

The Greater Ukuwela Nature Reserve

**KwaZulu-Natal
South Africa**




Protected Area Management Plan Final 2021 - 2026

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ABBREVIATIONS

Amafa	Amafa KwaZulu-Natali (KwaZulu-Natal Provincial Heritage Agency)
APO	Annual Plan of Operation
BECVOL	Biomass Estimates from Canopy Volumes
CEO	Chief Executive Officer
CPI	Consumer Price Index
DCO	District Conservation Officer
DEA	National Department of Environmental Affairs
DWAS	National Department of Water and Sanitation
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EWT	Endangered Wildlife Trust
Ezemvelo	Ezemvelo KwaZulu-Natal Wildlife
FPA	Fire Protection Association in terms of the National Veld and Forest Fire Act (No.1 of 1998)
GIS	Geographical Information System
IAP	Invasive Alien Plant
IDP	Municipal Integrated Development Plan
IUCN	International Union for the Conservation of Nature
LSU	Large Stock Unit
MEC	Member of the Executive Council
METT	Management Effectiveness Tracking Tool
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEMA	National Environmental Management Act
NEM: PAA	National Environmental Management: Protected Areas Act
NFEPA	National Freshwater Ecosystem Priority Area
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
PA	Protected Area
PES	Present Ecological State (as applied to assessed water resources)
SDF	Municipal Spatial Development Framework
SMME	Small, Micro and Medium Enterprises
SWOT	Strengths, weaknesses, opportunities and threats analysis
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VCA	Veld condition assessment
WCPA	World Commission on Protected Areas
WWF	World Wildlife Fund

1) BACKGROUND

1.1 Purpose of the plan

Management plans for biodiversity stewardship sites are strategic documents that provide the framework for the development and operation of biodiversity stewardship sites. Biodiversity stewardship offers varying levels of formal protection of land with nature reserves being the highest level of protection and a recognised protected area in terms of the National Environmental: Management Protected Areas Act, No. 57 of 2003. Because of the importance of its biodiversity and ecological functions, the Greater Ukuwela Nature Reserve qualified and has been declared as a nature reserve in terms of the Act.

This management plan informs management at all levels, from the management authority through to support staff within partner organisations and Ezemvelo KZN Wildlife. The purpose of the management plan is to:

- Provide the primary strategic tool for management of the Greater Ukuwela Nature Reserve, informing the need for specific programmes and operational procedures.
- Provide for capacity building, future thinking and continuity of management.
- Enable the management authority to develop and manage the Greater Ukuwela Nature Reserve in such a way that its values and the purpose for which it has been established are protected.
- Ensure the effective management of the Greater Ukuwela Nature Reserve in accordance with relevant provincial, national and international norms and standards.
- The plan outlines the implementation of the conditions laid out in the Protected Area Management Agreement for the Greater Ukuwela Nature Reserve, which are to:
 - Preserve the ecological integrity (including vulnerable and ecologically sensitive areas) of the reserve.
 - Conserve the biodiversity of the game reserve.
 - Protect areas representative of all ecosystems, habitats and species naturally occurring there.
 - Protect threatened or rare species.
 - Assist in ensuring the sustained supply of environmental goods and services provided by the nature reserve.
 - Provide for the sustainable use of natural and biological resources.
 - Create or augment destinations for nature-based tourism.
 - Rehabilitate and restore degraded ecosystems and promote the recovery of threatened and vulnerable species.

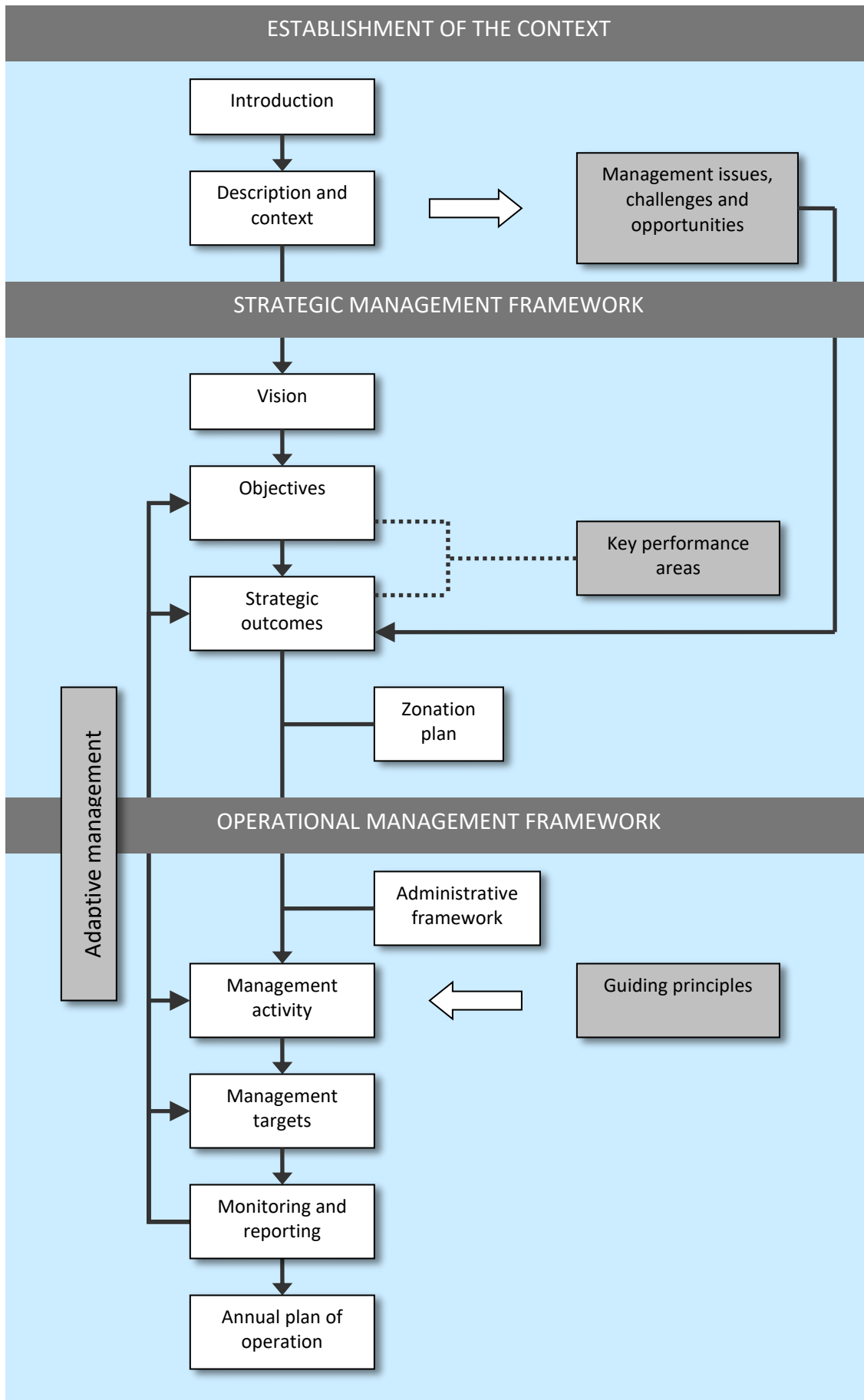


Figure 1.1 Structure of the Management Plan

1.2 Structure of the plan

Section 1:	Provides an introduction and background to the management plan and the Greater Ukuwela Nature Reserve.
Section 2:	Establishes the context of the Greater Ukuwela Nature Reserve, providing the basis for the strategic and operational management frameworks that follow.
Section 3:	Sets out the vision and objectives for the Greater Ukuwela Nature Reserve.
Section 4:	Sets out the zonation of the Greater Ukuwela Nature Reserve, outlining the land uses in particular zones.
Section 5:	Describes the administrative structure that has been established to assist in managing the Greater Ukuwela Nature Reserve.
Section 6:	Sets out the management targets that must be achieved in managing the nature reserve.
Section 7:	Sets out the monitoring measures required to determine if management targets are being met.
Section 8:	Describes the components that must be included in the annual plan of operation.

1.3 Alignment with METT

Management effectiveness is defined by the IUCN's World Commission on Protected Areas (WCPAs) as the assessment of how well a protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives (Hockings, Stolton & Dudley 2000; Hockings *et al.* 2006). The assessment of management effectiveness using the Management Effectiveness Tracking Tool (METT-SA Version 3, 2015) is not a management performance assessment but is intended to identify areas in which management effectiveness can be improved within a protected area and within the organisation managing the protected area.

As far as possible, this management plan has been aligned with the METT, which focuses on six elements of protected area management:

1. Understanding the context of existing values and threats.
2. Protected area planning and design.
3. The allocation of resources to the protected area.
4. The processes that are implemented in managing a protected area.
5. The outputs of management actions.
6. The outcomes or impacts of management actions.

It must be understood that not all aspects of the METT will be relevant to the Greater Ukuwela Nature Reserve but that the METT is able to identify areas in which to focus management activities in an effort to address deficiencies and

improve management. It thus provides a baseline upon which future management effectiveness can be measured and improved.

1.4 Introduction

The Greater Ukuwela Nature Reserve is a 1283,1 ha reserve that is situated north of Hluhluwe town in Northern KwaZulu Natal. It falls within the uMkhanyakude District Municipality and the Big Five Hlabisa Local Municipality.

