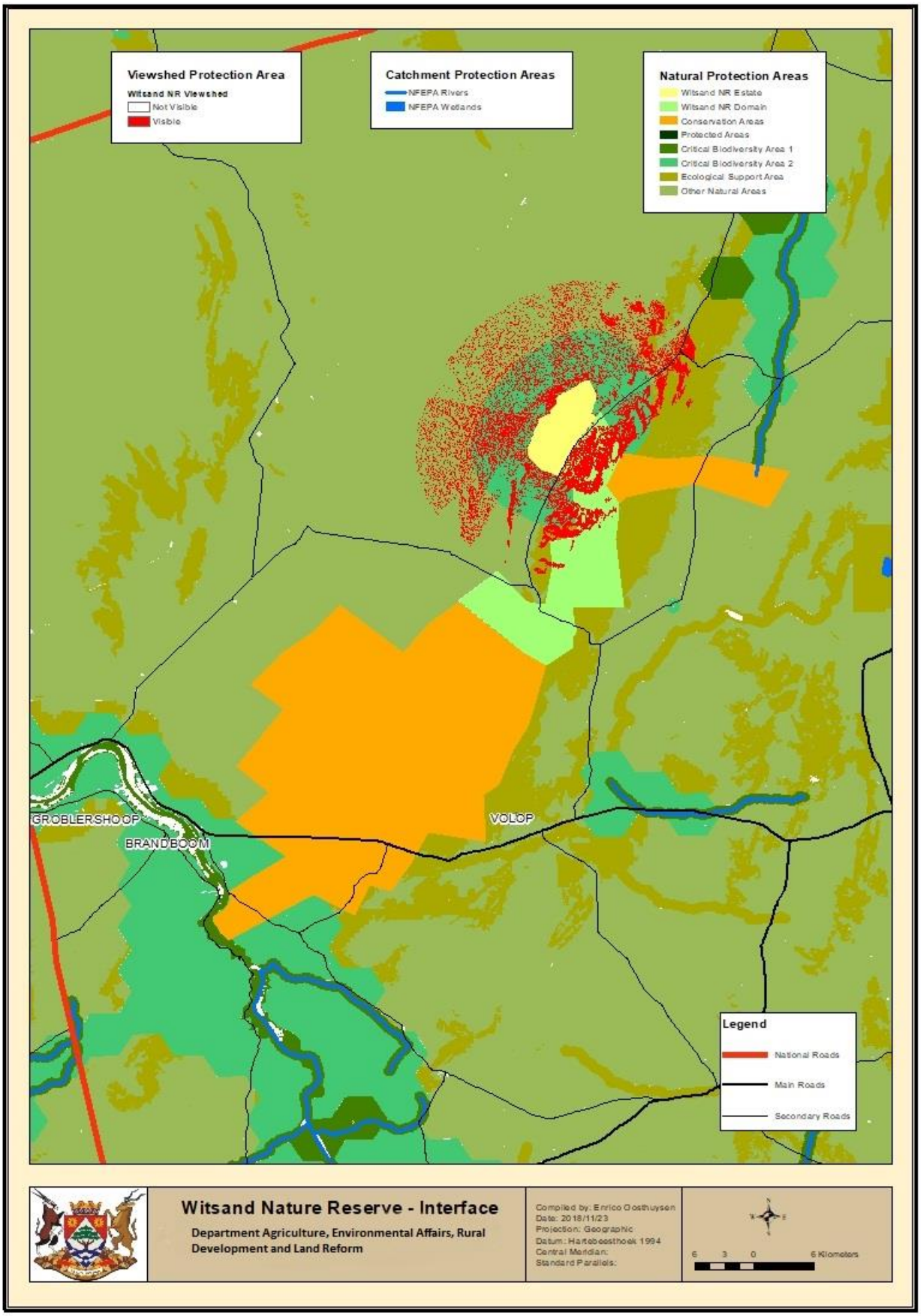
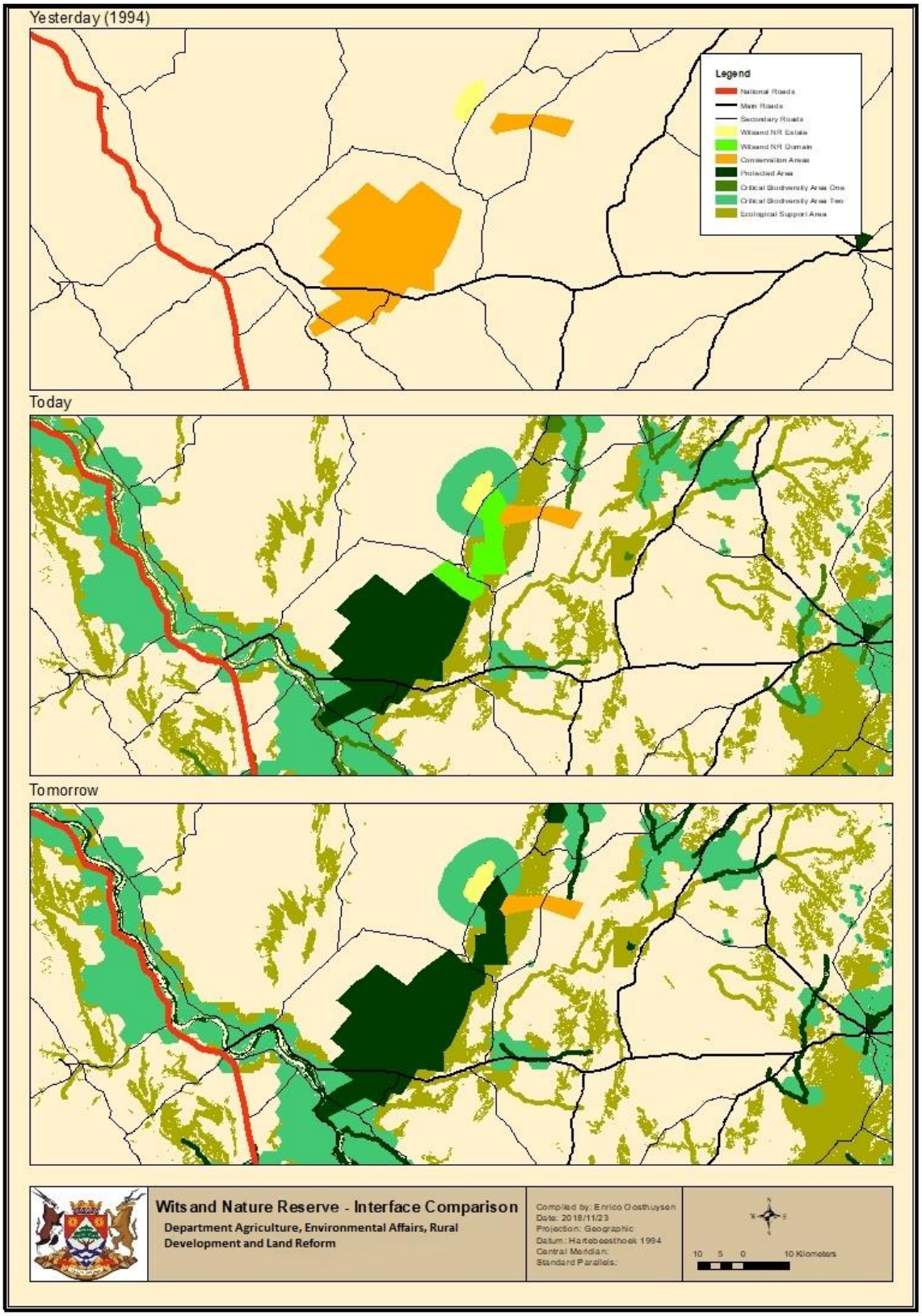


Figure 2: Witsand Nature Reserve Interface comparison[2]



[2] The vision for the future is that of DAERL and does not necessarily incorporate the vision of the landowner or other land users or conservation agencies

Figure 3: Witsand Nature Reserve Estate

ID	Lat	Long
1	-28.539135251194239	22.473291317000985
2	-28.535152673721313	22.473880648612976
3	-28.528155041858554	22.479543210938573
4	-28.52475106716156	22.479068040847778
5	-28.521904740482569	22.482002126052976
6	-28.514786409214139	22.493723966181278
7	-28.511731037870049	22.500017937272787
8	-28.509552329778671	22.503045815974474
9	-28.507457775995135	22.509484793990[illegible]
10	-28.520433800294995	22.515787314628594
11	-28.524545459076762	22.515512052923441
12	-28.523325640708208	22.510475954040885
13	-28.525116769596934	22.509757205843925
14	-28.525448273867369	22.51155411824584
15	-28.524241698905826	22.512221904471517
16	-28.524761460721493	22.515442064031959
17	-28.530488312244415	22.513304846361279
18	-28.538263617083431	22.511801803484559
19	-28.541084714233875	22.515505431219935
20	-28.567202724516392	22.495549209415913
21	-28.595981067046523	22.480722544714808
22	-28.59238556586206	22.475736401975155
23	-28.589027021080256	22.466535458177328
24	-28.585861679166555	22.462661471217871
25	-28.582865400239825	22.459056414663792
26	-28.578995140269399	22.455152543261647
27	-28.57838636264205	22.454741830006242
28	-28.576719537377357	22.453988799825311
29	-28.568712221458554	22.45368579402566
30	-28.544769063591957	22.463211659342051
31	-28.54377631098032	22.462737327441573
32	-28.538269400596619	22.47204065322876

2.3 Institutional arrangements

2.3.1 General

In implementing the RMP, it is essential that Reserve Management understand the mandates of various role-players and the institutional framework in which decision making; implementation and monitoring will be carried out. In light of this, a brief outline of the mandates and responsibilities of the Management Authority and key supporting government departments is provided below.

The mission of the DAERL, as the current designated management authority of the WNR, is to conserve and protect the natural environment for the benefit, enjoyment and welfare of present and future generations by integrating sustainable utilization with socio-economic development. The Department's strategic goals are to conserve, value, sustainably use, protect and continually enhance environmental assets; enhance socio-economic benefits and employment creation for present and future generations from a healthy environment; and provide a department that is fully capacitated to deliver its services efficiently and effectively.

The current Strategic and Annual Performance Plan of DAERL aim at achieving 6 strategic goals for the current cycle that is reviewed in line with the Medium Strategic Framework and the Environmental Sector Strategic Plan.

The strategic goals with goal statements of DAERL include the following:

Goal 1	**Environmental Quality and Biodiversity Management**
statement	Environmental assets conserved, valued, sustainably used, protected and continually enhanced
Goal 2	**Socio-economic benefits and Employment creation**
statement	Enhanced socio-economic benefits and employment creation for the present and future generations from a healthy environment
Goal 3	**Cooperative Governance and Administration**
statement	A department that is fully capacitated to deliver its services efficiently and effectively
Goal 4	**Environmental Education**
statement	Environmental education provide to stimulate critical thinking and influence decision making
Goal 5	**Research**
statement	Sound decision making based scientific research and monitoring
Goal 6	**Compliance and Enforcement**
statement	To promote and enforce compliance with environmental legislation

To achieve these strategic goals, the Department is divided in 8 programs with their sub-programs (Annexure 1). Protected Area Management resorts under sub subprogram 8.3.2 Conservation Agencies and Services. The strategic objective of this sub-subprogram is that “The protected area network is secured, expanded and managed to ensure that a representative sample of biodiversity and key ecological processes are conserved”.

The purpose of this sub-program is to ensure the implementation of mechanisms for management of ecologically viable areas, conserving biodiversity, protecting species and ecosystems for specific land areas and related conservation activities in the Province. Also to build a sound scientific base for the effective management of natural resources and biodiversity conservation decision making.

Conservation agencies (either external statutory bodies or provincial departments) are primarily engaged in nature conservation as well as the tourism and hospitality industry, the management of provincial nature reserves, enforcement and monitoring within their areas and as well as research, education and visitor services.

This sub-program currently directly manages 8 nature reserves covering a total area of 75 261.5843 ha or 3.29% of the total Northern Cape protected area estate. This total area does not include areas managed in terms of management or co-management agreements.

In addition, a range of other core government departments have important roles to play in ensuring that the WNR is appropriately conserved and managed as set out in the sections below.

2.3.1.1 Department of Environmental Affairs

The Department of Environmental Affairs (DEA) is responsible for the overall coordination of environmental activities in South Africa and is also the custodian of all protected areas in terms of NEM:PAA. It also coordinates environmental research, undertakes environmental education and ensures the implementation of environmental impact assessments, amongst other duties.
South Africa's Department of Environmental Affairs (DEA) is also tackling the critical challenge of natural resource management, environmental protection and infrastructure under the management of Environmental Programs (EP) through two divisions, namely Natural Resource Management (NRM) Programs and the Environmental Protection and Infrastructure (EPI) Programs.
Natural Resources Management (NRM) Programs address threats to the productive use of land and water, and the functioning of natural systems. These range from invasive alien species clearing programs to wild fires and land degradation. NRM programs include the following:

- Working for Water
- Working for Wetlands
- Working on Fire
- Working on Land
- Working for Forests
- Working for Energy

Environmental Protection and Infrastructure (EPI) Programs manage the identification, planning and implementation of focal areas such as:

- Working on Waste
- Working for the Coast
- People & Parks
- Eco-Furniture Factories, a component of Working for Land,
- Greening and Open Space Management.

2.3.1.2 Department of Water and Sanitation

The DWAS has the responsibility of developing tools and legislation related to water resource management; establishing appropriate institutional arrangements (CMA, other forums & advisory committees); and creating awareness and building capacity. Water resource planning, both quantity and quality, at catchment level, as well as the issuing of water use licenses and the enforcement and compliance of the provisions of the NWA also fall within the responsibilities of DWA. Given the importance of catchment management in maintaining the integrity of the WNR, the DWA also has a very important role to play in ensuring the long-term protection and maintenance of the reserve.
It is also the responsibility of the DWA to develop legislation and policies related to water resource management, namely:

- Developing approaches, systems, tools, standards, objectives and strategies that support and promote the sustainable utilisation of water resources;
- Facilitating the implementation of catchment management and other related strategies;
- Monitoring resource quality (this includes hydrological, water quality and bio monitoring);
- Auditing the state of South Africa's water resources against set objectives;
- Constructing & maintaining water-related infrastructure; and
- Setting water quality standards for the specific Water Management Area

2.3.1.3 Department Roads and Public Works

The provincial Northern Cape DRPW, in accordance with the Constitution, is responsible for Public Works functions, which relate to provincial functions and provincial state property (including State-owned Nature Reserves). The Department's mission is to provide and maintain all provincial land, buildings and road infrastructure in an integrated, sustainable manner.

The core functions of the provincial DRPW include:

- The provision and management of immovable properties that serve as a platform for the efficient delivery of various government services.
- Rendering an expert built environment function that involves technical planning, design and construction management.
- Coordination of the expanded Public Works Programme

2.3.1.4 Department Sports, Arts and Culture

Only the Western Cape and Kwa-Zulu Natal have functioning Provincial Heritage Authorities, and consequently the national heritage authority, SAHRA administers heritage in the remaining provinces particularly where archaeology and paleontology are the dominant concerns. Archaeology, including rock art, graves of victims of conflict and other graves not in formal cemeteries are administered by the South African National Heritage Authority, SAHRA.

Heritage Northern Cape (Ngwao Boswa Kapa Bokoni) a public entity established in terms of the National Heritage Resources Act is responsible for the protection, conservation, management and interpretation of the heritage resources of the Northern Cape. Amongst other things the latter administers:

- World Heritage Sites
- Provincial Heritage Sites
- Heritage Areas
- Register Sites
- 60-year-old structures
- Public monuments & memorials

2.3.1.5 Department: Cooperative Governance, Human Settlements and Traditional Affairs (CoGHSTA)

The mission of the Northern Cape Department of CoGHSTA is to facilitate and manage:

- integrated sustainable human settlements and infrastructure development for effective service delivery;
- facilitate, monitor and support the consolidation and sustainability phases at municipalities for integrated, sustainable service delivery;
- promote and support intersphere engagement for integrated planning and coordination;

- facilitate, develop and support systems and structures to enhance traditional leadership; and
- ensure the efficient, effective and economic utilisation of departmental resources to maximize service.

2.3.1.6 Department of Rural Development and Land Reform

The Spatial Planning and Land Use Management Branch of the department are to:

- Develop policy and standards, provide support and monitor implementation of SPLUM legislation and capacitate planning institutions;
- Provide spatial planning information and environmental planning services;
- Provide integrated spatial planning support;
- Manage projects at Branch level;
- Provide programme management support; and
- Provide service delivery coordination services

This branch through the local municipality will be responsible for the implementation of the Northern Cape Spatial Planning and Land Use Management Act. This act provides for the spatial planning, land use management and development of land in the Northern Cape Province in a sustainable manner, by means of the coordination and alignment of land use, land development policies, plans and systems of all spheres of government through the development of a single spatial structuring system, which ensures that sustainable development is developmental, consistent, uniform, transparent and inclusive in nature.

The function of the Land Redistribution and Development Branch of the department is to:

- Provide land acquisition and strategic institutional partnerships;
- Provide PLAS trading account's financial management services;
- Develop and provide strategic support to farmers and cooperatives;
- Provide land reform programme support and service delivery coordination; and
- Provide land acquisition and recapitalisation & development services at regional and district level.

2.1.3.7 Department of Transport, Safety and Liaison

The mission of the Northern Cape Department of Transport, Safety and Liaison is to enable a safe and secure environment and mobility for the community of the Northern Cape through:

- good corporate governance, management, administration and support;
- establishing and supporting community safety partnerships;
- monitoring and oversight of the police;
- facilitating and coordinating social crime prevention and road safety programmes;
- educating, enforcing and administering road traffic legislation;
- liaison with all relevant stakeholders, role-players and clients pertaining to policing, safety and security; and
- provision of an integrated transport system and operation for goods and people.

2.3.2 Institutional Arrangements Specifically Relevant to WNR

2.3.2.1 Local Community, NGO's and Private Landowners

All of the properties included in the WNR are State-owned and no community or private land is included in the reserve.

Stakeholder consultation 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, 2003 (Act No. 57 of 2003). Accordingly, the development of this 5-year IMP has been undertaken through a collaborative process involving local communities and other key stakeholders.

Stakeholder engagement has furthermore also been set as a Key Performance Area in this 5-Year IMP: Integrated Implementation Framework: KPA 5 - Stakeholder Involvement.

To give effect to the objectives of the NEM:PAA section 2(f) to promote participation of local communities in the management of protected areas, where appropriate, and Section 41(2)(e) that states a management plan must contain procedures for public participation, including participation by the land owner, any local community or other interested party. WNR is in the process of establishing a protected area advisory committee (PAAC).

A PAAC provides a means for a legitimate platform through which to communicate Nature Reserve and Protected Environment issues to ensure participation of all stakeholders on matters of mutual relevance affecting the Reserve. It is expected that the PAAC will facilitate a constructive interaction between the Reserve and the surrounding communities / stakeholders. PAACs are established to encourage the building of constituencies in support of the natural and cultural heritage conservation goals of the Northern Cape. PAAC's are not decision-making institutions, but are crucial for adherence to Batho Pele Principles.

2.3.2.2 Northern Cape Economic Development Trade and Investment Promotion Agency (NCEDA)

The Department Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) has an agreement with NCEDA to manage all the tourism facilities on the reserve. These facilities include all accommodation, the entrance gate, Brulsand, all viewpoints (including birdhide), picnic sites and the 4x4 route.

The mission of NCEDA is to achieve the promotion of the Northern Cape as a business friendly province through:

- Seeking sustainable growth at all times
- Facilitating the creation of a conducive environment for trade and investment within the province.
- Increased focus on attracting investment
- The promotion of trade

Linkages with other conservation initiatives

WNR has no linkages with other conservation initiatives. Further studies have to be done to establish if any linkages are possible.

2.4 Reserve description

2.4.1. History

Several sites dating from the Stone Age have been found on WNR. The discovery of these sites indicates that the water supply on the reserve must have been accessible and that the area must have been inhabited periodically at least during the last 40 000 years.

There is evidence that Stone Age herders such as the Korana used the area. The stone tools found were dated within the period of 17th to 19th AD. It is also recorded that the Tswana farmers moved through the area (Veldsman 2003).

Two colonial wars were fought in the region in 1878 and 1896/97. Boer rebel troops under the command of General Kemp, in 1914, went through the area on their way to the then German South-West Africa.

2.4.2. Climate

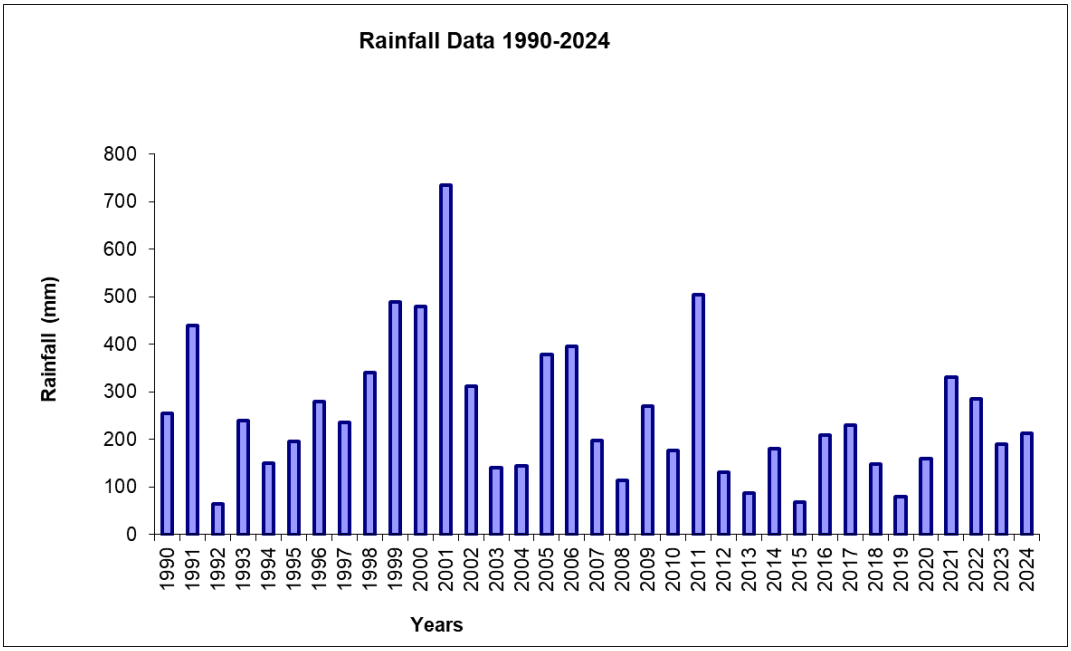
One of the driving forces on plant distribution in this area (along with soil type) is available moisture. This is not always in the form of rainfall, and may manifest as mist or seepage, but the amount and seasonality of the rainfall is still the main factor.

The reserve is located in a summer rainfall region. This is in the form of scattered showers and thunderstorms. The wettest period is from January to April. The reserve falls within an area with an average annual rainfall between 130mm and 300mm.

The Kalahari has the highest means of daily maximum temperatures in the country during January. The temperature ranges with lows from -10˚C in the winter to summer highs of 45˚C (Veldsman, 2003).

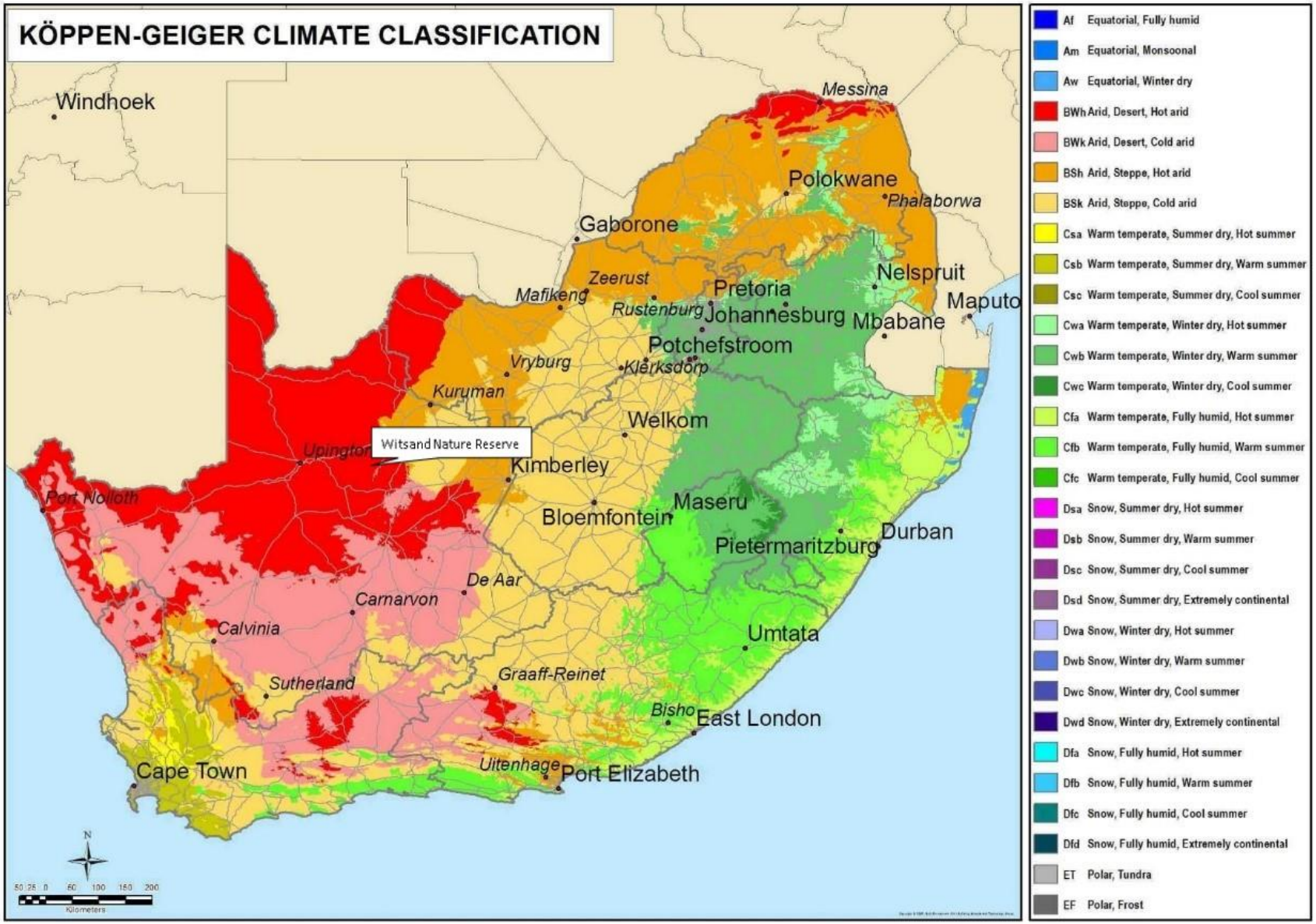
The CSIR created a detailed new Köppen-Geiger map to quantify the current climatic conditions as accurately as possible in South Africa. This classification uses a concatenation of a maximum of three alphabetic characters that describe the main climatic category, amount of precipitation and temperature characteristics. The site specific rainfall data for WNR over the past 5 years is provided in figure 8.

Figure 4: Total yearly rainfall for the reserve over a 30year period[3]



[3] The climatic data (temp) will need to be collected as part of KPA 1: Biodiversity and Heritage Conservation (Objective 1.5) and compared with the SOKDR (Biodiversity Data 01)

Figure 5: Climate regions



2.4.2.1 Climate change

The Pixley Ka Seme District Municipality IDP (2015/16) recognize that the Northern Cape specifically will be affected very adversely by climate change.

Dune activity of the Kalahari which include those found at WNR depend on two main factors: soil moisture and wind (Ashkenazy 2011). The higher temperatures caused by global warming will lead to a long-term decline in soil moisture, longer and more frequent droughts, and stronger winds. Climate change is also expected to have a serious impact on the region's biodiversity as well as major alien invaders, such as the Prickly Pear *Opuntia aurantiaca* and Mesquite *Prosopis glandulosa*.

Protected areas play a vital role in contributing to climate change mitigation and adaptation, both on global and local scales.

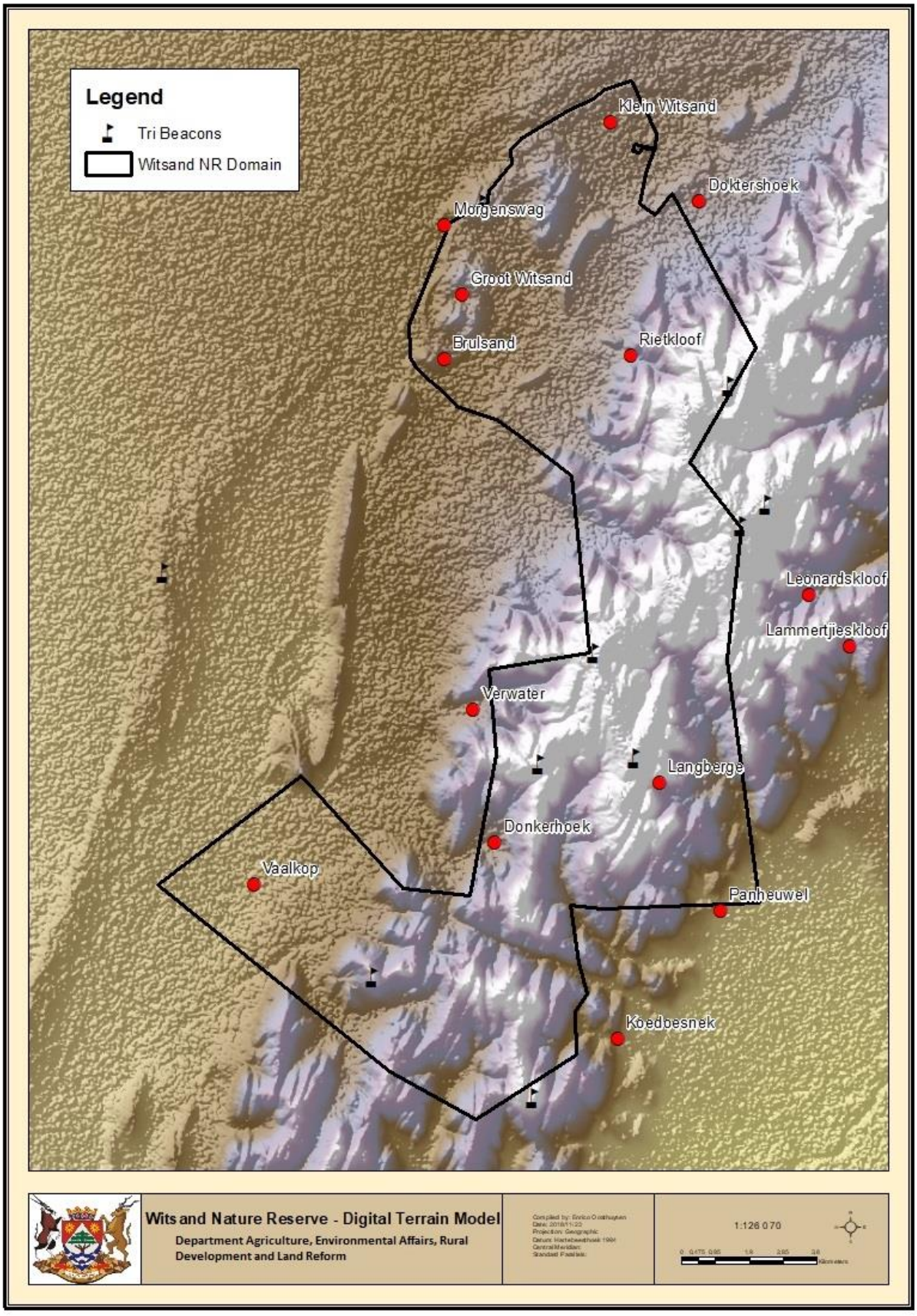
Bomhard and Midgley (2005) summarises the potential climate change impacts on biodiversity as follow:

- Species distributions
  - Individualistic species responses in latitudinal and altitudinal directions
  - Individualistic species responses to warmer/cooler and drier/moister conditions
  - Geographic variation in the magnitude of species responses to the changing conditions
  - Species range shifts/losses due to range expansions, contractions and eliminations
  - Species range shifts relative to reserve boundaries: net loss/gain of species in reserves
  - Local, regional and global extinctions of species due to the changing conditions
  - Spread of invasive alien species and/or pathogens and parasites
- Community composition and configuration
  - Changes in presence/absence and relative/absolute abundance (evenness/richness)
  - Formation of non-analogue communities (new species assemblages)
- Ecosystem functioning, services and states
  - Changes in phenology (the timing of events such as flowering)
  - Changes in nutrient cycling and natural resource supply (e.g. water)
  - Changes in predator-prey, parasite-host, plant- pollinator and plant-disperser relationships pollination and soil stabilization
  - Ecosystem switches following changes in ecosystem functioning and disturbance regimes
- Disturbance regimes
  - Changes in the intensity, frequency and seasonality of periodic and extreme events such as fires, floods, droughts and other extreme weather events
  - Changes in human land use pressures (global change synergies)

2.4.3 Topography

WNR lies within the southern Kalahari of which the biggest part is flat with a low relief (Ghaap Plateau). WNR is situated 5km to the west of the Langberg mountain range which forms part of the Griqua Fold Belt.

Figure 6: Digital Terrain Model Map for the Witsand Nature Reserve



2.4.4 Geology and Soils

2.4.4.1 Geology

Witsand NR is situated in the south eastern corner of the Kalahari. Rocks of the Olifantshoek Supergroup (Volop Group), and the tectono-stratigraphic Namaqua-Natal Province (Brulpan Group) occur in the area and are covered by the Kalahari Group.

- **Olifantshoek Supergroup**

The Olifantshoek Supergroup in the WNR area is comprised of a sequence of metamorphosed sedimentary strata mainly interbedded shale, quartzite, subgraywacke and andesitic lava overlain by a thick succession of coarse red and grey quartzite and minor shale with a total thickness of approximate 7 000 m. The age of the Olifantshoek Supergroup ranges from 1893 Ma to 1928 Ma.

At the base of the Olifantshoek Supergroup lie the Lucknow Formation (its thickness is estimated as 1500 m, might be less than 1000 m) and Mapedi Formation (with a thickness of about 500 m). Small outcrops of the two Formations are visible east of the prominent Langberg. The Gamagara Formation is regarded as equivalent to the Mapedi formation. However, the Mapedi & Gamagara Formations consist of Shale with interbedded quartzite and basaltic lava, whereas the Mapedi Formation consists of White quartzite and shale with subordinate dolomite and conglomerate. The strata of the Olifantshoek Supergroup are intensely folded. The general strike of the western limb of the regional synclinorium is from 30 – 45 degrees to the west. The strata are intensely folded and are visible in the Langberg Mountains. The strike of the syn- and anticlines axes are north-south and the plunch of the axes of the synclines are to the north. The folding of the strata to the west of the Langberg gives rise to the sand filled depression between the mountains and the dunes west of the Langberg. The quartzite outcrops could have acted as a trap for the sand.

- **Namaqua-Natal Province**

The Namaqua-Natal Province is a compilation of igneous and metamorphic rocks, formed or metamorphosed around 1200 to 1000 Ma. It comprises of three main lithostratigraphic components: The reworked Kheisian rocks (approximately 2000 Ma), Juvenile supracrustal and plutonic rocks formed during the rifting, ocean spreading and subduction phases around 1600 to 1200 Ma, and assembled during collision events accompanied by intense deformation and metamorphism. The third lithostratigraphic sequence is the voluminous syn- and post tectonic granitoids formed between 1200 and 1000 Ma (Moen 2006). The Namaqua-Natal Province is subdivided into a number of tectonostratigraphic subprovinces and terranes. Five domains are recognised in the Namaqua Sector (from West to East): Richtersveld Subprovince (~2000 Ma), Bushmanland Terrane (~2000 Ma), Kakamas Terrane (~2000 Ma), Areachap Terrane (~1300 to 1000 Ma) and the Kaaien Terrane consisting of Kheisian rocks (~2000 Ma) and early Namaquan volcano-sedimentary rocks and undeformed, but thermally metamorphosed, bimodal volcanic rocks.

The Brulpan Group consists mainly of quartz-muscovite schists and sercitic quartzite. In the east the group is structurally underlain by the Olifantshoek Supergroup. The Brulpan Group generally dips westwards. The Dapeb formation is the basal unit, and is directly against the Olifantshoek Supergroup. The contact is known as the Dabep Thrust. The Dapeb formation is composed of sheared quartz-sericite schist, subordinate quartz-chlorite schist and actinolite chlorite schists.

This formation is overlain by the Boegoeberg Formation (the Skurweberg), consisting of a 550m thick succession of light grey, medium- to fine grained quartzite with a strong bedding-parallel foliation.

- **Kalahari Group**

In the heart of the sub-continent, covering nearly one-third of the area is the sand-filled basin of the Kalahari (King 1963). It is perhaps the greatest expanse of sand in the world. Yet in times past its extent were ever greater and considerable portions of the surrounding countries, northern part of South Africa, Zimbabwe, Angola and Zaire were buried at the period of maximum sand spread. Since the Tertiary (65 million years ago) the Kalahari landscape has been characterized by aeolian dune sand accumulation, punctuated periodically by cold, wet periods. These climatic oscillations are recorded in the dolomitic Ghaap escarpment along the south-eastern margin of the Kalahari, just to the east of the study area where six major complexes of cryoclastic breccia and tufa accumulation have been identified.

2.4.4.2 Soils

With the exception of limited areas in the south and west, where scrub-dotted boulder plains or limestone-capped plateaux occur, the region is covered with a continuous mantle of sand through which steep-sided mountains project rarely as inselbergs. Over most of the central and southern Kalahari, soils are classified as arenosols in the FAO-UNESCO classification. However, the Kalahari sand is not homogeneous and it differs in colour, texture and depth.