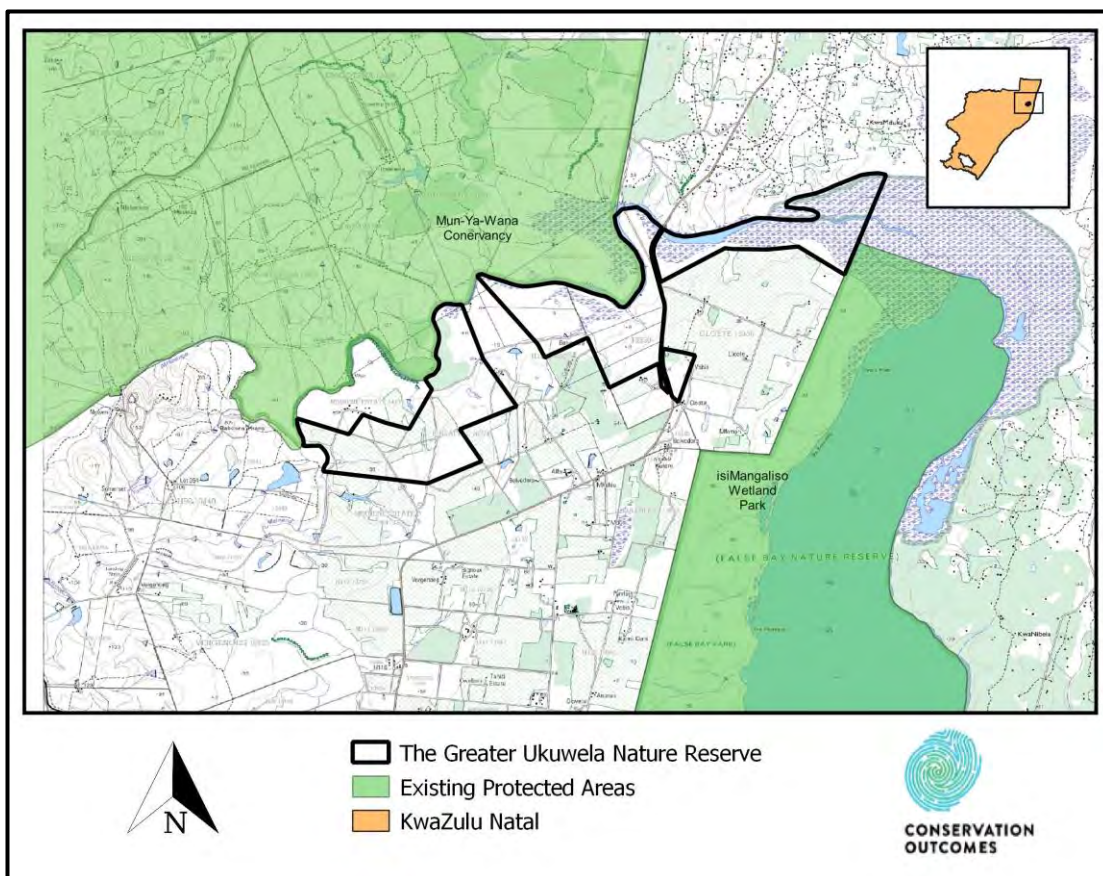


Figure 1.2 Regional location of the Greater Ukuwela Nature Reserve

As shown in Figure 1.2, the reserve forms an important linkage between the Mun-Ya-Wana Conservancy and the isiMangaliso Wetland Park. The Mzinene River, which flows directly into the isiMangaliso Wetland Park forms a portion of the boundary between the Greater Ukuwela Nature Reserve and the Mun-Ya-Wana Conservancy; the Greater Ukuwela Nature Reserve therefore plays an integral role in its protection.

The reserve comprises of two disconnected portions: Ukuwela (west), which is 540.8 ha, and Mfuleni (east) which is 742.3 ha.

1.5 The values of the Greater Ukuwela Nature Reserve

The values of a place are those remarkable attributes that exemplify it, which led to it being identified as a priority for the Biodiversity Stewardship Programme and to be proclaimed as a nature reserve. The values are

important in planning and management, as they are the aspects of the place that must be protected. The values of Ukuwela Nature Reserve include:

Socio-economic values	<ul style="list-style-type: none"> ▪ The Greater Ukuwela Nature Reserve provides benefits to its landowners flowing from tourism and sustainable resource use. ▪ The Greater Ukuwela Nature Reserve contributes to community upliftment through biodiversity conservation, tourism and upliftment programmes.
Habitat and species values	<ul style="list-style-type: none"> ▪ The Greater Ukuwela Nature Reserve provides suitable habitat for plant and animal species representative of the region. ▪ The Greater Ukuwela Nature Reserves enables habitat connectivity within the regional protected area network.
Ecosystem function values	<ul style="list-style-type: none"> ▪ The Mzinene River and a number of associated wetlands run through or adjacent to the The Greater Ukuwela Nature Reserve and feed into the St Lucia wetland system. ▪ The Greater Ukuwela Nature Reserve provides a critical connection to surrounding natural habitat and other protected areas.
Scenic values	<ul style="list-style-type: none"> ▪ The Greater Ukuwela Nature Reserve is a place of beauty that makes an important contribution to the sense of place of the region.
Scientific, research and educational values	<ul style="list-style-type: none"> ▪ The Greater Ukuwela Nature Reserve enables research in species, ecology and ecosystem function that contributes to the understanding of the biodiversity and conservation imperatives of such systems. ▪ The Greater Ukuwela Nature Reserve is an educational asset that enables people of all ages and education levels to improve their understanding and appreciation of nature.

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

- Protect representative areas of Subtropical Freshwater Wetlands; Western Maputaland Clay Bushveld; Maputaland Pallid Sandy Bushveld and Tembe Sandy Bushveld.
- Provide landscape level biodiversity conservation that connects protected areas and contributes to the protection of the ecological integrity of the region.
- Protect part of the catchment of the Mzinene River, which feeds into the iSiMangaliso Wetland Park.
- Protect threatened, rare and endemic species.
- Assist in the supply of sustained environmental goods and services.

- Be a successful model of biodiversity conservation and community beneficiation through nature-based tourism.

1.5.1 Protection of the values

The protected area's values, in particular those that underlie the functioning of its ecosystems and the protection of its rare and threatened species, will be given the highest degree of protection to ensure the persistence of these systems predominantly unaltered by human activity.

1.5.2 Ecosystem-based management

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

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

1.6 Adaptive management

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

Adaptive management enables landowners and managers to:

- i) Learn through experience.
- ii) Take account of, and respond to, changing factors that affect the biodiversity stewardship site.
- iii) Develop or refine management processes.
- iv) Adopt best practices and new innovations in biodiversity conservation management.
- v) Demonstrate that management is appropriate and effective.

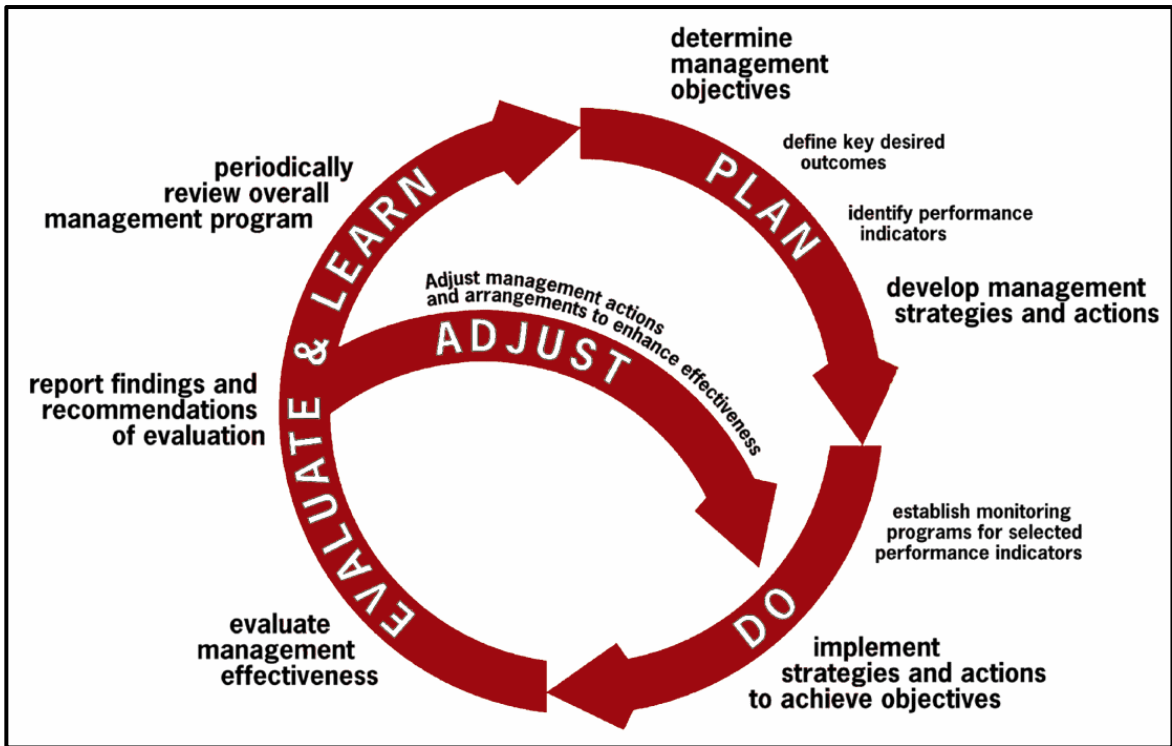


Figure 1.3 The adaptive management cycle (Management Strategy Evaluation, 2009)

2) DESCRIPTION OF THE GREATER UKUWELA NATURE RESERVE AND ITS CONTEXT

2.1 The history of the Greater Ukuwela Nature Reserve

The Ukuwela portion of the Greater Ukuwela Nature Reserve had been commercially farmed since the 1950s; in a combination of crop and *Nguni* beef production. In the 1950's it was predominantly used for sisal production (the old sisal factory is still present on the property); however, between the 1950's and 1980's the farm was slowly converted to pineapple production, which continued until 2009. From 2009 to 2011, portions of the farm were used to produce chillies, tomatoes and butternut. There are areas of primary vegetation that were utilised for grazing throughout the commercial agriculture period. The Mfuleni portion of the Greater Ukuwela Nature Reserve is predominantly primary vegetation (wetland habitat), with small patches that were utilised for farming. The entire area is currently being used for conservation and ecotourism ventures; therefore, the area is being rehabilitated.