Three types of soil forms were identified within WNR

- **Mispah form (Ms)**
  - This form of soil is found on the koppies and mountainous areas where the soil is very shallow. Mispah soil compises an orthic A-horizon overlying hard rock.
- **Namib form (Nb)**
  - Most of WNR is covered by sand and is classified as Namib form (Nb). Namib soils comprises an orthic A-horizon overlying regic sands. The orthic A-horizon plus the regic sand must be deeper than 500 mm to be classified as a Namib form if a classifiable soil occurs beneath the regic sand.
  - Three soil families from the Namib form were identified within the study area. These are:
- Nortier soil family
  - The Nortier soils are classified as yellow regic sand, with no lime present within 1 500 mm from the soil surface.
- Kalahari soil family
  - This soil family consists of red regic sand, and no lime present within 1 500 mm from the soil surface.
- Henkries soil family
  - Henkries soils are red regic sand, containing lime within 1 500 mm from the soil surface.
- **Coega form (Cg)**
  - The Coega form comprises soils with a shallow (less than 500 mm) orhtic A-horizon overlying a hard carbonate horizon.

The Witsand Nature Reserve is known for an acoustical phenomenon which occurs in the accumulation of whitish and light yellowish sands with a dune-like appearance. The dunes make a roaring sound when disturbed. The roaring

sands (Brulsand) occur at the edge of the dunes with an average angle of 30˚ and mainly the dunes that face a southerly direction.

Figure 7: Geological Map for the Witsand Nature Reserve

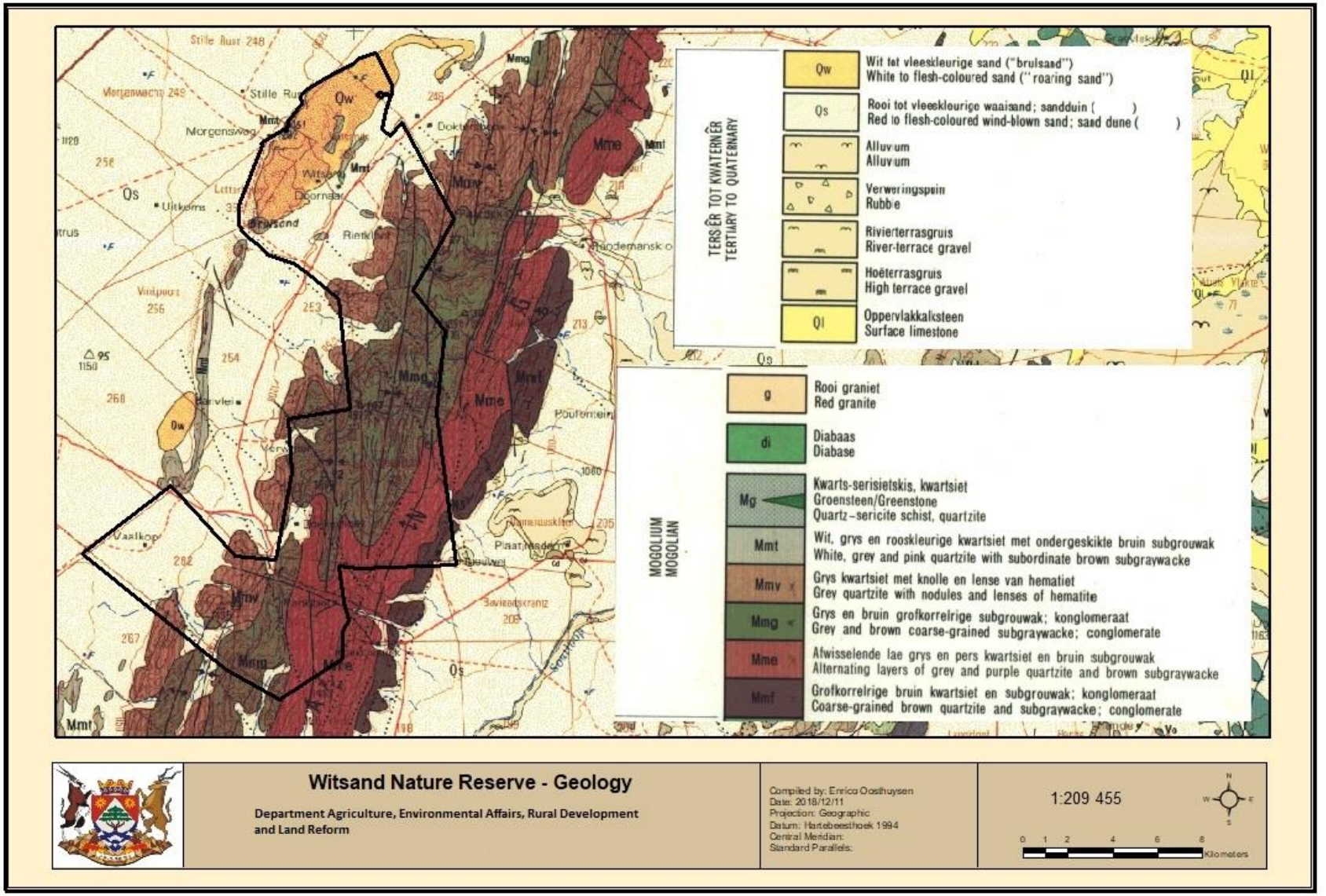
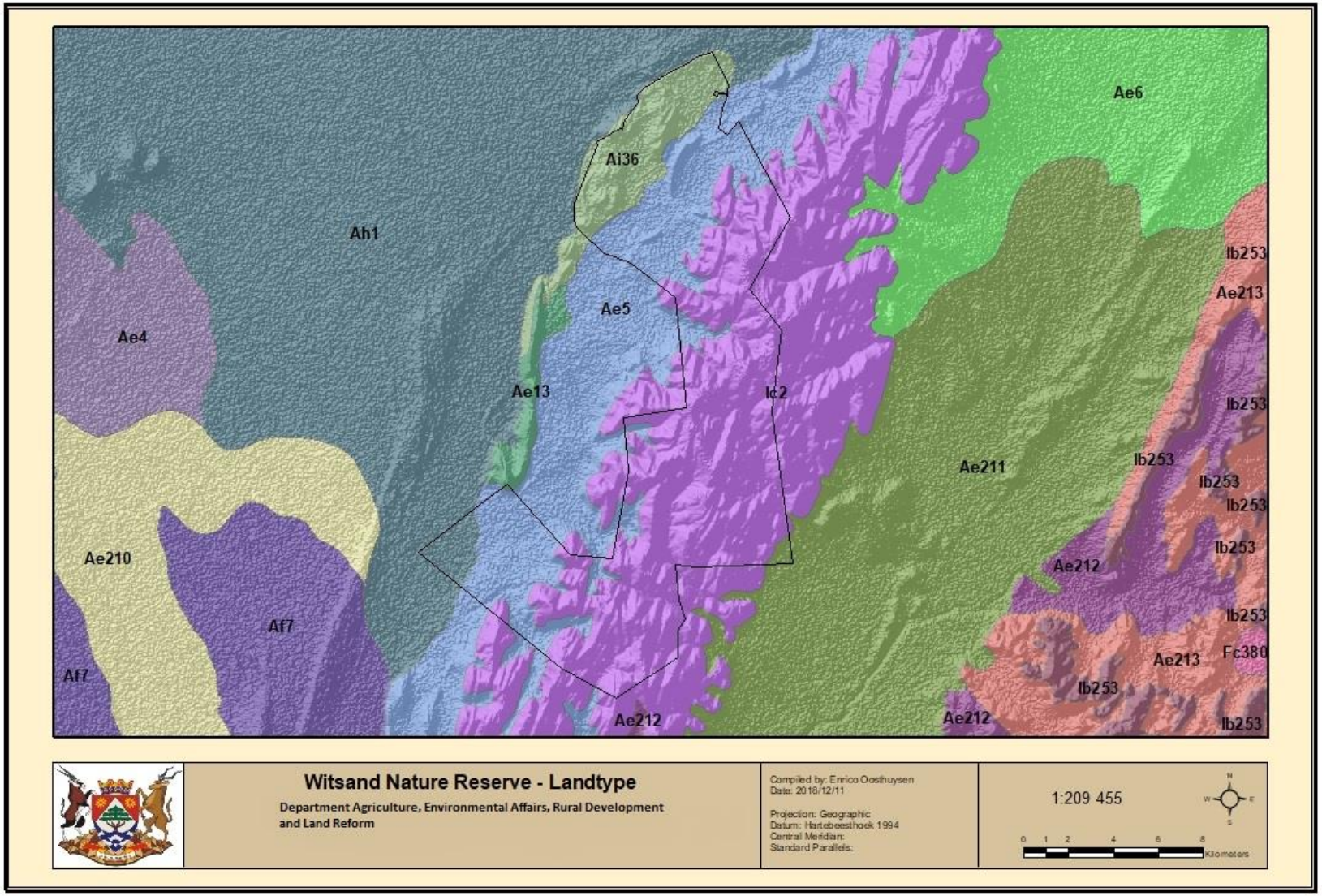


Figure 8: Land types and soil Map for the Witsand Nature Reserve



2.4.4.3 Soil Erosion

In terms of the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (UNCCD), to which South Africa is signatory, land degradation refers to the reduction or loss of biological or economic productivity of agricultural lands, woodlands, and forests that result mainly from human activities. Desertification refers to land degradation in drylands that result from both climatic variability and human activities. Desertification occurs when several degraded patches of land expand and join to form large, unproductive areas. Thus, desertification occurs over a larger scale than land degradation and results in the 'permanent' loss of productivity and supply of ecosystem services (DEA, 2006).

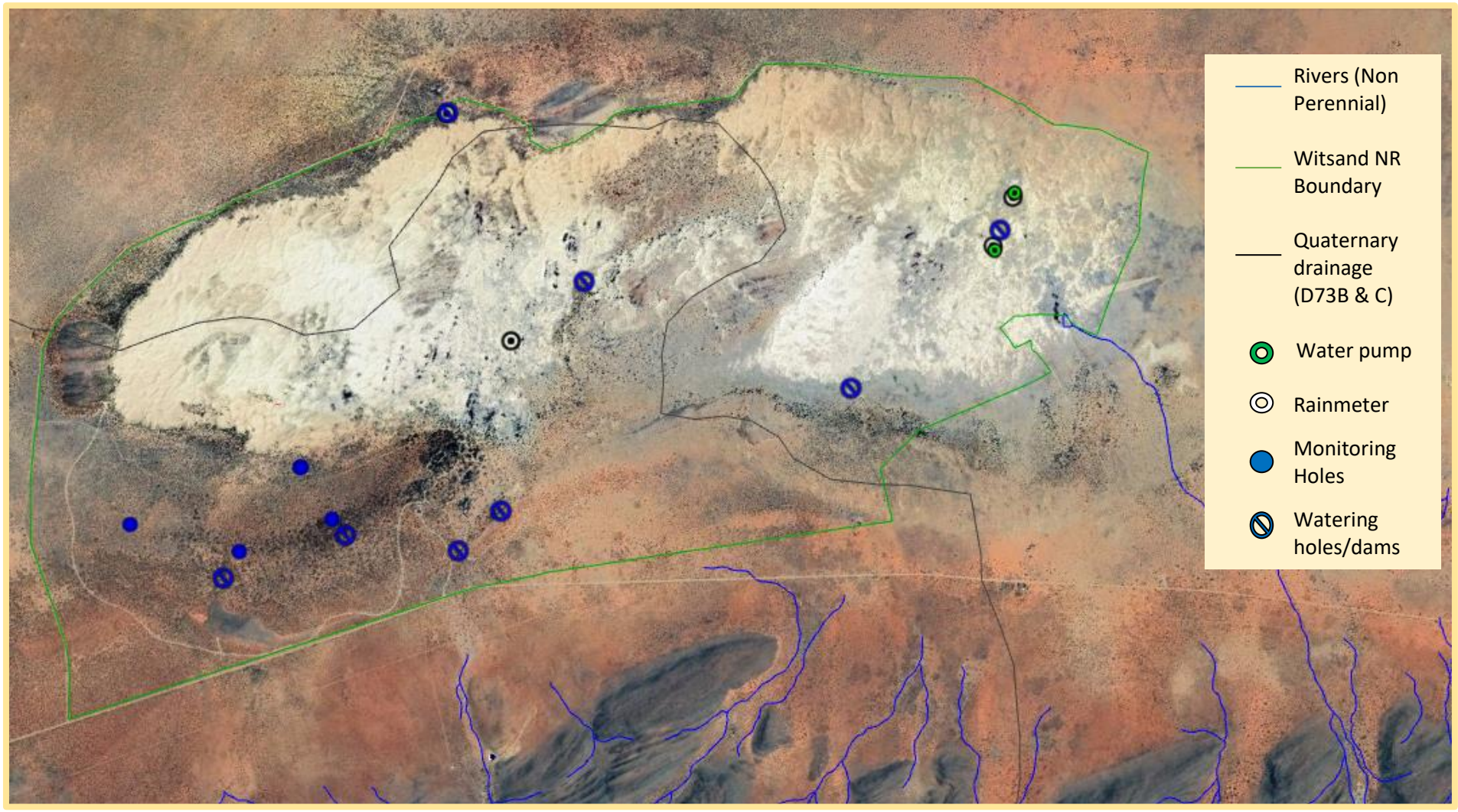
Soil degradation in the form of sheet and gully erosion is most severe (and generally perceived to be occurring at an increasing rate) in most communal grazing lands, and settlements in South Africa. Relative to overall global conditions, South Africa has more widespread and serious physical soil degradation, in the form of crusting (surface sealing) and soil compaction. Crusting is becoming an increasing problem in overgrazed, bare patches (Hoffman et al. 1999).

2.4.5 Wetlands and other Aquatic Ecosystems

The Water Research Commission and the South African National Biodiversity Institute (SANBI) commissioned the development of a National Wetland Classification System for the South African National Wetland Inventory, to encompass the broad suite of 'wetlands' as defined by the Ramsar Convention (Ollis et al. 2013; SANBI 2013). The classification system developed for SANBI was previously called a 'National Wetland Classification System'. The name of the classification system has been changed to a 'Classification System for Wetlands and other Aquatic Ecosystems in South Africa'. This change was made to avoid confusion around the term 'wetland', which is defined differently by the Ramsar Convention and the South African National Water Act (Act No. 36 of 1998).

The dune complex of the reserve overlies two natural water basins, located in quartzite gray subwacke and conglomerate of the Matsap quartzite Formation. The Witsand basins are primarily recharged with rain water, although it is also likely that water from the ephemeral drainage lines of the western slopes of the Langberg may feed into this system. The volume of water contained in the southern-most basin has been estimated to be more than 1 211 million cubic meters. Water is pumped up to 40 km from Witsand to supply domestic stock with drinking water.
No wetlands are found on Witsand, but in some areas the water from the aquifer seep through the ground in the dune complex to form shallow pools.

Figure 9: Drainage and Hydrology of Witsand Nature Reserve



2.4.6 Vegetation

2.4.6.1 Vegetation Types

WNR is on the border between the Kalahari Savanna biome and the Nama-karoo biome.

- Kalahari Savanna Biome
  The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa and is also the dominant vegetation in neighboring Botswana, Namibia and Zimbabwe. It is characterized by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground vegetation may be referred to as Shrubveld, where it is dense as Woodland, and the intermediate stages are locally known as Bushveld.
- Nama-karoo Biome
  The Nama Karoo Biome occurs on the central plateau of the western half of South Africa with altitudes between 500 and 2000 m, with most of the biome falling between 1000 and 1400m. It is the second-largest biome in the region. The geology underlying the biome is varied, as the distribution of this biome is determined primarily by rainfall. The rain falls in summer and varies between 100 and 520 mm per year. This also determines the predominant soil type - over 80% of the area is covered by a lime-rich weakly developed soil over rock. Although less than 5% of rain reaches the rivers, the high erodibility of soils poses a major problem where overgrazing occurs. The dominant vegetation is a grassy, dwarf shrubland. Grasses tend to be more common in depressions on sandy soils, and less abundant on clay soils.

  A total of five different vegetation units (Mucina & Rutherford 2006) form the vegetation of WNR. Classification from a study done by Veldsman (2003) revealed seven different plant communities. From this, two broad vegetation categories emerged: Mesic vegetation and Pan Vegetation. The Mesic vegetation was further divided into sandy vegetation and quartzite outcrop vegetation. The sandy vegetation was again divided into light yellow brown to whitish sand and reddish sand. The light yellow brown to whitish sand category is divided into dune vegetation and sandy plains and dune edges.
  A study done by Veldsman (2003) revealed the identification of seven plant communities:

- Community 1: Stipagrostis amabilis – Brachiaria dura var. pilosa Dune Vegetation
  - The vegetation of the dune areas on the Reserve was classified into a single community. Some of the dune areas have very little vegetation cover whereas other parts have a much denser vegetation cover. This community occurs at an altitude of 1 170 – 1 260 m. The sand varies from a light yellow colour to a whitish colour. Plants found within community 1 include: *Vachellia haematoxylon, Elephantorrhiza elephantine, Eragrostis lehmanniana*.
- Community 2: *Vachellia haematoxylon – Eragrostis trichophora* Low Grassy Bushland
  - The community occurs at the edges of the dunes and on the plains adjacent to the dunes. The soil seems to be a mixture between the whitish sand of the dunes and the reddish Kalahari sand. The

community is situated at an altitude of 1 160 – 1 230 m. Vachellia haematoxylon is often dominant, and forms a characteristic feature of the vegetation community. Other important species that are found in this community are *Hermannia tomentosa, Elephanthorrhiza elephantia* and *Stipagrostis amabilis* and *Eragrostis lehmanniana*, *Aristida meridionalis, Aristida congesta, Grewia flava* and *Stipagrostis uniplumis* occur widely in this community. Community 2 represents undisturbed natural vegetation.

- Community 3: *Prosopis velutina – Schmidtia kalihariensis* High Closed Shrubland
    - In contrast to the previous community that was undisturbed this community shows signs of disturbance and invasion of the alien tree *Prosopis velutina*. This species, originally from USA (Arizona, western New Mexico), Mexico (Sonora) (Faucon 1998-2005) is a serious problem in this area. In some parts of this community attempts have been made to eradicate the Prosopis, but range degradation has already occurred as can be seen by the grass and pioneer species growing in these cleared areas. The species found in the cleared area are *Tribulus zeyheri* and *Schmidtia kalihariensis*. The soil characteristics are similar to that of Community 2. *Prosopis velutina – Schmidtia kalihariensis* High Closed Shrubland is characterized by *Prosopis velutina* and less abundant species such as *Sida cordifolia* and *Nolletia arenosa*
- Community 4: *Vachellia erioloba – Vachellia karroo* Low Grassy Woodland
    - This woodland is found on the reddish Kalahari sand. The altitude where the community occurs is 1 160 – 1 230 m. This comunity is characterized by species such as *Vachellia erioloba* and *Vachellia karroo* prominent. Other species that also occur in this community are *Senegalia mellifera, Boscia albitrunca, Eragrostis lehmanniana, Grewia flava, Diospyros lycioides, Aristida congesta, Hermannia vestita* and *Stipagrostis uniplumis*
- Community 5: Senegalia *mellifera – Rhigozum trichotomum* Shrubland
    - This community occurs on shallow red Kalahari sand. The community occurs at an altitude of 1 160 – 1 250 m. The most conspicuous species are *Rhigozum trichotomum, Senegalia mellifera* and *Boscia albitrunca*. Other important species are *Eragrostis lehmanniana, Monechma incanum, Asparagus suaveolens, Schmidtia kalihariensis* and *Stipagrostis uniplumis*.
- Community 6: *Croton gratissimus – Cymbopogon pospischilii* Quartzite Outcrop Vegetation
    - This community is associated with the quartzite outcrops. On Witsand Nature Reserve there are only limited areas where the quartzite outcrops are visible, but only as small hills. The species that characterize this community are *Cymbopogon pospischilii, Croton gratissimus, Digitaria eriantha* and *Pollichia campestris*. Other species that are found are *Tarchonanthus camphoratus, Euclea undulata, Eragrostis rigidior, Aloe hereroensis, Crassula* species.
    - The species composition compares slightly to that of the Koranna-Langeberg Mountain Bushveld (SVk 15) vegetation unit (Mucina & Rutherford 2006), but differs enough to classify separately. It however

has been noticed that there are several other species occurring on the adjacent Langberg.

- Community 7: *Cyperus longus var. tenuiflorus – Schoenoplectus decipiens* Pan Vegetation
    - This community is found as small local patches scattered within Community 1. These patches are concentrated in the central part of Community 1 and the area is known as the white sands of Witsand Nature Reserve. This community consists mainly of species of the *Cyperaceae* and is found associated with the patches of surface water. The pans are formed in parts where the water table reaches the surface.

2.4.6.2 Species of Conservation Concern

Table 4 lists the plant species of conservation concern that occur in the WNR area.

Table 4: Plant species of conservation concern found within WNR

SCIENTIFIC NAME	TOPS 2015 STATUS[4]	TOPS 2013 STATUS	IUCN STATUS
Vachellia erioloba			
Vachellia haematoxylon			
Boscia albitrunca			
Amphiglossa tacta			
Prosopis velutina			

2.4.6.3 Invasive Alien Plants

On WNR invasive plants like *Prosopis* has become a major concern in certain areas of the reserve. Due to its exotic nature in South Africa, *Prosopis spp.* are virtually free of insect herbivores (Zimmermann, 1991). The absence of seed-feeding insects in South Africa has facilitated the rapid invasion of *Prosopis spp.* In one of the vegetation communities (High Closed Shrubland/Community 3) as identified by Veldsman (2003) *Prosopis* are in abundance.

[4] **T**hreatened **O**r **P**rotected **S**pecies (TOPS) in terms of sec. 56(1), 57(2) and 57(4)(a), read with sec.63 and 100 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) Critically endangered (CR), Endangered (EN), Vulnerable (VU).

Figure 10: Biomes, Bioregions and Vegetation Units of the Witsand Nature Reserve

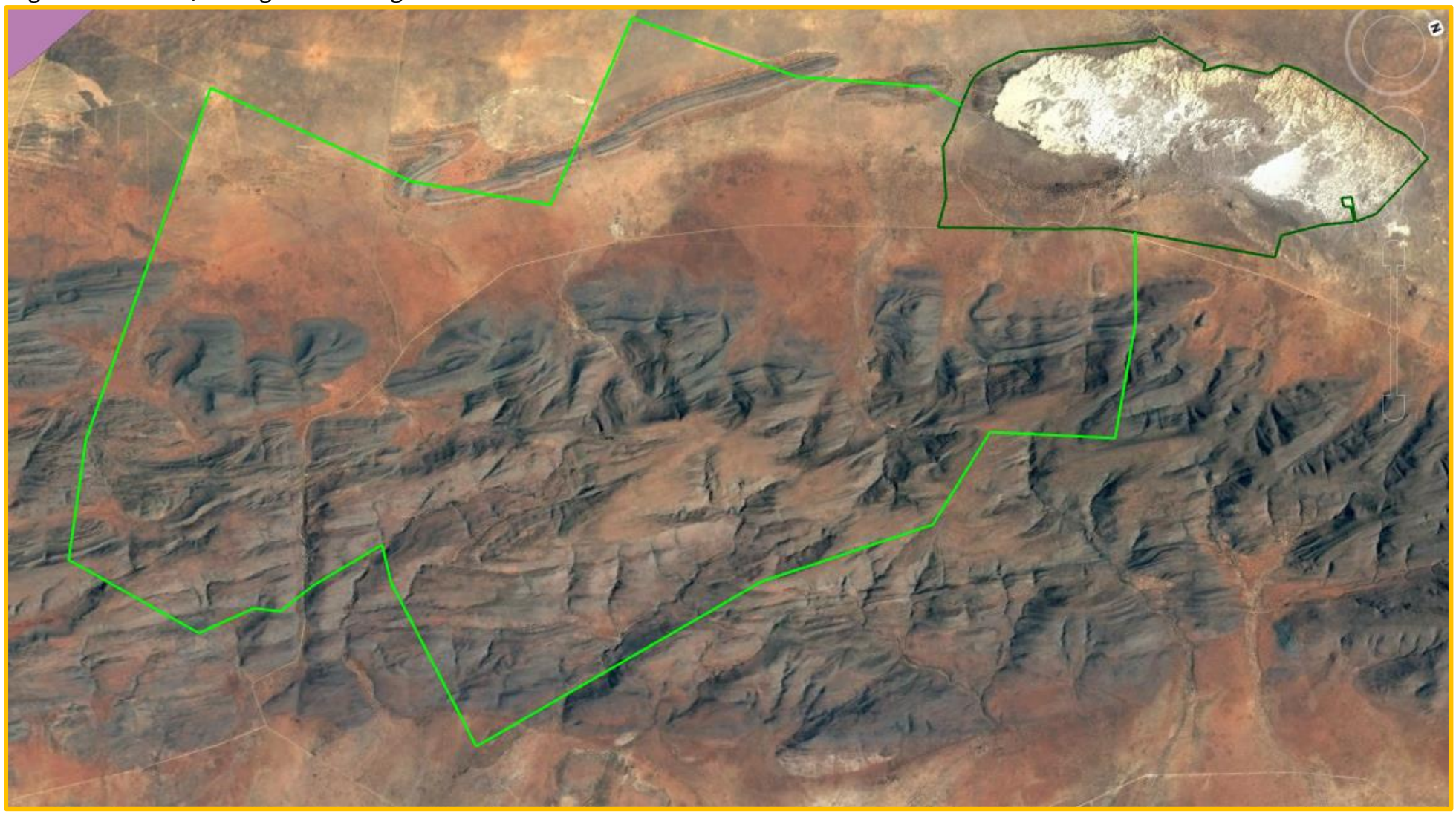
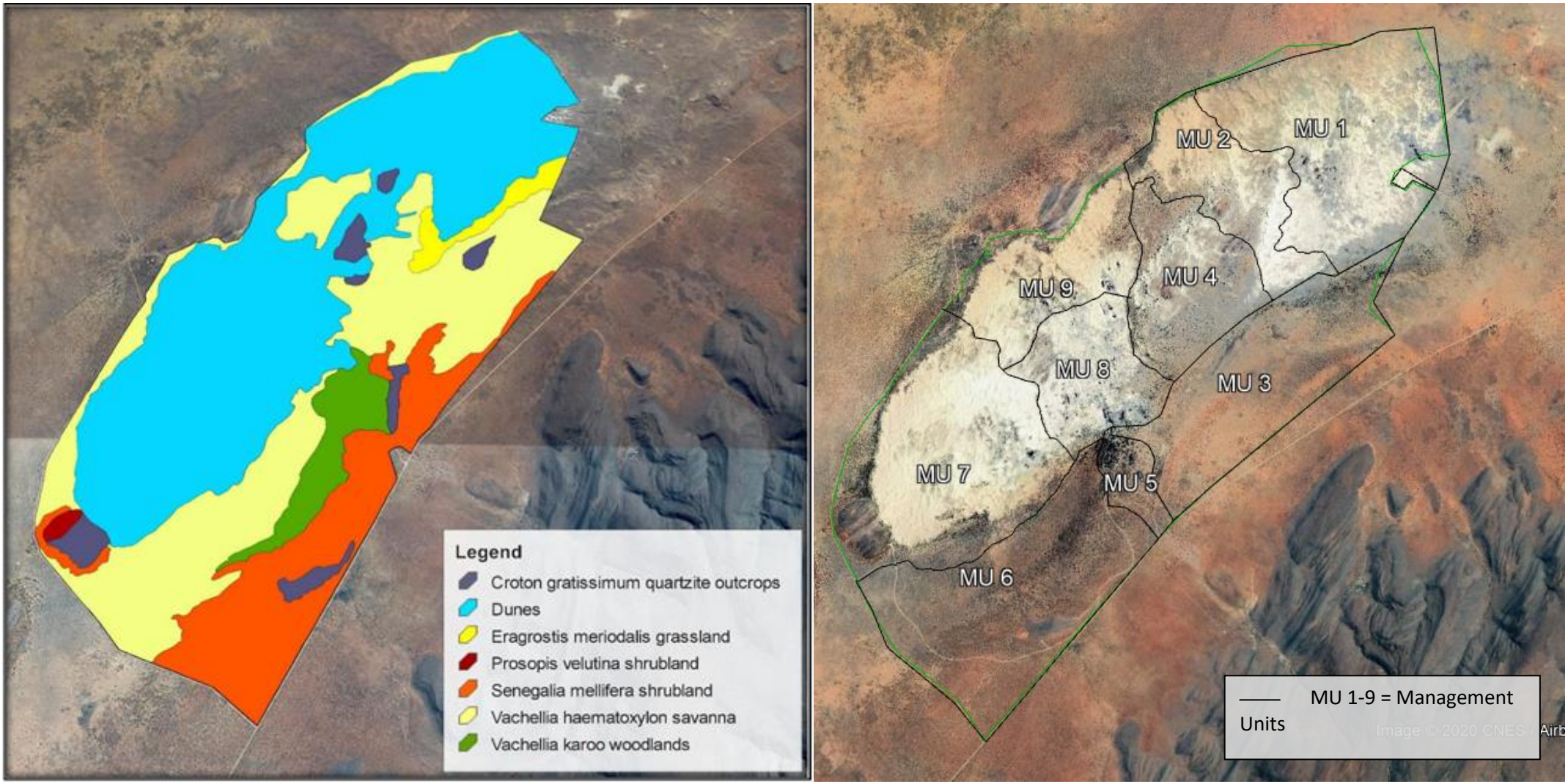


Figure 11: Plant communities and Management units of the Witsand Nature Reserve



2.4.7 Fauna

WNR lies on the border between the Nama-Karoo, which contains the Bushmanland and West Griqualand, Upper Karoo and Lower Karoo vegetation types and the Kalahari which consists of the Kalahari Dune Bioregion. The dune parts of the bioregion are characterized by shrubby grassland that is dominated by the grey camel thorn tree *Vachellia haematoxylon.* The Nama-Karoo region is relatively poor for wildlife production but animals like eland, gemsbok, red hartebeest, springbok and steenbok are known to occur here.

2.4.7.1 Mammals

Historically animals such as Buffalo, blue wildebeest, giraffe and Burchell's zebra have occurred in the area around the reserve (between Postmasburg and Griekwastad) (Badenhorst *et al* 1999). However, no large mammals were found in the dune areas of the reserve. Although antelope like kudu periodically moved from the Langberg range in to the area between the dune complex and the mountains. Kudu have previously been observed during game censes on the reserve. Smaller mammals requiring shorter ranges are still found, including antelope species such as duiker (*Sylvicapra grimmia)* and steenbuck (*Rhaphicerus campestris).* On WNR antelope like Springbuck (*Antidorcas marsupialis)*, Oryx (*Oryx gazelle)* and Red Hartebeest (*Alcelaphus buselaphus caama)* are also found.

Other less visible mammals include aardvark *Orycteropus afer*, honey badger (*Mellivora capensis)* and porcupine (*Hystrix africaeaustralis)*, and as well as smaller species such as the rock elephant shrew (*Elephantulus myurus)* and the ground squirrel (*Zerus inaurus)*.

A number of bat species also occur in the region. Uncommon or rare bat species possibly occurring in the area include (*Miniopterus schreibersii)* Schreiber's Long-fingered Bat. Bats are especially important since they can serve as indicator species of ecosystem health and global climate change (Cilliers et al., 2002).

The leopard *(Panthera pardus)* is the largest predator found in the area, although it has not been spotted in the reserve in recent times. Both the leopard and aardwolf are threatened species and protection measures are crucial for their survival. Smaller predators include African wild cat (*Felis lybica)*, caracal (*Felis caracal)*, aardwolf (*Proteles cristatus)* and Cape fox (*Vulpes chama)*. It is even possible that the secretive small spotted or black-footed cat (*Felis nigripes)* might also occur in the region. The omnivore, *Otocyon megalotis* (bat-eared fox), common throughout the area, particularly in agricultural lands, is often encountered in road kills.

The mammal species of conservation concern listed in Table 5 are known to occur at the WNR[5].

[5] The species of conservation concern indicated in this section have a strong probability of occurrence at this reserve, based on desktop studies. The actual occurrence of these species will, however, need to be ground-truthed as part of KPA 1: Biodiversity and Heritage Conservation (Objective 1.5) and compared with the SOKDR (Biodiversity Data 03)

Table 5: Mammal species of conservation concern within WNR

SCIENTIFIC NAME	COMMON NAME	IUCN Red List	SA Red Data List	TOPS
Manis temminckii	Pangolin	VU	VU	VU
Orycteropus afer	Aardvark	LC	LC	PR
Otocyon megalotis	Bat-eared Fox	LC	LC	PR
Felis nigripes	Black-footed Cat	VU	LC	PR
Hyaena brunnea	Brown Hyena	NT	NT	PR
Oreotragus oreotragus	Klipspringer	LC	LC	
Panthera pardus	Leopard	NT	LC	PR
Vulpes chama	Cape Fox	LC	LC	PR

2.4.7.2 Avifauna

Many different birds occur on Witsand, most of which are superbly adapted to live in a semi-desert environment. Sandgrouse are one of the most interesting and uniquely adapted of these desert birds. Three species of sandgrouse occur at Witsand. Burchell's Sandgrouse (*Pterocles burchelli)* and Namaqua Sandgrouse (*Pterocles Namaqua)* are particularly numerous. The Double-banded Sandgrouse (*Pterocles bicinctus)* is less numerous.

The karroid vegetation supports many bird assemblages restricted to the Namib-Karoo biome, as well a number of other arid zone "specials" (Barnes, 1998). A wide assortment of bird species might be encountered in the karoo, including fairy flycatcher (*Stenostira scita)*, pririt batis (*Batis pririt)*, South African shelduck (*Tadorna cana)* (a South African endemic), the rare tractrac chat (*Cercomela tractrac)*, Verreaux's (black) eagle (*Aquila verreauxii)*, the scarce and elusive cinnamon breasted warbler (*Euryptila subcinnamomea)*, Layard's titbabbler (*Parisoma layardi)* and the ever-present karoo prinia (*Prinia hypoxantha)* (Cilliers et al., 2002). The newly described karoo longbilled lark (*Certhilauda subcoronata)* occurs in rocky parts of the region (Barnes, 1998, Cilliers et al., 2002).

The Avifauna species of conservation concern listed in Table 6 are known to occur at the WNR.

Table 6: Avifauna species of conservation concern within WNR

SCIENTIFIC NAME	COMMON NAME	IUCN Red List	SA Red Data List	TOPS
Aquila rapax	Tawny Eagle	LC	EN	EN
Gyps africanus	White-backed Vulture	CEN	CEN	EN
Neotis ludwigii	Ludwig's Bustard	EN	EN	EN
Polemaetus bellicosus	Martial Eagle	VU	EN	EN
Sagittarius serpentarius	Secretary Bird	VU	VU	
Ardeotis kori	Kori Bustard	NT	NT	P
Torgos tracheliotos	Lappet-faced Vulture	EN	EN	

2.4.7.3 Reptiles

A wide veriety of reptiles are found at WNR. These include the serrated tortoise (*Psammobates* oculifer), the Cape Cobra (*Naja nivea*) and the Karoo girdled lizard (*Cordylus polyzonus*) The Herpetofauna species of conservation concern listed in Table 7 are known to occur at the WNR.

Table 7: Herpetofauna of conservation concern within WNR

SCIENTIFIC NAME	COMMON NAME	TOPS 2015 STATUS	TOPS 2013 STATUS	IUCN STATUS
Bitis caudalis	Horned adder		PR	

2.4.7.4 Amphibian, Mollusc and Crustaceans

Even though the area in which WNR is found is a very arid area, amphibians are found within the reserve. This is due to the pans scattered throughout the dunes. Amphibian that have been noticed in the reserve include the Giant bullfrog (*pyxicephalus adspersus*) and the common platanna (*Xonepus laevis*).

2.4.7.5 Invertebrates

Little is known about the invertebrate fauna of the region. However, the arachnid, the Dancing White Lady (*Leucochestris arenicola*), found in the dunes of the reserve, is of significant interest. The dunes of WNR is the only locality where this spider is found, outside of the Namib Desert. Few species of butterfly and beetles are also found in the reserve. Table 8 lists the invertebrate species of conservation concern found on WNR.

Table 8: Invertebrate species of conservation concern found within WNR

SCIENTIFIC NAME	COMMON NAME	TOPS 2015 STATUS	TOPS 2013 STATUS	IUCN STATUS
Leucochestris arenicola	Dancing White Lady			

2.4.8 Cultural/Heritage Resources

Only the Western Cape and Kwa-Zulu Natal have functioning Provincial Heritage Authorities, and consequently SAHRA administers heritage in the remaining provinces particularly where archaeology and paleontology are the dominant concerns. Heritage Northern Cape (Ngwao Boswa Kapa Bokoni) deals largely with built environment issues at this stage. Amongst other things the latter administers:

- World Heritage Sites
- Provincial Heritage Sites
- Heritage Areas
- Register Sites
- 60-year-old structures
- Public monuments & memorials

Archaeology, including rock art, graves of victims of conflict and other graves not in formal cemeteries are administered by the national heritage authority, SAHRA.