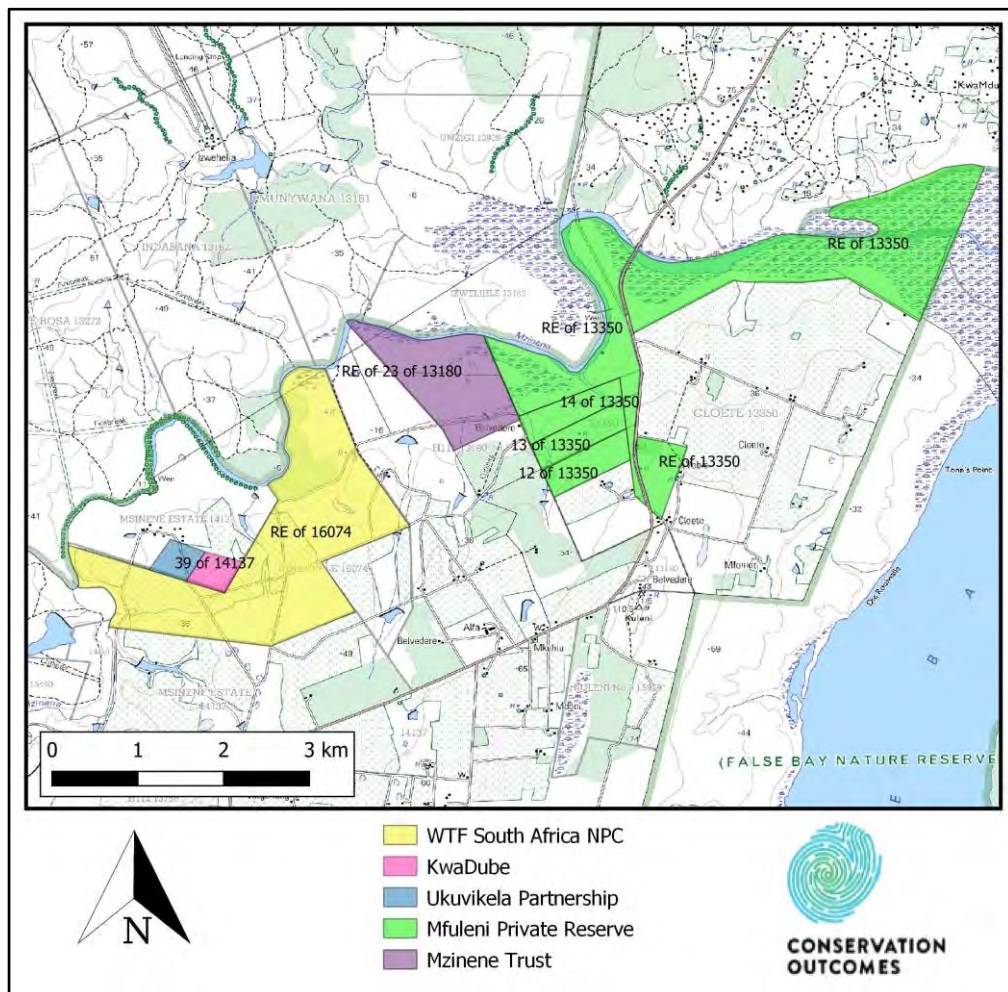


Figure 2.1 Land ownership within the Greater Ukuwela Nature Reserve.

Figure 2.1 depicts the current ownership of the various properties that make up the Greater Ukuwela Nature Reserve and Table 2.1.1 provides the relevant property descriptions and sizes.

The property Rem of 23 of LotH115 No 13180 was purchased in late 2004 by the Mzinene Trust with the intention that the trustees eventually live on the property while making an income from a small commercial venture. At the time of purchase, &Beyond Phinda were leasing the land and the property was open to what was then “Phinda Private Game Reserve” (now the Mun-Ya-Wana Conservancy). This property forms part of the ‘Mfuleni’ section of the Greater Ukuwela Nature Reserve.

In 2014, Sylvia Reynders-Froelicher (KwaDube) purchased Ptn 39 of 14137; with the intention of utilising it for residential purposes. This property forms part of the ‘Ukuwela’ section of the reserve.

In May 2017, the Farm Pineapple 16074 and Portion 38 of 14137 were purchased by Wild Tomorrow Fund and the Ukuvikela Partnership respectively; to prevent the cultivation of pineapples. The land was secured through donor funding, with the following mandates: secure the habitat for conservation purposes, rehabilitate the property and reintroduce indigenous species where appropriate. As part of the donor mandate, there may be no hunting on the property. This property also forms part of the ‘Ukuwela’ portion.

In 2019, WTF purchased a two-thirds majority share in Mfuleni Private Reserve, a holding company which owns the land as its sole asset. The properties included in Mfuleni Private Reserve are as follows: Rem of 13350; Portion 14 of 13350; Portion 13 of 13350; Portion 12 of 13350.

With the intention of protecting the properties in perpetuity; WTF initiated the Biodiversity Stewardship process. As part of that process, the various owners have signed a Landowner Association constitution, which will serve as the management authority for the conservancy.

Table 2.1.1 Land ownership within Ukuwela Nature Reserve

Landowner	Area (ha)
Wild Tomorrow Fund South Africa NPA	499.7700
Farm Pineapple 16074	499.7700
Mfuleni Private Reserve	587.2914
Rem of 13350	351.4535
Ptn 12 of 13350	40.8733
Re Ptn 13 of 13350	20.4406
34 (of 13) of 13350	20.4384
Ptn 14 of 13350	40.8733

Ukuvikela Partnership	20.2382
Portion 38 (of 15) of the Farm Msinene Estate no. 14137	20.2382
KwaDube (Sylvia Reynders-Froelicher)	20.7696
Portion 39 (of 15) of the Farm Msinene Estate no. 14137	20.7696
Mzinene Trust	154.0573
Re of 23 of 13180	154.0573
Total	1283.0614

2.2 The legal context for the management of the Greater Ukuwela Nature Reserve

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

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

A detailed list of relevant legislation is provided in Appendix B. As the management authority, the Greater Ukuwela Nature Reserve should familiarise itself with the purpose and contents of the statutes and their subsequent amendments and regulations.

2.2.1 Proclamation status of the Greater Ukuwela Nature Reserve

Conservation Outcomes and Ndlovu de Villiers Attorneys were contracted by the landowners of the Greater Ukuwela Nature Reserve to facilitate the Biodiversity Stewardship Process; the costs of which have been covered by WTF. After the constitution was signed and this Management Plan was approved by the management authority; it was submitted to Ezemvelo KZN Wildlife and the MEC for approval. After approval from the MEC and a 60-day public participation process the declaration was published in the national gazette, providing formal status as a nature reserve under S23 of NEM:PAA. The declaration was gazetted on the 27 May 2021, in Gazette No. 2290.

2.2.2 Boundary demarcation and deviations

The Greater Ukuwela Nature Reserve perimeter fence is a 1.8m heavy galvanized, electrified Veldspan or Bonnox game fence that meets the requirements of the National Norms and Standards for the Management of Elephants in South Africa (Figure 2.2). The electricians are run off solar power. As such the boundary of the Greater Ukuwela Nature Reserve is known by the

management authority, is fully demarcated and is respected by local residents, neighbouring land users and the public.



Figure 2.2 The Greater Ukuwela Nature Reserve perimeter fence

There is a boundary deviation on the western boundary of the reserve, whereby the fence line is east of the cadastral boundary. The fence then crosses the Mzinene River and joins the Mun-Ya-Wana fence line. This deviation is not addressed through a legally binding agreement.

In addition, there are two sections of the property Rem of 13350 that fall east of the R22, which have not been included in the fenced area. The eastern fence line follows the R22 district road. See figure 2.3 for a map of the current fence line.

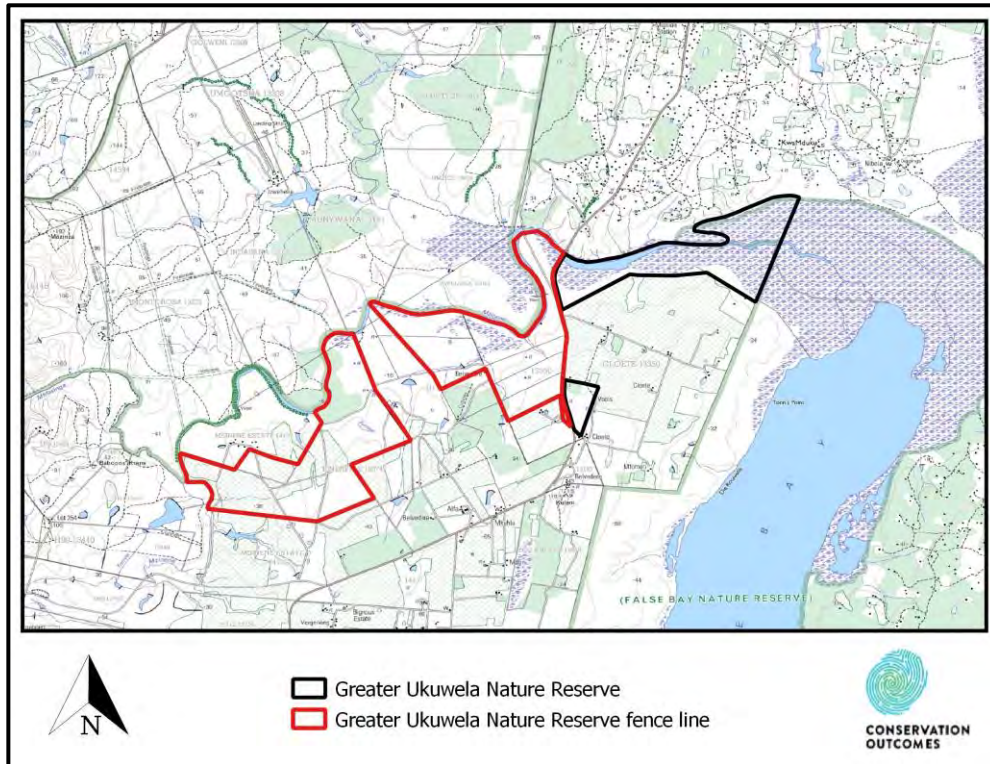


Figure 2.3: Map of the fenced area of the Greater Ukuwela Nature Reserve

The intention is to include the sections east of the R22 in the future. These boundary deviations will therefore be updated in the successive iteration of this management plan. The management authority will manage the entire reserve, including the sections east of the R22.

2.2.3 Servitude register

A water pipeline runs through the Ukuwela Nature Reserve (Farm Pineapple 16074) to Mun-Ya-Wana Conservancy; however, this is not a registered servitude. There are registered access roads to all the properties within the Greater Ukwela Nature Reserve. In addition, there are a number of Eskom powerlines that traverse the Nature Reserve; on both the Ukuwela and Mfuleni sections.

In addition, while the R22 is currently on the eastern boundary of the fenced area; it does bisect the reserve.

A register of these servitudes must be compiled and maintained. Appendix G is a map of all the servitudes on the nature reserve.

2.2.4 Invasive species control in terms of the Biodiversity Act

In terms of Section 76 of the National Environmental Management: Biodiversity Act (No.10 of 2004), the management authority of a protected area must incorporate an invasive species control plan in the protected area management plan. This is addressed in Sections 3 and 4 below. The management of invasive alien species will fall to the landowners of the individual properties. To this end, the individual properties within the Ukuwela Nature Reserve have invasive alien species control plans. These plans include

the identification of key invasive alien plants species, their distributions and densities, and a series of management and control strategies that include the use of fire, chemical and manual control, and the maintenance of boundaries and buffer zones to prevent new infestations.

2.3 Ecological context of the Greater Ukuwela Nature Reserve

2.3.1 Climate and weather

The Greater Ukuwela Nature Reserve has a warm to hot, humid, tropical to subtropical climate with hot summers and cool to warm winters. Tropical cyclones, which occur infrequently along the coast, generally from January to March result in occasional episodic large-scale floods. The mean annual rainfall for the period 1995 to 2009 was 776mm with a coefficient of variation of 29% where the maximum and minimum annual rainfall records were 1,195 and 345 mm respectively, which indicates the significant variability characterising the annual precipitation of the area (Trollope *et al.* 2011). More than 75% of the annual rainfall occurs between the months of October and March with February having the highest expected rainfall at an average of almost 120 mm and July having the lowest average rainfall at below 20 mm (Figure 2.4).

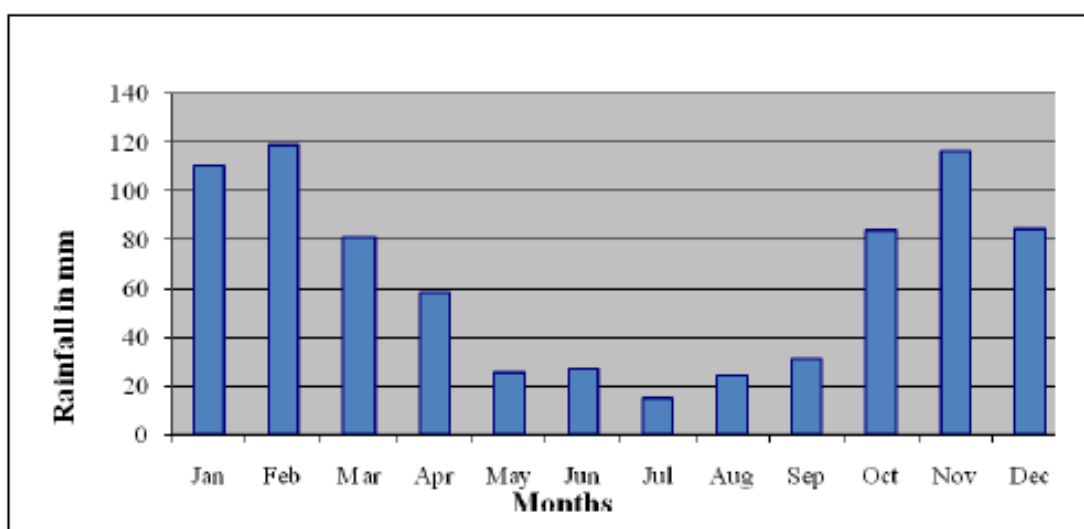


Figure 2.4 Mean monthly rainfall for the Greater Ukuwela Nature Reserve recorded during the period 1995 to 2009

The area is generally climatically stable with the mean annual temperature fluctuation less than 12 °C (Bothma 2002). The mean temperature is 21.8 °C, the highest average monthly temperature occurs in January, with an average of 25.5 °C and the lowest average temperature occurs in July, at 16.4 °C.

2.3.2 Topography

The Greater Ukuwela Nature Reserve lies at the south-western boundary of the extensive Maputaland Coastal Plain. The reserve is relatively flat, with an altitudinal range from 8 m above sea level on the Mzinene River to approximately 75 m above sea level in the south west of the conservancy (Figure 2.5).

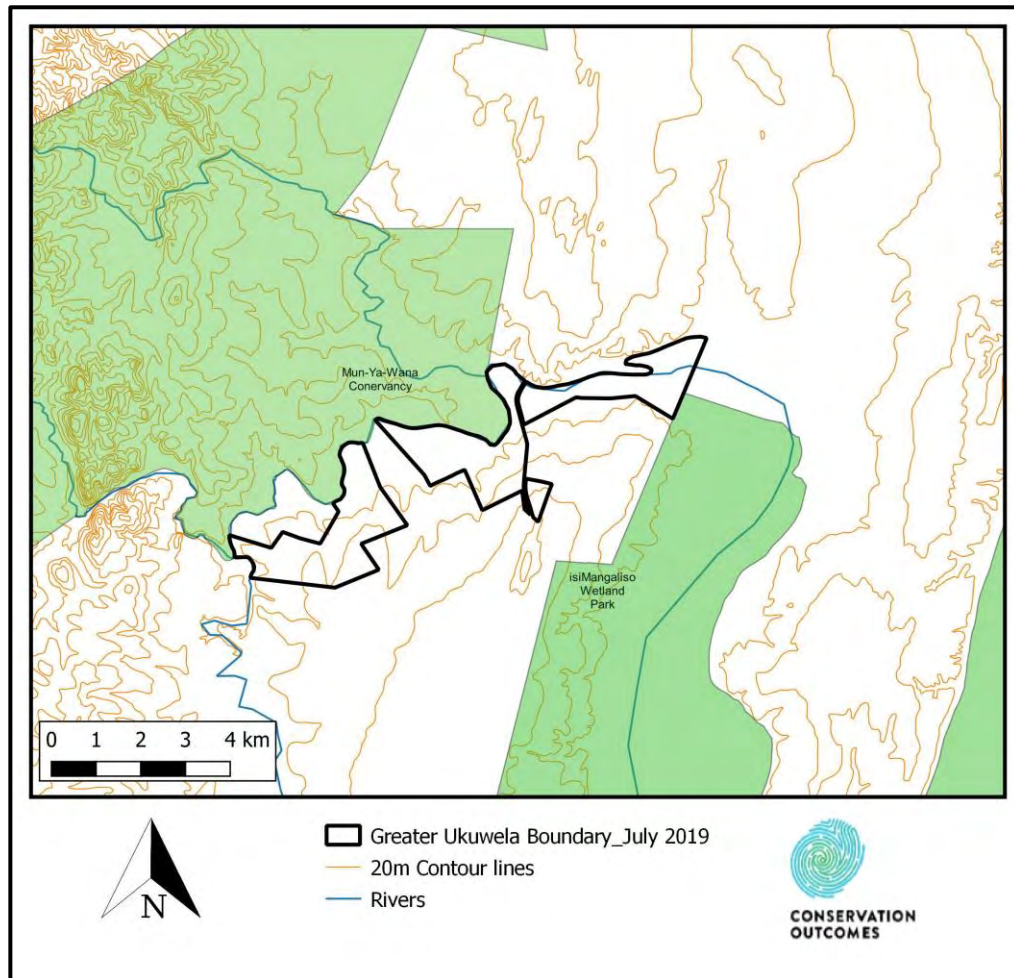


Figure 2.5 Topography of Ukuwela Nature Reserve and its surrounds

2.3.3 Geology and soils

The underlying geology and soils of the Greater Ukuwela Nature Reserve determine its vegetation types. As is seen in Figure 2.6, the Reserve is situated on a siltstone band, running north to south. This band is one of the three formations that comprise the Cretaceous sediments; all of which form striking north-south zones parallel to the eastern foot slopes of the Lebombo mountains (Wolmarans and du Preez 1986).