No formal registered heritage sites are present within the reserve. The archaeology, including rock art, graves of victims of conflict and other graves not in formal

cemeteries of the reserve are however of interest and should be investigated as information on the pre-colonial archaeology of the reserve is limited (Figure 21).[6]

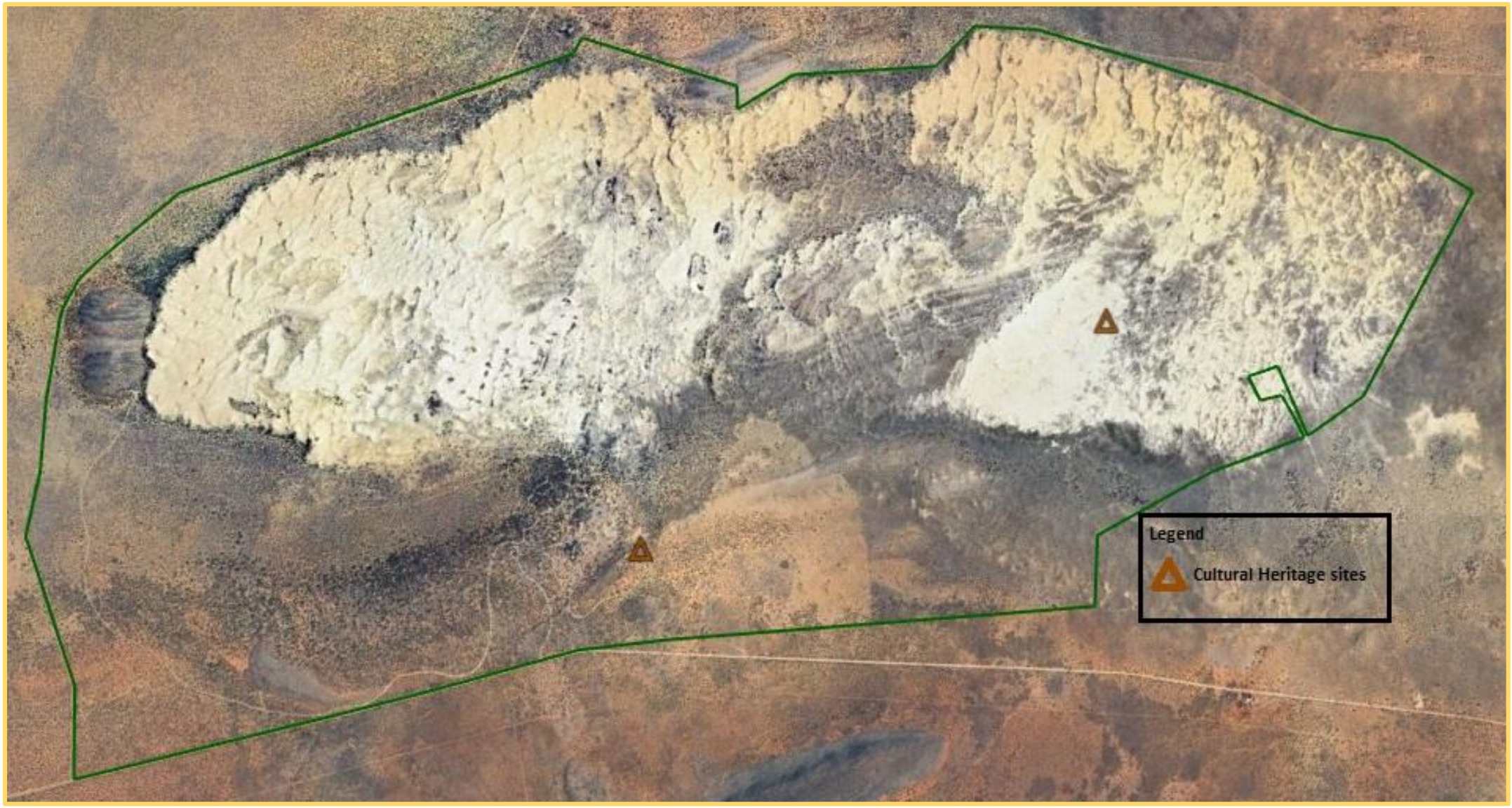
Witsand Nature Reserve has, since earliest times, been a hub of human activity because it was one of few reliable sources of permanent water in the area. Archeologists have found several Stone Age sites reflecting the changing lifestyles throughout many thousands of years.

Several sites dating from the Stone Age have been found on Witsand Nature Reserve. There is evidence that Stone Age herders such as the Korana used the area. The stone tools found were dated within the period of the 17 to 19 AD. It is also recorded that Tswana farmers moved through the area. It has been reported that bushman lived in the area by a geologist, George Stow, who visited the in 1872. Two colonial wars were fought in the region in 1878 and in 1896/97. Boer rebel troops under the command of General Kemp, in 1914, went through the area on their way to the then German South – West Africa.

Stone implements of two stone age cultures, namely the Wilton and Middle Stone Age, have been discovered at Witsand indicating that the water supply have been accessible and that the area must have been periodically occupies at least 40 000 years ago (Fock 1961, Van Rooyen and Verster 1983a). More recent discoveries of artifacts were dated at 360 and1120 B.P, indicating the presence of the recent indigenous cultures (Beaumont pers. Comm.).

[6] An archaeological fieldwork-based exploration of the Witsand Nature Reserve and surrounding area need to be conducted.

Figure 12: Witsand Nature Reserve Archaeological and Cultural/Heritage resources



2.4.9 Reserve Infrastructure

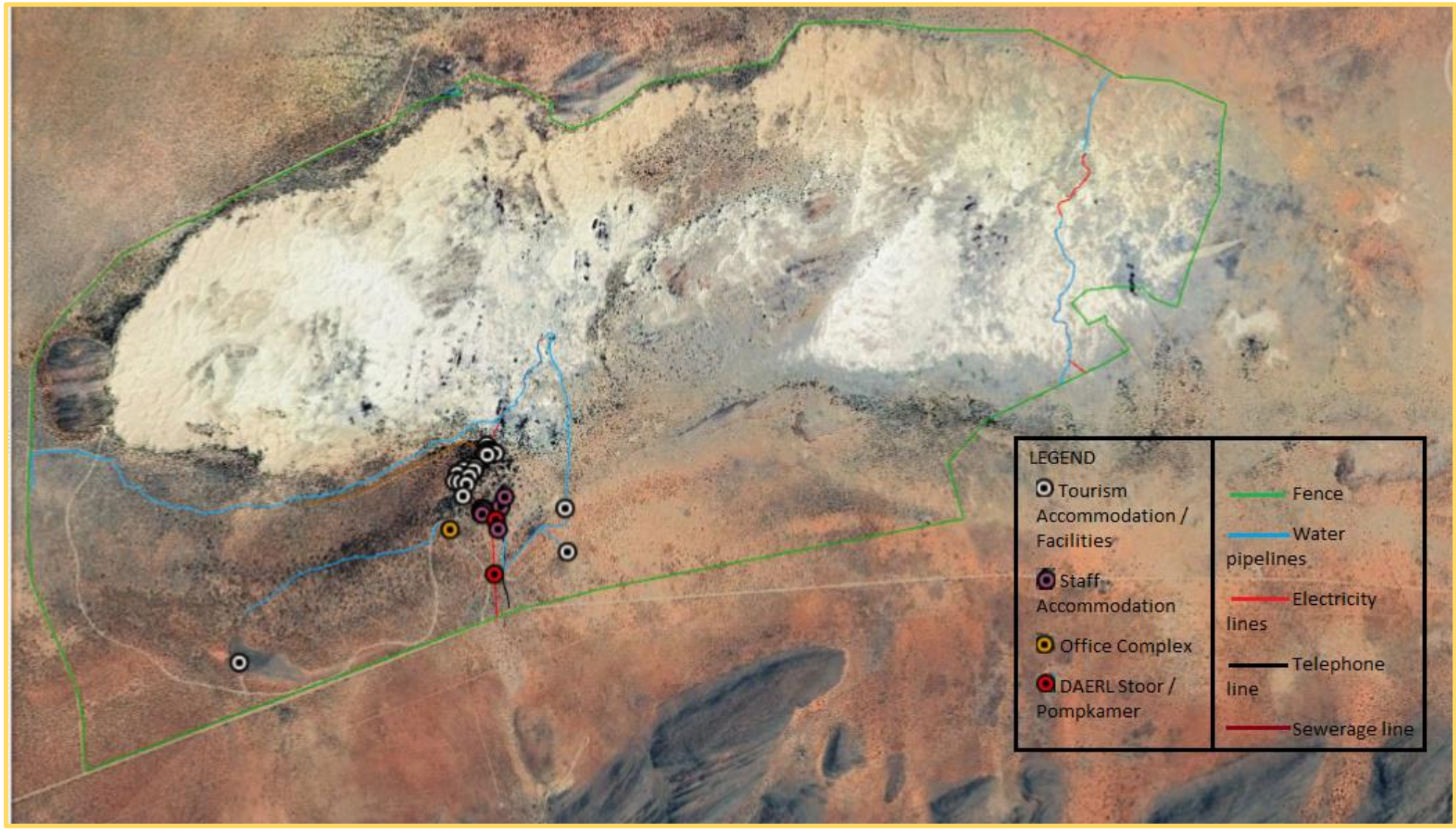
The administrative hub of the WNR is located on the reserve. The administrative hub consists only of a small office block which is utilized by NECDA and DAERL. The reserve has an office block and a store room, garages, information centre, and storage sheds as well as a workshop area.

The road network within the WNR is in a fair condition but some areas in the reserve are only accessible with a 4x4 vehicle. Signage within the nature reserve will not be extensive, but directional signage from the both the N14 and N8 to the entrance of the nature reserve can be improved.

Staff accommodation is provided on the reserve due to the isolated location and proximity of the nearest town settlements (Griekwastad, Postmasburg and Olifantshoek).

Water is sourced from the reserve by means of several bore holes equipped with electrical pumps and electricity to the administrative hub and accommodation (staff and tourist) is provided by Eskom.

Figure 13: Witsand Nature Reserve Infrastructure and Bulk services



2.4.10 Reserve Tourism

Tourism facilities are managed by NCEDA and these facilities includes a picnic site for day visitors, a basic campsite for overnight visitors as well as chalets and bungalows/cottages. Any additional tourism activities will be according to the reserve CDF to establish a coherent spatial framework in and around the reserve to guide and co-ordinate conservation, tourism and visitor experience initiatives. The CDF will play an important role in minimizing conflicts between different users of the reserve by separating potentially conflicting activities such as hiking and day-visitor picnic areas whilst ensuring that activities which do not conflict with the reserve values and objectives can continue in appropriate areas.
The area is ideal for nature-based recreation and tourism opportunities and an important destination for ecotourism.

Furthermore, this area shows some important characteristics as follows:

- The natural environment and its resources are susceptible to overexploitation or inappropriate use.
- The tourism sector depends on the environment.
- There is a substantial need for community development programmes.

The most important problems or limiting factors of monitoring nature tourism being analysed in this study are the following:

- Inadequate road maintenance limiting access to recreational and protected areas;
- Lack of co-operation between community tourism structures;
- Lack of guidelines for developing tourist facilities;
- Lack of human resource management skills;

Though the primary aim is conservation, the corridor provides opportunities for the social and the economic “upliftment” of local communities through tourism development. A site specific study for the reserve should however be undertaken to identify tourism opportunities and constraints in terms of attractions, access, amenities and awareness.

2.4.11 Social Context

With regard to socio-economic context, the Siyancuma Local Municipality was the largest municipality in 2001 in terms of population. However, it has since fallen to the second biggest municipality within the Pixley Ka Seme district municipality with a population of 37 076 people (2011). It includes the major towns of Douglas, Griekwastad and Cambell and covers approximately 16 753 square kilometers. The population density is also more than 2 persons per square kilometer. The unemployment rate increased from 25.3% in 2001 to 28.2% in 2011. Siyancuma is one of the municipalities with the highest unemployed people in the district. This clearly indicates again that economic development and job creation is one of the urgent developmental issues in the District (Pixley Ka Seme District Municipality, 2012).

2.4.11.1 Land Claim

Section 25(7) of the Constitution provides for a person or community dispossessed of property after 19 June 1913 as a result of past racially discriminatory laws or practices is entitled restitution or equitable redress.
The Restitution of Land Rights Act, 1994 (“Restitution Act”) provides for restitution of rights in land to persons and communities who were dispossessed of those rights as

a result of past racially discriminatory laws and practices. Restitution (as articulated in the government policy on settlement of land claims in national parks, world heritage sites and state forests as per Cabinet Memorandum No.5 of 2002) can be provided by ownership by claimants without physical occupation, but with arrangements for compensatory remuneration and benefits set out in the land claim settlement agreement (a co-management agreement). Effective conservation can be obtained through partnership between the owner and manager. Restoration through the transfer of title is feasible with registered notorial deed restrictions

.

On 2 May 2007, the Minister of for Agriculture and Land Affairs, and Minister for Environmental Affairs and Tourism approved and signed an inter-ministerial Memorandum of Agreement (MOA) on land claims in protected areas.

The National Environmental Management: Protected Areas Act (Act No.57 of 2003) provides for the co-management of a protected area by between the management authority and the new owners. In terms of Section 42 of the Act, the management authority may enter into an agreement with another organ of state, a local community, an individual or other party for the co-management of the area by the parties. Such co-management may provide for:

- The delegation of powers by the management authority to the other party to the agreement;
- The apportionment of any income generated from the management of the protected area or any other form of benefit sharing between the parties;
- The use of biological resources in the area;
- Access to the area;
- Occupation of the protected area or portions thereof;
- Development of economic opportunities within and adjacent to the protected area;
- Development of local management capacity and knowledge exchange; and
- Financial and other support to ensure effective administration and implementation of the co-management agreement.

According to the MOA, the existing management authority shall continue to manage the Land situated within the Protected Area after restitution until the DEAT Minister reviews it. In this case, the “existing management authority” means the organ of state appointed by the DEAT Minister in terms of the applicable legislation to manage the Protected Area.

On 31 December 1998 a land claim application was submitted on behalf of the Witsand community. Following verification by the Regional Land Claims Commission of the Northern Cape, it was confirmed that the claimants had a valid claim to Witsand. Witsand Nature Reserve is therefore currently part of a land claim involving the department (DAERL) and the Witaar CPA. Only certain portions of the reserve fall under the land claim and a Co-management agreement is in the process of being drafted that will cover the management of these portions.

2.5 Local and Regional Planning

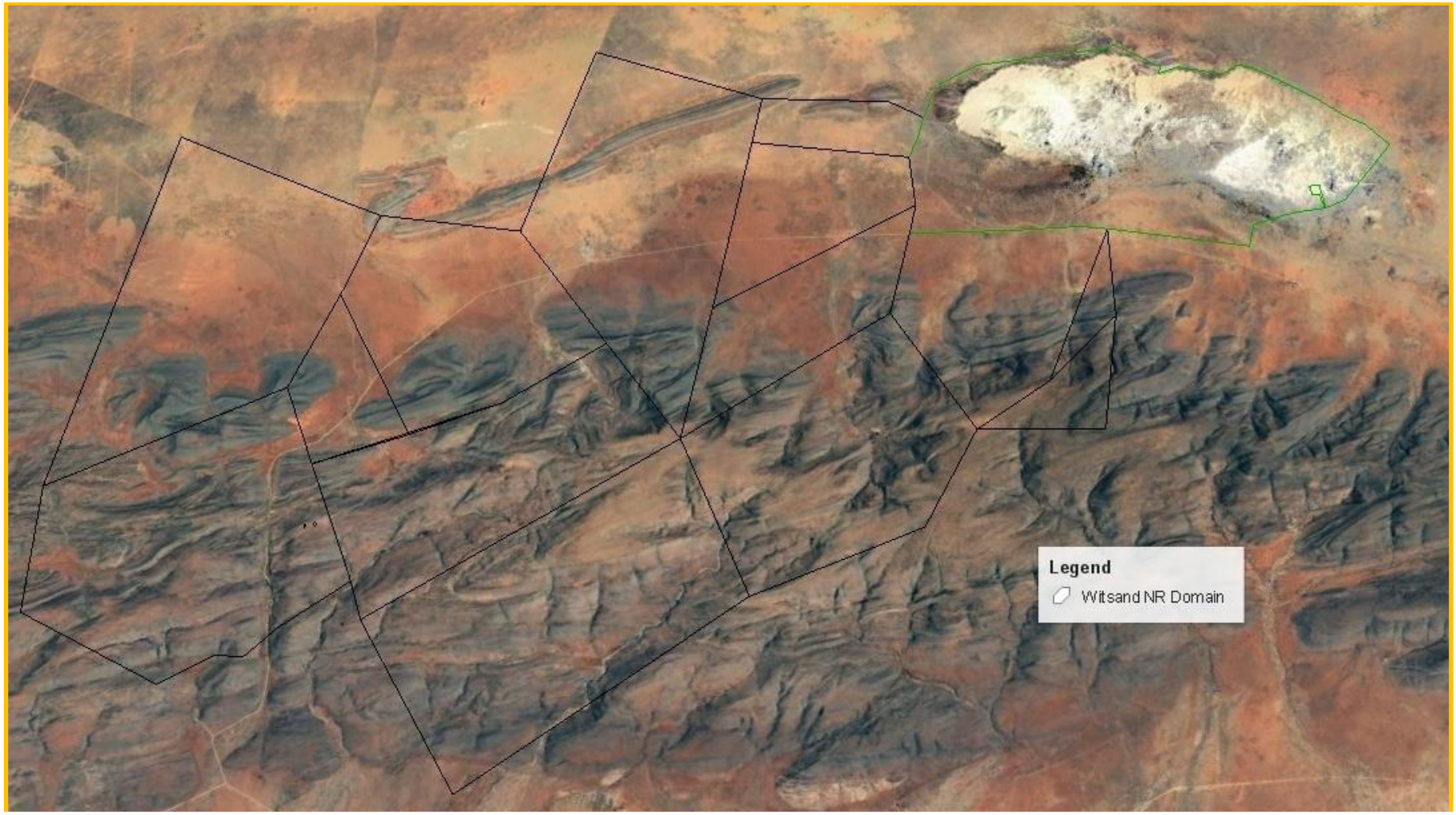
The WNR is located within the Siyancuma Local Municipality, which forms part of the Pixley Ka Seme District Municipality of Northern Cape.
The Siyancuma Local Municipality has an IDP in place. However, the Pixley ka Seme district municipality has no Environmental Management Framework (EMF) and Strategic Environmental Management Plan (SEMP) in place. The EMF and SEMP provide an evaluation of the state of the environment, sets out an environmental vision and details the constraints, opportunities, management measures, monitoring indicators and desired state of the environment for the various environmental elements.
The management measures in the SEMP acknowledge the need for social and economic development and provide strategic issues which should be addressed to take advantage of the environmental goods and services in the district. On the other hand, the strategic issues in the SEMP provide strategic actions that should be taken to protect and conserve environmental resources including nature reserves.
The Environmental Management Framework (EMF), the spatial section of the study, is presented as a series of environmental management zones which present the sensitive aspects of the environment, which land uses are suitable in each zone and which environmental studies should be conducted for proposed developments in each zone.

2.6 Reserve Expansion

A National Protected Area Expansion Strategy (NPAES) was compiled for South Africa in 2008. The aim of the NPAES is to achieve cost-effective protected area expansion that will ensure a) ecological sustainability and b) increased resilience to climate change. The NPAES sets five- and twenty-year protected area expansion targets; identifies focus areas for protected area expansion; and makes recommendations on potential mechanisms through which protected area expansion could be achieved.

Witsand NR has been identified as one of the focus areas for expansion in the NCPAES, namely the Witsand to Glen Lyon Primary Focus Area (No 8). The reason why this area has been identified is because climate change and ecological links would then be established between Witsand (a small provincial nature reserve) and Glen Lyon (a much bigger private nature reserve)

Figure 14: Expansion of WNR (Reserve domain)



2.7 Strengths, Weaknesses, Opportunities and Threats

Table 9 lists the key strengths, weaknesses, opportunities and threats that were identified for the WNR.

Table 9: Key strengths, weaknesses, opportunities and threats identified for the WNR

KEY STRENGTHS
• Peaceful and pristine environment. • Supports a high diversity and abundance of bird species • Easily accessible by tourists and offers great dunes for dune serving as well as the famous “brulsand”. • Good relationship with local communities. • Existing personnel experienced and qualified. • The reserve is registered with a Fire Protection Association (FPA).
KEY WEAKNESSES (ISSUES & CHALLENGES)
• There are insufficient resources and capacity to coordinate and implement effective management of the PA site; • Centralised budget, and de-capacitated reserve management; • Poor quality equipment and infrastructure; • Lack of management and access roads to and throughout the reserve; • Appropriate institutional arrangements are required to facilitate active involvement of local stakeholders in decision making; • Formal protection of some sections is required to better secure management of the area; • Limited biodiversity management procedures are in place at the reserve; • The reserve does not have a Strategic Development Framework (SDF) in place; • The reserve’s remote location makes it less accessible to tourists; • The range and dimension of products is limited. Currently activities are limited to hiking, camping and bird watching.
OPPORTUNITIES
• Potential for greater collaboration with other conservation initiatives to support management objectives; • Potential for research and monitoring by tertiary institutions. • Potential to improve tourism facilities, including the road network, in order to allow better access throughout the reserve. • Potential to promote day visitors’ facilities throughout the year • Potential for job creation. • Potential for tourism-related benefits accrue to local target communities.
THREATS
• Biological, Ecological and Archaeological resources collected from the reserve for the overseas market; • Uncontrolled access to the site and not adequately monitored; • Ecologically sensitive area and parts are ecologically degraded; • Uncontrolled fires entering the reserve from neighbouring areas; • Poor road conditions make vehicle access for management purposes difficult; • Ageing staff; • Lack of skilled staff; • Potential conflict between conservation and community land use objectives could undermine the proposed expansion of the PA; • A potential security risk for overnight visitors as a result of the lack of security and law enforcement; • The expansion of agriculture and the indirect impacts of agricultural activities on the

broader landscape (pollution, water abstraction, pesticide drift and the transformation of natural habitat);

- High levels of water abstraction in this naturally arid area can result in a lowering of the water table, with associated knock-on impacts that are difficult to predict;
- Alien trees are known to cause changes in the fire regime and alter the composition of the soil and natural plant and animal communities;

3. STRATEGIC PLANNING FRAMEWORK

3.1 Purpose

The WNR was initially proclaimed primarily for the conservation of components and processes associated with the dune ecosystem and the biotic communities that converge in that area.

In present times, four of the most important contributions of protected areas are:

- biodiversity conservation and ecological sustainability,
- adaptation to climate change,
- land reform and rural livelihoods, and
- socio-economic development, including ecosystem services.

Some of them were only partially realised through the initial goals of the WNR that included the following:

- To conserve the biodiversity and life-support mechanisms of WNR and the surrounding area.
- To implement an integrated environmental management strategy (CDF).
- To preserve and promote the cultural and historical heritage as well as the aesthetic and spiritual value of WNR and the surrounding area.
- To ensure local community involvement by securing access to and sharing benefits from natural and cultural resources.

In present times, the value of the WNR as a conservation area can also be attributed to the following:

- The roaring sands of the dunes are a scientifically important phenomenon.
- The reserve falls within the boundaries of the Griqualand West Centre of plant endemism. Centers of endemism represent areas in which plants and associated animals occur which have a limited distribution within the region. The limited distribution is generally attributed to specific environmental factors, which in the case of the Griqualand West Centre is adaptation to lime-rich substrates.
- It supports a high diversity and abundance of bird species.

3.2 Reserve Values

The following key values of the WNR were identified by the RPT:

Table 10: : Key values associated with the Witsand Nature Reserve

KEY RESERVE VALUES
• The reserve includes an important catchment area. • The reserve supports a high diversity and abundance of bird species.

3.3 The Reserve Vision

The vision of the reserve describes the overall long-term goal for the operation, protection and development of the WNR. The following vision was developed by the RPT:

To restore and conserve the ecological characteristics of its unique dune ecosystem. From this, it is envisaged that the following will be secured:

• Conservation of the biodiversity of the WNR and the surrounding area;
• Ensure the continued conservation of the geohydrology of the Witsand aquifer;
• Protection of the reserve's outstanding scenic value;
• Preservation of the bird species of conservation concern found in the area;
• Implementation of an integrated environmental management strategy;
• Preservation of the cultural and historical heritage attributes as well as the aesthetic and spiritual value of the reserve and the surroundings;
• The integrity of the natural environment is protected to sustain its scenic qualities to serve as a basis for tourism;
• Quality of life of rural communities are improved by developing opportunities for tourism; and
• Equitable access to, and responsible use of, the reserve and its natural resources

3.4 Key Performance Areas and Objectives

The RPT identified 24 Objectives for the WNR. Collectively these objectives are anticipated to contribute to realising the Vision for the reserve.
These objectives have, in turn, been grouped into six Key Performance Areas (KPAs), as follows:

KEY PERFORMANCE AREAS (KPA)	OBJECTIVES
KPA 1: Biodiversity and Heritage Conservation	1.1: **Biodiversity** and **Cultural Heritage knowledge** 1.2: Restoration of **degraded areas** 1.3: Maintenance of **ecological processes** in the NNR 1.4: Maintenance of **critical ecosystem services** 1.5: **Land use planning** and management outside of the protected area 1.6: **Water use planning** and management operations influencing the protected area 1.7: Audit achievement of **biodiversity targets** 1.8: Manage and mitigate the **environmental impacts** of conservation management, tourism, recreation and natural resource use in the NNR 1.9: Protect the **heritage resources** of the WNR
KPA 2: Recreation, Marketing, Education, Awareness and Interpretation	2.1 Develop, deliver and maintain a diverse range of **tourism and recreational services** for visitors to the WNR taking into account the criteria for use zones. 2.2 Develop and implement a focused and cost-effective **marketing** programme for the WNR. 2.3 Develop and implement a focused and cost-effective **awareness-raising and educational program** for the WNR
KPA 3: Enforcement, Security and Access Control	3.1 Secure the **legal tenure** of, and **management authority** for, the WNR 3.2 Secure the **boundaries** of, and maintain controlled **access** to, the WNR. 3.3 Sustain an effective **law enforcement** and **compliance** capacity in the WNR.
KPA 4: Infrastructure and Equipment	4.1 Acquire and maintain **operational equipment** and **vehicles** for the WNR. 4.2 Construct, maintain and upgrade the **administration infrastructure and bulk services** infrastructure in the WNR. 4.3 Construct, upgrade and maintain day and overnight **visitor buildings and infrastructure** in the WNR
KPA 5: Stakeholder Involvement	5.1 Interaction with **stakeholders and communities** in the planning, development and management of the WNR 5.2 Actively participate in **local** and **regional** conservation and socio-economic development **initiatives** that may affect or benefit the WNR. 5.3 Develop, implement and maintain effective mechanisms for ongoing communications with **co-management partners**
KPA 6: Administration and Planning	6.1 Institute and maintain an effective **administrative and planning** capability in the WNR. 6.2 Maintain an adequately equipped, resourced and trained **staff complement** for the WNR. 6.3 Institute and maintain an effective **financial, administration and planning** capability in the WNR

3.5 Conservation Development Framework (CDF)

The CDF is a strategic spatial plan for the reserve and its surrounds that indicates a range of visitor use zones, areas requiring special management intervention, the placement of visitor facilities, the nature and size of these facilities, entry points and movement routes through the reserve. It also provides guidelines for potential future development, rehabilitation and the management of land-use along the reserve borders. The CDF is underpinned by a thorough analysis of the biodiversity, cultural-heritage and landscape limits to development, as well as the tourism opportunities. Sensitivity-value analysis is a decision support tool for spatial planning that is designed to integrate best available biodiversity information into a format that allows for defensible and transparent decisions to be made. The CDF for the reserve is not yet fully developed as the reserve is in a transition between having a zonation plan and a fully developed CDF (which will include the Use Zone Map). One of the elements underlying the CDF not yet fully developed is a full tourism market analysis and detailed analysis of all development nodes. Other element of the CDF still to be considered further in future are resource use potential and better interfacing with municipal Integrated Development Plans and Environmental Management Frameworks. The development of the initial CDF for the reserve followed the generic planning process and basic planning principles for all reserves as described in Appendix 1.

3.5.1 Use Zone map and development sites

3.5.1.1 Determine use zones

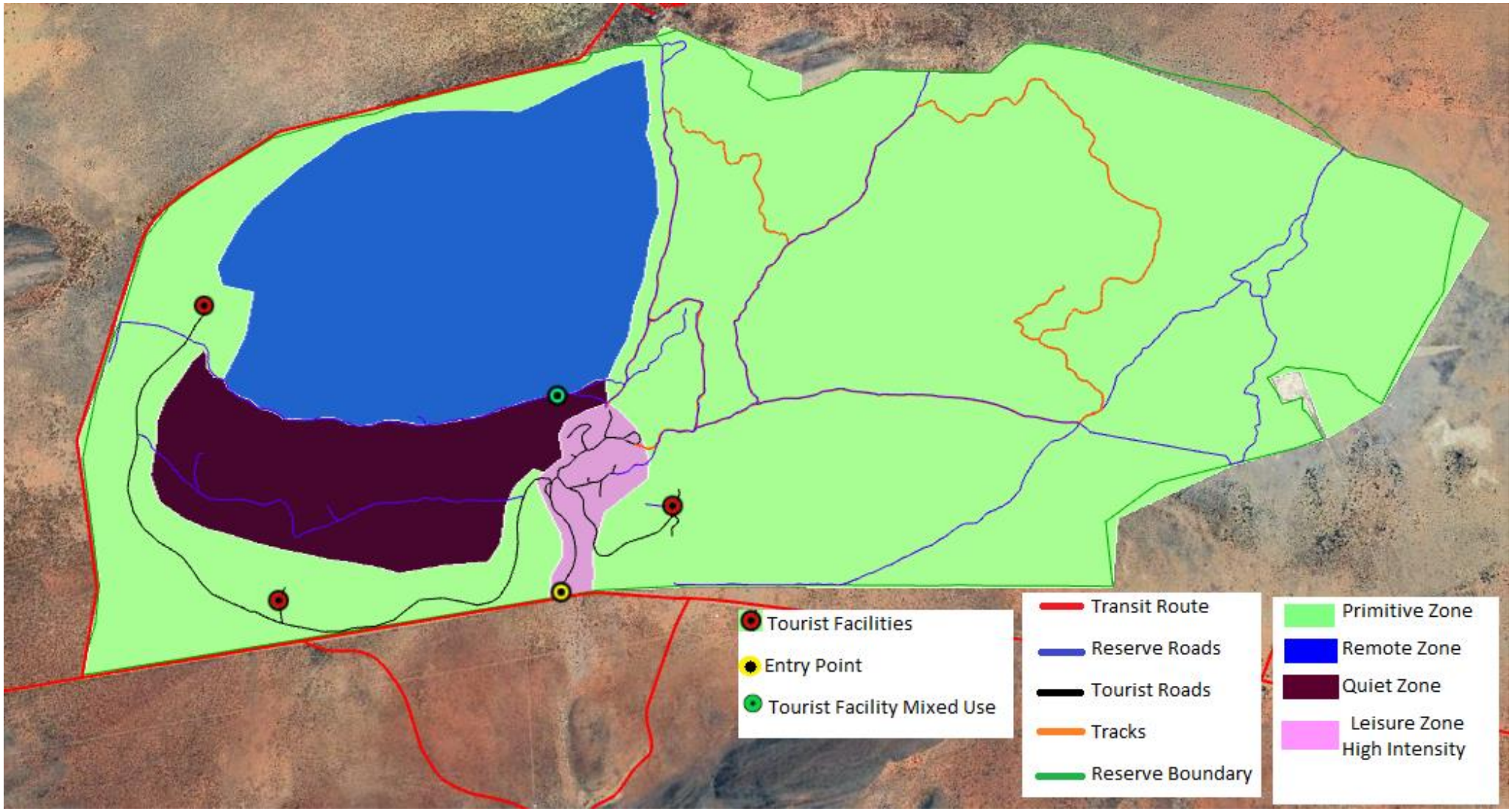
- This step of the CDF process is a requirement for all reserves in terms of the PAA. A draft was exposed to all stakeholders and amended as required by the PAA that is now submitted to the Executive Management for ratification and approval by the MEC as part of this IMP.
- This process was informed largely by the sensitivity map and reserve policies and planning principles.
- The generic set of visitor use zones for all reserves was used as a guideline.

3.5.1.2 Determine locations for future development of specific facilities

- Informed by the use zones, regional influences, visitor requirements, market needs and other informants, sites for potential visitor facilities and alternates were identified.
- At the same time potential transport routes and alternates are identified and the standards for all roads, footpaths and cycle routes will be set.
- Using the principle of SEA, the alternate sites will be critically examined and the most suitable location decided on.
- The scale of development and the numbers of visitors need to be informed by an assessment of cumulative impacts for the whole reserve.

Based on available information, and in consultation with the RPT, the Conservation Development Framework (CDF) (Annexure 2) is presented as an strategic spatial planning framework for the WNR and its surrounds. Annexure 1 describes the objectives, characteristics, uses, management guidelines and broad conservation and tourism infrastructural requirements designated for each of the use zones shown in Figure 25. Each of these zones has criteria for the type of activities, interaction with other users the type and size of facilities, the sophistication of facilities and the standard of roads.

Figure 15: Use Zone Map for the Witsand Nature Reserve



4. OPERATIONAL MANAGEMENT FRAMEWORK

The Operational Management Framework translates each KPA and its set of related objectives into:

- Guiding management principles to guide decision-making and operations including:
  - International Conventions, Commissions and Treaties
  - National Acts and Regulations
  - Provincial legislation and municipal bylaws
  - Policies to guide decision-making and operations and strategies relating to implementation
  - Standard Operating Procedures (SOP's) on how to implement policy and strategy including:
    - Frameworks;
    - Norms and Standards; and
    - Protocols
- Management actions and targets that should be implemented to achieve the PA objectives and the resources required to implement it.

Guiding management principles (Figure 22) are provided for in the Annual OMF with copies of the relevant documents as part of the SOKDR.

Management actions according to priority, management targets and performance indicators are also provided for in the Annual OMF together with Time Frames, Responsibilities and Cost estimate provided as subsidiary plan to this document.

4.1 KPA 1: Biodiversity and heritage Conservation

4.1.1 Objective 1.1: Biodiversity and Cultural Heritage knowledge

4.1.1.1 Norms and standards[7]

- Ensure proper planning in the establishment or expansion of the protected area
  - A biodiversity resource inventory for the protected area is maintained and monitored.
    - *Priority species, habitats or ecosystems have been identified;*
    - *information on these species, habitats and ecosystems is sufficient to support planning and decision making and little additional information is required to manage the protected area's biodiversity;*
    - *A monitoring programme for these species habitats and ecosystems is in place.*
  - A cultural heritage resource inventory for the protected area is maintained.
    - *There is a comprehensive inventory of cultural heritage resources.*
- Ensure that each protected area has an approved programme identifying research needs and a monitoring plan according to the management plan of a protected area.
  - A research programme for the protected area is being implemented.
    - *Research provides for management application (where possible and allowed for by budget);*
    - *Scientific decision support is available and or facilitated;*
    - *Management orientated research projects form a substantial part of the programme;*
    - *Results of research projects are fed back to protected area management;*
    - *The results are used to adapt management of the protected area where relevant;*
    - *There is an approved research plan with all research requirements;*
    - *There is a number of approved projects in place;*
    - *There is a platform in place to give feedback of research results;*
    - *There are research records in place;*
    - *Distinction between research for management purposes and that done by outsiders which may not have direct applications and managing the external researchers;*
    - *Researchers to comply with ethical research procedures.*
  - A monitoring programme for the protected area is being implemented.
    - *The protected area has developed an applicable monitoring programme supporting management objectives, and provide for review of the programme;*
    - *Indicators for monitoring have been established;*
    - *The results of the programme are used to adapt management of the protected area where relevant.*

[7] The norms, standards and indicators is according to the "Norms and standards for the management of protected areas in South Africa" published in terms of NEM:PAA Act (57/2003) under General Notice 528.

4.1.1.2. Principles[8]

- *The R*esearch and Monitoring *Program (RMP) should be developed, where relevant, to align with and complement national and international monitoring systems (Teder et al. 2007).*
- *The RMP recognises that monitoring is required at multiple levels and scales and that monitoring objectives are often hierarchical. In this way, standard approaches facilitate aggregation of information across ecosystems and into organisational, national and global measures (Teder et al. 2007).*
- *Clear, rigorous and relevant sets of objectives, hypotheses and methods must be established for each monitoring programme (Nichols & Williams 2006), with feedbacks between scoping, design, testing and implementation phases (Reyers & McGeoch 2007).*
- *Monitoring programmes should be designed using best scientific practice and current understanding, and be supported by integrated, long-term and question- driven research (Pringle & Collins 2004; The Royal Society 2003; Nielsen et al. 2009).*
- *Where possible and appropriate design monitoring programmes using well-established, widely applied techniques and methods, that capitalise on technological developments (e.g., remote sensing, Margules et al. 2003; Soberon & Peterson 2009).*
- *Minimum monitoring requirements should initially be established independently of current capacity and resource constraints, whereafter cost-effectiveness assessments, prioritisation and staged implementation options should be evaluated (Gardner et al. 2008).*
- *Few, well-implemented monitoring programmes (including the indicators and thresholds of concern that underpin them) are preferable to many under-developed programmes, or programmes that cannot be sustained because of capacity limitations (Biggs & Rogers 2003; Timko & Innes 2009).*
- *Planning for analysis, reporting, data management, archiving and programme integration must be incorporated as essential elements during the design of the RMP (Spellerberg 2005; Field et al. 2007; Flenry et al. 2008). This includes planning for the translation of results and outcomes into actions and advice relevant to management and/or policy development, that is, to complete the adaptive management cycle.*
- *Monitoring programme proposals should be peer-reviewed prior to implementation, and thereafter should have regular review cycles.*
- *The RMP will not necessarily exclude other monitoring activities (current or future), and additional monitoring with highly localised and perhaps shorter-term objectives may be necessary. Where such activities and projects exist or are implemented, they will add value to and are likely to complement the RMP and should be integrated into the RMP.*

[8] The policy (principles) guiding the development of Biodiversity Monitoring System (BMS) and the Biodiversity Monitoring Programmes (BMPs) in this section were developed by SANParks.