The first of these zones to be deposited was the lower Cretaceous Makatini Formation consisting of non-marine, fluvial coarse sandstone and conglomerate (Siltstone). The overlying Mzinene Formation consists of shallow marine silts and sands (Sand), while the St Lucia Formation near the coast is the youngest and comprises of buff and greenish grey glauconitic silts and fine sands (Cenozoic sediment).

The Cretaceous sediments of the Zululand Group continue from the eastern base of the Ubombos where the gently undulating nature of the terrain signifies the start of the Maputoland Coastal Plain (Wolmarans and du Preez 1986). Ukuwela Nature Reserve is situated on the western edge of the Maputoland Coastal Plain.

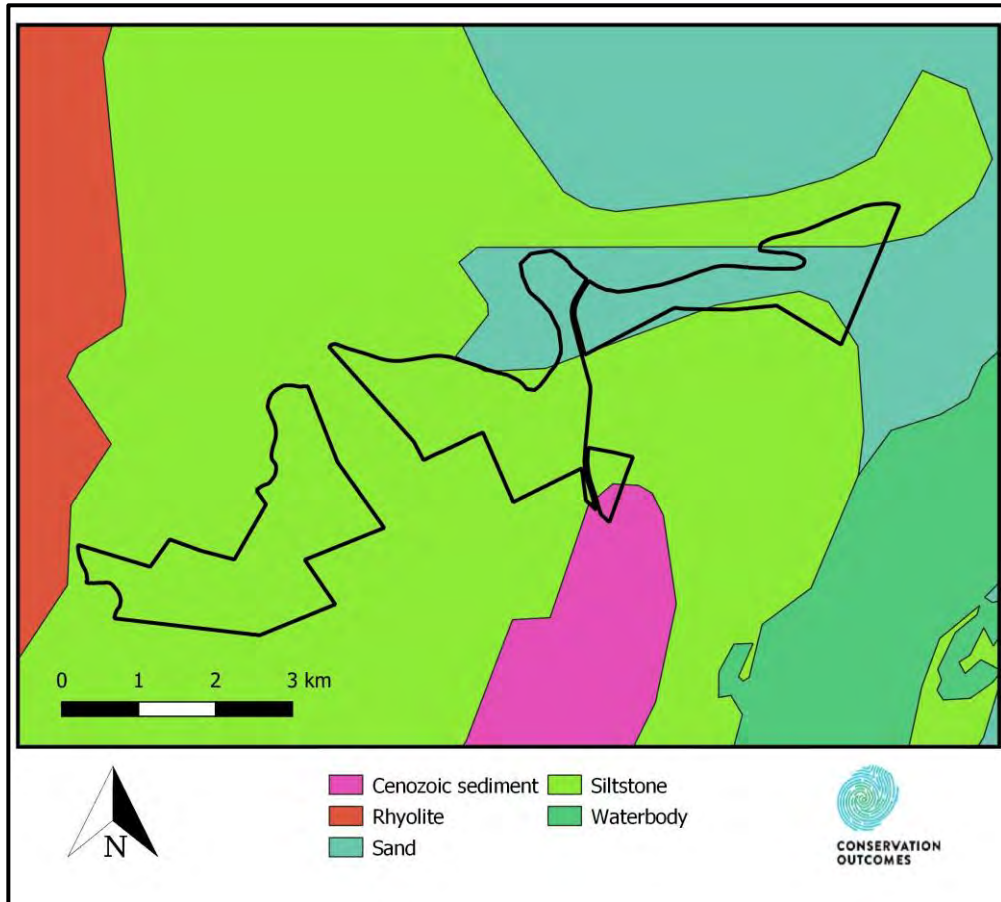


Figure 2.6 Geology of the Greater Ukuwela Nature Reserve and its surrounds

Although there is a general understanding of the soils in the reserve, a detailed, fine-scale soil survey is required in order to generate an accurate soil map for the reserve.

2.3.4 Drainage and hydrology

The Greater Ukuwela Nature Reserve is drained by a number of drainage lines towards the Mzinene River to the north of the reserve, which ultimately flows into the St Lucia Wetland system (Figure 2.7).

Artificial watering points consist of a number of small dams scattered throughout the reserve; only some of which are functional and/or are kept full throughout the year.

The Mzinene River is a National Freshwater Ecosystem Priority Area (NFEPA) Rivers. Similarly, a number of the wetlands within the reserve are NFEPA wetlands. The implication of this is that these rivers and wetlands are considered a priority for the provision of freshwater ecosystem services and biodiversity conservation nationally. Furthermore, the rivers and wetlands within the reserve make up an integral part of the St Lucia Wetland system, South Africa’s largest estuary and a primary component of the iSiMangaliso Wetland Park World Heritage Site. The protection and management of the

reserve is thus important in maintaining the connectivity and ecological integrity of iSiMangaliso Wetland Park World Heritage Site.

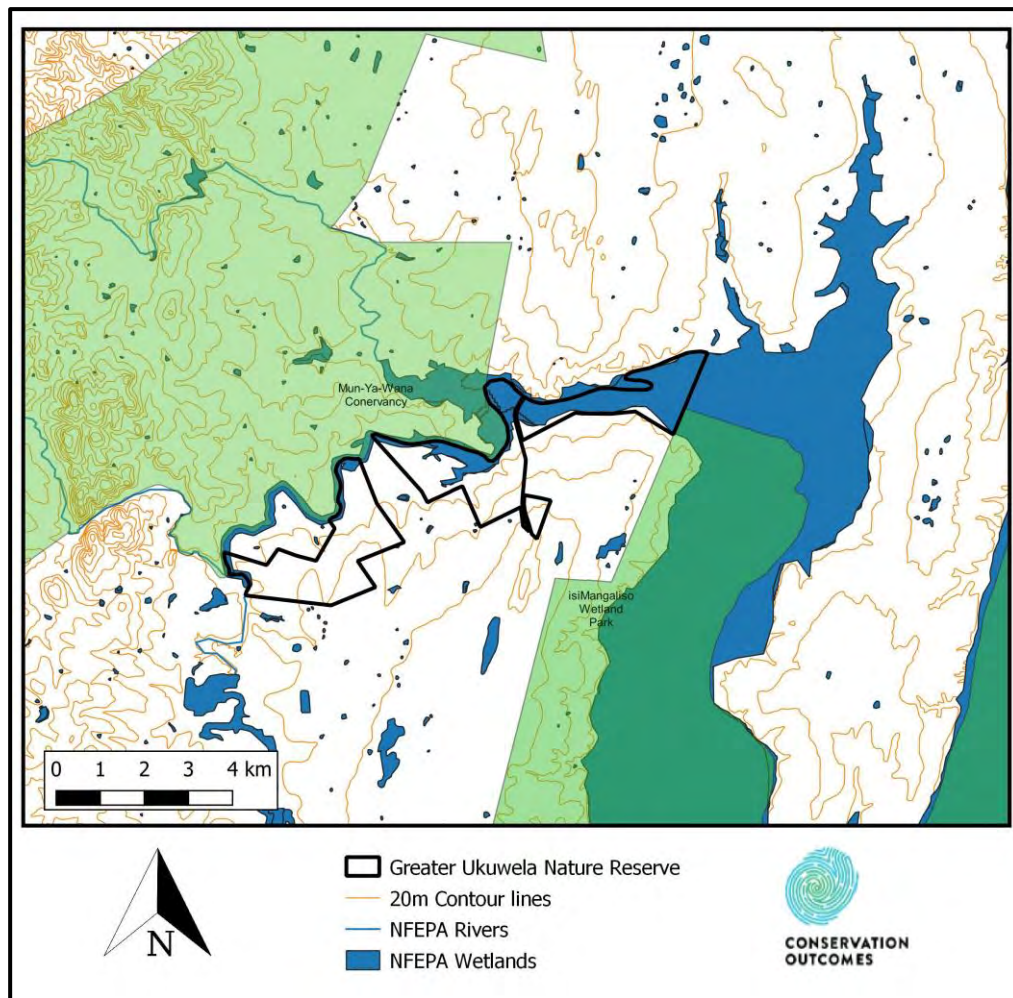


Figure 2.7 Drainage and hydrology of the Greater Ukuwela Nature Reserve and its surrounds

2.3.5 Vegetation

Mucina and Rutherford (2006) have identified two vegetation types within the Greater Ukuwela Nature Reserve. The updated KZN vegetation layer has further refined this finding and has identified 4 vegetation types (Figure 2.8). For the purposes of this management plan, the focus will be on the 4 vegetation types identified in the KZN vegetation layer, as these are used to determine the contribution of the reserve to provincial and national biodiversity and protected area targets (Table 2.3.1). *Untransformed* areas are used when calculating contribution to provincial and national targets.