4.1.2 Objective 1.2: Restoration of degraded areas

4.1.2.1 Norms and standards

- ❖ Ensure that the protected area has visitor facilities that contribute positively to the experience without negatively affecting the environment.
  - ➢ Visitor facilities are established in line with the protected area objectives, and in response to tourism market demands, and contribute positively to the visitor experience
    - *There are active programmes for restoration of degraded areas in the protected area and/or associated buffer zone, resulted (resulting) from visitor use;*
    - *Areas in the protected area suffering from degradation or damage as a result of visitor use are subject to a rehabilitation plan;*
- ❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.
  - ➢ Biodiversity resources are managed to meet the protected area objectives as set out in the management plan.
    - *The protected area is implementing an effective invasive species control and eradication (programme) strategy, as required in terms section 76 of the National Environmental Management: Biodiversity Act, 2004*

4.1.2.2 Principles

- *PA management shall strive to remove all alien species where possible, control, maintain and where necessary, restore previously invaded or planted areas, in order that these sites resemble or form part of the functioning landscape and ecosystem.*
- *DAERL recognises that invasive alien species is one of the greatest threats to the biodiversity of the reserve estate.*
- *Under the guiding international conventions, national legislation, and by means of its own objectives, invasive alien species impact on and harm the core conservation business of Provincial Reserves.*
- *DAERL as the leading conservation organisation in the Northern Cape, has a responsibility to lead by example, provide awareness and educate the broader community about invasive alien species in the interests of the province ecological and economic environment.*
- *Implement rules applicable to use and control of ornamental plants within Nature Reserves including rules under which camps and personnel villages will be surveyed and cleared, as well as rules for replacement and use of plants for landscaping and ornamentation. These principles must also be captured in the Code of Conduct which guides staff residing in the reserve, as well as plants used for ornamental purposes at tourism facilities.*
- *Identify associated research and monitoring needs; and*
- *Highlight potential risks or threats.*

  o Map the parcels of land under the control of the Protected Area Management Authority, in management unit compartments

  o Compiling the List of Invasive Species for each management unit compartment

  o Describing the prioritization of the land parcels in the management unit compartments

  o Assessing the extent of infestations

o Reporting on the efficacy of previous control or eradication measures
o The current measures to monitor, control or eradicate Listed Invasive Species
o The measurable indicators of progress and success, and indications of when the Control Plan is to be completed

- *Identify redundant structures and impacted sites within the PA which require removal and/or rehabilitation in order to restore wilderness qualities and 'sense of place' and also to improve ecosystem functioning;*
- *Prioritise rehabilitation goals with highest priority given to wilderness zones and areas bordering on those zones;*
- *Determine the rehabilitation needs for the next five years with associated timeframes and projected funding requirements;*

4.1.3 Objective 1.3: Maintenance of ecological processes in the WNR

4.1.3.1 Norms and standards

- Ensure proper planning in the establishment or expansion of the protected area
  - The management of a protected area contributes to the maintenance of ecological processes.
    - *The management of a protected area includes the adaptive management framework to ensure monitoring of ecological processes;*
    - *The management of a protected area effectively maintains the environment for ecological processes critical for the achievement of biodiversity targets;*
    - *Ecological processes are being effectively maintained with the result that ecological integrity and biodiversity are not being compromised;*
    - *The management of a protected area has a monitoring system in place;*
    - *The management of a protected area has a system to mitigate ecosystem threats in place.*
- Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.
  - Biodiversity resources are managed to meet the protected area objectives as set out in the management plan.
    - *An effective fire management programme for the protected area is implemented - where relevant;*
    - *The protected area is adequately managed for sustainable use of resources, where applicable;*
    - *The protected area has management guidelines for the sustainable use of biological resources;*
    - *The biodiversity assets and values are being managed consistent to objectives;*
    - *The impact of legal and illegal extractive use of biological resources is being monitored - where applicable;*
    - *Species management plans as required in terms of NEM: Biodiversity Act, 2004 (Act No. 10 of 2004) are approved.*
- Existing DAERL strategies relating to management of ecological processes:

  - Wildlife management strategy for Provincial nature reserves in Northern Cape.

- game census on provincial nature reserves;
- national norms and standards on hunting on PA's;
- procedures for game registers on provincial nature reserves;
- procedures for the introduction of mammals into provincial nature reserves including provincial and national translocation policy;
- Procedures on the donation of game;
- Provincial directive on the control and management of damage-causing wild animals in Northern Cape Province; and
- Removal of game from (provincial) nature reserves;

- Vegetation monitoring strategy for Provincial nature reserves in Northern Cape.

❖ The reserve shall conform to the legal requirements of the NVFFA.
- Unplanned wildfires that occur in areas where it could have undesirable ecological effects, threaten reserve infrastructure or threaten neighbouring properties shall be suppressed or controlled wherever possible.
- Unplanned wildfires that occur in reserve areas where it will do no ecological harm and/or threaten properties may be allowed to burn, provided that safety concerns are not compromised.
- Fire protection measures and resources (equipment, trained personnel, firebreaks, etc.) must be maintained and effective in the reserve at all times.
- The reserve management shall, wherever possible, establish partnerships with neighbours and other role-players through agreements and membership of FPAs.
- Controlled block burns can only be implemented after an ecological assessment of the dry matter/fuel load has been completed.

4.1.3.2. Principles [9]

- *Respect the complexity, as well as the richness and diversity of the socio-ecological systems making up the PA and the wider landscape and context.*
- *Respect the interdependency of the fundamental drivers of landscape diversity, the associated biotic and landscape diversity, and the aesthetic, cultural, educational and spiritual attributes.*
- *Strive to maintain natural processes in ecosystems, along with the uniqueness, authenticity and worth of cultural heritage, so that these systems and their elements can be resilient and hence persist.*
- *Manage with humility the systems under our custodianship, recognising and influencing the wider socio-ecological context in which we are embedded.*
- *Strive to maintain a healthy flow of ecosystem and cultural goods and services (specifically preserving cultural artefacts), and to make these available, also through access to reserves, thereby promoting enjoyment, appreciation and other benefits for people.*
- *When necessary, intervene in a responsible and sustainable manner, complementing natural processes as far as possible, using only the level of interference needed to achieve our mandate.*

[9] The principles in this section were developed by SANParks's as part of fulfilling their mandate for biodiversity custodianship.

- *Do all the above in such a way as to preserve all options for future generations, while also recognizing that systems change over time.*
- *Acknowledge that conversion of some natural and cultural capital has to take place for the purpose of sustaining our mandate, but that this should never erode the core values above.*
- *Biodiversity forms an important basis of the ecosystem services that sustain the benefits that humans derive from conservation.*
- *People are seen as part of ecosystems, though the ways in which they interact with ecosystems may vary widely in different PA's and circumstances.*
- *We measure our performance in all that we are mandated to do.*
- *We are responsive to the impact of other value systems on biodiversity such as cultural and tourism values.*
- *We are concerned, and responsible, for the implications of our conservation management decisions/actions.*
- *Co-operative governance is seen as a central guiding principle, and collaborative methodologies are thus seen as fundamental.*
- *We treat all biodiversity elements (all species, ecosystems, processes, structural components, etc.) with equity.*
- *We strive to maintain a balance between the management of biodiversity and cultural heritage.*
- *Wildlife management in the reserve must be focused primarily on protecting the ecological functioning of the reserve.*
- *Wildlife stocking densities should be maintained within the ecological capacity of the supporting habitats of the reserve.*
- *A regular programme for monitoring the veld condition, the animal numbers and the physical condition of animals must be in place to ensure that the ecological capacity of the reserve is not exceeded.*
- *Population management of wildlife species shall be required to ensure that such species are not causing the ecological degradation of the reserve.*
- *Wherever feasible, non-lethal and environmentally-friendly measures should be implemented to limit, or mitigate, the impacts of any indigenous damage causing animal in, or escaping from, the reserve.*

4.1.4 Objective 1.4: Maintenance of critical ecosystem services

4.1.4.1 Norms and standards

- Ensure proper planning in the establishment or expansion of the protected area
  - A protected area contributes to the socio-economic benefits of the surrounding communities.
    - *The protected area management has identified the ecosystem services that the protected area and neighbouring land-users are reliant upon;*
    - *The ecosystem services are being effectively maintained with the result that the protected area and neighbouring land users are deriving most benefit from these services.*
- The reserve shall conform to DAERL policies and strategies relating to management of critical ecosystem services:

4.1.4.2 Principles [10]

- *Precautionary approach - The „precautionary approach" must apply. This is interpreted as:*
  - *leaving an appropriate „margin of error" where information is inadequate;*
  - *prohibiting or preventing use of resources in instances where the consequences of erring could be severely negative for species, heritage resources, cultural landscapes and/or ecosystems;*
  - *terminating resource use activities if doubt arises as to the sustainability or impacts on the PA.*
- *Maintenance of system integrity - The ecological, aesthetic, socio-cultural, archaeological and spiritual integrity of protected areas must not be jeopardised in the long-term in order to satisfy short-term needs/demands.*
- *Cost-benefit analysis - The benefit-cost ratio to DAERL must be positive.*
- *Determination and evaluation of potential influence of utilising resources - The thresholds of potential concern for use on affected species, heritage resources, cultural landscapes and ecosystems must be determined and evaluated using methodology that is appropriate for this purpose. This must take into account the effects of resource use on population dynamics, ecosystem functioning and social and cultural values. This must be achieved in an integrated manner, incorporating all relevant scientific, formal and informal information and knowledge (including traditional knowledge).*
- *Cost recovery - Costs must be recoverable from resource users who are able to pay, and it should be possible to leverage „contributions in kind" from users who are unable to pay. Cost recovery also includes the costs of monitoring programmes that are required to manage resources in a sound manner.*
- *Adequate capacity - Appropriate human and financial resources must be available to manage, monitor and regulate resource use.*
- *Adaptive management - Resource use must be managed adaptively, accompanied by constant learning based on monitoring, information gathering and research.*
- *Incentives - Incentives for sustainable resource use and disincentives for unsustainable or wasteful use must be put in place.*
- *Ethics - Accepted ethical norms and standards must be adhered to.*
- *Redress - Past inequalities must be addressed through benefiting the poor, but without undermining the diversity of people's livelihood strategies.*
- *Respect for rights - Intellectual property rights and historical claims to resources must be respected.*

[10] The principles in this section were developed by SANParks's as part of fulfilling their mandate for biodiversity custodianship.

- *Co-management – Decision-making must be consultative and transparent. All stakeholders involved in resource use should accept responsibility for sustainable use.*
- *Enforcement - Illegal resource use must be prevented through law enforcement.*
- *Rights and responsibilities: While DAERL acknowledges the responsibilities outlined above, it also has the right to choose which resources it will make available and how much, as well as the right to withdraw if necessary (i.e. the use of a resource does not automatically constitute the source as being permanent).*
- *The reserve regards any action that utilises or impacts on the scenery, sense of place, soil, water, air and nutrient cycles, habitats, heritage resources, flora and fauna, and the interrelatedness between these, as a resource use.*
- *The reserve recognises that it has a responsibility to ensure that natural and cultural resources which are not harvested from within the PA boundaries, but are used in the PA, are collected and harvested in an ethical way that conforms to DAERL policies.*
- *Strive to maintain a healthy flow of ecosystem and cultural goods and services (specifically preserving cultural artefacts), and to make these available, also through access to reserves, thereby promoting enjoyment, appreciation and other benefits for people.*
- *Biodiversity forms an important basis of the ecosystem services that sustain the benefits that humans derive from conservation.*
- *Our understanding and management must reflect the social imperatives (e.g. transformation, equity, efficiency, empowerment, growth) of an emerging African democracy.*
- *Whenever feasible and justifiable, we strive to implement the option which best serves local community needs.*

4.1.5 Objective 1.5: Land use planning and management outside of the protected area

4.1.5.1 Norms and standards

- ❖ Promote and or ensure the positive involvement of the protected area management in planning outside the protected area which may affect its integrity.
  - ➢ An appropriate buffer zone for the protected area has been established.
    - *The protected area has identified a buffer zone in its management plan;*
    - *The protected area has mechanisms to facilitate the implementation of the buffer zone;*
    - *The protected area management has proactively sought to encourage neighbours to introduce conservation-friendly land uses to enhance buffering of the protected area;*
    - *A policy for controlling activities in the buffer zone has been developed and is implemented.*
  - ➢ A protected area is integrated into land-use planning outside of the protected area
    - *Management authorities play an active role in land use planning affecting the protected area.*
    - *The land-use planning takes cognisance of the protected area and the achievement of protected area management objectives.*

- Promote compliance with NEMA, 1998 (Act No 107 of 1998) Environmental Impact Assessment Regulations, 2014 Listing Notice 3 of 2014 under sections 24(2), 24(5), 24D and 44, read with section 47A (1) (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), in Gazette No. 38282 dated 04 December 2014 – Northern Cape Province

❖ Contribute to a good relationship between the protected area staff and neighbouring communities.

- Neighbour relations contribute positively to the success of the protected area.
  - *A zone of influence has been identified;*
  - *A programme to encourage the development and maintenance of good relations with neighbours in the zone of influence is in place;*
  - *There is a formalized programme of regular interaction between protected area management and neighbouring land users;*
  - *The protected area staff regularly collaborate with partners, local communities and other organizations;*

4.1.5.2 Principles[11]

- *Develop and introduce appropriate strategies, mechanisms and incentives to integrate the reserve within the broader ecological and social landscape, and encourage conservation in adjacent private and communal areas.*
- *Support and promote activities adjacent to protected areas that are compatible with and which complement the objectives of the protected area.*
- *Discourage development in areas in which biodiversity and ecological function would be adversely affected.*
- *Conserve and make sustainable use of biological resources in the buffer zone and avoid o minimize adverse impacts on the biodiversity of such areas.*
- *Support the development of community-based biodiversity management initiatives as part of a broader set of approaches to land-use planning and developing local sustainable development strategies.*
- *Promote the development of partnerships between the management authority, other conservation authorities, community organisations, non-governmental organization (NGOs), and private entrepreneurs for purposes of planning and managing the use of resources within the PA zone of influence, and optimising benefits for local people*
- *Enhance the capacity of communities residing in or adjacent to protected areas to participate in protected area management through providing appropriate training and education, and through recognising local expertise and traditional institutions.*
- *Take steps to avoid or minimize damage caused to people and property by wildlife.*
- *Improve benefit flows to people in and around protected areas.*

[11] The principles in this section were modified from the goals of the Biodiversity Policy and Strategy for South Africa: Strategy on buffer zones for National Parks Government Gazette No 35020. 2012.

4.1.6 Objective 1.6: Water use planning and management operations influencing the PA

4.1.6.1 Norms and standards

Promote and or ensure the positive involvement of the protected area management in Water use planning and management operations influencing the PA.

- Water-use planning outside takes into account the objectives of the protected area.
  - *Management authorities play an active role in water use planning affecting the protected area.*
  - *The water-use planning takes cognisance of the protected area and the achievement of protected area management objectives.*

4.1.6.2 Principles

- *PA management is a key stakeholder and role player in the management of water resources in all the catchments within which it is situated (water quantity and quality issues are very important from both biodiversity management and tourism perspectives).*
- *The National Water Act details the involvement of stakeholders in the management of water resources and the PA has taken an active role in the initiation and management of Catchment Forums*
- *Increased interaction with neighbouring and upstream land-use planning and catchment management activities as the interdependence of these systems is more fully appreciated.*

4.1.7 Objective 1.7: Audit achievement of biodiversity targets

4.1.7.1 Norms and standards

- Verify the importance of the protected area to the South African system of protected areas.

  - A protected area contributes to the achievement of national biodiversity targets

    - *The protected area is an ecological viable area;*
    - *It protects a representative sample of South African biodiversity;*
    - *It protects a representative sample or iconic feature of South Africa's land/seascapes.*

  - A protected area is important for the conservation of biodiversity

    - *Contribution to protection of endemic, threatened, or endangered species;*
    - *Contribution to conservation of threatened ecosystems;*
    - *Contribution to biodiversity conservation targets;*
    - *Protection of a representative range of plant and animal diversity for the eco-region [in terms of biodiversity targets];*
    - *Viability and extinction risk of populations of key species;*
    - *Contribution to the representative examples of biomes, vegetation types and ecosystems;*
    - *Extent to which natural and disturbance processes necessary for ecosystem functioning are maintained;*

- *The state of landscape linkages and connectivity that allow the protected area to function as part of larger surrounding ecosystems;*
- *Provision of ecosystem services that the protected area and neighboring land-users are reliant upon;*
- *The protected area provides a critical landscape function;*
- *The protected area includes ecosystems whose historic range has been greatly diminished.*

4.1.7.2. Principles

- *Criteria must be scientifically credible, practical and simple; Different thresholds may be required for different environments;*
- *The most appropriate scale for mapping ecosystems depends on a range of factors including the nature of the ecosystems and the available data.*
- *The approach must be explicit and repeatable;*
- *The approach must be target-driven and systematic, especially for threatened ecosystems;*
- *The approach must follow the same logic as the IUCN approach to listing threatened species, whereby a number of criteria are developed and an ecosystem is listed based on its highest ranking criterion;*
- *The identification of ecosystems to be listed must be based on scientifically credible, practical and simple criteria, which must translate into spatially explicit identification of ecosystems.*

4.1.8 Objective 1.8: Manage and mitigate the environmental impacts of conservation management, tourism, recreation and natural resource use in the WNR

4.1.8.1 Norms and standards

❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.

➢ All development projects that require environmental scoping are assessed through either internal or external EIA processes and are authorized at the relevant level.

- *There are records of decisions/authorizations in place.*
- *There is a process to monitor and effect compliance with conditions of records of decisions.*

4.1.8.2 Principles

- *The reserve shall strive to continually improve its environmental management systems, through reducing or mitigating the environmental impacts of inter alia: administrative and visitor infrastructure and activities; solid waste disposal; water supply and distribution systems; energy supply and distribution networks; sewage systems; and herbicide and fuel supplies.*
- *The reserve shall strive to continually improve its environmental management systems, through restoration and/or rehabilitation efforts.*

4.1.9 Objective 1.9: Protect the heritage resources of the WNR

4.1.9.1 Norms and standards

- ❖ Proper planning in the establishment or expansion of the protected area.
  - ➢ A cultural heritage resource inventory for the protected area is maintained.
    - *Cultural heritage values have been identified;*
    - *Information on these resources and values is sufficient to support planning and decision making and little additional information is required to manage the cultural heritage of the protected area;*
    - *There is a comprehensive inventory of cultural heritage resources.*
- ❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.
  - ➢ Cultural Heritage Resources are managed to meet the protected area objectives as per the management plan and in terms of the South African Heritage Resources Agency requirements.
    - *The heritage resources are managed;*
    - *The heritage monuments are managed and maintained;*
    - *The cultural sites are adequately managed;*
    - *Cultural heritage resources adequately managed;*
    - *Heritage assets and values managed consistently to objectives;*
    - *The management of heritage assets and values (are being managed) is consistent (to) with protected area objectives;*
    - *Critical cultural heritage assets are predominantly intact according to the objectives of the protected area.*

4.1.9.2 Principles

- *The reserve shall conform to the legal requirements of the NHRA.*

Table 11: Management actions and targets relating to Marketing, Education Awareness & Interpretation KPA 1

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Budget Requirements				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2029
KPA 1: Biodiversity and Heritage Conservation									R 860 518,23	R 879 019,16	R 804 767,46	R 798 612,60	R 875 382,06
Objective 1.1 Obtain Biodiversity knowledge about the PA									**R 226 382,66**	**R 224 864,94**	**R 235 693,95**	**R 239 044,21**	**R 247 064,49**
1	Identify, and prioritise the biodiversity management requirements of the PA for baseline information and monitoring.												
a	*Compile Integrated Biodiversity Management Famework (BMF)*	There is an established Monitoring & Evaluation program which is fully implemented with PA management participation and is used to guide adaptive management.	3.1.1 Monitoring and Evaluation Programme						R -	R -	R 22 508,71	R -	R 24 815,85
b	*Compile Biodiversity Man. Programmes (BMP) identified in BMF*												
2	Develop and maintain a targeted research and monitoring program relevant to management needs to guide biodiversity management												
a	*Compile archive of all research completed on the site*	Research needs have been identified and projects relevant to all management needs are being undertaken, enabling the monitoring of results of management actions against set objectives	3.1 Management Research Programme						R 12 760,04	R 16 077,65	R 14 067,94	R 14 771,34	R -
b	*Identifying research projects for achieving all management objectives*												
3	Facilitate access for and assist external research institutions to implement the priority research and monitoring requirements of the reserve.												
a	*Facilitate controlled access for external institutions undertaking relevant research projects within the reserve.*	There is an established working relationship with researchers and regular liaison leads to research results feeding into management decisions	3.1.2 Relationship with researchers						R 12 760,04	R 13 398,04	R 14 067,94	R 14 771,34	R 15 509,91
b	*Create Database with potential institutions to assist with outsourced research projects*												
4	Collect and update key baseline information - Monitoring & Research in PA Estate												
a	*01 BMP 1 Biodiversity mechanisms*	Information and the understanding thereof concerning key species, habitats, ecosystems of the PA supports the achievement of all biodiversity objectives.	1.4. Biodiversity knowledge and understanding						R 200 862,58	R195 389,25	R185 049,35	R209 501,53	R206 738,72
b	*02 BMP 2 SSC*												
c	*03 BMP 3 Freshwater and Wetlands*												
d	*04 BMP 4 IAS*												
e	*07 BMP 7 Degradation Rehabilitation*												
f	*08 BMP 8 Cultural Heritage*												
g	*09 BMP 9 Climate and Climate Change*												
Objective 1.2: Restoration and mitigation of degradation									**R 171 204,71**	**R 99 886,75**	**R 152 855,68**	**R 151 605,82**	**R 195 156,22**
1	Compile an invasive species control and eradication plan in terms sec. 76 of the NEM: Biodiversity Act, 2004												
a	*Eradication plan for damage-causing and problem animals in PA*	There is a plan for addressing control and eradication of invasive species within the PA.	2.6 Restoration of degraded areas						R 22 968,07	R 5 359,22	R -	R -	R 27 917,83
b	*Eradication plan for invasive alien plant infestations in PA*												
2	Implement the invasive species control and eradication plan BMP 4												
a	*Implement, environmentally friendly measures to reduce the impacts of any damage-causing and problem animals*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	6.3 Ecological processes						R 82 967,81	R 48 845,63	R 96 021,89	R110 552,70	R114 345,37
b	*Eradicate, on an ongoing basis, all known invasive alien plant infestations occurring in the reserve*												
3	Rehabilitation or Mitigation of degredation in PA												
a	*Rehabilitation, Restoration or mitigation of all un-natural and/or highly erodible areas in the PA estate and maintain mitigation measures*	There is a plan for addressing degraded areas within the PA	2.6 Restoration of degraded areas						R 65 268,82	R 45 681,90	R 56 833,79	R 41 053,12	R 52 893,02
b	*Rehabilitation, Restoration or mitigation of visitor impact wrt. special natural features and heritage resources in the PA estate and maintain mitigation measures*												
c	*Close and rehabilitate solid waste dump sites in the reserve, and remove all solid waste to the nearest municipal dump sites.*												
d	*Close/remove/demolish and rehabilitate all extraneous and redundent mining related buildings, foundations, waste dumps, equipment, excavations and fencing.*												
e	*Close and rehabilitate all unused, extraneous and/or highly erodible tracks and roads in the reserve and maintain road closures*												

Objective 1.3: Maintenance of ecological processes in the PA									**R 231 174,01**	**R 191 417,02**	**R 231 025,71**	**R 199 479,82**	**R 214 959,00**
1	ID Ecological processes critical for the achievement of biodiversity targets as part of BMF		6.3 Ecological processes						R 2 552,01	R 2 679,61	R 2 813,59	R 2 954,27	R 3 101,98
2	Re-establish, manage and maintain viable populations of locally indigenous fauna and flora in the WNR												
a	*Determine historical distribution of game animals*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	2.6 Restoration of degraded areas						R -	R -	R 14 067,94	R -	R -
b	*Compile reintroduction program*												
3	Develop and maintain a vegetation monitoring program, including an annual veldt condition assessment. BMP 1.3	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	6.3 Ecological processes						R 2 612,01	R 35 511,83	R 30 610,24	R 23 277,95	R 33 747,79
4	Prepare and/or update a simple, functional Fire Management Programme for the reserve. BMP 1.3								R 5 104,02	R -	R -	R -	R -
5	Manage watering points for game												
a	*Monitor and maintain artificial watering points*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.							R 191 574,49	R145 273,38	R 141 452,31	R 148 524,93	R169 002,08
6	HIRA for PA and Contingency plans for Disaster Management												
a	*Undertake a Threat Analysis to determine all potential threats to the safety and security of the reserve.*	There is a plan for addressing natural disasters within the PA.	1.6 Risk Assessment						R 29 331,49	R 7 952,20	R 42 081,63	R 24 722,67	R 9 107,15
b	*Update Risk assesment*	A full risk assessment, covering inter alia biodiversity, financial management, human resources, tourism, pressures & threats has been undertaken for the PA that informs management planning.											
c	*Compile a Disaster Management Plan for the reserve*												
d	*Establish, train and equip a fully functional reaction team*												
Objective 1.4: Maintenance of critical ecosystem services									**R 80 084,44**	**R112 836,46**	**R 81 442,01**	**R106 686,61**	**R 98 095,19**
1	ID critical ecological sevices that deliver services to surrounding communities												
a	*Description and monitoring change wrt biodiversity importance of PA*	PA and neighbouring land users are deriving benefit from ecologica services.	2.1 PA design 2.1.1 PA expansion plan						R -	R -	R -	R -	R -
b	*Description and monitoring change wrt conservation interphase*												
2	ID ecological services & develop a structured and scientific measurement system for effective maintenance of ecological services	A structured and scientific measurement and monitoring system has shown that ecosystem services are being effectively maintained with the result that the PA and neighbouring land users are deriving benefit from these services.	6.4 Ecosystem services						R -	R -	R -	R -	R -
3	Monitoring benefit of ecological services to PA and neighbouring land users								R 80 084,44	R112 836,46	R 81 442,01	R106 686,61	R 98 095,19
Objective 1.5: Land use planning and management outside of the protected area									**R 25 366,23**	**R 27 618,53**	**R 27 966,27**	**R 24 708,99**	**R 31 164,81**
1	Provide and define PA expansion strategy												
a	*Description wrt biodiversity importance (Veg type targets) of PA and interphase*	The size and shape of the site is adequate in design to fully achieve the conservation objectives.	2.1 PA design						R -	R -	R -	R -	R -
b	*Compile PA Expansion Plan*	A site expansion plan been set out in line with the expansion strategy of the organisation	2.1.1 Expansion plan										
c	*Investigate options for conservation of identified land parcels of biodiversity value*												
1	Provide and define a zone of influence and applicable buffering mechanisms (interphases)												
a	*Complete sensitivity analysys and demarcate ZOI and Domain*	The zone of influence PA Domain and applicable buffering mechanisms have been clearly defined for input into the municipal IDP, catchment and river plans	2.1.2 Delineation of a zone of influence						R -	R -	R -	R -	R -
b	*Develop guidelines for conflicting land uses and obtain MOU with land managers within PA Domain*												
c	*Determine applicable buffering mechanisms, demarcate corridors and include in PAES*	There is a plan for the management of corridors linking the PA to key habitats outside of the PA thereby mitigating fragmentation.	2.1.3 Corridor management										
2	Collect baseline information and control illegal harvesting of natural resources and grazing in reserve interface and domain.												
a	*01 BMP 1 Biodiversity mechanisms*	There is a bilateral relationship between any relevant biodiversity plan and/or the applicable aspects of the IDP of the local municipality and the planning and management of the site. There is formal agreement with industries within the zone of influence.	6.5 Land use planning and management outside of the protected area						R 25 366,23	R 27 618,53	R 27 966,27	R 24 708,99	R 31 164,81
b	*02 BMP 2 SSC*												
c	*03 BMP 3 Freshwater and Wetlands*												
d	*04 BMP 4 IAS*												
e	*05 BMP 5 Resource Use Tourism*												
f	*07 BMP 7 Degradation Rehabilitation*												
g	*08 BMP 8 Cultural Heritage*												
h	*Establish working relationship (MoU) with landowners and residents within the PA domain*												

Objective 1.6: Water use planning and management operations influencing the protected area									**R 25 357,59**	**R 27 322,67**	**R 15 091,61**	**R 15 846,19**	**R 19 740,48**
1	Collect and update key baseline information concerning land use practices of the reserve catchment interface and control illegal harvesting of natural resources .												
a	*02 BMP 2 SSC*	Catchment and river plans and water management fully take the water needs of the PA into account and the water quality meets required standards as set out by the relevant authority.	6.6 Water use planning and management operations influencing the protected area						R 25 357,59	R 27 322,67	R 15 091,61	R 15 846,19	R 19 740,48
b	*03 BMP 3 Freshwater and Wetlands*												
c	*04 BMP 4 IAS*												
d	*05 BMP 5 Resource Use Tourism*												
e	*07 BMP 7 Degradation Rehabilitation*												
f	*08 BMP 8 Cultural Heritage*												
g	*Establish working relationship (MoU) with landowners and residents within the PA domain and interface*												
h	*Map and monitor cross boundary movement hotspots.*												
2	Assist other enforcement agencies in cross border and other operations								Ad Hoc				
3	Participation in Catchment Management and other forums to ensure that the quality and quantity of water meets the needs for maintaining habitats, species and ecosystems								Ad Hoc				
Objective 1.7: Audit achievement of biodiversity targets									**R 2 552,01**	**R 2 679,61**	**R 2 813,59**	**R 2 954,27**	**R 3 101,98**
1	Achievement of biodiversity targets												
a	*Set biodiversity objectives and targets as part of IMP*	A structured and scientific biodiversity condition assessment has shown that the management of biodiversity is meeting the set targets. Management techniques are constantly being adapted to changing environments and new knowledge.	6.2 Achievement of biodiversity targets						R 2 552,01	R 2 679,61	R 2 813,59	R 2 954,27	R 3 101,98
b	*Monitoring results of management actions against set objectives. State of biodiversity report.*												
Objective 1.8: Manage and mitigate the environmental impacts of conservation management, tourism, recreation and natural resource use in the PA									**R 18 396,59**	**R161 937,21**	**R 20 718,79**	**R 18 800,46**	**R 19 740,48**
1	Develop management guidelines for the sustainable extractive use of biotic and abiotic resources as part of BMP 5.1 (ii) Monitor resource use & development in domain.	Management guidelines for the sustainable extractive use of biotic and abiotic resources that apply to both the organisation and outside parties are in place.	4.12 Sustainable Extractive Use						R -	R -	R -	R -	R -
2	Introduce more environmentally-friendly technologies (recycling, water and energy saving, sourcing of biodegradable materials, dry and wet waste disposal, sustainable benefits to local communities, sourcing supplies locally and using certified sources of building materials).	Plans for environmentally responsible practices including environmentally-friendly technologies and using certified sources of building materials.	4.16 Environmentally Responsible practice						R -	R 5 359,22	R 2 813,59	R 2 954,27	R 3 101,98
3	Mitigate visitors impact												
a	*Maintain information about the reserve visitors as part of BMP5*	Visitor impacts which could result from current and anticipated levels of visitation are fully mitigated by the design of the tourism infrastructure	5.1 Tourism Infrastructure (mitigating impacts)						R 10 740,56	R 15 500,35	R 15 091,61	R 15 846,19	R 16 638,50
b	*Implement access control*												
c	*Develop and implement a visitors compliments and complains register and adress issues*												
d	*Rehabilitation, Restoration or mitigation of visitor impact wrt. special natural features and heritage resources in te PA estate*												
4	Waste Management												
a	*Develop a formal legally compliant programme for the management of domestic waste*	The PA has been accredited with a recognised green standard. Examples are Green Globe. Green Leaf and Travelife. This does not only relate to tourism infrastructure.	4.13 Management of Hazardous Substances						R 5 104,02	R 5 359,22	R 2 813,59	R -	R -
b	*Develop a formal legally compliant programme for the management of hazardous waste*												
c	*Develop a legally compliant programme for the management and use of pestisides & insectisides*												
5	*Develop functional infrastructure for the management of waste*								R 2 552,01	R135 718,43	R -	R -	R -

Objective 1.9 Obtain Cultural Heritage knowledge about the PA									**R 80 000,00**	**R 30 455,96**	**R 37 159,85**	**R 39 486,23**	**R 46 359,41**
1	In collaboration with academic institutions, research, document and inventorize the cultural heritage resources of the reserve and determine significance	A formal cultural heritage assesment by an accredited heritage practitioner for significant heritage resources and values and has been verified by SAHRA and is included in the IMP	1.5 Heritage knowledge						R -	R 16 355,36	R -	R 17 725,61	R 9 305,94
2	In collaboration with academic institutions, develop management plans for significant Cultural Heritage assets												
a	*Management of significant Palaeontological resources*	Formal management plans with mitigating and management guidelines by an accredited heritage practitioner for significant heritage resources/sites has been approved by the relevant heritage authority.	2.4 Management plans for significant Cultural Heritage assets						R 80 000,00	R -	R 14 067,94	R -	R 15 509,91
b	*Management of significant Archaeological resources*												
c	*Management of significant Cultural-Heritage resources*												
3	Monitor and do regular condition assessment of Cultural Heritage Resources	A structured assessment conducted by an accredited heritage practitioner, has shown that the management of cultural heritage assets and values are meeting the set management objectives.	6.7 Cultural Heritage condition assessment						R -	R 14 100,59	R 23 091,91	R 21 760,62	R 21 543,56

CATEGORY	PRIORITIES
HIGH PRIORITY - Once off activity	Critical to the effective management of the reserve. Funding and resources should be secured to implement these actions. As reflected in the Management Effectiveness Tracking Tool (METT)
HIGH PRIORITY - Routine activity	
MEDIUM PRIORITY	Important to the effective management of the reserve, but its implementation may be delayed because of limited funds or resources.
LOW PRIORITY- Activity on hold	Constitutes good management practice, but not necessarily critical or important to reserve management effectiveness. Implementation may be dependent on availability of external funding or support.
COMPLETED	Activities Completed for the 5 year cycle to be assessed during the following 5-year planning cycle

4.2 KPA 2: Recreation, Marketing, Education, Awareness & Interpretation

4.2.1 Objective 2.1: Develop, deliver and maintain a diverse range of tourism and recreational services for visitors to the WNR taking into account the criteria for use zones

4.2.1.1 Norms and standards

- ❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.

  - ➢ Commercial tourism, where applicable, contributes to the protected area objectives.

    - *The commercial tour operators interact with protected area management;*
    - *There is an excellent co-operation between protected area management and tourism operators to enhance visitor experiences maintain protected area conservation values and resolve conflicts;*
    - *The commercial tour operators contribute to protected area management;*
    - *Permits, licenses and concessions are granted in terms of management plan objectives;*
    - *Tourism standards are developed for nature based tourism;*
    - *Protected areas serving as triggers for tourism, economic development (where applicable/ subject to management plan).*

4.2.1.2 Principles:

- *In developing and maintaining tourism and recreational infrastructure, the reserve shall obtain the necessary authorisation in terms of all relevant legislation.*
- *Tourism and recreational infrastructure developed within the reserve must be appropriate to the purpose for which the reserve has been proclaimed, and must not threaten its biodiversity or ecological function.*
- *Environmental resources, together with the maintenance of essential ecological processes and conservation of natural heritage and biodiversity, constitute a key element in tourism planning and development;*
- *Ensure that tourism development is appropriate in scale, requiring the lowest possible consumption of non-renewable resources; and*
- *Ensure that additional funds for conservation are generated from the tourism business*
- *Tourism activities and experiences must optimise the PAs' unique attributes and special features as the preferred focus to ensure sustainability and a unique product compatible with the overall desired state whilst applying the principles of Responsible Tourism*

4.2.2 Objective 2.2: Develop and implement a focused and cost-effective marketing programme for the WNR

4.2.2.1 Norms and standards

- ❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.

  - ➢ Commercial tourism, where applicable, contributes to the protected area objectives.

    - *The commercial tour operators interact with protected area management;*
    - *There is an excellent co-operation between protected area management and tourism operators to enhance visitor experiences maintain protected area conservation values and resolve conflicts;*
    - *The commercial tour operators contribute to protected area management;*
    - *Permits, licenses and concessions are granted in terms of management plan objectives;*
    - *Tourism standards are developed for nature based tourism;*
    - *Protected areas serving as triggers for tourism, economic development (where applicable/ subject to management plan).*

4.2.2.2 Principles:

- *Tourism and recreational infrastructure shall be developed in response to tourism market demands and opportunities within the reserve, and should be carefully assessed to determine its viability.*
- *Using tourism as a conservation strategy by optimally deploying and appropriately utilizing environmental resources.*
- *Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities and contributing to poverty alleviation,*
- *The reserve shall collaborate and cooperate with key local, regional and institutional partners to strengthen the marketing of the reserve's tourism and recreational infrastructure and services; improve the awareness of the reserve, and its prospective uses, in local communities; and promote the use of the reserve as a local educational resource.*
- *Visitor management must take heed of a recent demand analysis and develop creative alternatives e.g. „park and drive" vs. „self-drive", converting day visitors to overnight visitors, interpretive centres at gates for when gate quotas are reached.*
- *Infrastructure upgrading must be aimed at the state of grading of 70% (by the Grading Council of SA).*
- *Revenue sharing with applicable communities according to relevant clauses in the Co-Management Agreement.*
- *Pricing strategy must ensure that pricing is competitive, affords access to all South Africans and that it correlates with star grading and tourism*

will need to focus on the flexibility of packages, in line with the rest of the ecotourism industry.

4.2.3 Objective 2.3: Develop and implement a focused and cost-effective awareness-raising and educational programme for the WNR

4.2.3.1 Norms and standards

- ❖ Ensure that the protected area has an education and awareness programme in place.

  - ➢ Education and awareness programme developed.