Table 2.3.1 Vegetation types in the Greater Ukuwela Nature Reserve and their contribution towards protected area targets

Vegetation type	Threat status	Extent of vegetation within the reserve (ha)	Proportion of provincial extent of veg type within the reserve	Contribution to biodiversity targets
Western Maputaland Clay Bushveld	Vulnerable	330	0.58%	1.14%
Freshwater Wetlands: Subtropical Freshwater Wetlands: Short Grass/ Sedge Wetlands	Least threatened	355	0.92%	3.15%
Maputaland Pallid Sandy Bushveld	Least threatened	232	0.50%	1.15%
Tembe Sandy Bushveld	Least threatened	14	0.02%	0.07%

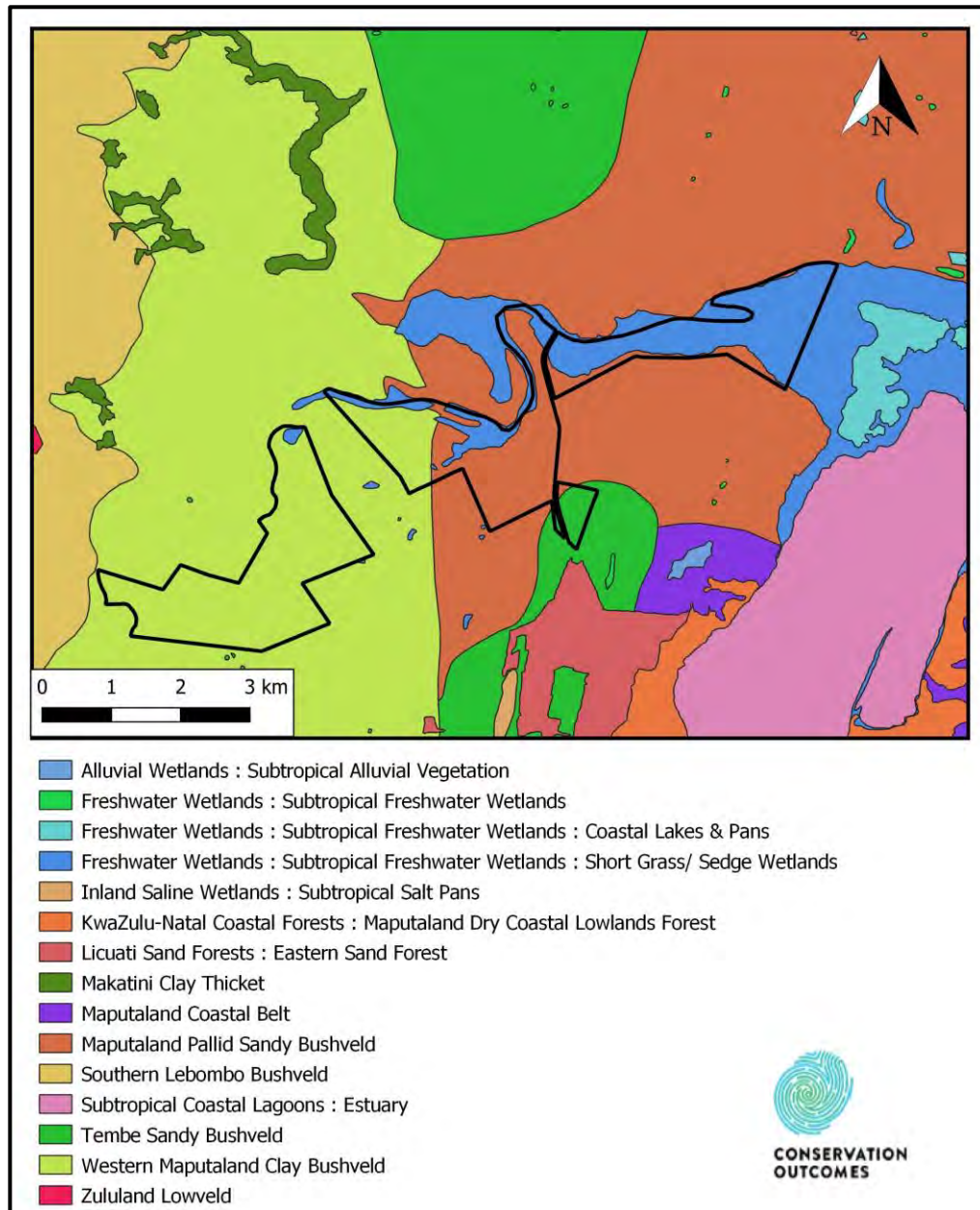


Figure 2.8 Vegetation of the Greater Ukuwela Nature Reserve (KZN vegetation layer)

Western Maputaland Clay Bushveld (Mucina and Rutherford 2006) covers approximately 47% of the Greater Ukuwela Nature Reserve. It occurs in the regions immediately to the east of the Lebombo Mountains, eastwards to the western edge of the Tembe Sandy Bushveld at an altitude of 20 to 200 metres. The vegetation comprises mixed but mainly compound leaved short (5-10 m) woodlands and wooded grasslands. It occurs on the crests, upper and mid-slopes of gently undulating terrain. The vegetation type is dissected by two large alluvial floodplains associated with the Mkuze and Pongola Rivers.

Subtropical Freshwater Wetlands (Mucina and Rutherford 2006) collectively cover approximately 28% of the Greater Ukuwela Nature Reserve. Mucina and Rutherford (2006) do not distinguish between different categories of this vegetation type as the KZN vegetation layer does. These wetlands are widely

distributed in South Africa, occurring within the Albany Thicket Biome, the Coastal Belt from Transkei to Maputaland and the Lowveld and Central Bushveld regions at altitudes ranging from zero to 1,400 metres. The vegetation occurs in flat topography supporting low beds dominated by reeds, sedges and rushes, and water-logged meadows dominated by grasses. It is found typically along the edges of seasonal pools in aeolian depressions as well as fringing alluvial backwater pans or artificial dams.

Maputaland Pallid Sandy Bushveld (Mucina and Rutherford 2006) covers approximately 22% of the Greater Ukuwela Nature Reserve. It occurs on the coastal plain of the Maputaland region, generally found on the ancient coastal dune cordons on gently undulating slopes. It is characterised by an open to closed evergreen woodland with a canopy that is 5 to 10m tall and bushlands. It differs from Tembe Sandy Bushveld in the generally higher clay content of the soils and higher water table.

Tembe Sandy Bushveld (Mucina and Rutherford 2006) covers approximately 3% of the reserve. This vegetation type occurs on extensive flat plains with open to closed woodland with a canopy between 5 and 10m. It is dominated by *Terminalia sericea*, with a species rich shrub layer and grassy undergrowth (*Panicum*, *Perotis*, *Urelytrum agropyroides*, *Hyperthelia dissolute* and *Diheteropogon* species).

2.3.6 Plant species

There are a number of confirmed threatened and endemic plant species that occur within the Greater Ukuwela Nature Reserve (Table 2.3.2).

Table 2.3.2 Threatened and endemic plant species present within the Greater Ukuwela Nature Reserve

Species	Common name	Threat status	Endemic status
<i>Carissa tetramera</i>	Sand num-num	Declining	Non endemic
<i>Sansevieria metallica</i>	Giant Sansevieria	Critically Rare	Endemic
<i>Balanites maughamii</i>	Green Thorn	Protected Tree	RL - Declining
<i>Carissa tetramera</i>	Sand Forest Num-Num	Threatened	Near endemic
<i>Cleistanthus schlecteri</i>	False Tamboti	Protected Tree	Non endemic
<i>Elaeodendron transvaalense</i>	Transvaal Saffron	Near threatened	Non endemic
<i>Newtonia hildebrandtii</i>	Lebombo Wattle	RL – Declining	Non endemic
<i>Sclerocarya birrea subsp. caffra</i>	Marula	Protected tree	Non endemic
<i>Sideroxylon inerme</i>	White Milkwood	Protected tree	Non endemic

In addition to the threatened and endemic plant species present in the Greater Ukuwela Nature Reserve, there are a number of trees that are Protected in terms of the National Forest Act 1998 (Act No. 84 of 1998):

- *Sclerocarya birrea subsp. caffra*

- *Sideroxylon inerme*
- *Elaeodendron transvaalense*

A comprehensive plant list is included in Appendix D.

2.3.7 Threatened and endemic animal species

There are a number of confirmed threatened and endemic animal species that occur within the Greater Ukuwela Nature Reserve (Table 2.3.3).