    - *There is a planned education and awareness programme;*
    - *There is an education and awareness plan linked to the objectives of the protected area;*
    - *There is a fully implemented and highly effective education and awareness the objectives of the protected area.*

4.2.3.2 Principles:

- *The popularity of wilderness related activities and the fact that income is generated with very little impact on the environment, emphasized the importance to zone land for this purpose and to develop activities in this regard.*
- *Day programs can be developed to afford schools the opportunity to experience the PA for a day and to enjoy a carefully planned environmental education program run by qualified education and interpretative staff.*
- *Bush Camps can be provided to offer a unique opportunity for learners to experience their natural environment in the rustic comfort of a secluded campsite.*
- *Learners to enjoy the PA on foot or by open vehicle under the guidance of a qualified officer who gives insights into all aspects of the environment.*
- *Teacher development by contributing to Outcomes Based Education enhancement programme, linking curriculum with environmental conservation and resources are developed in the process.*
- *Programs on rediscovering and using traditional knowledge and methodologies of learning used in the past to relate to their environment. Experiential learning through inter-generational communication is the key to this project. In their home language, "wise men" and women facilitate the interaction of small groups of young people with nature through interpretive trails and cultural activities in the camp.*
- *Outreach programmes to promote the use of the PA as an „outdoor laboratory" and Centre for social science research and projects through the development of specialized educational programmes aimed at tertiary institutions and researchers at the local and national levels, and active participation in the bioregional plan for the PA.*
- *The use of interpretive materials such as information boards, signs and plaques pertaining to special features of the PA. Reliance on donor funding is seen as an important risk.*

Table 12: Management actions and targets relating to Marketing, Education Awareness & Interpretation KPA 2ctions

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 2: Recreation, Marketing, Education, Awareness and Interpretation									**R 4 562,84**	**R 10 150,20**	**R 9 765,56**	**R 5 282,06**	**R 8 648,15**
Objective 2.1: Develop, deliver and maintain a diverse range of tourism and recreational services for visitors to the PA in accordance with CDF									**R 4 562,84**	**R 4 790,99**	**R 9 765,56**	**R 5 282,06**	**R 5 546,17**
1	Develop Subsidiary Plan (CDF) for Commercial Tourism with guidelines that apply to both the organisation and outside parties concession holders	Aa zoning system based on a sensitivity analysis indicating visitor use zones, and positioning and nature of operational and visitor infrastructurehas been compiled and included into the Integrated Management Plan	2.2.1 Conservation Development Framework (CDF)						R -	R -	R -	R -	R -
2	Facilitate controlled access to the reserve for other complementary recreational activities, including mountain biking, trail running and 4X4 drives.	There is excellent interaction and co-operation between managers and tourism operators/concessionaires to enhance visitor experiences, protect values and resolve conflicts.	4.15 Commercial Tourism						R 4 562,84	R 4 790,99	R 9 765,56	R 5 282,06	R 5 546,17
3	Support entrepreneurial opportunities for local communities to participate in the provision and management of tourist and recreational products.								R -	R -	R -	R -	R -
Objective 2.2: Develop and implement a focused and cost-effective marketing programme for the PA									**R -**	**R -**	**R -**	**R -**	**R -**
1	Tourism management plan for the PA	There is an approved and updated Tourism and Marketing Programme and it is fully integrated into the IMP of the PA. Accommodation has been accredited with a recognised tourism grading standard.	3.8.1 Tourism grading	On Hold									
2	Design, publish and distribute reserve-specific brochures and pamphlets for visitors and users.								On Hold		R -	R -	R -
3	Continually provide updated information in the ongoing development of corporate, regional and provincial tourism marketing products and materials.development of corporate, regional and provincial tourism marketing products and materials.			On Hold									
4	Accreditation of activities and facilities with a recognised tourism grading standard.												
Objective 2.3: Develop and implement a focused and cost-effective awareness-raising and educational programme for the PA									**R -**	**R 5 359,22**	**R -**	**R -**	**R 3 101,98**
1	Develop site specific Education, awareness and interpretation programme	The management plan include an education, awareness and interpretation programme to create awareness of the values of the site	2.3 Education, awareness and interpretation						R -	R 5 359,22	R -	R -	R 3 101,98
2	Establish links with local educational institutions and networks in order to promote subsidised access to, and use of, the reserve as an educational resource.												
a	*Determine research opportunities*	The education, awareness and interpretation programme is fully linked to the objectives and needs of the PA and is being fully implemented.	4.9 Implementation of Education, awareness and						Ad hoc				
b	*Make facilities including environment available for educational programmes*												

4.3 KPA 3: ENFORCEMENT, SECURITY AND ACCESS CONTROL

4.3.1 Objective 3.1: Secure the legal tenure of and management authority for WNR

4.3.1.1 Norms and standards

- ❖ Ensure that correct legal processes have been followed in securing the protected area.
  - ➢ A protected area is declared in terms of the Act.
    - *The protected area is declared in the Government Gazette;*
    - *The Registrar of Deeds has been informed in writing of the declaration and has recorded such declaration in the relevant registers and documents;*
    - *The protected area is listed in the Register of Protected Areas as required by section 10 of the Act;*
    - *The protected area has an assigned management authority.*
  - ➢ There are applicable legal mechanisms in place to control inappropriate activities.
    - *There are appropriate regulations;*
    - *The protected area has a formal set of internal rules.*
  - ➢ There are adequate legal controls to ensure the integrity of the protected area.
    - *The Act is applied / enforced;*
    - *The National Environmental Management Act, 1998, the NEM: Biodiversity Act, 2004 are applied and or enforced;*
    - *The relevant regulations are applied and or enforced;*
    - *Internal rules are in effect.*
- ❖ Ensure that the boundaries of the protected area are well demarcated, secured and publically known.
  - ➢ Boundaries of the protected area are demarcated, secured and publically known.
    - *The extent of the protected area is included in a description and Surveyor General diagramme;*
    - *The boundaries are appropriately demarcated;*
    - *The boundaries are known by both the management authority of a protected area and the neighbouring community;*
    - *Any deviations from the declared area are agreed upon and documented in the management plan and include a signed, legally binding MoU;*
    - *Conflicts with the local community are resolved fairly and effectively.*

4.3.1.2 Principles:

- *The reserve shall conform to the legal requirements of all relevant legislation*

4.3.2 Objective 3.2: Secure the boundaries of and maintain controlled access to the WNR

4.3.2.1 Norms and standards

- ❖ Ensure that the relevant legislation is effectively enforced in a protected area.

  - ➢ Protection systems are in place.

    - *Management mechanisms effectively control and manage access;*
    - *The available management mechanisms are working to control both illegal and legitimate access;*
    - *Effective control measures are in place to control the use of the protected area; Standard operating procedures for controlling activities have been developed and are being effectively implemented/ contingency plans;*
    - *Annual risk assessments completed and mitigating interventions applied where appropriate;*
    - *Critical cultural heritage assets have been identified and secured in terms of a heritage management plan.*

4.3.2.2 Principles:

- *Fencing specifications according to NCNCA; and*
- *The boundaries of the reserve shall, at all times, be clearly demarcated and be regularly maintained.*
- *All entry and exit points shall be properly managed to ensure that access to, and through, the reserve is effectively controlled at all times.*

4.3.3 Objective 3.3: Sustain an effective law enforcement and compliance capacity in the WNR

4.3.3.1 Norms and standards

- ❖ Ensure that the relevant legislation is effectively enforced in a protected area.

  - ➢ The NEM:PAA, 2003 (Act No. 57 of 2003), the NEMA Act,1998 (Act No. 107 of 1998), the NEM: BA Act,2004 (Act No. 10 of 2004 their Regulations and internal rules are in effect.

    - *The protected area has sufficient capacity to enforce the Acts, regulations and internal rules;*
    - *The protected area's staff is adequately capacitated to enforce legislation within the organization's mandate and does so effectively;*
    - *Staff resources are adequate to conduct critical law enforcement activities;*
    - *The staff has relevant law enforcement and compliance training;*
    - *The law enforcement officers are appropriately trained;*
    - *The staff has been formally designated to enforce the relevant legislation;*
    - *Appropriate staff have been designated environmental management inspectors;*
    - *The staff has the necessary equipment to enable them to do law enforcement effectively;*

- *The protected area has allocated sufficient funds for effective law enforcement;*
- *The protected area receives adequate support from other sections of the organization to effectively manage ensure effective management;*
- *Assessment of state on illegal activities in the protected area;*
- *The protected area management has a database to register illegal activities;*
- *The database of illegal activities assessed.*

4.3.3.2 Principles:

- *The reserve shall conform to the legal requirements of all relevant legislation*

Table 13: Management actions and targets relating to Enforcement, Security & Access Control KPA 3

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 3: Enforcement, Security and Access Control									**R 110 804,37**	**R 355 639,72**	**R 72 711,24**	**R 62 818,40**	**R 119 802,38**
Objective 3.1: Secure the legal tenure of, and management authority for, the PA									**R -**	**R -**	**R -**	**R -**	**R 9 305,94**
1	Ensure declaration of all properties within the estate to obtain legal status in terms of NEMPAA and registered on the national PA register												
a	*Compile and submit notice of intend for domain to be approved and gazetted*	All properties managed as part of the PA estate have been declared and listed in the SAPAD and the registrar of Deeds has recorded the declaration against the relevant register and documents or has formal management agreements in place.	1.1 Legal Status										
b	*Record the declaration against the SAPAD*												
c	*Record the declaration against the relevant Title Deed.*												
d	*Consolidation of properties*								R -	R -	R -	R -	R 9 305,94
e	*Apply for MPRDA sec 53 permission for all properties in PA estate & domain- 5km buffer only*												
f	*Formal agreements with landowners regarding managent of properties as part of estate not declared*												
Objective 3.2: Secure the boundaries of, and maintain controlled access to, the PA									**R 110 804,37**	**R 347 600,90**	**R 58 643,29**	**R 56 909,86**	**R 68 292,47**
1	Implement the protection systems or mechanisms for controlling current and anticipated levels of legitimate and illegitimate access or activities in the PA												
a	*Regular boundary patrols and access hotspots*	Protection systems or mechanisms for controlling current and anticipated levels of legitimate and illegitimate access or activities in the PA are fully implemented. The success has been verified by a relevant PA integrity audit (eg. SOAM or PAME)											
b	*Record incidence and non compliance*												
c	*Implement, mechanisms for subsidised entry for local community user and interest groups.*								R 53 239,72	R 32 266,13	R36 702,55	R32 629,14	R 31 158,62
d	*Provide, on request, controlled access to recognised cultural/religious sites and non-destructive or consumptive cultural/religious practices.*												
2	Complete the construction of the perimeter demarcation/fencing to meet all requirements of the DENC Technical Guidelines and Principles (TGP) for fencing.												
a	*Verify position of estate beacons agains title deeds*	The reserve assets are secure. The reserve visitors and users have equitable access to the reserve, and are safe from harm.	1.3 Protected Area boundary demarcation						R57 564,65	R315 334,77	R21 940,74	R24 280,72	R37 133,85
b	*Maintain beacons in correct position*												
c	*Construction of the perimeter signage*												
d	*Demarcation of boundary by fencing, bollards, beacons, sign posts.*												
e	*Ensure regular maintenance of the perimeter demarcation/fencing in the reserve.*												
Objective 3.3: Sustain an effective law enforcement and compliance capacity in the PA									**R -**	**R 8 038,83**	**R14 067,94**	**R 5 908,54**	**R 42 203,96**
1	Integrated Compliance Plan												
a	*Develop and Integrated Compliance Plan*	There is an approved and updated Integrated Compliance Plan and it is fully integrated into the IMP of the PA. The success of protection plan has been verified by a relevant PA	1.3 Protected Area boundary demarcation						R -	R -	R 5 627,18	R -	R -
b	*Implement Integrated Compliance Plan*												
2	Ensure capacity/resources/support to implement the Integrated Compliance Plan												
a	*Determine capasity RB Martin or IUCN and develop list of critical skills required with training courses available for field rangers.*	PA has excellent capacity/recources/support to enforce rules/regulations.	3.6. Law Enforcement Capacity & Capability						R -	R 8 038,83	R 8 440,77	R 5 908,54	R 42 203,96
b	*Ensure the provision of enforcement and compliance training for all reserve field staff.*												
c	*Ensure that the field ranger staff complement is adequately resourced and equipped to fulfil an effective enforcement and compliance function.*												

4.4 KPA 4: INFRASTRUCTURE AND EQUIPMENT

4.4.1 Objective 4.1: Acquire and maintain operational equipment and vehicles for the WNR

4.4.1.1 Norms and standards

- ❖ Ensure that each protected area has the necessary operational equipment and infrastructure in place, with an effective maintenance programme.

  - ➢ Necessary operational equipment and infrastructure is in place.

    - *The infrastructure necessary to manage the protected area effectively is in place;*
    - *Staff facilities are adequate to perform critical management activities;*
    - *There is (an) adequate operational equipment as required for operational management purposes.*

  - ➢ Equipment and infrastructure are effectively maintained.

    - *A regular programme of infrastructure maintenance is adhered to.*
    - *Equipment is maintained in good working condition.*

4.4.1.2 Principles:

- *The reserve shall acquire and/or replace the equipment and vehicles necessary to implement the activities identified in this IMP.*
- *All reserve equipment and vehicles shall be regularly maintained in accordance with the manufacturers' specifications.*

4.4.2 Objective 4.2: Construct, maintain and upgrade the administration infrastructure and bulk services infrastructure in the WNR

4.4.2.1 Norms and standards

- ❖ Follow Technical management guideline and procedures for the development, maintenance and upgrading of roads in provincial nature reserves.
- ❖ Promote and or ensure the positive involvement of the protected area management in Water use planning and management operations influencing the PA.

  - ➢ Water-use planning outside takes into account the objectives of the protected area.

    - *Management authorities play an active role in water use planning affecting the protected area.*
    - *The water-use planning takes cognisance of the protected area and the achievement of protected area management objectives.*

4.4.2.2 Principles:

- *Administrative and operations infrastructure and services must be limited, and appropriately scaled, to the necessary administrative and operational requirements of the reserve, and must not threaten its biodiversity or ecological function.*

- *In developing and maintaining administrative and operations infrastructure, the reserve shall obtain the necessary authorisation in terms of the relevant legislation.*
- *The reserve shall strive to phase out bulk services that have a detrimental impact on the environment. It will, in turn, seek to introduce more sustainable technologies, wherever practicable and cost-effective.*
- *The reserve shall rationalise the network of roads, tracks and footpaths to reduce the maintenance costs and limit the environmental impacts, while ensuring adequate access for tourism and operational management requirements.*

4.4.3 Objective 4.3: Construct, upgrade and maintain day and overnight visitor buildings and infrastructure in the WNR

4.4.3.1 Norms and standards

❖ Ensure that the protected area has visitor facilities that contribute to their visitor's experience.

➢ Visitor facilities, where appropriate (are established in line) with the protected area objectives are established in response to tourism market demands, and contribute positively to the visitor experience.

- *The visitor/tourism facilities are adequate and sufficient to prevent damage to protected areas;*
- *Tourism infrastructure is effectively servicing the current volume of visitors to the protected area according to the protected areas carrying capacity;*
- *The visitor facilities are appropriate to the level of visitor use.*

4.4.3.2 Principles:

- *Continuously minimize the potential negative impacts caused by existing tourism use, particularly to sensitive sites.*
- *Direct new tourism developments (if possible) to less sensitive areas.*

Table 14: Management actions and targets relating to Infrastructure & Equipment KPA 4

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2025/2026	2026/2027	2027/2028	2028/2029
KPA 4: Infrastructure and Equipment									**R 392 451,94**	**R 403 894,86**	**R 405 985,28**	**R 399 645,01**	**R 468 458,72**
Objective 4.1: Acquire and maintain operational equipment and vehicles for the PA									**R283 244,10**	**R285 450,31**	**R291 866,04**	**R295 765,53**	**R333 181,31**
1	Acquire and maintain operational equipment and constantly update an operational equipment register.	Operational equipment is adequate and suitable for current and future anticipated operational needs.There is a maintenance schedule and all operational equipment is being correctly maintained and meeting the set standards.	3.7 Adequacy of Operational equipment 4.6 Maintenance of operational equipment										
a	*Procure, maintain and safely store operational stores and equipment and update asset registers*								R 98 062,37	R 77 572,01	R 72 055,61	R 71 093,84	R 98 613,53
b	*Procure, install and maintain a reliable internal communications network for the reserve, including repeaters, base station, hand-held radios and car radios.*												
c	*Establish an electronic network (i.e. internet and e-mail) for, and connect services and applications to, the reserve.*												
d	*Maintain and service pumps at all boorholes and renovate the pipelines and water troughs at these water points, as required.*												
2	Maintain and/or replace all reserve vehicles and according to the manufactures' specifications and/or corporate replacements	The transport fleet is totally appropriate and sufficient for all management needs with adequate numbers and range of vehicles to meet management needs?	3.9 Adequacy of transport fleet 4.6.2Maintenance of Transport fleet						R161 400,00	R176 097,20	R179 406,76	R185 502,39	R193 440,01
a	*Do needs analyses regarding transport fleet for all management needs with adequate numbers and range of vehicles (boats, motor cycles etc.)*												
b	*Replacement of reserve vehicles according to the manufacturers' specifications and/or corporate replacement cycles*												
3	Maintain and update all assets and stock inventory registers and reports for the reserve.	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 18 677,71	R 26 421,87	R 34 776,49	R 33 260,76	R 34 923,80
4	Determine the economic valuation of the reserve.								R 5 104,02	R 5 359,22	R 5 627,18	R 5 908,54	R 6 203,96
Objective 4.2: Construct, maintain and upgrade the administration infrastructure and bulk services infrastructure in the PA									**R 109 207,84**	**R 118 444,56**	**R 114 119,24**	**R 103 879,47**	**R 135 277,41**
1	Construct and upgrade the administration and bulk services infrastructure in the reserve and constantly update the infrastructure register and CDF.												
a	*Install and maintain generator and/or solar power systems for the functioning of remote reserve operational equipment (e.g. water pumps) and the smaller tourism and recreational facilities.*	Operational infrastructure is optimal for current and future anticipated management needs							R 6 775,75	R 32 131,13	R 10 331,92	R 13 802,78	R 11 390,94
2	Implement Infrastructure Maintenance Programme												
a	*Maintenance of all reserve administrative, staff and operational buildings and infrastructure.*	There is a maintenance schedule and all operational infrastructure is being maintained and meeting the set standards.	3.7.1 Adequacy of Operational infra-structure. Level of conformance (%) with SANS 1197:2012.						R102 432,09	R 86 313,43	R103 787,33	R 90 076,69	R123 886,47
b	*Maintenance of the network of roads in the reserve, with a strong focus on maintaining and mitigating highly erodible areas.*												
d	*Schedule and implement the maintenance of the network of roads in the reserve, with a strong focus on maintaining and mitigating highly erodible areas.*												
e	*Link up with EPIP projects as well as external projects with available funds*												
Objective 4.3: Construct, upgrade and maintain day and overnight visitor buildings and infrastructure in the PA									**R -**	**R -**	**R -**	**R -**	**R -**
1	Assess the feasibility of developing additional overnight accommodation and camping/caravanning sites and day visitor facilities with reference to the CDF and update CDF if required	Tourism infrastructure is optimal to manage the current and anticipated future volume of visitors.	3.8 Adequacy of Tourism infrastructure						R -	R -	R -	R -	R -
2	Assess the cost-effectiveness of different management options for the operating of Lodges, Camps and select the preferred/optimal management option/s.												
a	*Plan and Develop the overnight visitor buildings, facilities, equipment and linked infrastructure, in accordance with the CDF to meet DENC standards for the provision of nature-based tourism products.*	Tourism infrastructure is optimal to manage the current and anticipated future volume of visitors.	3.8 Adequacy of Tourism infrastructure						R -	R -	R -	R -	R -
b	*Implement, and formalise (as required), the selected management option for the Lodges, Camps (e.g. concessioning, leasing, service agreement, community-managed, etc.).*												
3	DevelopTourism Infrastructure Maintenance Programme												
a	*Develop Site Plans*	There is a maintenance schedule and all tourism infrastructure is being maintained and meeting the set standards.	4.7 Maintenance of tourism infrastructure						R -	R -	R -	R -	R -
b	*Maintenance standards & prosedures*												
c	*Maintenance of all tourism buildings and infrastructure.*												

4.5 KPA 5: STAKEHOLDER INVOLVEMENT

4.5.1 Objective 5.1: Interaction with stakeholders and communities in the planning, development and management of the WNR

4.5.1.1 Norms and standards

- ❖ Good relationship between the protected area staff and neighbouring communities.

  - ➢ Neighbour relations contribute positively to the success of the protected

    - *The neighbouring communities have relevant input, where relevant, into decisions relating to protected area management;*
    - *An advisory committee or park forum has been established.*

- ❖ Ensure that the protected area plays an important role in socio-economic activities within their sphere of influence.

  - ➢ A process to evaluate the stakeholder's feedback is in place for all protected areas.

    - *The protected area receives high level support as a result of co-management consultation and high quality visitor experiences emanating from effective protected area management;*
    - *The protected area has a large degree of support from neighbours, district and public stakeholders;*
    - *The protected area has a functional protected area advisory committee;*
    - *The protected area advisory committee is representative of all stakeholders of the protected area.*

4.5.1.2 Principles:

- *The reserve shall establish and maintain an effective Reserve Advisory Committee based on the Regulations for the Proper Administration of Nature Reserves, promulgated in terms of Section 86 (1) of NEMPAA.*

4.5.2 Objective 5.2: Actively participate in local and regional conservation and socio-economic development initiatives that may affect or benefit the WNR

4.5.2.1 Norms and standards

- ❖ Ensure that the protected area plays an important role in socio-economic activities within their sphere of influence.

  - ➢ A protected area provides substantive socio-economic benefits to the local area, where appropriate (refer to section 41 of the Act).

    - *The protected area provides socio-economic benefits to local communities;*
    - *Programmes to enhance local community welfare whilst conserving protected area resources are being implemented;*
    - *There is effective communication with local communities;*
    - *The protected area is a source of employment for local communities;*
    - *The protected area provides community development opportunities through sustainable resource use;*

- *The protected area provides access to spiritual or religious sites;*
- *An active education and interpretation programme is implemented, focusing primarily on local children in the region around the protected area;*
- *The protected area receives inside and outside contributions;*
- *The protected area has co-management framework for benefit flows.*

❖ Good relationship between the protected area staff and neighbouring communities.

➢ Neighbour relations contribute positively to the success of the protected

- *The protected area has transfrontier and bilateral agreements - where applicable;*

4.5.2.2 Principles:

- *The reserve management shall actively collaborate with national, provincial and local tourism and conservation initiatives that could contribute to meeting the objectives of this IMP.*
- *The reserve shall strive to work with the relevant government institutions in order to integrate all local and regional planning and socio-economic development activities affecting the reserve.*
- *The reserve shall participate in, and support, any Co-Management Committee as an important governance mechanism to achieve the aims and objectives of the Co-Management Agreement.*
- *The reserve shall strive to meet to the socio-economic development commitments made in any Co-Management Agreement.*

4.5.3 Objective 5.3: Develop, implement and maintain effective mechanisms for ongoing communications with co-management partners

4.5.3.1 Norms and standards and policies

- ❖ Good relationship between the protected area staff and neighbouring communities.
  - ➢ Neighbour relations contribute positively to the success of the protected
    - *The neighbouring communities have relevant input, where relevant, into decisions relating to protected area management;*
    - *The protected area has entered into a co-management agreement with neighboring communities and partners - where relevant;*
    - *The protected area has transfrontier and bilateral agreements - where applicable;*
    - *An advisory committee or park forum has been established.*
- ❖ Ensure that the protected area plays an important role in socio-economic activities within their sphere of influence.
  - ➢ A protected area provides measurable economic benefits to the direct beneficiaries.
    - *The protected area develops and implements a programme that provides economic benefits to local communities / beneficiaries where appropriate.*
    - *The protected area delivers considerable quantifiable long-term economic benefits that make a real difference to the livelihoods of local communities.*

4.5.3.2 Principles:

- *Stakeholder communications shall be focused on strengthening a sense of ownership and empowerment in local community, through an improved understanding of the contribution of the reserve to socio-economic development and heritage/biodiversity conservation.*
- *Stakeholder communications shall seek to develop a common understanding in surrounding communities of the issues affecting the integrity of the reserve, and collaborative approaches to resolve these.*

Table 15: Management actions and targets relating to Stakeholder Involvement KPA 5

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 5: Stakeholder Involvement									**R 18 964,41**	**R63 820,13**	**R74 879,93**	**R87 486,73**	**R87 716,09**
Objective 5.1: Interaction with stakeholders and communities in the planning, development and management of the PA									**R -**	**R10 718,43**	**R11 254,36**	**R11 817,07**	**R12 407,93**
1	Under the guidance of the Regulations for the proper administration of Nature Reserves, as promulgated in terms of Section 86 (1) of NEMPAA, establish a Reserve Advisory Committee and meet on a regular, agreed to basis.	A well represented functioning and formalised Community Liaison Structure contributes significantly to the management/development of the PA.	4.11 Community Liaison Structure						R -	R10 718,43	R11 254,36	R11 817,07	R12 407,93
2	Develop and implement an active Public Relations (PR) and Communication Programme												
a	*Ensure positive press coverage is obtained and timeously and effectively respond to items in public media which may negatively impact on the organisation.*	There is a wide ranging multi media public relations and communication programme keeping the general public and internal role players informed of important aspects of the PA.	4.10 Public Relations (PR) and Communication Programme	On Hold									
b	*Initiate and sustain ongoing communications with the communal and/or private landowners to discuss opportunities for ongoing cooperation and collaboration.*												
c	*Establish a Public Relations (PR) and Communications Programme*												
3	Ensure members of the community are involved in supporting the PA through volunteering, projects and fundraising by establishing formal groups such as Friends groups, Volunteers or Honorary rangers	There are a wide range of projects supported by volunteers including fund raising and assistance with management that contribute significantly to increased PA management effectiveness.	5.5 Community Support										
Objective 5.2: Actively participate in local and regional conservation and socio-economic development initiatives that may affect or benefit the PA									**R 18 964,41**	**R50 422,09**	**R43 930,45**	**R52 035,51**	**R56 696,28**
1	Participate in local municipal IDP planning processes, with a specific focus on the provision of municipal infrastructure and services to the reserve and supporting local economic development initiatives in the community.												
a	*Identify, and make application for, EPWP-related funding for relevant tourism and conservation initiatives in the reserve.*	A formal published review/audit has shown that the PA delivers quantifiable long term stimuli to the regional (and possibly the national) economy and delivers a broad range of long term quantifiable community benefits that improve the livelihood strategies and resilience in the lives of communities.	6.1 Economic and Social benefit assessment Direct and measurable benefitsaccrue to local community from the reserve.						R 2 552,01	R 5 359,22	R 2 813,59	R 8 862,80	R 9 305,94
2	Participate in the planning and development of other conservation initiatives with a specific focus on strengthening linkages												
a	Assist other DAERL PA's with specific projects	The PA is influencing the local or regional economy and providing measurable social benefits to communities? Social benefits to direct benefits such as jobs, training and health care. Stimulus of the economy through businesses benefiting	6.1 Economic and Social benefit assessment Direct and measurable benefits accrue to local						R 16 412,40	R45 062,87	R41 116,86	R43 172,71	R47 390,33
3	Investigate and select mechanisms for optimising employment, empowerment and capacity building opportunities for the local community.												
a	*Develop opportunities for selected individuals from the local community to be trained and directly employed in appropriate conservation and tourism related work.*	The PA is influencing the local or regional economy and providing measurable social benefits to communities? Social benefits to direct benefits such as jobs, training and health care. Stimulus of the economy through businesses benefiting from tourism and meeting the needs of the protected area.	6.1 Economic and Social benefit assessment Direct and measurable benefits accrue to local community from the reserve.	On Hold									
b	*Develop opportunities to facilitate an empowerment component for selected individuals from the local community in any outsourcing/concessioning of the tourism and recreational products.*												
c	*Identify, and if feasible develop, opportunities for the establishment of community-based entrepreneurial opportunities within, or linked to, the reserve, including: game drives; sale of curios and crafts; guided heritage trails; village tourism; conservation enterprise; horse trails; event management and commercial hunting packages.*												
Objective 5.3: Develop, implement and maintain effective mechanisms for ongoing communications with co-management partners									**R -**	**R 2 679,61**	**R19 695,12**	**R23 634,15**	**R18 611,89**
1	Develop and continually review, and amend (as required), the structure, representation and TOR of the Co-Management Committee to ensure that it contributes to realising the intent of the Co-Management Agreement.	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.	4.14 Community partners (only where applicable)						R -	R 2 679,61	R 2 813,59	R 5 908,54	R -
2	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.												
a	*Hold quarterly (more regular if required) meetings with the Co-Management Committee to ensure that co-management decisions are made timeously and effectively.*	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.	4.14 Community partners (only where applicable)						R -	R -	R16 881,53	R17 725,61	R18 611,89
b	*Support the ongoing capacity building of the local community representatives on the Co-Management Committee.*												
c	*Allocate office space in the administrative complex for office bearers of the Co-Management Committee.*												
d	*Host a regular quaterly meeting, each in a different neighbouring village, to present and discuss issues of mutual concern.*												

4.6 KPA 6: ADMINISTRATION AND PLANNING

4.6.1 Objective 6.1: Institute and maintain an effective administration and planning capability in the WNR

4.6.1.1 Norms and standards and policies

- ❖ Ensure proper planning in the establishment or expansion of the protected area.

  - ➢ A protected area is designed and planned to meet its objectives.

    - *The size of the protected area is sufficient to achieve its conservation objectives;*
    - *The protected area forms a critical part of a greater, integrated system forming a transfrontier protected area;*
    - *The shape of the protected area is adequate sufficient to achieve its conservation objectives;*
    - *The design of the protected area is adequately to allow large-scale ecological processes to take place;*
    - *The objectives are consistent with the protected area location;*
    - *The layout and configuration of the protected area optimizes the conservation of biodiversity.*

- ❖ Ensure the approved management plan is implemented accordingly to meet the objectives set in the management plan.

  - ➢ A management plan has been developed for the protected area in accordance with section 39 of the Act, and the Guidelines for the development of a management plan for a protected area in terms of the Act.

    - *The purpose of the protected area is reflected in the management plan;*
    - *The management plan contains explicit biodiversity targets for all priority biodiversity elements;*
    - *The management plan addresses the management of specific priority species and habitats;*
    - *There is an analysis and strategy for addressing protected area threats and pressures;*
    - *The results of monitoring, research and evaluation are routinely incorporated into planning and decision making;*
    - *An expansion plan to meet the conservation objectives has been developed - where relevant;*
    - *A zoning plan indicating what activities may take place in different sections of the area, and the conservation objectives of these sections is included in the management plan;*
    - *An infrastructure development plan (concept development plan), subject to the zoning plan, is included in the management plan - where development is to be considered;*
    - *There is a programme for the implementation of the management plan linked to annual work plans and staff performance agreements;*
    - *The management plan is being fully implemented;*
    - *Relevant components of the municipal IDP have been considered in the management plan; Municipal IDPs have (taken the relevant aspects*

of the management plan into account) considered the ecological sensitivity of the protected area, its buffer zones and any priorities areas for protected area expansion;
- *The planning process allows adequate consultation with key stakeholders in the compilation of the management plan;*
- *There is an established schedule and process for periodic review and updating of the management plan;*
- *There is a programme for the implementation of the management plan and its costing; Where appropriate, the implementation of community-based natural resource management is planned for;*
- *The terms and conditions of any relevant Biodiversity plan and/or the applicable aspects of the IDP of the local municipality have been taken into account as required by the Act.*

➢ The management plan for the protected area has been approved.

- *An up to date management plan has been adopted by the Board and or the HOD and approved by the Minister or the MEC.*

➢ The management plan as approved is implemented successfully.

- *Annual work plan of operations, implementing the management plan is in place.*
- *There is a detailed work plan identifying specific targets for achieving management objectives linked to the management plan.*

4.6.1.2 Principles:

- *- The reserve shall conform to the legal requirements of the NEM:PAA.*

4.6.2 Objective 6.2: Maintain an adequately equipped, resourced and trained staff complement for the WNR

4.6.2.1 Norms and standards and policies

❖ Ensure that all protected areas have effective systems in place to manage human resources.

➢ Human resource capacity is adequate to manage the protected area effectively.

- *The skills development audit is completed and results are implemented;*
- *The protected area staff execute their duties to a high standard and require minimal supervision;*
- *The protected area employment conditions are adequate sufficient to retain high- quality staff;*
- *The protected area has a staff performance evaluation system in place;*
- *The protected area has a succession programme in place.*

➢ Human resource management contributes to effective management of the protected

- *There is an effective staff management programme in place;*
- *The protected areas fully implement the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);*
- *The protected area has a staff health and safety programme in place;*
- *The protected area staff have good living conditions;*
- *The protected area has disaster management plans in place.*

4.6.2.2 Principles:

- *The reserve shall identify opportunities for the training and capacity building of reserve staff.*

4.6.3 Objective 6.3: Institute and maintain an effective financial and administration capability in the WNR

4.6.3.1 Norms and standards and policies

- ❖ Ensure that each protected area has an effective performance evaluation system in place.
  - ➢ A performance evaluation system for the management of the protected area is in place.
    - *There is a functioning evaluation system in place to measure performance against set objectives for the protected area.*
- ❖ Ensure that each protected area has its own administrative system in place for its management.
  - ➢ The protected area has a supportive administration system for effective management.
    - *Ensuring that Public Finance Management Act is implemented; Ensure that assets are well managed;*
    - *The reporting system is well managed;*
    - *The system for information management is managed properly.*
- ❖ Ensure that the protected area's finances are well managed and there is a system for their management.
  - ➢ Financial management effectively contributes to the management of the protected
    - *An operational budget is allocated to fund the critical management need of the protected area;*
    - *The long-term financial outlook for the protected areas is stable;*
    - *The allocation of expenditures is appropriate according to the protected areas priorities and objectives;*
    - *Financial management practice enables efficient and effective protected area management;*
    - *Funding to conduct critical management activities is adequate for the next 5 years to conduct critical management activities;*
    - *The costing of management plans and shortfalls are addressed;*
    - *There is a procurement plan supporting local communities (socio-economic).*

- Alternative resources used for the management of a protected area are well managed.

  - *The management authority encouraged to solicit external funding or services for the management of a protected area.*
  - *Environmental programmes to assist management of the protected area.*

- Mechanisms to enable volunteers to work in protected areas and managed where relevant are in place.

  - *There is a system for the appointment and management of volunteers in place.*
  - *There is a system for the application of external sources to be used to contribute to management of protected area.*

4.6.3.2 Principles:

- *All information that is used to support the operational planning and decision-making in the reserve shall be collected, collated, updated, maintained and presented in a cost-effective format that is readily accessible for use by management.*
- *The reserve shall conform to all relevant provincial/departmental financial and administrative reporting requirements.*

Table 16: Management actions and targets relating to Administration & Planning KPA 6

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority 2025	2026	2027	2028	2029	Cost Estimates 2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 6: Administration and Planning									**R 1 862 843,19**	**R 1 926 576,11**	**R 1 859 345,25**	**R 2 009 940,58**	**R2 041 316,79**
Objective 6.1: Institute and maintain an effective management planning capability in the PA									**R 145 310,61**	**R 230 673,32**	**R 213 487,90**	**R 235 979,37**	**R210 554,55**
1	Compile and regular revised an IMP for the PA												
a	*Review of IMP on 5 year cycle*	The Management plan is fully integrated covering all aspects of PA management with measureable objectives and is approved by the MEC. Review and compile for next 5 year planning period	2.2 Management Plan						R12 760,04	R13 398,04	R14 067,94	R29 542,68	R46 529,72
b	*Review IMP maps on a 5 year cycle*												
	Map 1:Reserve Interface												
	Map 2: Reserve Interface comparison												
	Map 3: Reserve Estate												
	Map 4: Climate (Climatic regions within the NDM)												
	Map 5: Digital Terrain Model Map												
	Map 6: Geological Map												
	Map 7: Land types and soil Map												
	Map 8: Drainage and Hydrology												
	Map 9: Biomes, Bioregions and Vegetation units												
	Map 10: Plant communities and Management units												
	Map 11: Special habitats - Hotspots												
	Map 12: Archaeological and Cultural, Heritage resources												
	Map 13: Infrastructure and Bulk services												
	Map 14: Use Zone Map												
c	*Follow PPP*												
d	*Obtain approval from MEC*												
2	Update APO and OMF identifying all the activities, tasks and outcomes (operational and management) in accordance with predetermined time frames and approved management plans to be completed in a fanancial year with costing												
a	*Do annual METT assessment*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 55 061,83	R 78 106,26	R 59 211,26	R 59 217,56	R 71 484,38
b	*Review OMP according to planning cycle*	An approved OMF with APO exists and actions are linked to the PA's management plan targets.	4.1 Annual Plan of Operation										
c	*Annual review of APO workplans*												
d	*Link OMF to operational budget*	An operational budget specific to the site is secure and is guarenteed on a 5 year cycle.	3.4 Security of Operational Budget 3.4.1 Capital Budget										
e	*Link APO with Key Performance Areas of PA manager and key personell*	The implementation of the Management Plan linked to the Key Performance Areas of the site manager	5.4 Linking of management plan to key performance										
3	Update State of Knowledge Data Repository - General & Logistical Data												
a	*Update declaration summary and SAPAD*	All properties managed as part of the PA estate have been declared and listed in the SAPAD	1.1 Legal status						R 60 165,85	R 120 979,99	R 121 110,21	R 127 165,72	R 71 484,38
b	*Property description*												
b1	*Property descriptions and history according to deeds with records*	All boundary deviation have been recorded in a legally binding document	1.3.1 Boundary deviations										
b2	*Record all boundary deviations in a legally binding document.*												
b3	*Update a register of all servitudes and the conditions relating thereto.*	A register of all servitudes and conditions relating thereto has been compiled	1.3.2 Servitude register										
c	*Risk Assesment*	S.H.E. Risk & Impact assesment covering inter alia biodiversity, financial management, human resources, tourism impacts and threats	1.6 Risk assessment										
c1	*Undertake a thread analysis to determine all potential threats to the safety and security of the reserve*												
c2	*Undertake risk assessment*												
d	*Protected area expenditure including historical data*	Budget is effectively managed to meet critical management needs in accordance with the APO	3.4.2 Budget Management										
e	*Personnel Info*	The approved organogram reflects the actual needs for effectively achieving all management objectives and the HR capacity meets the approved levels.	3.2 Human Resource capacity										
f	*Economic valuation*	Operational equipment is adequate and suitable for current and future anticipated operational needs	3.7 Adequacy of operational equipment										
g	*Assets and stock inventory registers*												
h	*Equipment/vehicle fleet Maintenance schedules with maintenance standards & prosedures*	There is a maintenance schedule and all operational equipment and transport fleet is being correctly maintained and meeting the set standards	4.6 Maintenance of operational equipment										
i	*Infrastructure Maintenance schedules with maintenance standards & prosedures*	There is a maintenance schedule and all operational infrastructure is being maintained and meeting the set standards.	4.6.1 Maintenance of operational infrastructure										
j	*14 Literature Inventory & Web Links.docx*	Information technology systems are excellent and fully support management effectiveness. All electronic data are backed up on a routine basis, stored according to organisational standards and are easy to access.	4.5 Information Technology systems										

4	*Update State of Knowledge Data Repository - Guiding Management Principles*											
a	*Complete list of 01 International Conventions, Commissions and Treaties relating to Biodiversity Conservation and Protected Areas, to which SA is a signatory.*	Protections systems or mechanisms for controlling current and anticipated levels of legitimate or illegitemate access or activities in the PA are fully implemented. The success has been verified by a relevant PA integrity audit.	5.2 Functioning of law enforcement and compliance systems						R 12 760,04	R 13 398,04	R 14 067,94	R 14 771,34	R 15 509,91
b	*Complete list of 02 National Legislation with Regulations with which Protected Areas have an obligation to comply*												
c	*Complete list of Provincial and Municipal Bylaws with which Protected Areas have an obligation to comply*												
d	*Complete list of 04 Policies to guide decision-making and operations and strategies relating to implementation*												
e	*Review Protected Areas internal rules ito Sections 52 of NEM:PAA that are PA specific. Approve and Gazette Internal Rules*	Regular revision of Internal Rules in line with changing legislation	1.2 Internal Rules										
f	*Compile Standard Operating Procedures pertaining to all management activities*	Relevant Standard Operating Procedures pertaining to all management activities are in place and are regularly updated to ensure best practice.	4.2 Standard Operating Procedures										
5	*Update State of Knowledge Data Depository Maps*												
a	*General and Logistical Maps for Estate and Domain not ZOI*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 4 562,84	R 4 790,99	R 5 030,54	R 5 282,06	R 5 546,17
	Map 1: Protected area Expansion												
	Map 2: Historical land uses - Polygon Only data From colonial time												
	Map 3: Conflicting land uses - Polygon Current and known future												
	Map 4: Anthropogenic incidence (HIRA) - Polygon Incidence of manmade disasters, accidents and impacts (poaching, arsen ect.)												
	Map 5: Site plans - update with CDF/GIAMA												
	Map 5-1: Development Plans - According to CDF												
	Map 6: Roads - Historic and current update with CDF												
	Map 7: Fences - Historic and current update with CDF												
	Map 8: Water supply systems - Historic and current update with CDF												
	Map 9: Watering points - Historic and current manmade update with CDF												
	Map 10: Electrical installations - Historic and current update with CDF												
	Map 11: Mining operations and Burrow pits - Historic and current update with CDF												
b	*Biodiversity Maps Link to BMS for Estate and Domain not ZOI*	Information and the understanding thereof concerning key species, habitats, ecosystems and invasive species of the PA supports the achievement of biodiversity objectives.	1.4. Biodiversity knowledge and understanding										
	Map 1: Fauna												
	Map 1-1 Exotic Fauna - One map all species different colours per species only hotspots												
	Map 1-2 Fauna Distribution of Species with commercial value												
	Map 1-3 Fauna Distribution of Species of Special Concern - density + distribution												
	Map 1-4 Fauna Distribution Large Predators - One map all species different colours per species												
	Map 1-5 Fauna Distribution Key Raptor Nests - One map all species different colours per species												
	Map 1-6 Fauna Monitoring sites - One map all projects different colours per project (Game count)												
	Map 2: Flora												
	Map 2-1: Flora Exotic - One map all species different colours per species only hotspots												
	Map 2-2 Flora Distribution of Species with commercial value												
	Map 2-3 Flora Distribution of species of Special Interest - One map all species (density + distribution)												
	Map 2-4 Flora Fire insidence - One map all burns different colours per incidence												
	Map 2-5 Flora Monitoring sites One map all projects different colours per project												

Objective 6.2: Maintain an adequately equipped, resourced and trained staff complement for the PA									**R 1 355 188,40**	**R 1 379 296,70**	**R 1 352 256,87**	**R 1 392 064,80**	**R 1 430 827,65**
1	Ensure that all vacant posts in the reserve's approved organogram are filled and determine actual needs for achieving management objectives.	The approved organogram reflects the actual needs for effectively achieving all management objectives and the HR capacity meets the approved levels.	3.2 Human Resource capacity						R 824 601,64	R 836 609,12	R 829 166,54	R 841 861,41	R 873 202,01
2	Implement the institutional staff performance appraisal system and link WP and PA to APOsystem.												
a	*Have clear job descriptions and Performance Agreements on record. Link KPA's to APO and Mett*	HR management and staff development systems are excellent and fully support management effectiveness	5.3 Staff Development and productivity						R 188 680,90	R 152 436,65	R 110 326,44	R 115 292,76	R 111 573,43
b	*Identify training needs, and facilitate access to training programs for reserve staff, with a priority focus on field ranger, first aid, hospitality and IT skills training.*												
c	*Maintain leave and CWW records as part of monthly planner*												
3	Maintain all staff information for the reserve (leave records, attendance registers, overtime, etc.).		4.3 HR Management systems						R 294 570,43	R 309 298,95	R 324 763,90	R 341 002,09	R 358 052,20
4	Develop S.H.E policies and procedures for the reserve	An external audit has certified that PA management complies with and implements the Occupational Health and Safety Act.	4.3 HR Management systems						R 47 335,42	R 80 951,98	R 88 000,00	R 93 908,54	R 88 000,00
5	Develop a policy and standards for staff housing and ensure all staff housed accordingly.	There is a policy and standards for staff housing and are all staff housed accordingly	3.11 Staff housing						R -	R -	R -	R -	R -
Objective 6.3:Institute and maintain an effective financial and administartive planning capability in the PA									**R 362 344,19**	**R 316 606,09**	**R 293 600,48**	**R 381 896,41**	**R 399 934,59**
1	Information Technology systems												
a	*Ensure electronic data are backed up on a routine basis and stored according to organisational standards and are easy to access.*	Infromation technology systems are excellent and fully support management effectiveness. All electronic data are backed up on a routine basis, stored according to organisational standards and are easy to access	4.5 Information Technology systems						R 62 416,06	R 28 718,43	R 8 440,77	R 26 588,41	R 48 815,85
b	*Institute and maintain an electronic and/or hard copy filing system for all reserve-specific information.*												
c	*Read and apply all updated Management Authority guidelines, policies and procedures to the daily functioning of the reserve.*			Ad hoc									
2	Ensure financial management is excellent and all management goals are met												
a	*Compile OMF budget for 5 year planning cycle*	The available budget is sufficient and meets the full management needs of the site without external funding	3.3 Adequacy of Operational budget						R 61 248,19	R 50 912,56	R 28 135,89	R 85 673,78	R 68 243,60
b	*Compile database of external sources of funding for specific projects*	There are skills and capacity in the organisation to raise external sources of funding for specific projects in the organisation	3.5.1 Fund raising										
c	*Compile APO budget for current financial year and obtain dedicated budget*	Site manager resposible and accountable for budget management?	3.4.3 Delegation of management of budget										
d	*Maintain a reserve-based record of all purchases made, accounts paid and services procured in support of reserve operations over each financial year*	Budget is effectively managed to meet critical management needs in accordance with the APO	3.4.2 Budget Management										
e	*Keep record and manage own revenue according to PFMA and supply inputs when required*	Income is managed and retained within the organisation and is used solely for PA management in the organisation	3.5 Income										
3	Ensure administration management is excellent and all management goals are met												
a	*Attend PAM and other meetings*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems	Ad hoc					R 238 679,94	R 236 975,10	R 257 023,82	R 269 634,22	R 282 875,14
b	*Update PAM task list*												
c	*Monthly and quaterly planning and reports*												

5. RESOURCING AND GOVERNANCE FRAMEWORK

This section provides brief recommendations on the minimum staffing complement and funding that would be required to implement the RMP (i.e. the IMP and APO). This section also briefly describes the key responsibilities of the reserve management team in the development, implementation, monitoring and review of the RMP.

5.1 Staffing Requirements

It is proposed that the following minimum staffing complement[12] would be required to implement this IMP[13]:

POST DESIGNATION	NUMBER
RESERVE MANAGER	1
ASST. RESERVE MANAGER	1
SENIOR FIELD RANGER	1
FIELD RANGER	6
GENERAL FOREMAN	1
GENERAL ASSISTANT	5
ADMINISTRATION CLERK	1
ADMIN CLEANER	1
FACILITY MANAGER	1
HANDYMAN/DRIVER	1
GATE GUARD	3
FACILITY CLEANER	2

[12] This minimum staff complement assumes that the overnight tourism facilities and services are not outsourced to an operator or concessionaire and that the reserve management is directly responsible for the management of these facilities and services.

[13] The staffing requirements reflected in the SP are premised on two elements: (i) a critical assessment of the efficacy of the current approved (not actual) organogram for the reserve in respect of current reserve management responsibilities; and (ii) a facilitated discussion with the RPT on any (mostly minor) adjustments/changes that may be required to this approved organogram in order to more effectively implement the SP for the next five years.

5.2 Funding Requirements

It is proposed that the following operational[14] and capital[15] budget would be required to implement this IMP:

Table 17: Budget requirement per KPA

KPA 1: Biodiversity and heritage conservation

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R435 178,78	R410 861,52	R491 058,02	R443 435,52	R523 748,35
GOODS AND SERVICES		R130 710,00	R25 395,00	R21 675,00	R23 825,00	R31 475,00
CAPITAL ASSETS >R5000		R40 000,00	R38 000,00	R0,00	R0,00	R0,00
TOTAAL:		R605 888,78	R474 256,52	R512 733,02	R467 260,52	R555 223,35

KPA 2: Recreation, Marketing, Education, Awareness and Interpretation

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R4 562,84	R10 150,20	R9 765,56	R5 282,06	R8 648,15
GOODS AND SERVICES		R0,00	R0,00	R0,00	R0,00	R0,00
CAPITAL ASSETS >R5000		R0,00	R0,00	R0,00	R0,00	R0,00
TOTAAL:		R4 562,84	R10 150,20	R9 765,56	R5 282,06	R8 648,15

KPA 3: Enforcement, security and access control

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R59 704,30	R56 789,29	R59 638,28	R49 091,80	R58 889,45
GOODS AND SERVICES		R16 500,00	R286 400,00	R0,00	R0,00	R10 500,00
CAPITAL ASSETS >R5000		R0,00	R0,00	R0,00	R0,00	R0,00
TOTAAL:		R76 204,30	R343 189,29	R59 638,28	R49 091,80	R69 389,45

KPA 4: Infrastructure and equipment

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R58 388,49	R83 456,40	R51 052,57	R58 729,17	R67 869,59
GOODS AND SERVICES		R201 100,00	R200 170,00	R218 206,00	R208 326,30	R241 495,12
CAPITAL ASSETS >R5000		R22 500,00	R2 500,00	R2 500,00	R2 500,00	R22 500,00
TOTAAL:		R281 988,49	R286 126,40	R271 758,57	R269 555,47	R331 864,70

KPA 5: Stakeholder involvement

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R18 964,41	R63 820,13	R74 879,93	R87 486,73	R87 716,09
GOODS AND SERVICES		R0,00	R0,00	R0,00	R0,00	R0,00
CAPITAL ASSETS >R5000		R0,00	R0,00	R0,00	R0,00	R0,00
TOTAAL:		R18 964,41	R63 820,13	R74 879,93	R87 486,73	R87 716,09

KPA 6: Administration and planning

ECONOMIC CLASSIFICATION - SCOA		2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R1 326 451,17	R1 352 653,00	R1 338 883,29	R1 468 646,32	R1 456 878,61
GOODS AND SERVICES		R276 235,88	R309 615,88	R330 955,88	R342 862,88	R355 365,23
CAPITAL ASSETS >R5000		R10 000,00	R18 000,00	R0,00	R0,00	R20 000,00
TOTAAL:		R1 612 687,05	R1 680 268,88	R1 669 839,17	R1 811 509,20	R1 832 243,84

[14] Operational costs are roughly based on an area-complexity factor (i.e. different cost ranges per ha, based on the level (high, medium or low) of management complexity). This was then moderated against documented expenditure for operational costs in Northern Cape's provincial reserves, wherever available. This was then again moderated against equivalent reserves in Kwa-Zulu Natal and the Western Cape, as well as reserves of SANParks and ECParks, where operating costs have stabilised and are well documented over a period of three to five years.

[15] Capital budget requirements are roughly based on known costs for similar capital investments, either in terms of replacement costs (e.g. vehicles), infrastructure development costs (e.g. cost/ha or cost/km for fencing or roads), bulk services (e.g. costs/m for pipelines, etc.), or building costs (e.g. cost/m2 for staff accommodation or chalets), etc.

Table 19: Total Budget requirements

ECONOMIC CLASSIFICATION - SCOA		2025-2026	1,00	2027-2028	2028-2029	2029-2030
		Budget	Budget	Budget	Budget	Budget
PERSONEEL		R1 903 249,99	R1 977 730,54	R2 025 277,65	R2 112 671,60	R2 203 750,24
GOODS AND SERVICES		R624 545,88	R821 580,88	R570 836,88	R575 014,18	R638 835,35
CAPITAL ASSETS >R5000		R72 500,00	R58 500,00	R2 500,00	R2 500,00	R42 500,00
TOTAAL:		R2 600 295,87	R2 857 811,42	R2 598 614,53	R2 690 185,78	R2 885 085,58

5.3 Roles and Responsibilities

5.3.1 Reserve Management

The key responsibilities of reserve management in the development, implementation, monitoring and review of the IMP are summarised as follows:

Biodiversity Management (Management Authority HO)	The conservation agencies and services sub-program of the Management Authority will have direct responsibility for: • Implementation of the designated priority activities in the IMP, and linked APO; and • Providing professional and technical support to the Regional Manager, Reserve Manager in the implementation of the SP and APO.
Regional Manager	The Regional Manager will have overall responsibility for: • Ensuring the alignment of the IMP with Provincial and DAERL policies and guidelines; • Ensuring the coordination and alignment of the IMP with other departmental activities and initiatives; • Providing oversight of the implementation of the IMP and APO; • Reporting on the performance of the WNR in the implementation of the IMP and APO to Program Manager; • Instituting corrective actions to ensure that the IMP and linked APO is implemented, reviewed and updated; and • Approval of the APO.
Reserve Manager	The Reserve Manager will have direct responsibility for: • Annually drafting an APO to operationalize the priority activities identified in the IMP; • Implementation of the APO; • Monitoring of performance against the APO (and the IMP); • Reporting of performance against the APO (and the IMP) to the Regional Manager; • Management of reserve staff, resources and finances in the implementation of the APO; and • Communicating with the Regional Manager about obstacles in the implementation of the APO.

5.3.2 Reserve Planning Team

The RPT may include any of the following persons:

- Regional Manager;
- Northern Cape PA Managers
- The Reserve Manager;
- Key reserve management staff;
- Biodiversity planner;
- Regional scientist/s;
- Landowner/s (in the case of stewardship agreements);
- Representative/s of any reserve co-management committee (in cases where one has been established); and
- Co-opted technical experts/consultants.

The RPT is specifically responsible for the following:

- Overseeing all planning initiatives and activities in the reserve;
- Providing strategic direction to the RMP;
- Providing technical and scientific inputs into the RMP;
- Approving the first draft of the reserve's IMP for public consultation;
- Identifying the need for subsidiary plans in the reserve, and guiding its formulation;
- Providing technical inputs into the preparation of the APOs for the reserve;
- Approving the first draft of the reserve's APOs for formal submission to the Management Authority;
- Reviewing the reserve's performance against the objectives and goals established in the IMP and APOs;
- Guiding the updating of the IMP and APOs, based on the outcomes of the annual performance review; and
- Assisting in identifying the ongoing human resource and budgetary requirements of the reserve.

The RPT should meet under the guidance of the Reserve Manager, who should also act as chairman at all meetings.

5.3.3 Protected Area Advisory Committee

Regulation 9 of the Regulations for the Proper Administration of Nature Reserves made in terms of Section 86 (1) of NEMPAA states that the Management Authority may establish one or more advisory committees in respect of a nature reserve according to the procedure stipulated in Regulation 10 of the aforementioned Regulations. Upon following this procedure, the Management Authority may appoint an advisory committee, provided that at least one employee of the Management Authority, nominated by the Management Authority itself, serve as an ex officio member of the committee. Each member of the advisory committee is appointed by the Management Authority for a period determined by the Management Authority, which may not exceed three years.

The mandate of any advisory committee must be defined by the Management Authority itself in specific terms in writing. These specific terms must include the terms of reference; the method of communicating advice; the acceptance and rejection of advice offered; the appointment and removal of committee members; and the support to be provided, together with any remuneration payable and its terms.

5.3.4 Reserve Co-Management Committee

As all properties are currently State-owned a co-management agreement is applicable and is in the process of being drafted. If private land is incorporated at a later stage as part of the expansion strategy the key responsibilities of WNRCMC in the development, implementation, monitoring and review of the RMP are summarised as follows:

Witsand Co-Management Committee
The WNRCMC shall have overall responsibility for: • Representing the interests of the different reserve stakeholder groups and institutions during the preparation of the IMP and APOs; • Overseeing the drafting of the IMP and APOs; • Providing strategic inputs into the drafting of the IMP, and technical inputs into the

annual drafting of the APOs;
- Making recommendations to the Regional Manager on the adoption of the IMP and annual APOs;
- Reviewing the quarterly and annual performance of the WNR against the APO (and IMP); and
- Providing inputs into ad hoc and emergency reserve decision-making not adequately addressed in the IMP/APO.

6. BIBLIOGRAPHY

Ashkenazy, Y, Yizhaq, H, Tsoar, H. (2011). Sand dune mobility under climate change in the Kalahari and Australian deserts. Climatic change Vol 112 (2012) Pages 901-923.

Badenhorst, M, Koen, J.H., Kruger R.S. (1999). Veld condition assessment during January 1999 and Recommendations for game introductions. Unpublished report.

Balfour, D. et al. (2016). Department of Environmental Affairs (2016) National Protected Areas Expansion Strategy for South Africa 2016. Department of Environmental Affairs, Pretoria, South Africa.

Balfour, D. & Holness, S. (2017) Northern Cape Protected Area Expansion Strategy (2017 to 2021). Report compiled for the Northern Cape Department of Environment and Nature Conservation, Kimberly.

Barnes, K N (ed.) (1998). The important bird areas of southern Africa. Birdlife South Africa, Johannesburg.

Bomhard B. and Midgley (2005). Securing Protected Areas in the face of Global Change.

Cape Nature, (2005). Biodiversity Spatial Plan Technical Report; Prepared for the Project Management Unit of the GCBC

Cowan, G.I. & Mpongoma, N. 2011. Guidelines for the development of a management plan for a protected area in terms of the National Environmental Management: Protected Areas Act, 2003. Unpublished document.

DEA, 2012. Working Group 1 Action Plan for Implementing the Convention on Biological Diversity's - Programme of Work on Protected Areas

Martin R.B. (1996). Costs of Conserving State Protected Areas in Southern Africa. Fact Sheet No.6, Africa Resources Trust, P.O. Box A860, Avondale, Harare, Zimbabwe.

Mucina, L. & Rutherford, M.C. (eds.). 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

National Co-Management Framework. 2010. Department of Environmental Affairs, Pretoria, South Africa.

Ollis, D.J., Snaddon, C.D., Job, N.M. & Mbona, N. (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems. SANBI Biodiversity Series 22. South African National Biodiversity Institute, Pretoria.

Payne, A. 2013. Animals, South Africa. [online] Available at: globerove.com/ south-africa/south-african-rock-dassies

Pixley ka Seme District Municipality. 2011. IDP/Budget: 2011/2016. District Municipal Integrated Development Plan.

Savage N. M. 1972. Soft-Sediment Glacial Grooving of Dwyka Age in South Africa. Journal of Sedimentary Petrology Vol. 42 (1972) No. 2. (June), Pages 307-308

Siegrist, D., Clivaz, C., Hunziker, M. & Iten, S. (eds.) (2006). Exploring the Nature of Management. Proceedings of the Third International Conference on Monitoring and Management of Visitor Flows in Recreational and Protected Areas. University of Applied Sciences Rapperswil, Switzerland, 13-17 September 2006. Rapperswil.

Stuart, C. & Stuart, T. 2007. Field guide to mammals of Southern Africa. Struik Publishers, Cape Town.

Veldsman, S. 2003. An analysis of the vegetation of the Witsand Nature Reserve. Unpublished document

Veldsman, S. 2008. Vegetation degradation gradients and ecological index of key grass species in the South-eastern Kalahari, South Africa. Thesis/Dissertation. Unpublished

Zimmerman, H.G. 1991. Biological control of mesquite, *Prosopis* spp. (Fabaceae, in South Africa. Agriculture, Ecosystems and Environment Vol 37 (1991) Pages 175-186

ANNEXURE 1: Departmental Programmes and Sub-programmes

DESCRIPTION	PROGRAMME
Programme 1	**Administration**
Sub-programme 1.1	Office of the MEC
Sub-programme 1.2	Senior Management
Sub-programme 1.3	Corporate Services
Sub-programme 1.4	Financial Management
Sub-programme 1.5	Communication Services
Programme 2	**Sustainable Resource Use Management**
Sub-programme 2.1	Agricultural Engineering Services and Land Care
Sub-programme 2.2	Land-use Management and Disaster Risk Reduction
Sub-programme 2.3	Agricultural Producer and Development Producer Support Services
Sub-Programme 2.4	Extension and Advisory Services
Programme 3	**Agricultural Producer Support and Development**
Sub -Programme 3.1	Producer Support Services
Sub-Programme 3.2	Extension and Advisory Services
Sub-Programme 3.3	Food Security
Programme 4	**Veterinary Services**
Sub-Programme 4.1	Animal Health
Sub-programme 4.2	Veterinary International Trade Facilitation
Sub-programme 4.3	Veterinary Public Health
Sub-programme 4.4	Veterinary Diagnostic Services
Sub-programme 4.5	Veterinary Technical Support Services
Programme 5	**Research and Technology Development Services**
Sub-programme 5.1	Research
Sub-programme 5.2	Technology Transfer Services
Sub-programme 5.3	Infrastructure Support Services
Programme 6	**Agricultural Economics Services**
Sub-programme 6.1	Production Economics and Marketing Support
Sub-programme 6.2	Macroeconomics Support
Sub-programme 6.3	Agro-processing Support
Programme 7	**Rural Development**
Sub-programme 7.1	Rural Development Coordination
Sub-programme 7.2	Social Facilitation
Programme 8	**Environment and Nature Conservation**
Sub-programme 8.1	Compilance and Enforcement

Sub-subprogramme 8.1.1	Environmental Quality Management Authorisation
Sub-subprogramme 8.1.2	Biodiversity Management Authorization and Compliance
Sub-programme 8.2	Environmental Quality Management
Sub-subprogramme 8.2.1	Impact Management
Sub-subprogramme 8.2.2	Air Quality Management
Sub-subprogramme 8.2.3	Pollution and Waste Management
Sub-subprogramme 8.2.4	Environmental Communication and Awareness Raising
Sub-subprogramme 8.2.5	Expanded Public Works Programme
Sub-programme 8.3	**Biodiversity Management**
Sub-subprogramme 8.3.1	Biodiversity Protected Area Planning and Management
Sub-subprogramme 8.3.2	**Conservation agency and Services**
Sub-subprogramme 8.3.3	Coastal Management
Sub-subprogramme 8.3.4	Environmental Capacity Development and Support

ANNEXURE 2: Conservation Development Framework (CDF) and Use Zone Map

1. Introduction

The CDF is a strategic spatial plan for the reserve and its surrounds that indicates a range of visitor use zones, areas requiring special management intervention, the placement of visitor facilities, the nature and size of these facilities, entry points and movement routes through the reserve. It also provides guidelines for potential future development, rehabilitation and the management of land-use along the reserve borders. The CDF is underpinned by a thorough analysis of the biodiversity, cultural-heritage and landscape limits to development, as well as the tourism opportunities. Sensitivity-value analysis is a decision support tool for spatial planning that is designed to integrate best available biodiversity information into a format that allows for defensible and transparent decisions to be made.

2. Basic planning principles applied

The basic planning principles applied in the compilation of the CDF and facilities in reserves are as follow:

2.1. Reserve Interface Zone

- Recognize that Reserve boundaries are not static and that there are factors beyond the current or future boundaries that can influence the Reserve.
- Interface Zones, shows the areas within which surrounding land-use changes could affect the reserve.

- The zones serve as a basis for identifying focus areas in which reserve management should respond to development proposals and EIAs, identifying impacts that would be important at a particular site, and most importantly, serving as the basis for integrating long-term protection of a reserve into the spatial development plans of municipalities and other local authorities.

2.2. Regional Influences

- Recognize that the Reserve cannot exist in isolation and that planning needs to ensure that the Reserve is integrated with the surrounding landscapes and economic and social structures.
- Ensure that the plans take account of the IDP/SDF of the local municipality
- Conduct market research to ensure that the proposed facilities are sustainable in the local regional and national market.
- Provide unique integrated ranges of products.
- Provide facilities that serve the local community.
- Determine the extent to which Reserve management will be involved in planning issues outside of the future boundary (Reserve interface Zone) and produce guidelines for this area.

2.3. Biodiversity conservation

- Recognize that the prime mandate of Reserves is to conserve biodiversity.
- All planning will be underpinned by a thorough sensitivity analysis of all biophysical aspects using the best available data.
- Apply the principles of Strategic Environmental Assessment (SEA) that is similar to that of EIA for projects.
- Apply the principles of Limits of Acceptable Change to determine the carrying capacity of the Reserve.
- Follow the IEM system for all developments that promotes the principles of transparency, accountability and informed decision-making at all stages of the project life-cycle.
- Apply the “precautionary” principle whenever insufficient information is available to make an informed decision.
- Reduce the current impacts of structures and roads.
- Rationalize and consolidate the roads system.
- Mitigate current impacts.
- Rehabilitate impacted areas.

2.4. Scenic resources

- Recognize that conservation and management of scenic quality is a vital part of Reserves mandate.
- Mitigate the visual impact of current structures and where necessary remove structures from highly visually sensitive areas.
- Ensure that new developments and roads do not impact on the scenic quality.
- Visual sensitivity must inform the acquisition of land outside of the Reserve.
- Improve the sense of place at existing facilities in the Reserve.

2.5. Heritage/Cultural assets

- Recognize that Reserves has a mandate not only in terms of the NEMPAA but also the National Heritage Resources Act to manage cultural assets.

- Ensure that cultural sites are not disturbed by developments.
- Celebrate cultural assets in the provision of facilities, information and interpretation.

2.6. Visitor facilities and infrastructure

- Recognize that Reserve offers a wide range of unique opportunities for experiences of solitude and nature-based recreation.
- All facilities to comply with “Touching the Earth Lightly” principles.
- Determine the optimum number of visitors to ensure quality experiences.
- Provide a range of unique experiences without significant impacts on biodiversity and scenery.
- Zone the Reserve to allow for different levels of intensity of use.
- Consolidate and minimize entry points.
- Where possible place new management and visitor facilities on the periphery of the Reserve.
- Provide opportunities to experience the Reserve on foot and or bicycles

3. Sensitivity analysis

As a first step in compiling the CDF a sensitivity analysis was done for the reserve. Biodiversity conservation, wilderness attributes, unique landscape features, and the legacy of development that includes obsolete structures, infrastructure considered as heritage in terms of the National Heritage Resources Act, all act as the primary informants to land-use planning. The process analysed the overall reserve environment and assessed the range and scale of activities that the reserve can support. Where available the data extend beyond the Reserve estate and cover the complete domain. Ideally data should include the complete interface.
The following data used in the Sensitivity analysis is only the basic requirements and all available data should be sourced.

3.1. Reserve interface

- This layer should be divided into historic, current situation with regard to conservation and protected areas as well as the vision for the future (yesterday, today and tomorrow).
- A rudimentary reserve interface delineation exercise for reserves has been conducted and identified three Interface Zone categories:

➢ Priority Natural Areas:
  - These are key areas for both pattern and process that are required for the long-term persistence of biodiversity in and around the reserve and include other protected and conservation areas.
  - The zone also includes areas identified for future reserve expansion. Inappropriate development and negative land-use changes should be opposed in this area.
  - Developments and activities should be restricted to sites that are already transformed. Only developments that contribute to ensuring conservation friendly land-use should be viewed favorably.
  - This layer was derived from identification of intact natural areas around reserves as highlighted through the CBA assessment combined with an evaluation of areas for their corridor value.

➢ Catchment Protection Areas:

- These are areas important for maintaining key hydrological processes within the reserve.
- Inappropriate development (dam construction, loss of riparian vegetation etc.) should be opposed.
- Control of alien vegetation and soil erosion as well as appropriate land care should be promoted.
-
- This assessment is not very well geared at showing areas of reserve vulnerability to specific hydrological impacts, and the Aquatic Ecosystems of the reserve must be formally classified according to the six-tiered structure of the Classification System for Wetlands and other Aquatic Ecosystems in South Africa'.

➢ Viewshed Protection Areas:
- These are areas where development is likely to impact on the aesthetic quality of the visitor's experience in a reserve.
- Within these areas any development proposals should be carefully screened to ensure that they do not impact excessively on the aesthetics of the reserve.
- The areas identified are only broadly indicative of sensitive areas, as at a fine scale many areas within this zone would be perfectly suited for development.
- In addition, major projects with large scale regional impacts may need to be re-considered even if they are outside the Viewshed Protection Zone.
- This layer was derived from a visual analysis conducted for the reserve.

3.2. Reserve domain (Planning domain)

- Planning domain include current reserve boundaries (estate) with planned expansion for next 5-year planning period.

3.3. Reserve estate (Boundaries & Beacons)

- Layout plan of the reserve showing current boundary.
- All corners (beacons) should be listed with their co-ordinates in the legend[16].

3.4. Climate regions

- CSIR Köppen-Geiger map based on 1985 to 2005 South African Weather Services data on a very fine 1 km x 1 km grid.
- This layer was completed on a large scale for the complete Northern Cape Province.

3.5. Digital Terrain Model (topography)

- This was done on a 30m resolution and indicate areas with special natural features (waterfalls, canyons, plato's, escarpments, caves and rock formations).
- This layer also indicates all high points with names and or trig beacons.
- Areas that have particular aesthetic value were also mapped as polygons.

[16] Only estimated position but needs to be replaced with surveyed co-ordinate according to deeds diagrams

3.6. Geology map

- Fine scale units according to the maps provided by the Council of Geoscience were used and were geo-referenced to produce the layer for the reserve domain.

3.7. Land types & Soil map:

- The Land Type Map covering the reserve domain together with the Land Type Memoir with explanatory information on land types, modal profiles and climate zones were used to compile this layer.

3.8. Aquatic Ecosystems

- Classification and mapping according to SANBI System for Wetlands and other Aquatic Ecosystems in South Africa' were used to map the aquatic ecosystems.
- Distinction is made between Floodplain wetlands, Un-channeled valley-bottom wetlands, Wetland flats, Channeled valley-bottom wetlands, Depressions, Seeps and Rivers

3.9. Biomes and Bioregions

- The biomes and bioregions according to the reserve domain were mapped.

3.10. Vegetation Map

- This layer needs to broadly fit in with the new national classification.
- Sub-categories including management units and disturbed areas that will include degraded areas for the previous 5 years and all transformed areas were also included.

3.11. Special habitats:

- Known concentrations of species of special concern (breeding colonies, etc.) needs to be mapped.
- This will only be broadly mapped (complete habitat), and can be based on expert assessment.

3.12. Archaeological and Cultural resources:

- Brief survey with cultural/heritage sites points data.
- Specialist studies needed to classify the value of each site (national-local etc.) (Research proposals submitted).

3.13. Existing infrastructure, services and facilities:

- All visitor facilities provided in the reserve estate were mapped.
- All tourism facilities in reserve domain were mapped.
- All infrastructure within the reserve domain were mapped.
- All existing and potential access points were mapped.
- All services (potable water, Eskom power supply) within the reserve domain were mapped.

3.14. Visual Analysis:

- The view shed from the reserve domain was determined to establish the footprint of the reserve interphase.

- Visual analysis was also done to determine the view shed from existing visitor facilities and other infrastructure.
- The analysis was used to determine the aesthetic value.

4. Reserve Policies & Context

4.1. Reserve policies in respect of biodiversity conservation and the provision of facilities

- The second step in the CDF process were to determine the policies in respect of biodiversity conservation and the provision of facilities
- These policies are provided for as Appendix 1 to this IMP as it also needs to be approved as part of the IMP.

4.2. Determine what the short- and longer-term visitor requirements are

- This should be underpinned by a visitor survey which sets out the visitor profile, site patronage & visitor's concerns and requirements.
- This should be accompanied by a market survey of the demand for services and products.
- In order to be strategic, the planning process should look beyond the current boundaries and plan accordingly.
- It is also essential to determine the extent to which local (adjacent to reserve domain) and regional (reserve interface) influences will determine visitor requirements in the reserve.

5. Sensitivity-values mapping

5.1. Determine significant informants

- All the data layers collected during the first step of the CDF process (sensitivity analysis) were examined in terms of significance and sensitivity to development.
- The result has informed the use zone mapping and the placing, extent and the nature of visitor facilities.
- To determine and map sensitivity-values it must be emphasized that the data required to make this exercise defensible, is often inadequate or not available at all. Thus, the first step in the CDF process, the collecting and recording of the best available data should be seen as an extremely high priority for all reserves.

6. Use Zone map and development sites

6.1. Determine use zones

- This step of the CDF process is a requirement for all reserves in terms of the NEMPAA. A draft was exposed to all stakeholders and amended as required by the NEMPAA that is now submitted to the Executive Management for ratification and approval by the MEC as part of this IMP.
- This process was informed largely by the sensitivity map and reserve policies and planning principles.
- The generic set of visitor use zones for all reserves was used as a guideline.

6.2. Determine locations for future development of specific facilities

- Informed by the use zones, regional influences, visitor requirements, market needs and other informants, sites for potential visitor facilities and alternates were identified.
- At the same time potential transport routes and alternates are identified and the standards for all roads, footpaths and cycle routes will be set.
- Using the principle of SEA, the alternate sites will be critically examined and the most suitable location decided on.
- The scale of development and the numbers of visitors need to be informed by an assessment of cumulative impacts for the whole reserve.

Based on available information, and in consultation with the RPT, the Conservation Development Framework (CDF) (Annexure 1) is presented as a strategic spatial planning framework for the WNR and its surrounds. Annexure 1 describes the objectives, characteristics, uses, management guidelines and broad conservation and tourism infrastructural requirements designated for each of the use zones shown in Figure 24. Each of these zones has criteria for the type of activities, interaction with other users the type and size of facilities, the sophistication of facilities and the standard of roads.

7. Site plans

- As a final step in the planning process detailed planning will be undertaken for each site to produce a site plan for each visitor site which will inform the development of the specific facilities.
- The percent plans will determine the nature and scale of the facilities and will guide future phased expansion.
- In the long term it is proposed to produce a design manual for each reserve which will guide the style of al facilities and accompanying signage.

8. CDF Guide to Use Zones - General characteristics and objectives

8.1. Wilderness Zone

i. General Characteristics

- It complies fully with the criteria for the designation in terms of the NEMPAA.
- This is an area retaining an intrinsically wild and rugged appearance and character, or capable of being restored to such and which is undeveloped and without roads.
- Different wilderness blocks are usually separated from each other by management tracks, a necessity in areas with increased poaching pressure and the need to access remote areas by rangers.
- The area provides outstanding opportunities for solitude and has awe-inspiring natural characteristics.
- Areas where users have little chance of encountering any other human presence or group.
- Sight or sound of human activities outside zone barely discernible and at far distance; preferably no human impact or infrastructure inside the zone other than trails.
- Natural burning regimes, with no active fire management and road/firebreak infrastructure.
- Areas with minimal Invasive Alien Plant infestations, where IAP control can be done without vehicle access.

- Include sensitive or threatened habitats & species, important heritage sites and features in this low use zone when contiguous sites meet the criteria for wilderness.

ii. Conservation Objective:

- Wilderness zones are managed to protect and maintain natural and cultural biodiversity and the provision of environmental goods and services.
- Management interventions use a “minimum tool approach” and “no-trace-left” activities may be conducted.
- Maintain the zone in as near to a natural state as possible with no impact on biodiversity pattern or processes.
- Existing impacts on biodiversity either from historical usage or originating from outside the zone should be minimized.

iii. Aesthetic / recreational objectives

- To provide an experience of solitude in pristine landscapes with minimal evidence of human presence or use.
- Activities which Impact on the intrinsically wild appearance and character of the area, or which impact on the wilderness characteristics of the area (solitude, remoteness, wildness, serenity, peace etc.) will not be tolerated.

iv. Conservation and Special Management (Resource Utilisation)

- Minimal management requirements, typically natural burning regime.
- Prevent or restore visible trampling or any other impact.
- Rehabilitate non-essential roads to natural vegetation. Re-zone essential roads out of Wilderness Zoning.
- Resource Utilisation not compatible with the area.

v. Visitor Management

- Manage to conserve natural and cultural resources, ecological processes and wilderness integrity.
- Limited management interventions. Management measures may be carried out in extreme conditions, but tread lightly principles must apply.
- Intensive maintenance of visitor activities. Leave no trace ethic. Restrict numbers of visitors and allow for no-use rest periods if required.
- Active enforcement of reserve regulations.
- Since visitor use cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species.
- Trail layout, design and construction must reduce maintenance requirements.