Table 2.3.3 Threatened and endemic animal species present within Ukuwela Nature Reserve

Species	Common name	Threat status	Endemic status
<i>Circaetus fasciolatus</i>	Southern Banded Snake Eagle	Critically Endangered	Non endemic
<i>Gyps africanus</i>	White-backed vulture	Critically Endangered	Non endemic
<i>Ephippiorhynchus senegalensis</i>	Saddle-billed Stork	Endangered	Non endemic
<i>Terathopus ecaudatus</i>	Bateleur	Endangered	Non endemic
<i>Turnix nanus</i>	Black-rumped Buttonquail	Endangered	Non endemic
<i>Aquila nipalensis</i>	Tawny Eagle	Endangered	Non endemic
<i>Circus ranivorus</i>	African Marsh Harrier	Endangered	Non endemic
<i>Machieiramphus alcinus</i>	Bat Hawk	Endangered	Non endemic
<i>Halcyon senegaloides</i>	Mangrove Kingfisher	Endangered	Non endemic
<i>Mycteria ibis</i>	Yellow-billed Stork	Endangered	Non endemic
<i>Sterna dougallii</i>	Roseate Tern	Endangered	Non endemic
<i>Torgos tracheliotus</i>	Lappet-faced vulture	Endangered	Non endemic
<i>Gyps coprotheras</i>	Cape Vulture	Endangered	Endemic
<i>Panthera pardus</i>	Leopard	Vulnerable	Non endemic
<i>Tyto capensis</i>	African Grass Owl	Vulnerable	Non endemic
<i>Caprimulgus natalensis</i>	Swamp Nightjar	Vulnerable	Non endemic
<i>Gorsachius leuconotus</i>	White-backed Night Heron	Vulnerable	Non-endemic
<i>Microparra capensis</i>	Lesser Jacana	Vulnerable	Non-endemic
<i>Smithornis capensis</i>	African Broadbill	Vulnerable	Non endemic
<i>Polemaetus bellicosus</i>	Martial eagle	Vulnerable	Non endemic
<i>Podica senegalensis</i>	African Finfoot	Vulnerable	Non endemic
<i>Sterna caspia</i>	Caspian Turn	Vulnerable	Non endemic
<i>Crocodylus niloticus</i>	Nile Crocodile	Vulnerable	Non endemic
<i>Stephanoateus coronatus</i>	Crowned Eagle	Vulnerable	Non endemic
<i>Falco biarmicus</i>	Lanner Falcon	Vulnerable	Non endemic
<i>Nettapus auritus</i>	African Pygmy Goose	Vulnerable	Non endemic

<i>Pelecanus onocrotalus</i>	Pink-backed Pelican	Vulnerable	Non endemic
<i>Pelecanus onocrotalus</i>	Great white pelican	Vulnerable	Non endemic
<i>Anthus brachyurus</i>	Short-tailed Pipit	Vulnerable	Non endemic
<i>Scotopelia peli</i>	Pel's Fishing Owl	Vulnerable	Non endemic
<i>Ciconia nigra</i>	Black Stork	Vulnerable	Non endemic
<i>Sagittarius serpentarius</i>	Secretarybird	Vulnerable	Non endemic
<i>Petrodromus tetradactylus</i>	Four-toed Sengi	Near Threatened	Non endemic
<i>Felis serval</i>	Serval	Near Threatened	Non endemic
<i>Crocuta crocuta</i>	Spotted hyena	Near Threatened	Non endemic
<i>Neotragus moschatus</i>	Suni	Near Threatened	Near endemic
<i>Paraxerus palliatus tongensis</i>	Tonga Red Squirrel	Near Threatened	Near endemic
<i>Cephalophus natalensis</i>	Red Duiker	Near Threatened	Non endemic
<i>Crithagra citrinipectus</i>	Lemon-breasted Canary	Near Threatened	Non endemic
<i>Numenius arquata</i>	Eurasian Curlew	Near Threatened	Non endemic
<i>Phoenicopterus roseus</i>	Greater Flamingo	Near Threatened	Non endemic
<i>Phoenicopterus minor</i>	Lesser Flamingo	Near Threatened	Non endemic
<i>Alcedo semitorquata</i>	Half-collared Kingfisher	Near Threatened	Non endemic
<i>Marconyx ameliae</i>	Rosy-throated Longclaw	Near Threatened	Non endemic
<i>Charadrius pallidus</i>	Chestnut-banded Plover	Near Threatened	Non endemic
<i>Coracias garrulus</i>	European Roller	Near Threatened	Non endemic
<i>Cinnyris neergaardi</i>	Neergaard's Sunbird	Near Threatened	Endemic
<i>Afrixalus spinifrons spinifrons</i>	Natal Leaf-folding Frog	Near Threatened	Endemic

2.3.8 Mammalian fauna

The Greater Ukuwela Nature Reserve has the typical game species of a northern Zululand reserve without "Big 5". A number of threatened mammal species naturally occur on the reserve including leopard (VU), honey badger (VU), serval (NT), spotted hyena (NT) and most likely (although not confirmed) side-striped jackal (NT). In addition, both cheetah (VU) and African wild dog (EN) are transient through the property. A list of mammal species is included in Appendix D.

2.3.9 Avifauna

The list of bird species that occur on the Greater Ukuwela Nature Reserve is not complete. The reserve is significant for avifaunal conservation for the following reasons:

- The habitat that it has for waterfowl and its connection to iSiMangaliso Wetland Park World Heritage Site, which is also a listed Ramsar Site (Convention on Wetlands of International Importance, especially as Waterfowl Habitat).

- Its inclusion in a new Important Bird Area (IBA) to be known as the Zululand IBA, which has been proposed by BirdLife South Africa.

The Zululand IBA

One of the primary reasons for the creation of the Zululand IBA is that it will incorporate breeding populations of savanna associated vultures and raptors which are currently only represented in the protected area system within Hluhluwe-iMfolozi Park (HIP) in KwaZulu-Natal. Important components of these populations occur outside of HIP in the biodiversity stewardship sites in the region, including the Greater Ukuwela Nature Reserve. The declaration of these sites and the creation of the IBA enable appropriate landscape level conservation that will capture much of the breeding and feeding area of these vultures and other raptors. Importantly, all of the vulture species are listed as globally threatened.

The IBA is also significant because it supports a number of species at the southernmost limit of their range, including:

- Bennet's Woodpecker.
- Burchell's Starling.
- Red-billed Buffalo Weaver.
- Magpie Shrike.
- Pearl-spotted Owlet.
- Red-headed Weaver.
- Brown-headed Parrot.
- Grey and Red-billed Hornbills.
- Levillant's Cuckoo.
- Purple Roller.

The IBA also supports a number of East Coast Endemics, including:

- Rudd's Apalis.
- Pink-throated Twinspot.
- Lemon-breasted Canary.
- Neergard's Sunbird.

A list of bird species is included in Appendix D.

2.3.10 Herpetofauna (reptiles and amphibians)

The list of reptile and amphibian species that occur in the Greater Ukuwela Nature Reserve is not complete. The list does include Nile crocodile (*Crocodylus niloticus*) which is classified as Vulnerable. In addition, there have been sightings of African rock python (*Python sebae*) on the reserve. The reptile and amphibian species list are contained in Appendix D.

2.3.11 Invertebrates

The Greater Ukuwela Nature Reserve has a comprehensive invertebrate species list (Appendix D). There are a number of notable species.

2.3.12 Fire and herbivore management

Fire is a key driver of ecological dynamics in southern African systems, which are largely driven by patterns of disturbance. Fire contributes to patterns of disturbance by removing the vegetative growth of plants, and in contrast to grazing it does this non-selectively, which reduces the competitive advantages of species adapted to grazing. An important aspect of fire in savanna environments is the role that it plays in controlling bush encroachment and stimulating new growth for both grazing and browsing species. This can be used as a tool to encourage game to move from over-utilised to under-utilised areas of a property (Bothma 2002).

Previously, the landowners of the respective properties have been responsible for their own fire management. However, it will be important to conduct fire management on the Greater Ukuwela Nature Reserve that is cognisant of animal movement and utilisation. Incorrect planning could result in the over-utilisation of some areas and vegetation degradation.

WTF has developed a Fire Management Plan for the reserve. This is based on the ecological data produced by the Veld Monitoring Programme designed and carried out by Ross Goode. This monitoring programme will utilise data on veld condition of the reserve to determine when areas should be burnt, annually. The FMP will include details on the monitoring programme, methodology on carrying out recommendations, as well as design 'management blocks' for the burning programme.

2.3.13 Invasive species

There are generally no problems associated with invasive alien animals on the Greater Ukuwela Nature Reserve. However, a variety of invasive alien plant (IAP) species are known to occur within the reserve (Table 2.3.4). The portions of the Greater Ukuwela Nature Reserve that had been preciously cultivated and are therefore 'disturbed' vegetation, are generally the areas which have the highest abundance of IAPs. WTF has developed an IAP Management Plan for the reserve.

Table 2.3.4 Identified listed invasive alien species that must be controlled within the reserve in terms of NEMBA

Common name	Scientific name	NEMBA category
Chromoleana / Triffid weed / Parafienbos	<i>Chromoleana odorata</i>	1b
Famine weed	<i>Parthenium hysterophorus</i>	1b
Lantana / Tickberry	<i>Lantana camara</i>	1b

Sisal	<i>Agave sisalana</i>	2
Syringa	<i>Melia azedarach</i>	1b
Yellow Trumpetbush / Yellow Bells	<i>Tecoma stans</i>	1b
Castor-oil plant	<i>Ricinus communis</i>	2
Creeping woodsorrel	<i>Oxalis corniculata</i>	
Black-jack	<i>Bidens sp.</i>	

In terms of the National Environmental Management: Biodiversity Act (No.10 of 2004 – NEMBA) and the Conservation of Agricultural Resources Act (No.43 of 1983 – CARA), landowners are required to control and eradicate listed invasive alien species on their land. NEMBA categorises such plants on the following basis:

- Category 1a:** Prohibited - a person in control of a Category 1a Listed Invasive Species must comply with the provisions of section 73(2) of NEMBA; immediately take steps to combat or eradicate listed invasive species in compliance with sections 75(1), (2) and (3) of NEMBA; and allow an authorised official from DEA to enter onto land to monitor, assist with or implement the combatting or eradication of the listed invasive species.
- Category 1b:** Prohibited/exempted if in possession or under control – a person in control of a Category 1b Listed Invasive Species must control the listed invasive species in compliance with sections 75(1), (2) and (3) of NEMBA. A person contemplated in sub-regulation (2) must allow an authorised official from DEA to enter onto the land to monitor, assist with or implement the control of the listed invasive species, or compliance with the Invasive Species Management Programme contemplated in section 75(4) of the Act.
- Category 2:** Permit required - Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the notice or an area specified in the permit. A landowner on whose land a Category 2 Listed Invasive Species occurs or person in possession of a permit, must ensure that the specimens of the species do not spread outside of the land or the area specified in the notice or permit. Unless otherwise specified in the notice, any species listed as a Category 2 Listed Invasive Species that occurs outside the specified area contemplated in sub-regulation (1), must, for purposes of these regulations, be considered to be a Category 1b Listed Invasive Species and must be managed according to Regulation 3. Persons or organ of state must ensure that the specimens of such Listed Invasive Plant Species do not spread outside of the land over which they have control.
- Category 3:** Prohibited - Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of NEMBA, as

species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of the Act, as specified in the notice. Any plant species identified as a Category 3 Listed Invasive Species that occurs in riparian areas, must, for the purposes of these regulations, be considered to be a Category 1b Listed Invasive Species and must be managed according to regulation 3.