8.2. Remote Zone

i. General Characteristics

- These areas provide a "wilderness experience”, but do not necessarily comply with the criteria for legal designation as wilderness.
- The same criteria as for wilderness although limited unimproved management tracks (mostly extreme 4x4) are allowed. There are no permanent improvements or any form of human habitation. Moderate levels of visibility obtrusiveness allowed.
- Popular view sites or natural and cultural attractions only accessible by extreme 4X4 self-drive or access by boat.
- Areas that may have natural burning regimes, with no active fire management and road/firebreak infrastructure or areas that require active fire management to stay within thresholds of concern.

ii. Conservation Objective:

- The conservation objective is to maintain the zone in a natural state with no impact on biodiversity pattern or processes. Existing impacts on biodiversity either from historical usage or originating from outside the zone should be minimized.
- Habitats with minimal management requirements, typically natural burning zones.
- To minimise and mitigate the effects of visitor use on the reserve's natural habitats and species and its cultural sites.

iii. Aesthetic / recreational objectives

- To provide an experience of relative solitude and wildness. Signs and sounds of the urban area are more obvious and encounters with other visitors are more frequent than in Wilderness. There may be some signs of infrastructure mainly of a heritage nature.
- Although less physical exertion is required, a reasonable level of fitness, self-reliance and experience is necessary.
- The nature of the experience is dependent on the quality of the natural environment.

iv. Conservation and Special Management (Resource Utilisation)

- May require active conservation management interventions erosion control, fire breaks and block burning.
- Intensive maintenance of visitor activities.
- Intensive conservation management activities undertaken (rehabilitation).
- Resource Utilisation not compatible with the area.

v. Visitor Management

- Manage to conserve natural and cultural resources, ecological processes and wilderness integrity.
- Limited management interventions. Management measures may be carried out in extreme conditions, but tread lightly principles must apply.
- Intensive maintenance of visitor activities. Leave no trace ethic. Restrict numbers of visitors and allow for no-use rest periods if required.
- Active enforcement of reserve regulations.
- Since visitor use usually cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species. Trail layout, design and construction must reduce maintenance requirements.
- Trail layout, design and construction must reduce maintenance requirements.

8.3. Primitive Zone

i. General Characteristics

- Intrinsically wild appearance & character
- Areas where users will seldom encounter other human groups or presence with access controlled in terms of numbers, frequency and size of groups.
- Any visible human impact or infrastructure inside the zone is unobtrusive. Views of human activities and development outside of the reserve or zone may be audible or visible in places.
- The zone has limited access roads and the potential for basic small-scale self-catering accommodation facilities or small Rest Camps (which would generally have more sophisticated facilities).

- Areas remote from management centres, or otherwise difficult or expensive to access for management.
- Primitive areas are designated to buffer remote or wilderness areas from higher use areas and activities outside the reserve, as well as to protect most of the remaining sensitive areas from high levels of tourist activity.
- Almost all highly and moderately sensitive environments that were not included within the Wilderness or Remote zone are included in this zone.
- Primitive areas are also designated in valleys with relatively low environmental sensitivity to allow access to remote areas as well as to contain the infrastructure required for management and tourist activity in these areas (e.g. trail huts and access roads).
- Areas that might not meet the criteria for Wilderness or Remote but can serve as undeveloped visual buffers for these zones.
- Areas that may have natural burning regimes, with no active fire management and road/firebreak infrastructure OR areas that require active fire management to stay within thresholds of concern.

ii. Conservation Objective:

- The conservation objective is to maintain the zone in an almost completely natural state with little or no impact on biodiversity processes, and very limited and site-specific impacts on biodiversity pattern.
- Existing impacts on biodiversity either from historical usage or originating from outside the zone should be minimized.
- To limit visitor use, numbers and infrastructure to minimise impact in sensitive environments. To reduce need for management of users and visitor impacts.
- Allows for minimal or more intensive biodiversity management intervention.
- Include extensive areas of sensitive or threatened habitats & species in this low use zone when sites do not meet the criteria for wilderness.

iii. Aesthetic / recreational objectives

- The aesthetic/recreational objectives for the zone specify that activities which impact on the intrinsically wild appearance and character of the infrastructure/facility should be designed to fit in with the environment within which it is located in order to avoid aesthetic impacts.
- To provide an experience of solitude in natural landscapes with little nearby evidence of human presence.
- Can provide access to and buffer Wilderness and Remote Zones.
- To provide easy access to experience the reserve's natural landscapes, habitats, species and heritage resources.
- Limited range of activities and relaxation in a natural environment.

iv. Conservation and Special Management (Resource Utilisation)

- Habitats with lower or higher management requirements.
- Usually remote areas so roads and trails should be planned and constructed assuming infrequent maintenance.
- Intensive maintenance of visitor activities and facilities
- Prevent or restore visible trampling or any other visitor impact.
- Rehabilitate non-useful roads to natural vegetation
- Sustainable use can be appropriate under controlled circumstances subject to a formal assessment and application in accordance with DAERL policies.

v. Visitor Management

- Manage to conserve natural and cultural resources, ecological processes and wild appearance & character.
- Restrict numbers of visitors and allow for no-use rest periods if required.
- Active enforcement of reserve regulations.
- All facilities will be small, very basic, self-catering and distributed to avoid contact between users.
- There should be limited if any interaction between groups. Visible & audible human impacts from adjacent zones should be mitigated.
- Since visitor use can be intensively managed, trails can be routed to access areas with sensitive local habitats or plant and animal species.

8.4. Quiet Zone

i. General Characteristics

- The same as for primitive with the exception that this zone is characterised by unaccompanied (or accompanied under some circumstances) non-motorised access, where visitors can walk or cycle and experience nature without the intrusion of any form of motorised transport.
- Visitor numbers and density are higher than in the primitive zone and contact between visitors is frequent.
- This zone provides experiences of a relative sense of solitude and relaxation in an environment that is openly exposed to the sights of the surrounds.
- There is less of a challenge and the zone is easier to access and less physical exertion is required.
- The quality of the experience is less dependent on the quality of the natural environment than primitive with the provision of basic facilities as for the leisure low intensity zone.
- It also serves as a buffer to the adjoining primitive or farm/urban area.

ii. Conservation Objective:

- The same as for primitive.

iii. Aesthetic / recreational objectives

- The same as for leisure low intensity

iv. Conservation and Special Management (Resource Utilisation)

- The same as for primitive.

v. Visitor Management

- The same as for leisure low intensity with the exception of no motorised transport

8.5. Leisure Zone Low Intensity

i. General Characteristics

- Areas with extensive lower sensitivity habitats:
- Areas able to accommodate higher numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity.
- Popular view or access sites.
- Extensive areas able to accommodate roads, trails and tracks without high risk of erosion and degradation.
- Areas accessible for regular management of roads and trails.
- Areas where roads and trail infrastructure can be located with low visibility from the surrounding landscape, particularly from adjacent Primitive or Wilderness Zones.

- Usually areas that require active fire management with firebreaks to stay within thresholds of concern, but may also include natural burning regimes.
- Facilities along roads are limited to basic self-catering picnic sites with toilet facilities.
- Low intensity leisure areas are designated in current game viewing loops, around current accommodation and other associated infrastructure outside of the main camps, and along existing public access roads where they form part of the reserve road network.
- Areas with a contained, low-density development footprint.
- The underlying characteristic of this zone is motorised self-drive access with the potential for roads, trails and small to medium scale recreational facilities and self-catering accommodation units in small basic camps without modern facilities such as shops and restaurants.

ii. Conservation Objective:

- The conservation objective is to mitigate the biodiversity impacts of the relatively high levels of tourism activity and infrastructure that are accommodated within this zone through careful planning and active management, and to ensure that both the negative effects of the activities and infrastructure are restricted to the zone, and that the zone is maintained in a generally natural state that is in keeping with the character of a protected area.
- To manage and direct visitor use, and plan infrastructure to minimise impact on sensitive environments.
- To actively manage users and visitor impacts. Allows for minimal or more intensive biodiversity management intervention.
- Provide additional protection to localised sensitive or threatened habitats, species or other features by Special Management Overlays
- Deviation from the natural / pristine state should be minimized and limited to restricted impact footprints as far as possible. However, it is accepted that some damage to the biophysical environment associated with tourist activities and facilities will be inevitable.

iii. Aesthetic / recreational objectives

- The aesthetic / recreational objectives for the zone specify that although activities and facilities will impact on the wild appearance and reduction of the wilderness characteristics of the area (solitude, remoteness, wildness etc.) is inevitable, these should be managed and limited to ensure that the area still provides a relatively natural outdoor experience.
- To provide easy access to natural landscapes with low expectation of solitude at all times. Can buffer between development and wilderness or Primitive Zones.
- To provide a wide range of medium sized accommodation, facilities, activities and services with relaxation in a relatively natural environment.
- Although it is inevitable that activities and facilities will impact on the wild appearance and reduce the wilderness characteristics of the area, these should be managed and limited to ensure that the area still provides and relatively natural outdoor experience.

iv. Conservation and Special Management (Resource Utilisation)

- Habitats with lower or higher management requirements.

- May be natural burning zones. Prevent or restore visible trampling or any other visitor impact.
- Rehabilitate non-useful roads to natural vegetation.
- Limited conservation management activities undertaken.
- Sustainable use of natural resources may, where feasible, be considered on application, and subject to a formal permitting arrangement.

v. Visitor Management

- More frequent monitoring of these areas is necessary to prevent damage or degradation.
- More frequent footpath maintenance must be scheduled for busy routes, with particular attention paid to use of railings or other access control to prevent damage to sensitive areas.
- Unless visitor access can definitely be intensively guided and managed, re-route trails away from any sensitive local habitats or plant and animal species.
- Trail layout, design and construction must be specified to reduce maintenance requirements under higher use.
- Visible & audible human impacts to adjacent Primitive or Wilderness Zones should be mitigated.
- Active enforcement of reserve regulations.
- Active visitor control.
- Risk management (e.g. fire safety) measures implemented.
- Development footprint actively contained.

8.6. Leisure Zone High Intensity & Reserve administration

i. General Characteristics

- The main characteristic is that of a high-density tourist development node with amenities such as shops, restaurants and interpretive centres.
- Areas where new infrastructure can be located with low visibility from the surrounding landscape. Areas not visible from Primitive or Wilderness Zones.
- Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment.
- This is the zone where more concentrated human activities are allowed and is accessible by motorised transport on high volume transport routes.
- Major provincial roads cutting through the reserve should be in the high intensity leisure zone.
- Areas with extensive degraded or transformed footprints.
- Areas with an extensive high-density development footprint.
- Areas with limited biodiversity significance.
- Areas where risk of fire damage to infrastructure is low, or can be mitigated.
- Areas that have access to potable water and Eskom power, and not sensitive to disposal of treated wastewater.
- Areas that is easily accessible from the reserve entry points.
- Areas with low visibility from the surrounding landscape.

ii. Conservation Objective:

- The main focus is to ensure a high-quality visitor experience; however, the conservation objectives still require that the high levels of tourism activity and infrastructure that are accommodated within this zone are planned and managed to minimize the effect on the surrounding natural environment, and

that the zone must still retain a level of ecological integrity consistent with a protected area.

- To actively manage users and visitor impacts on adjacent sensitive areas.
- To contain the impacts and footprint of reserve visitor facilities, services and infrastructure.
- Deviation from the natural / pristine state should be minimized and limited to restricted impact footprints as far as possible. However, it is accepted that some damage to the biophysical environment associated with tourist activities and facilities will be inevitable.
- To define the location of the infrastructure and facilities for reserve administration.

iii. Aesthetic / recreational objectives

- To provide access to adjacent natural landscapes with no expectation of solitude.
- The aesthetic/ recreational objectives for the zone specify although the high visitor numbers, activities and facilities will impact on the wild appearance and reduction of the wilderness characteristics of the area (solitude, remoteness, wildness etc.) is inevitable, these should be managed and limited to ensure that the area generally still provides a relatively natural outdoor experience.
- To provide a wide range of medium sized to large scale accommodation, facilities and associated attractions and conveniences.
- Comfortable and sophisticated facilities while retaining a natural ambiance.

iv. Conservation and Special Management (Resource Utilisation)

- Provide access and generate maximum revenue.
- Management should aim to mitigate the biodiversity impacts of the high number of visitors only in sensitive areas (if any) identified by Special Management Overlay.
- These are highly transformed habitats with lower management requirements.
- Natural fire exclusion areas.
- Prevent or rehabilitate visible trampling or any other visitor impact.
- Plan for a compact overall development footprint, avoiding dispersed infrastructure that will increase fire risk and/or environmental footprint. This is most critical in fire-prone environments.
- Sustainable use unlikely to be compatible.

v. Visitor Management

- Management action will focus mostly on maintenance of facilities & providing high quality experiences.
- Use infrastructure solutions such as railings, hard surfacing and boardwalks to manage undesirable visitor impacts.
- Frequent landscape, footpath and road maintenance must be scheduled for high impact areas.
- Active enforcement of reserve regulations.
- Risk management (e.g. fire safety) measures implemented.
- Active visitor control.
- Visible impacts to adjacent Zones should be mitigated.

8.7. Azonal - Special Protection Zones (Species, Habitats, Heritage)

i. General Characteristics

- Sites or areas where uncontrolled public access is undesirable due to the presence of threatened species and habitats or sensitive heritage features.
- Sensitive habitat types identified for special protection in order to reduce any potential loss and to priorities rehabilitation work in these areas.

ii. Conservation Objective:

- Protection of species, habitats or heritage sites of special conservation concern.
- No deviation from natural / pristine state is allowed, Infrastructure, especially paths and viewpoints should be designed to limit the impact of large numbers of visitors on the biophysical environment.

iii. Aesthetic / recreational objectives

- Na

iv. Conservation and Special Management (Resource Utilisation)

- Restrictions on access and numbers of visitors may be enforced.
- Active conservation and heritage management activities undertaken, as required.

v. Visitor Management

- Where visitor access is permitted, strict access control is required to delimit access routes, and, if necessary, screen visitors; i.e. hides, boardwalks, screened routes, and paths with railings may be appropriate.

8.8. Azonal - Special Management Zones (Resource Utilisation)

i. General Characteristics

- Demarcated sites or areas where seasonal utilisation of natural resources (e.g. harvesting of grass for thatching, collection of reeds for building material, hunting of wildlife for trophies or meat, angling etc.) takes place.
- Demarcated sites or areas where bait collection will be allowed
- Regulation and control of resource utilisation (commercial and/or community based), including hunting.
- Seasonal restrictions on access may be enforced.
- Active management of resource utilisation permits.

8.9. Azonal - Special Management Zones (Private Land)

i. General Characteristics

- These are areas of land which are fenced into the reserve through stewardship programs or agreements with the Department, but which are owned by private individuals, companies, trusts, communities, etc.
- A co-management agreement should be drawn up and management should be implemented through negotiation with the Co Management Committee.
- While owners are not restricted to this zone, they do have exclusive use in it.
- Reserve Management, however, retains access and all management rights in these zones at all times.
- No access is allowed to these areas unless by prior arrangement with the landowners. Reserve Management, or their nominated agent, will obviously have access for control purposes.
- The owner retains any agreed development rights subject to an Environmental Impact Assessment (EIA) and possible re-negotiation of fees and carries any costs associated therewith.

9. CDF Use Zones - Desired State Limits of acceptable change (LAC)

Zone	Limits of acceptable change: Biophysical	Limits of acceptable change: Aesthetics and recreational
Wilderness Zone Remote Zone	The zone should be kept in a natural state with no impact on biodiversity pattern or processes.	The area should be kept in a natural state, and activities which impact on the intrinsically wild appearance and character of the area, or which impact on the wilderness characteristics of the area (solitude, remoteness, wildness, serenity, peace etc.) should not be allowed. Controlled access, only on foot for visitors. Established footpaths where erosion maybe a problem. Essentially undeveloped and without roads
Primitive Zone	Deviation from a natural/pristine state should be small nd limited to restricted impact footprints and existing impacts should be reduced.	Any facilities constructed in these areas, and activities undertaken here should be done in a way that limits environmental impacts. Road and infrastructure specifications should be designed to limit impacts. Infrastructure, especially paths and viewpoints should be designed to limit the impact of large numbers of visitors on the biophysical environment.
Quiet Zone	The zone should be maintained in a generally natural state, but some deviation from a natural/pristine state is allowed. Infrastructure should only be allowed within a restricted development footprint, and infrastructure, especially paths and viewpoints should be designed to limit the impacts of large numbers of visitors on the biophysical environment.	The zone should retain a generally natural appearance and character, and activities which impact on this should be restricted. In particular visitors are not allowed motorised access to this zone. It is however recognized that the presence of larger numbers of visitors and the facilities they require, may impact on the feeling of wildness found in this zone.
Leisure Low Intensity	Although it is inevitable that activities and facilities will impact on the wild appearance and reduce the wilderness characteristics of the area (solitude, remoteness, wildness etc), these should be managed and limited to ensure that the area still provides a relatively natural outdoor experience.	The area should be managed to provide a relatively natural outdoor experience. Although, it is inevitable that the high visitor numbers, activities and facilities will impact on the wild appearance, the aesthetics of the zone still need to be maintained in a sufficiently natural state to ensure that the overall objectives and purpose for proclamation of the reserve are not compromised.
Leisure High Intensity	The zone must retain a level of ecological integrity consistent with a protected area. The greatest level of deviation from a natural/pristine state is allowed in this zone, and it is accepted that damage to the biophysical environment associated with tourist activities and facilities will be inevitable, however no activities or infrastructure should be allowed which compromise the overall objectives and purpose for proclamation of the reserve.	

10. CDF Use Zones - Guidelines for Managing Recreational Activities

Recreational Activities	Interaction between users groups	Off-road self-drive	Mountain Biking	Horse Riding	Hiking	Walking (Day trails)	Running	Bouldering Kloofing	Traditional & Free Climbing	Sport Climbing	Guided nature / heritage tours	Hang & Paragliding	Overnight	Caravanning / camping	Picnic and braaing	Row boats	Canoes and kayaks	Sailing (large yachts)	Dinghies and Sail board (wind surfing)	Power boating (fuel driven)	Swimming & Water sports	Angling	On –road self-drive	Tourist route Busses	Workshop or conference
Wilderness Zone	None				1				1				2				3								
Remote Zone	None to low	4			1	1	1	1	1		1		2				3			8					
Primitive Zone	Low to medium	4	4	4	5	4	4	4	5	4	5	7	6		4	7	7		7	8	8	8	4		
Quiet Zone	Medium		4	4	9	4	4	4	9			7	6	6		7	7		7		8	8			
Leisure Low Intensity	Frequent	4	4	4						10		7				7	7		7	10	10	8	4		
Leisure High Intensity	Frequent		4							10		10								10	10	8			

	Restricted activities - If an activity is not listed in the table, then it is not permitted
	Controlled activities - Suitable under management conditions
	Unrestricted activities - Very suitable
1	Only groups >3 and <10 people per group on designated trails “Leave-no-trace” activities: "Carry in, Carry out" principle for all food and waste.
2	Overnight hiking, without any sleeping facilities, formal campsites, or with only basic, un-serviced shelters. No fires.
3	Entry is by foot or by river from outside the zone provided all equipment is carried in and out.
4	Only on designated routes or sites, seasonal restrictions if needed for safety
5	Only small groups <16 people per group
6	Basic, un-serviced, accommodation (cabin, huts) or formal campsites (tent camps). Isolated, small, unobtrusive facilities for up to 16 guests on restricted footprints. Designated fire places
7	From launch sites provided or by river from outside the zone or provided all equipment is carried in and out.
8	Only on designated sites. No skiing and restrictions on size of outboard motors. No beaching on islands or bank. Angling regulations applicable.
9	Only small groups <8 people per group
10	Skiing can be allowed and restrictions on size of outboard motors. .

infrastructure and Facilities	Signage	Trails	Water ways, jetty's	Horse, donkey cart, pack animals	Shelters Natural	Tracks	Internal fences & firebreaks	Interpretive & Educational Centres	Launching sites	Refuse bins	Picnic site	Accommodation and Houseboats	Camping & Caravan sites	Bird/Game hides or view points	Rustic Campsites	Interpretive signage	Toilets	Roads	Access Points Reception offices, gate huts	Lodges and Rest Camps	Conference	Bulk infrastructure	Services (power, waste management, water, etc.)	Food & Beverages Outlet, Equipment Rental	Curios & Craft Sales	Air strip	Swimming pools and water parks	Fuel supply pump
Wilderness Zone	6	7	2	3	1																							
Remote Zone	6	7	2	3	1	5	5																					
Primitive Zone	6	7	2	3	1	8	10	10	10	13	10	11		10	10	10	10	9				19	19					
Quiet Zone											10	11		12	12	12	13					19	19					
Leisure Low Intensity											14	14	14				13	16	17	15		19	19					
Leisure High Intensity																		17		4	18					20		

	Restricted activities - If an activity is not listed in the table, then it is not permitted except for temporary structures
	Controlled activities - Suitable under management conditions
	Unrestricted activities - Very suitable
1	No structures except small existing buildings of cultural, historic or aesthetic value. Can be used as un-serviced sleeping shelters for hikers & provided with composting toilets.
2	Use of non-motorised canoe or flotation device on rivers can be acceptable where entry is by foot or by river from outside the zone.
3	Use of donkeys, horses or other pack animals with an official guide only on designated historical routes and trails, or existing tracks, and only where this will not cause trampling, erosion or any degradation.
4	High density tourist resorts with modern amenities including restaurants, curio and refreshment stalls, shops, education centres and high volume roads. Infrastructure should be designed to reduce impacts of higher visitor numbers and planning should ensure that area still provides relatively natural outdoor experience.
5	No roads but limited vehicle tracks mainly on fire breaks. Unguided visitor access only on foot. Only allows for 4x4 routes or vehicle access if specifically considered and noted.
6	No signage except small, unobtrusive markers for closed routes, or at trail junctions.
7	Narrow permanent walking trails. Visitors have freedom to use various trails. The traditional wilderness concept of access without defined trails is unsafe and rapidly results in undesirable user-created trails and erosion.
8	All roads, tracks or trails to be located and constructed to reduce maintenance, visibility and erosion. Where un-surfaced tracks will result in erosion, use concrete strip or interlocking pavers to stabilise. Re-route unstable or erosion-prone road sections if this will lower long-term visual and environmental impact.
9	New roads for visitor access only justified if also required for management access or firebreaks. Avoid wide surfaced roads or roads and tracks wider than required for a single vehicle.
10	Deviation from natural state to be minimised. Infrastructure should not be visible from Wilderness Zones. Designated fire places with services.
11	May provide isolated, small, unobtrusive accommodation facilities for up to 16 guests on restricted footprints,
12	Unaccompanied non-motorised access to specific facilities. Vehicle access on dedicated routes, with pedestrian access from parking areas or adjacent Development Zones.
13	Facilities maybe provided in high use areas.

14	Self-catering accommodation and camping for up to 100 guests in total at any time
15	Single small Rest Camps for up to 30 guests are permissible if all facilities are contained in a compact footprint, this represents the total accommodation for the zone, and any restaurant or catering facilities are for overnight guests only.
16	Roads open to the public should be accessible by 2x4 sedan. Roads in this zone should be surfaced to reduce management cost and environmental impacts.
17	Accessible by motorised transport (car/bus) on high volume transport routes, including delivery vehicles. If possible roads should be narrow with separate incoming and outgoing routes; otherwise double vehicle width roads are strongly advisable for safety and usability.
18	Meetings, workshop or -conference activities for no more than the number of people that can be accommodated overnight in the zone.
19	Location of infrastructure and facilities for Reserve Administration & especially conservation management facilities (storage facilities, workshops, game capture and holding facilities). Not compatible with tourism and tourism access.
20	The Reserve Airspace is regulated by Section 47 of the Protected Areas Act as 2500 ft. (762 meters) above the highest point.

11. CDF Use Zones - Guidelines for Managing External Commercial Activities & Organised Events

Recreational Activities	Film shoots	Group Events	Helicopter tours	Cultural events	Specialised adventure events	Environ Education	Commercial passenger boats (ferries)	Houseboats (private and commercial)	Research
Wilderness Zone									
Remote Zone	**2**			1	1	1			1
Primitive Zone	3			1	1	1			1
Quiet Zone				1	3	1			1
Leisure Low Intensity	3			3	3	3			1
Leisure High Intensity	3	3	4	3	**3**		3	3	1

	Restricted activities - If an activity is not listed in the table, then it is not usually permitted
	Controlled activities - Suitable under management conditions. The type of activities may be considered but not necessarily approved.
	Unrestricted activities - Very suitable
1	The number of events, the number of participants and frequency of events to be strictly controlled
2	Restricted to nature and scientific films. All equipment to be carried in and out.
3	Activities should not interfere with designated use of the zone
4	The Reserve Airspace is regulated by Section 47 of the Protected Areas Act as 2500 ft (762 meters) above the highest point (900 meters).

12. CDF Visitor Site Categories – Role, Facilities and Management Guidelines

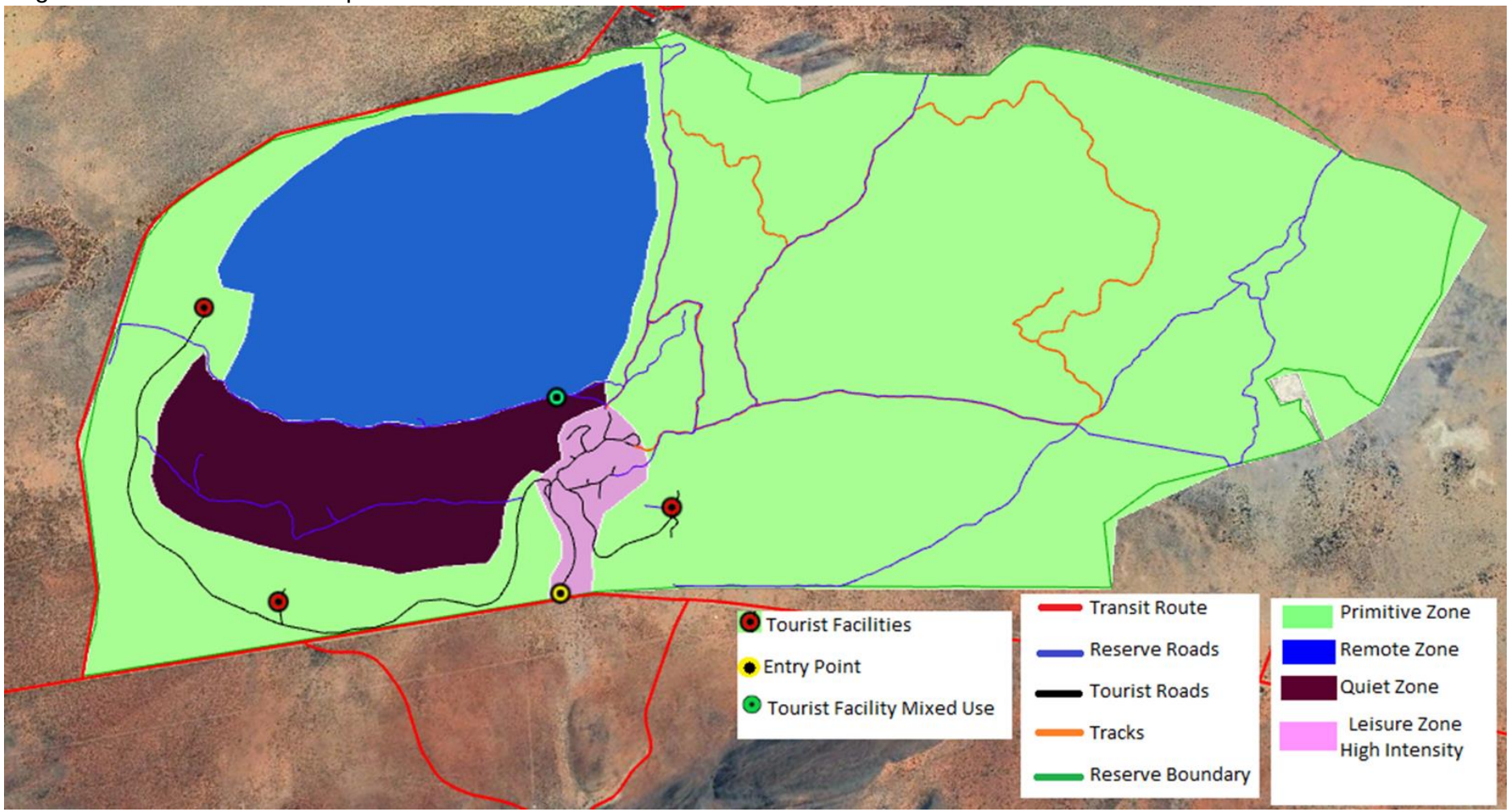
Site	Role	Facilities	Applicable zones	Guidelines
Tourist Destination	Main tourist destinations. Seeing and experiencing specific attractions. Short duration visit.	Appropriate facilities to deal with large numbers of tourists e.g. parking, ablutions, interpretation, footpaths, transport systems, refreshments.	High Intensity Leisure	Due to high pressure of tourist volumes and the sensitive nature of the surrounds, these sites are maintained as destinations of high volumes and short duration. Facilities should not detract from the intrinsic qualities of the area.
Mixed Use	Serves a variety of purposes - recreation, leisure, transit, education, refreshments. Varies in scale and purpose according to context	Ablutions, parking, food outlets, interpretative centres, education facilities, recreation facilities (picnic & braai). Administration facilities.	High Intensity leisure, Low Intensity leisure, Primitive	Length of stay is longer than for Tourist Destinations and provides for a range of activities.
Picnic / braai, Camping	Provides braai and/or picnic facilities. Rustic camping sites	Only picnic and braai facilities, tables with seating and ablutions. No other facilities.	Low Intensity leisure, Primitive	Provides for safe and secure family orientated facilities for low intensity leisure activities
Entry Point	Points of entry which can be categorised as: -Pay Points, -Gateways, -Minor Access Points and -Local Access Points	Parking with signage & information. Ablutions and trading at selected sites.	Low Intensity Leisure	Maintained as entry points Not suitable to diversify into Mixed Use sites. Management of security is required
Accommodation	Provides accommodation from which adjoining zones can be accessed.	Small (max. 16 beds) accommodation units, preferably self-catering for visitors	Low Intensity leisure, Primitive Quiet	The accommodation should be appropriate to the surrounding environment.

13. CDF: Management Guidelines for the Reserve Movement Network

Category	Characteristics	Applicable zones	Guidelines
Transit route	A high volume road used to gain access to high intensity visitor sites. Used by delivery, service and management vehicles to tourist and admin facilities. Commercialised coach tours are allowed.	High Intensity leisure	Managed to allow tourism and management access to destinations. Minimal facilities such as view sites along road. The view shed is included in zone for all new roads and where possible for existing roads.
Tourist Roads	These may be surfaced or un-surfaced roads used for game viewing and sight-seeing in sedan vehicles and microbuses. Self-drive and tours. Busses are allowed, but no commercial coach tours.	Low intensity leisure	View sites and interpretative boards at suitable sites. Parking to access footpaths and facilities. The view shed is included in zone for all new roads and where possible for existing roads.
Limited access roads	These may be surfaced or un-surfaced roads used only for accessing campsites and accommodation	Primitive Quiet	Minimal facilities such as view sites along road. Directional and regulatory signage provided.

Tracks ═══	These may be two wheel or 4x4 tracks. Used as footpaths and for activities such as Mountain Biking, horse riding and approved scenic/game drives on extreme 4X4 roads requiring specialised driving skills under controlled conditions.	Remote Primitive Quiet	These tracks are used primarily for recreational access. There must be strict management guidelines for the use of vehicles. Generally, maintenance is low key to allow the road to be as unobtrusive as is possible. Directional and regulatory signage provided.
Reserve Roads	These may be two wheel or 4x4 tracks or roads used only for management purposes.	Remote Primitive Quiet	These roads are used only for management access. Generally, maintenance is low key to allow the road to be as unobtrusive as is possible. No directional and regulatory signage provided.
Paths – – – – – – – –	Used as footpaths and for activities such as Mountain Biking, horse riding .	Remote Primitive Quiet	These paths are used primarily for recreational access. Generally, maintenance is low key to allow the paths to be as unobtrusive as is possible. Directional and regulatory signage provided.
Notes:			
1. The movement network provides for linking visitor sites across different use zones as determined through local planning processes and statutory approvals (e.g. EIA and HIA)			
2. If the Reserve's use zones are traversed by public roads. Joint management arrangements will be sought between the Reserve and the relevant authorities to uphold the experiential qualities of the zone that the road traverses.			

Figure 1: WNR Use Zone Map 2025 - 2030



➢ ANNEXURE 3: Annual Plan of Operation (APO) for 2025 to 2030 planning cycle

CATEGORY	PRIORITIES
HIGH PRIORITY - Once off activity	Critical to the effective management of the reserve. Funding and resources should be secured to implement these actions. As reflected in the Management Effectiveness Tracking Tool (METT)
HIGH PRIORITY - Routine activity	
MEDIUM PRIORITY	Important to the effective management of the reserve, but its implementation may be delayed because of limited funds or resources.
LOW PRIORITY- Activity on hold	Constitutes good management practice, but not necessarily critical or important to reserve management effectiveness. Implementation may be dependent on availability of external funding or support.
COMPLETED	Activities Completed for the 5 year cycle to be assessed during the following 5-year planning cycle

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Budget Requirements				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2029
KPA 1: Biodiversity and Heritage Conservation									R 860 518,23	R 879 019,16	R 804 767,46	R 798 612,60	R 875 382,06
Objective 1.1 Obtain Biodiversity knowledge about the PA									**R 226 382,66**	**R 224 864,94**	**R 235 693,95**	**R 239 044,21**	**R 247 064,49**
1	Identify, and prioritise the biodiversity management requirements of the PA for baseline information and monitoring.												
a	*Compile Integrated Biodiversity Management Famework (BMF)*	There is an established Monitoring & Evaluation program which is fully implemented with PA management participation and is used to guide adaptive management.	3.1.1 Monitoring and Evaluation Programme						R -	R -	R 22 508,71	R -	R 24 815,85
b	*Compile Biodiversity Man. Programmes (BMP) identified in BMF*												
2	Develop and maintain a targeted research and monitoring program relevant to management needs to guide biodiversity management												
a	*Compile archive of all research completed on the site*	Research needs have been identified and projects relevant to all management needs are being undertaken, enabling the monitoring of results of management actions against set objectives	3.1 Management Research Programme						R 12 760,04	R 16 077,65	R 14 067,94	R 14 771,34	R -
b	*Identifying research projects for achieving all management objectives*												
3	Facilitate access for and assist external research institutions to implement the priority research and monitoring requirements of the reserve.												
a	*Facilitate controlled access for external institutions undertaking relevant research projects within the reserve.*	There is an established working relationship with researchers and regular liaison leads to research results feeding into management decisions	3.1.2 Relationship with researchers						R 12 760,04	R 13 398,04	R 14 067,94	R 14 771,34	R 15 509,91
b	*Create Database with potential institutions to assist with outsourced research projects*												
4	Collect and update key baseline information - Monitoring & Research in PA Estate												
a	*01 BMP 1 Biodiversity mechanisms*	Information and the understanding thereof concerning key species, habitats, ecosystems of the PA supports the achievement of all biodiversity objectives.	1.4. Biodiversity knowledge and understanding						R 200 862,58	R195 389,25	R185 049,35	R209 501,53	R206 738,72
b	*02 BMP 2 SSC*												
c	*03 BMP 3 Freshwater and Wetlands*												
d	*04 BMP 4 IAS*												
e	*07 BMP 7 Degradation Rehabilitation*												
f	*08 BMP 8 Cultural Heritage*												
g	*09 BMP 9 Climate and Climate Change*												
Objective 1.2: Restoration and mitigation of degradation									**R 171 204,71**	**R 99 886,75**	**R 152 855,68**	**R 151 605,82**	**R 195 156,22**
1	Compile an invasive species control and eradication plan in terms sec. 76 of the NEM: Biodiversity Act, 2004												
a	*Eradication plan for damage-causing and problem animals in PA*	There is a plan for addressing control and eradication of invasive species within the PA.	2.6 Restoration of degraded areas						R 22 968,07	R 5 359,22	R -	R -	R 27 917,83
b	*Eradication plan for invasive alien plant infestations in PA*												
2	Implement the invasive species control and eradication plan BMP 4												
a	*Implement, environmentally friendly measures to reduce the impacts of any damage-causing and problem animals*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	6.3 Ecological processes						R 82 967,81	R 48 845,63	R 96 021,89	R110 552,70	R114 345,37
b	*Eradicate, on an ongoing basis, all known invasive alien plant infestations occurring in the reserve*												
3	Rehabilitation or Mitigation of degredation in PA												
a	*Rehabilitation, Restoration or mitigation of all un-natural and/or highly erodible areas in the PA estate and maintain mitigation measures*	There is a plan for addressing degraded areas within the PA	2.6 Restoration of degraded areas						R 65 268,82	R 45 681,90	R 56 833,79	R 41 053,12	R 52 893,02
b	*Rehabilitation, Restoration or mitigation of visitor impact wrt. special natural features and heritage resources in the PA estate and maintain mitigation measures*												
c	*Close and rehabilitate solid waste dump sites in the reserve, and remove all solid waste to the nearest municipal dump sites.*												
d	*Close/remove/demolish and rehabilitate all extraneous and redundent mining related buildings, foundations, waste dumps, equipment, excavations and fencing.*												
e	*Close and rehabilitate all unused, extraneous and/or highly erodible tracks and roads in the reserve and maintain road closures*												

Objective 1.3: Maintenance of ecological processes in the PA									**R 231 174,01**	**R 191 417,02**	**R 231 025,71**	**R 199 479,82**	**R 214 959,00**
1	ID Ecological processes critical for the achievement of biodiversity targets as part of BMF		6.3 Ecological processes						R 2 552,01	R 2 679,61	R 2 813,59	R 2 954,27	R 3 101,98
2	Re-establish, manage and maintain viable populations of locally indigenous fauna and flora in the WNR												
a	*Determine historical distribution of game animals*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	2.6 Restoration of degraded areas						R -	R -	R 14 067,94	R -	R -
b	*Compile reintroduction program*												
3	Develop and maintain a vegetation monitoring program, including an annual veldt condition assessment. BMP 1.3	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.	6.3 Ecological processes						R 2 612,01	R 35 511,83	R 30 610,24	R 23 277,95	R 33 747,79
4	Prepare and/or update a simple, functional Fire Management Programme for the reserve. BMP 1.3								R 5 104,02	R -	R -	R -	R -
5	Manage watering points for game												
a	*Monitor and maintain artificial watering points*	A scientifically based assessment has shown that ecological processes are being effectively maintained /augmented with the result that ecological integrity and biodiversity are not being compromised.							R 191 574,49	R145 273,38	R 141 452,31	R 148 524,93	R169 002,08
6	HIRA for PA and Contingency plans for Disaster Management												
a	*Undertake a Threat Analysis to determine all potential threats to the safety and security of the reserve.*	There is a plan for addressing natural disasters within the PA.	1.6 Risk Assessment						R 29 331,49	R 7 952,20	R 42 081,63	R 24 722,67	R 9 107,15
b	*Update Risk assesment*	A full risk assessment, covering inter alia biodiversity, financial management, human resources, tourism, pressures & threats has been undertaken for the PA that informs management planning.											
c	*Compile a Disaster Management Plan for the reserve*												
d	*Establish, train and equip a fully functional reaction team*												
Objective 1.4: Maintenance of critical ecosystem services									**R 80 084,44**	**R112 836,46**	**R 81 442,01**	**R106 686,61**	**R 98 095,19**
1	ID critical ecological sevices that deliver services to surrounding communities												
a	*Description and monitoring change wrt biodiversity importance of PA*	PA and neighbouring land users are deriving benefit from ecologica services.	2.1 PA design 2.1.1 PA expansion plan						R -	R -	R -	R -	R -
b	*Description and monitoring change wrt conservation interphase*												
2	ID ecological services & develop a structured and scientific measurement system for effective maintenance of ecological services	A structured and scientific measurement and monitoring system has shown that ecosystem services are being effectively maintained with the result that the PA and neighbouring land users are deriving benefit from these services.	6.4 Ecosystem services						R -	R -	R -	R -	R -
3	Monitoring benefit of ecological services to PA and neighbouring land users								R 80 084,44	R112 836,46	R 81 442,01	R106 686,61	R 98 095,19
Objective 1.5: Land use planning and management outside of the protected area									**R 25 366,23**	**R 27 618,53**	**R 27 966,27**	**R 24 708,99**	**R 31 164,81**
1	Provide and define PA expansion strategy												
a	*Description wrt biodiversity importance (Veg type targets) of PA and interphase*	The size and shape of the site is adequate in design to fully achieve the conservation objectives.	2.1 PA design						R -	R -	R -	R -	R -
b	*Compile PA Expansion Plan*	A site expansion plan been set out in line with the expansion strategy of the organisation	2.1.1 Expansion plan										
c	*Investigate options for conservation of identified land parcels of biodiversity value*												
1	Provide and define a zone of influence and applicable buffering mechanisms (interphases)												
a	*Complete sensitivity analysys and demarcate ZOI and Domain*	The zone of influence PA Domain and applicable buffering mechanisms have been clearly defined for input into the municipal IDP, catchment and river plans	2.1.2 Delineation of a zone of influence						R -	R -	R -	R -	R -
b	*Develop guidelines for conflicting land uses and obtain MOU with land managers within PA Domain*												
c	*Determine applicable buffering mechanisms, demarcate corridors and include in PAES*	There is a plan for the management of corridors linking the PA to key habitats outside of the PA thereby mitigating fragmentation.	2.1.3 Corridor management										
2	Collect baseline information and control illegal harvesting of natural resources and grazing in reserve interface and domain.												
a	*01 BMP 1 Biodiversity mechanisms*	There is a bilateral relationship between any relevant biodiversity plan and/or the applicable aspects of the IDP of the local municipality and the planning and management of the site. There is formal agreement with industries within the zone of influence.	6.5 Land use planning and management outside of the protected area						R 25 366,23	R 27 618,53	R 27 966,27	R 24 708,99	R 31 164,81
b	*02 BMP 2 SSC*												
c	*03 BMP 3 Freshwater and Wetlands*												
d	*04 BMP 4 IAS*												
e	*05 BMP 5 Resource Use Tourism*												
f	*07 BMP 7 Degradation Rehabilitation*												
g	*08 BMP 8 Cultural Heritage*												
h	*Establish working relationship (MoU) with landowners and residents within the PA domain*												

Objective 1.6: Water use planning and management operations influencing the protected area									**R 25 357,59**	**R 27 322,67**	**R 15 091,61**	**R 15 846,19**	**R 19 740,48**
1	Collect and update key baseline information concerning land use practices of the reserve catchment interface and control illegal harvesting of natural resources .												
a	*02 BMP 2 SSC*	Catchment and river plans and water management fully take the water needs of the PA into account and the water quality meets required standards as set out by the relevant authority.	6.6 Water use planning and management operations influencing the protected area						R 25 357,59	R 27 322,67	R 15 091,61	R 15 846,19	R 19 740,48
b	*03 BMP 3 Freshwater and Wetlands*												
c	*04 BMP 4 IAS*												
d	*05 BMP 5 Resource Use Tourism*												
e	*07 BMP 7 Degradation Rehabilitation*												
f	*08 BMP 8 Cultural Heritage*												
g	*Establish working relationship (MoU) with landowners and residents within the PA domain and interface*												
h	*Map and monitor cross boundary movement hotspots.*												
2	Assist other enforcement agencies in cross border and other operations								Ad Hoc				
3	Participation in Catchment Management and other forums to ensure that the quality and quantity of water meets the needs for maintaining habitats, species and ecosystems								Ad Hoc				
Objective 1.7: Audit achievement of biodiversity targets									**R 2 552,01**	**R 2 679,61**	**R 2 813,59**	**R 2 954,27**	**R 3 101,98**
1	Achievement of biodiversity targets												
a	*Set biodiversity objectives and targets as part of IMP*	A structured and scientific biodiversity condition assessment has shown that the management of biodiversity is meeting the set targets. Management techniques are constantly being adapted to changing environments and new knowledge.	6.2 Achievement of biodiversity targets						R 2 552,01	R 2 679,61	R 2 813,59	R 2 954,27	R 3 101,98
b	*Monitoring results of management actions against set objectives. State of biodiversity report.*												
Objective 1.8: Manage and mitigate the environmental impacts of conservation management, tourism, recreation and natural resource use in the PA									**R 18 396,59**	**R161 937,21**	**R 20 718,79**	**R 18 800,46**	**R 19 740,48**
1	Develop management guidelines for the sustainable extractive use of biotic and abiotic resources as part of BMP 5.1 (ii) Monitor resource use & development in domain.	Management guidelines for the sustainable extractive use of biotic and abiotic resources that apply to both the organisation and outside parties are in place.	4.12 Sustainable Extractive Use						R -	R -	R -	R -	R -
2	Introduce more environmentally-friendly technologies (recycling, water and energy saving, sourcing of biodegradable materials, dry and wet waste disposal, sustainable benefits to local communities, sourcing supplies locally and using certified sources of building materials).	Plans for environmentally responsible practices including environmentally-friendly technologies and using certified sources of building materials.	4.16 Environmentally Responsible practice						R -	R 5 359,22	R 2 813,59	R 2 954,27	R 3 101,98
3	Mitigate visitors impact												
a	*Maintain information about the reserve visitors as part of BMP5*	Visitor impacts which could result from current and anticipated levels of visitation are fully mitigated by the design of the tourism infrastructure	5.1 Tourism Infrastructure (mitigating impacts)						R 10 740,56	R 15 500,35	R 15 091,61	R 15 846,19	R 16 638,50
b	*Implement access control*												
c	*Develop and implement a visitors compliments and complains register and adress issues*												
d	*Rehabilitation, Restoration or mitigation of visitor impact wrt. special natural features and heritage resources in te PA estate*												
4	Waste Management												
a	*Develop a formal legally compliant programme for the management of domestic waste*	The PA has been accredited with a recognised green standard. Examples are Green Globe. Green Leaf and Travelife. This does not only relate to tourism infrastructure.	4.13 Management of Hazardous Substances						R 5 104,02	R 5 359,22	R 2 813,59	R -	R -
b	*Develop a formal legally compliant programme for the management of hazardous waste*												
c	*Develop a legally compliant programme for the management and use of pestisides & insectisides*												
5	*Develop functional infrastructure for the management of waste*								R 2 552,01	R135 718,43	R -	R -	R -

Objective 1.9 Obtain Cultural Heritage knowledge about the PA									**R 80 000,00**	**R 30 455,96**	**R 37 159,85**	**R 39 486,23**	**R 46 359,41**
1	In collaboration with academic institutions, research, document and inventorize the cultural heritage resources of the reserve and determine significance	A formal cultural heritage assesment by an accredited heritage practitioner for significant heritage resources and values and has been verified by SAHRA and is included in the IMP	1.5 Heritage knowledge						R -	R 16 355,36	R -	R 17 725,61	R 9 305,94
2	In collaboration with academic institutions, develop management plans for significant Cultural Heritage assets												
a	*Management of significant Palaeontological resources*	Formal management plans with mitigating and management guidelines by an accredited heritage practitioner for significant heritage resources/sites has been approved by the relevant heritage authority.	2.4 Management plans for significant Cultural Heritage assets						R 80 000,00	R -	R 14 067,94	R -	R 15 509,91
b	*Management of significant Archaeological resources*												
c	*Management of significant Cultural-Heritage resources*												
3	Monitor and do regular condition assessment of Cultural Heritage Resources	A structured assessment conducted by an accredited heritage practitioner, has shown that the management of cultural heritage assets and values are meeting the set management objectives.	6.7 Cultural Heritage condition assessment						R -	R 14 100,59	R 23 091,91	R 21 760,62	R 21 543,56

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 2: Recreation, Marketing, Education, Awareness and Interpretation									**R 4 562,84**	**R 10 150,20**	**R 9 765,56**	**R 5 282,06**	**R 8 648,15**
Objective 2.1: Develop, deliver and maintain a diverse range of tourism and recreational services for visitors to the PA in accordance with CDF									**R 4 562,84**	**R 4 790,99**	**R 9 765,56**	**R 5 282,06**	**R 5 546,17**
1	Develop Subsidiary Plan (CDF) for Commercial Tourism with guidelines that apply to both the organisation and outside parties concession holders	Aa zoning system based on a sensitivity analysis indicating visitor use zones, and positioning and nature of operational and visitor infrastructurehas been compiled and included into the Integrated Management Plan	2.2.1 Conservation Development Framework (CDF)						R -	R -	R -	R -	R -
2	Facilitate controlled access to the reserve for other complementary recreational activities, including mountain biking, trail running and 4X4 drives.	There is excellent interaction and co-operation between managers and tourism operators/concessionaires to enhance visitor experiences, protect values and resolve conflicts.	4.15 Commercial Tourism						R 4 562,84	R 4 790,99	R 9 765,56	R 5 282,06	R 5 546,17
3	Support entrepreneurial opportunities for local communities to participate in the provision and management of tourist and recreational products.								R -	R -	R -	R -	R -
Objective 2.2: Develop and implement a focused and cost-effective marketing programme for the PA									**R -**	**R -**	**R -**	**R -**	**R -**
1	Tourism management plan for the PA	There is an approved and updated Tourism and Marketing Programme and it is fully integrated into the IMP of the PA. Accommodation has been accredited with a recognised tourism grading standard.	3.8.1 Tourism grading	On Hold									
2	Design, publish and distribute reserve-specific brochures and pamphlets for visitors and users.										R -	R -	R -
3	Continually provide updated information in the ongoing development of corporate, regional and provincial tourism marketing products and materials.development of corporate, regional and provincial tourism marketing products and materials.			On Hold									
4	Accreditation of activities and facilities with a recognised tourism grading standard.												
Objective 2.3: Develop and implement a focused and cost-effective awareness-raising and educational programme for the PA									**R -**	**R 5 359,22**	**R -**	**R -**	**R 3 101,98**
1	Develop site specific Education, awareness and interpretation programme	The management plan include an education, awareness and interpretation programme to create awareness of the values of the site	2.3 Education, awareness and interpretation						R -	R 5 359,22	R -	R -	R 3 101,98
2	Establish links with local educational institutions and networks in order to promote subsidised access to, and use of, the reserve as an educational resource.												
a	*Determine research opportunities*	The education, awareness and interpretation programme is fully linked to the objectives and needs of the PA and is being fully implemented.	4.9 Implementation of Education, awareness and						Ad hoc				
b	*Make facilities including environment available for educational programmes*												

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 3: Enforcement, Security and Access Control									**R 110 804,37**	**R 355 639,72**	**R 72 711,24**	**R 62 818,40**	**R 119 802,38**
Objective 3.1: Secure the legal tenure of, and management authority for, the PA									**R -**	**R -**	**R -**	**R -**	**R 9 305,94**
1	Ensure declaration of all properties within the estate to obtain legal status in terms of NEMPAA and registered on the national PA register												
a	*Compile and submit notice of intend for domain to be approved and gazetted*	All properties managed as part of the PA estate have been declared and listed in the SAPAD and the registrar of Deeds has recorded the declaration against the relevant register and documents or has formal management agreements in place.	1.1 Legal Status										
b	*Record the declaration against the SAPAD*												
c	*Record the declaration against the relevant Title Deed.*												
d	*Consolidation of properties*								R -	R -	R -	R -	R 9 305,94
e	*Apply for MPRDA sec 53 permission for all properties in PA estate & domain- 5km buffer only*												
f	*Formal agreements with landowners regarding managent of properties as part of estate not declared*												
Objective 3.2: Secure the boundaries of, and maintain controlled access to, the PA									**R 110 804,37**	**R 347 600,90**	**R 58 643,29**	**R 56 909,86**	**R 68 292,47**
1	Implement the protection systems or mechanisms for controlling current and anticipated levels of legitimate and illegitimate access or activities in the PA												
a	*Regular boundary patrols and access hotspots*	Protection systems or mechanisms for controlling current and anticipated levels of legitimate and illegitimate access or activities in the PA are fully implemented. The success has been verified by a relevant PA integrity audit (eg. SOAM or PAME)											
b	*Record incidence and non compliance*												
c	*Implement, mechanisms for subsidised entry for local community user and interest groups.*								R 53 239,72	R 32 266,13	R36 702,55	R32 629,14	R 31 158,62
d	*Provide, on request, controlled access to recognised cultural/religious sites and non-destructive or consumptive cultural/religious practices.*												
2	Complete the construction of the perimeter demarcation/fencing to meet all requirements of the DENC Technical Guidelines and Principles (TGP) for fencing.												
a	*Verify position of estate beacons agains title deeds*	The reserve assets are secure. The reserve visitors and users have equitable access to the reserve, and are safe from harm.	1.3 Protected Area boundary demarcation										
b	*Maintain beacons in correct position*												
c	*Construction of the perimeter signage*								R57 564,65	R315 334,77	R21 940,74	R24 280,72	R37 133,85
d	*Demarcation of boundary by fencing, bollards, beacons, sign posts.*												
e	*Ensure regular maintenance of the perimeter demarcation/fencing in the reserve.*												
Objective 3.3: Sustain an effective law enforcement and compliance capacity in the PA									**R -**	**R 8 038,83**	**R 14 067,94**	**R 5 908,54**	**R 42 203,96**
1	Integrated Compliance Plan												
a	*Develop and Integrated Compliance Plan*	There is an approved and updated Integrated Compliance Plan and it is fully integrated into the IMP of the PA. The success of protection plan has been verified by a relevant PA	1.3 Protected Area boundary demarcation						R -	R -	R 5 627,18	R -	R -
b	*Implement Integrated Compliance Plan*												
2	Ensure capacity/resources/support to implement the Integrated Compliance Plan												
a	*Determine capasity RB Martin or IUCN and develop list of critical skills required with training courses available for field rangers.*	PA has excellent capacity/recources/support to enforce rules/regulations.	3.6. Law Enforcement Capacity & Capability										
b	*Ensure the provision of enforcement and compliance training for all reserve field staff.*								R -	R 8 038,83	R 8 440,77	R 5 908,54	R 42 203,96
c	*Ensure that the field ranger staff complement is adequately resourced and equipped to fulfil an effective enforcement and compliance function.*												

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2025/2026	2026/2027	2027/2028	2028/2029
KPA 4: Infrastructure and Equipment									**R 392 451,94**	**R 403 894,86**	**R 405 985,28**	**R 399 645,01**	**R 468 458,72**
Objective 4.1: Acquire and maintain operational equipment and vehicles for the PA									**R283 244,10**	**R285 450,31**	**R291 866,04**	**R295 765,53**	**R333 181,31**
1	Acquire and maintain operational equipment and constantly update an operational equipment register.	Operational equipment is adequate and suitable for current and future anticipated operational needs.There is a maintenance schedule and all operational equipment is being correctly maintained and meeting the set standards.	3.7 Adequacy of Operational equipment 4.6 Maintenance of operational equipment										
a	*Procure, maintain and safely store operational stores and equipment and update asset registers*								R 98 062,37	R 77 572,01	R 72 055,61	R 71 093,84	R 98 613,53
b	*Procure, install and maintain a reliable internal communications network for the reserve, including repeaters, base station, hand-held radios and car radios.*												
c	*Establish an electronic network (i.e. internet and e-mail) for, and connect services and applications to, the reserve.*												
d	*Maintain and service pumps at all boorholes and renovate the pipelines and water troughs at these water points, as required.*												
2	Maintain and/or replace all reserve vehicles and according to the manufactures' specifications and/or corporate replacements	The transport fleet is totally appropriate and sufficient for all management needs with adequate numbers and range of vehicles to meet management needs?	3.9 Adequacy of transport fleet 4.6.2Maintenance of Transport fleet										
a	*Do needs analyses regarding transport fleet for all management needs with adequate numbers and range of vehicles (boats, motor cycles etc.)*								R161 400,00	R176 097,20	R179 406,76	R185 502,39	R193 440,01
b	*Replacement of reserve vehicles according to the manufacturers' specifications and/or corporate replacement cycles*												
3	Maintain and update all assets and stock inventory registers and reports for the reserve.	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 18 677,71	R 26 421,87	R 34 776,49	R 33 260,76	R 34 923,80
4	Determine the economic valuation of the reserve.								R 5 104,02	R 5 359,22	R 5 627,18	R 5 908,54	R 6 203,96
Objective 4.2: Construct, maintain and upgrade the administration infrastructure and bulk services infrastructure in the PA									**R109 207,84**	**R118 444,56**	**R114 119,24**	**R103 879,47**	**R135 277,41**
1	Construct and upgrade the administration and bulk services infrastructure in the reserve and constantly update the infrastructure register and CDF.												
a	*Install and maintain generator and/or solar power systems for the functioning of remote reserve operational equipment (e.g. water pumps) and the smaller tourism and recreational facilities.*	Operational infrastructure is optimal for current and future anticipated management needs							R 6 775,75	R 32 131,13	R 10 331,92	R 13 802,78	R 11 390,94
2	Implement Infrastructure Maintenance Programme												
a	*Maintenance of all reserve administrative, staff and operational buildings and infrastructure.*	There is a maintenance schedule and all operational infrastructure is being maintained and meeting the set standards.	3.7.1 Adequacy of Operational infra-structure. Level of conformance (%) with SANS 1197:2012.										
b	*Maintenance of the network of roads in the reserve, with a strong focus on maintaining and mitigating highly erodible areas.*								R102 432,09	R 86 313,43	R103 787,33	R 90 076,69	R123 886,47
d	*Schedule and implement the maintenance of the network of roads in the reserve, with a strong focus on maintaining and mitigating highly erodible areas.*												
e	*Link up with EPIP projects as well as external projects with available funds*												
Objective 4.3: Construct, upgrade and maintain day and overnight visitor buildings and infrastructure in the PA									**R -**	**R -**	**R -**	**R -**	**R -**
1	Assess the feasibility of developing additional overnight accommodation and camping/caravanning sites and day visitor facilities with reference to the CDF and update CDF if required	Tourism infrastructure is optimal to manage the current and anticipated future volume of visitors.	3.8 Adequacy of Tourism infrastructure						R -	R -	R -	R -	R -
2	Assess the cost-effectiveness of different management options for the operating of Lodges, Camps and select the preferred/optimal management option/s.												
a	*Plan and Develop the overnight visitor buildings, facilities, equipment and linked infrastructure, in accordance with the CDF to meet DENC standards for the provision of nature-based tourism products.*	Tourism infrastructure is optimal to manage the current and anticipated future volume of visitors.	3.8 Adequacy of Tourism infrastructure						R -	R -	R -	R -	R -
b	*Implement, and formalise (as required), the selected management option for the Lodges, Camps (e.g. concessioning, leasing, service agreement, community-managed, etc.).*												
3	DevelopTourism Infrastructure Maintenance Programme												
a	*Develop Site Plans*	There is a maintenance schedule and all tourism infrastructure is being maintained and meeting the set standards.	4.7 Maintenance of tourism infrastructure						R -	R -	R -	R -	R -
b	*Maintenance standards & prosedures*												
c	*Maintenance of all tourism buildings and infrastructure.*												

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 5: Stakeholder Involvement									**R 18 964,41**	**R 63 820,13**	**R 74 879,93**	**R 87 486,73**	**R 87 716,09**
Objective 5.1: Interaction with stakeholders and communities in the planning, development and management of the PA									**R -**	**R10 718,43**	**R11 254,36**	**R11 817,07**	**R12 407,93**
1	Under the guidance of the Regulations for the proper administration of Nature Reserves, as promulgated in terms of Section 86 (1) of NEMPAA, establish a Reserve Advisory Committee and meet on a regular, agreed to basis.	A well represented functioning and formalised Community Liaison Structure contributes significantly to the management/development of the PA.	4.11 Community Liaison Structure						R -	R 10 718,43	R 11 254,36	R 11 817,07	R 12 407,93
2	Develop and implement an active Public Relations (PR) and Communication Programme												
a	*Ensure positive press coverage is obtained and timeously and effectively respond to items in public media which may negatively impact on the organisation.*	There is a wide ranging multi media public relations and communication programme keeping the general public and internal role players informed of important aspects of the PA.	4.10 Public Relations (PR) and Communication Programme	On Hold									
b	*Initiate and sustain ongoing communications with the communal and/or private landowners to discuss opportunities for ongoing cooperation and collaboration.*												
c	*Establish a Public Relations (PR) and Communications Programme*												
3	Ensure members of the community are involved in supporting the PA through volunteering, projects and fundraising by establishing formal groups such as Friends groups, Volunteers or Honorary rangers	There are a wide range of projects supported by volunteers including fund raising and assistance with management that contribute significantly to increased PA management effectiveness.	5.5 Community Support										
Objective 5.2: Actively participate in local and regional conservation and socio-economic development initiatives that may affect or benefit the PA									**R 18 964,41**	**R50 422,09**	**R43 930,45**	**R52 035,51**	**R56 696,28**
1	Participate in local municipal IDP planning processes, with a specific focus on the provision of municipal infrastructure and services to the reserve and supporting local economic development initiatives in the community.												
a	*Identify, and make application for, EPWP-related funding for relevant tourism and conservation initiatives in the reserve.*	A formal published review/audit has shown that the PA delivers quantifiable long term stimuli to the regional (and possibly the national) economy and delivers a broad range of long term quantifiable community benefits that improve the livelihood strategies and resilience in the lives of communities.	6.1 Economic and Social benefit assessment Direct and measurable benefitsaccrue to local community from the reserve.						R 2 552,01	R 5 359,22	R 2 813,59	R 8 862,80	R 9 305,94
2	Participate in the planning and development of other conservation initiatives with a specific focus on strengthening linkages												
a	Assist other DAERL PA's with specific projects	The PA is influencing the local or regional economy and providing measurable social benefits to communities? Social benefits to direct benefits such as jobs, training and health care. Stimulus of the economy through businesses benefiting	6.1 Economic and Social benefit assessment Direct and measurable benefits accrue to local						R 16 412,40	R 45 062,87	R 41 116,86	R 43 172,71	R 47 390,33
3	Investigate and select mechanisms for optimising employment, empowerment and capacity building opportunities for the local community.												
a	*Develop opportunities for selected individuals from the local community to be trained and directly employed in appropriate conservation and tourism related work.*	The PA is influencing the local or regional economy and providing measurable social benefits to communities? Social benefits to direct benefits such as jobs, training and health care. Stimulus of the economy through businesses benefiting from tourism and meeting the needs of the protected area.	6.1 Economic and Social benefit assessment Direct and measurable benefits accrue to local community from the reserve.	On Hold									
b	*Develop opportunities to facilitate an empowerment component for selected individuals from the local community in any outsourcing/concessioning of the tourism and recreational products.*												
c	*Identify, and if feasible develop, opportunities for the establishment of community-based entrepreneurial opportunities within, or linked to, the reserve, including: game drives; sale of curios and crafts; guided heritage trails; village tourism; conservation enterprise; horse trails; event management and commercial hunting packages.*												
Objective 5.3: Develop, implement and maintain effective mechanisms for ongoing communications with co-management partners									**R -**	**R 2 679,61**	**R19 695,12**	**R23 634,15**	**R18 611,89**
1	Develop and continually review, and amend (as required), the structure, representation and TOR of the Co-Management Committee to ensure that it contributes to realising the intent of the Co-Management Agreement.	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.	4.14 Community partners (only where applicable)						R -	R 2 679,61	R 2 813,59	R 5 908,54	R -
2	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.												
a	*Hold quarterly (more regular if required) meetings with the Co-Management Committee to ensure that co-management decisions are made timeously and effectively.*	Provide ongoing support (e.g. logistical, administrative, technical, professional and leadership) to, and actively participate in, an effectively functioning Co-Management Committee.	4.14 Community partners (only where applicable)						R -	R -	R16 881,53	R17 725,61	R18 611,89
b	*Support the ongoing capacity building of the local community representatives on the Co-Management Committee.*												
c	*Allocate office space in the administrative complex for office bearers of the Co-Management Committee.*												
d	*Host a regular quaterly meeting, each in a different neighbouring village, to present and discuss issues of mutual concern.*												

#	Management action	Management targets	Key performance indicators Mett-Sa Vers 3	Activity planned & Priority					Cost Estimates				
				2025	2026	2027	2028	2029	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
KPA 6: Administration and Planning									**R 1 862 843,19**	**R 1 926 576,11**	**R 1 859 345,25**	**R 2 009 940,58**	**R2 041 316,79**
Objective 6.1: Institute and maintain an effective management planning capability in the PA									**R 145 310,61**	**R 230 673,32**	**R 213 487,90**	**R 235 979,37**	**R210 554,55**
1	Compile and regular revised an IMP for the PA												
a	*Review of IMP on 5 year cycle*	The Management plan is fully integrated covering all aspects of PA management with measureable objectives and is approved by the MEC. Review and compile for next 5 year planning period	2.2 Management Plan						R12 760,04	R13 398,04	R14 067,94	R29 542,68	R46 529,72
b	*Review IMP maps on a 5 year cycle*												
	Map 1:Reserve Interface												
	Map 2: Reserve Interface comparison												
	Map 3: Reserve Estate												
	Map 4: Climate (Climatic regions within the NDM)												
	Map 5: Digital Terrain Model Map												
	Map 6: Geological Map												
	Map 7: Land types and soil Map												
	Map 8: Drainage and Hydrology												
	Map 9: Biomes, Bioregions and Vegetation units												
	Map 10: Plant communities and Management units												
	Map 11: Special habitats - Hotspots												
	Map 12: Archaeological and Cultural, Heritage resources												
	Map 13: Infrastructure and Bulk services												
	Map 14: Use Zone Map												
c	*Follow PPP*												
d	*Obtain approval from MEC*												
2	Update APO and OMF identifying all the activities, tasks and outcomes (operational and management) in accordance with predetermined time frames and approved management plans to be completed in a fanancial year with costing												
a	*Do annual METT assessment*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 55 061,83	R 78 106,26	R 59 211,26	R 59 217,56	R 71 484,38
b	*Review OMP according to planning cycle*	An approved OMF with APO exists and actions are linked to the PA's management plan targets.	4.1 Annual Plan of Operation										
c	*Annual review of APO work plans*												
d	*Link OMF to operational budget*	An operational budget specific to the site is secure and is guarenteed on a 5 year cycle.	3.4 Security of Operational Budget 3.4.1 Capital Budget										
e	*Link APO with Key Performance Areas of PA manager and key personell*	The implementation of the Management Plan linked to the Key Performance Areas of the site manager	5.4 Linking of management plan to key performance										
3	Update State of Knowledge Data Repository - General & Logistical Data												
a	*Update declaration summary and SAPAD*	All properties managed as part of the PA estate have been declared and listed in the SAPAD	1.1 Legal status						R 60 165,85	R 120 979,99	R 121 110,21	R 127 165,72	R 71 484,38
b	*Property description*												
b1	*Property descriptions and history according to deeds with records*	All boundary deviation have been recorded in a legally binding document	1.3.1 Boundary deviations										
b2	*Record all boundary deviations in a legally binding document.*												
b3	*Update a register of all servitudes and the conditions relating thereto.*	A register of all servitudes and conditions relating thereto has been compiled	1.3.2 Servitude register										
c	*Risk Assesment*	S.H.E. Risk & Impact assesment covering inter alia biodiversity, financial management, human resources, tourism impacts and threats	1.6 Risk assessment										
c1	*Undertake a thread analysis to determine all potential threats to the safety and security of the reserve*												
c2	*Undertake risk assessment*												
d	*Protected area expenditure including historical data*	Budget is effectively managed to meet critical management needs in accordance with the APO	3.4.2 Budget Management										
e	*Personnel Info*	The approved organogram reflects the actual needs for effectively achieving all management objectives and the HR capacity meets the approved levels.	3.2 Human Resource capacity										
f	*Economic valuation*	Operational equipment is adequate and suitable for current and future anticipated operational needs	3.7 Adequacy of operational equipment										
g	*Assets and stock inventory registers*												
h	*Equipment/vehicle fleet Maintenance schedules with maintenance standards & prosedures*	There is a maintenance schedule and all operational equipment and transport fleet is being correctly maintained and meeting the set standards	4.6 Maintenance of operational equipment										
i	*Infrastructure Maintenance schedules with maintenance standards & prosedures*	There is a maintenance schedule and all operational infrastructure is being maintained and meeting the set standards.	4.6.1 Maintenance of operational infrastructure										
j	*14 Literature Inventory & Web Links.docx*	Information technology systems are excellent and fully support management effectiveness. All electronic data are backed up on a routine basis, stored according to organisational standards and are easy to access.	4.5 Information Technology systems										

4	*Update State of Knowledge Data Repository - Guiding Management Principles*											
a	*Complete list of 01 International Conventions, Commissions and Treaties relating to Biodiversity Conservation and Protected Areas, to which SA is a signatory.*	Protections systems or mechanisms for controlling current and anticipated levels of legitimate or illegitemate access or activities in the PA are fully implemented. The success has been verified by a relevant PA integrity audit.	5.2 Functioning of law enforcement and compliance systems						R 12 760,04	R 13 398,04	R 14 067,94	R 14 771,34	R 15 509,91
b	*Complete list of 02 National Legislation with Regulations with which Protected Areas have an obligation to comply*												
c	*Complete list of Provincial and Municipal Bylaws with which Protected Areas have an obligation to comply*												
d	*Complete list of 04 Policies to guide decision-making and operations and strategies relating to implementation*												
e	*Review Protected Areas internal rules ito Sections 52 of NEM:PAA that are PA specific. Approve and Gazette Internal Rules*	Regular revision of Internal Rules in line with changing legislation	1.2 Internal Rules										
f	*Compile Standard Operating Procedures pertaining to all management activities*	Relevant Standard Operating Procedures pertaining to all management activities are in place and are regularly updated to ensure best practice.	4.2 Standard Operating Procedures										
5	*Update State of Knowledge Data Depository Maps*												
a	*General and Logistical Maps for Estate and Domain not ZOI*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems						R 4 562,84	R 4 790,99	R 5 030,54	R 5 282,06	R 5 546,17
	Map 1: Protected area Expansion												
	Map 2: Historical land uses - Polygon Only data From colonial time												
	Map 3: Conflicting land uses - Polygon Current and known future												
	Map 4: Anthropogenic incidence (HIRA) - Polygon Incidence of manmade disasters, accidents and impacts (poaching, arsen ect.)												
	Map 5: Site plans - update with CDF/GIAMA												
	Map 5-1: Development Plans - According to CDF												
	Map 6: Roads - Historic and current update with CDF												
	Map 7: Fences - Historic and current update with CDF												
	Map 8: Water supply systems - Historic and current update with CDF												
	Map 9: Watering points - Historic and current manmade update with CDF												
	Map 10: Electrical installations - Historic and current update with CDF												
	Map 11: Mining operations and Burrow pits - Historic and current update with CDF												
b	*Biodiversity Maps Link to BMS for Estate and Domain not ZOI*	Information and the understanding thereof concerning key species, habitats, ecosystems and invasive species of the PA supports the achievement of biodiversity objectives.	1.4. Biodiversity knowledge and understanding										
	Map 1: Fauna												
	Map 1-1 Exotic Fauna - One map all species different colours per species only hotspots												
	Map 1-2 Fauna Distribution of Species with commercial value												
	Map 1-3 Fauna Distribution of Species of Special Concern - density + distribution												
	Map 1-4 Fauna Distribution Large Predators - One map all species different colours per species												
	Map 1-5 Fauna Distribution Key Raptor Nests - One map all species different colours per species												
	Map 1-6 Fauna Monitoring sites - One map all projects different colours per project (Game count)												
	Map 2: Flora												
	Map 2-1: Flora Exotic - One map all species different colours per species only hotspots												
	Map 2-2 Flora Distribution of Species with commercial value												
	Map 2-3 Flora Distribution of species of Special Interest - One map all species (density + distribution)												
	Map 2-4 Flora Fire insidence - One map all burns different colours per incidence												
	Map 2-5 Flora Monitoring sites One map all projects different colours per project												

Objective 6.2: Maintain an adequately equipped, resourced and trained staff complement for the PA									**R 1 355 188,40**	**R 1 379 296,70**	**R 1 352 256,87**	**R 1 392 064,80**	**R 1 430 827,65**
1	Ensure that all vacant posts in the reserve's approved organogram are filled and determine actual needs for achieving management objectives.	The approved organogram reflects the actual needs for effectively achieving all management objectives and the HR capacity meets the approved levels.	3.2 Human Resource capacity						R 824 601,64	R 836 609,12	R 829 166,54	R 841 861,41	R 873 202,01
2	Implement the institutional staff performance appraisal system and link WP and PA to APOsystem.												
a	*Have clear job descriptions and Performance Agreements on record. Link KPA's to APO and Mett*	HR management and staff development systems are excellent and fully support management effectiveness	5.3 Staff Development and productivity						R 188 680,90	R 152 436,65	R 110 326,44	R 115 292,76	R 111 573,43
b	*Identify training needs, and facilitate access to training programs for reserve staff, with a priority focus on field ranger, first aid, hospitality and IT skills training.*												
c	*Maintain leave and CWW records as part of monthly planner*												
3	Maintain all staff information for the reserve (leave records, attendance registers, overtime, etc.).		4.3 HR Management systems						R 294 570,43	R 309 298,95	R 324 763,90	R 341 002,09	R 358 052,20
4	Develop S.H.E policies and procedures for the reserve	An external audit has certified that PA management complies with and implements the Occupational Health and Safety Act.	4.3 HR Management systems						R 47 335,42	R 80 951,98	R 88 000,00	R 93 908,54	R 88 000,00
5	Develop a policy and standards for staff housing and ensure all staff housed accordingly.	There is a policy and standards for staff housing and are all staff housed accordingly	3.11 Staff housing						R -	R -	R -	R -	R -
Objective 6.3:Institute and maintain an effective financial and administartive planning capability in the PA									**R 362 344,19**	**R 316 606,09**	**R 293 600,48**	**R 381 896,41**	**R 399 934,59**
1	Information Technology systems												
a	*Ensure electronic data are backed up on a routine basis and stored according to organisational standards and are easy to access.*	Infromation technology systems are excellent and fully support management effectiveness. All electronic data are backed up on a routine basis, stored according to organisational standards and are easy to access	4.5 Information Technology systems						R 62 416,06	R 28 718,43	R 8 440,77	R 26 588,41	R 48 815,85
b	*Institute and maintain an electronic and/or hard copy filing system for all reserve-specific information.*												
c	*Read and apply all updated Management Authority guidelines, policies and procedures to the daily functioning of the reserve.*			Ad hoc									
2	Ensure financial management is excellent and all management goals are met												
a	*Compile OMF budget for 5 year planning cycle*	The available budget is sufficient and meets the full management needs of the site without external funding	3.3 Adequacy of Operational budget						R 61 248,19	R 50 912,56	R 28 135,89	R 85 673,78	R 68 243,60
b	*Compile database of external sources of funding for specific projects*	There are skills and capacity in the organisation to raise external sources of funding for specific projects in the organisation	3.5.1 Fund raising										
c	*Compile APO budget for current financial year and obtain dedicated budget*	Site manager resposible and accountable for budget management?	3.4.3 Delegation of management of budget										
d	*Maintain a reserve-based record of all purchases made, accounts paid and services procured in support of reserve operations over each financial year*	Budget is effectively managed to meet critical management needs in accordance with the APO	3.4.2 Budget Management										
e	*Keep record and manage own revenue according to PFMA and supply inputs when required*	Income is managed and retained within the organisation and is used solely for PA management in the organisation	3.5 Income										
3	Ensure administration management is excellent and all management goals are met												
a	*Attend PAM and other meetings*	Administrative support systems are excellent and fully support management effectiveness.	4.4 Administrative support systems	Ad hoc					R 238 679,94	R 236 975,10	R 257 023,82	R 269 634,22	R 282 875,14
b	*Update PAM task list*												
c	*Monthly and quaterly planning and reports*												