Figure 2.9 Famine weed (*Parthenium hysterophorus*)

2.4 Cultural and heritage context of the Greater Ukuwela Nature Reserve

There has been no formal archaeological or paleontological assessment done across the reserve as a whole, therefore little is known about the cultural or historical resources of the reserve. However, there was an archaeological assessment done as part of the Environmental Impact Assessment that was facilitated by WTF for the proposed ecovolunteers camp. There were no archaeological or historical resources of significance located at those sites.

2.5 Socio-economic role of the Greater Ukuwela Nature Reserve

The Greater Ukuwela Nature Reserve provides employment to local communities through the hiring of field rangers and hospitality staff. In addition, it has aided in SMME development, through the provision of alien plant removal contracts to local, all-women, teams.

In addition, WTF has been actively involved in community upliftment projects in the region, including *inter alia*: support to local creche's through the provision of food and the donation of education toys; support to local schools through the provision of learning equipment; and provision of food to a local orphanage. In particular, WTF was responsible for the construction of Thelelulwazi Community Creche in the Mduku community north of the reserve.

2.6 The regional and local planning context of the Greater Ukuwela Nature Reserve

2.6.1 Protected area expansion

The Greater Ukuwela Nature Reserve falls between two priorities for both the national and KZN Protected Areas Expansion strategies; namely the HIP corridor and the False Bay Corridor. In addition, because the reserve is adjacent to the Mun-Ya-Wana Conservancy, it contributes to forming an important linkage with four macro-ecological corridors (Figure 2.10):

- The False Bay Corridor
- The Hluhluwe-iMfolozi Park Corridor
- The Lebombo South Corridor
- The Maputaland Corridor

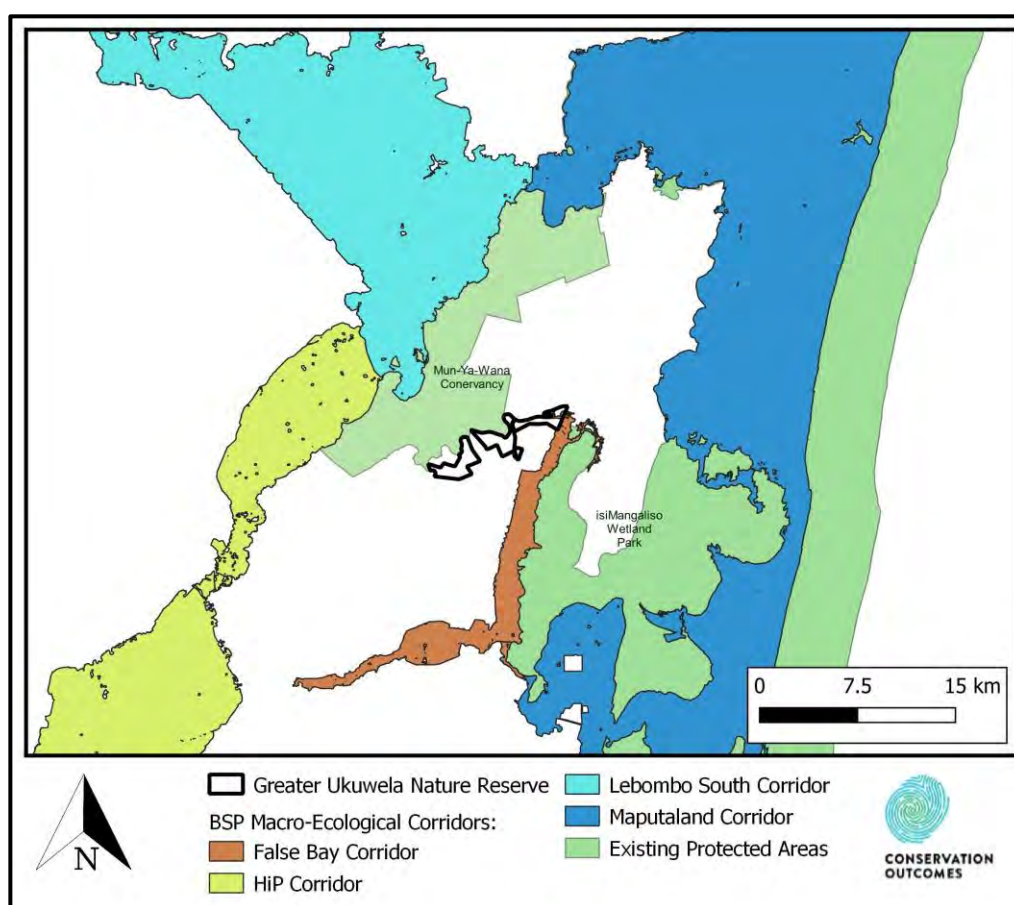


Figure 2.10 Location of the Greater Ukuwela Nature Reserve in relation to KZN macro-ecological corridors

At a landscape level this means that the Greater Ukuwela Nature Reserve is important in linking other protected areas, in enabling large-scale ecological processes across the region and in enabling climate change adaptation through facilitating the movement of wide-ranging species across different areas and habitat types.

2.6.2 The Greater Ukuwela Nature Reserve Expansion Plan

Although the entire property Rem of 23 of LotH115 of 13180 has been included for declaration; only the sections west of the R22 district road are fenced into the reserve. Therefore, including these sections into the fenced area will form phase one of the expansion plan (Figure 2.11).

In addition, there is a property that falls between the Ukuwela and Mfuleni sections of the reserve. This property would significantly increase the connectivity of the reserve.

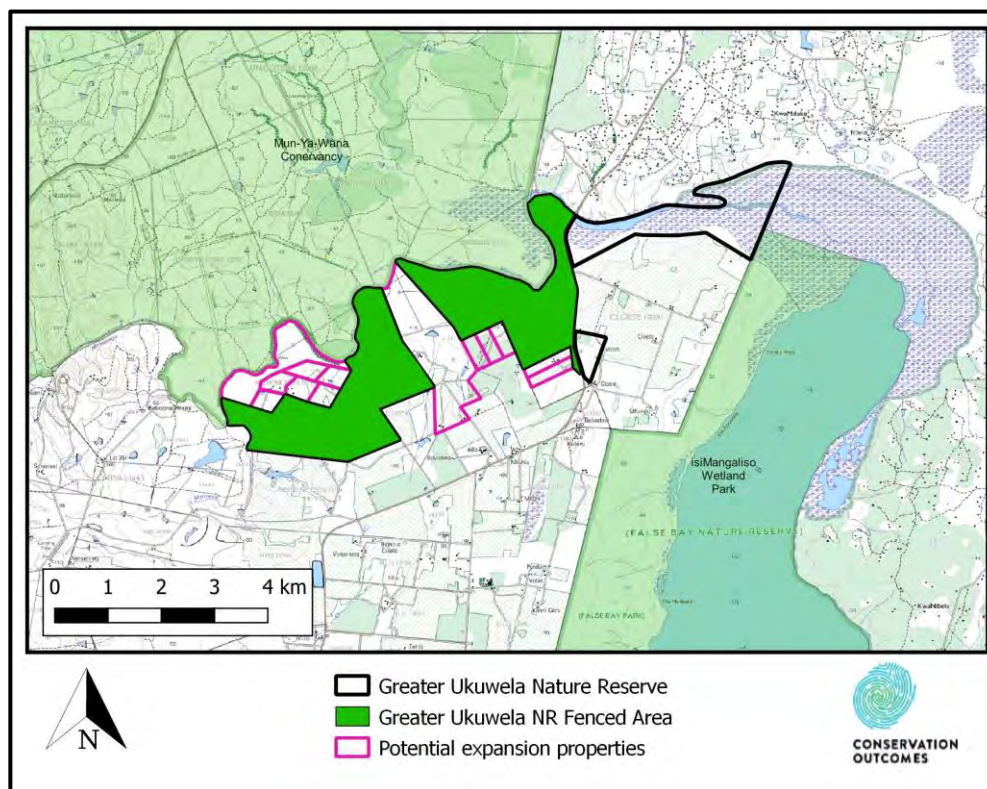


Figure 2.11 The Greater Ukuwela Nature Reserve potential expansion properties

2.6.3 Regional and local planning frameworks

The Greater Ukuwela Nature Reserve falls within uMkhanyakude District Municipality and The Big Five Local Municipality (Figure 2.12), which set the regional and local planning frameworks.

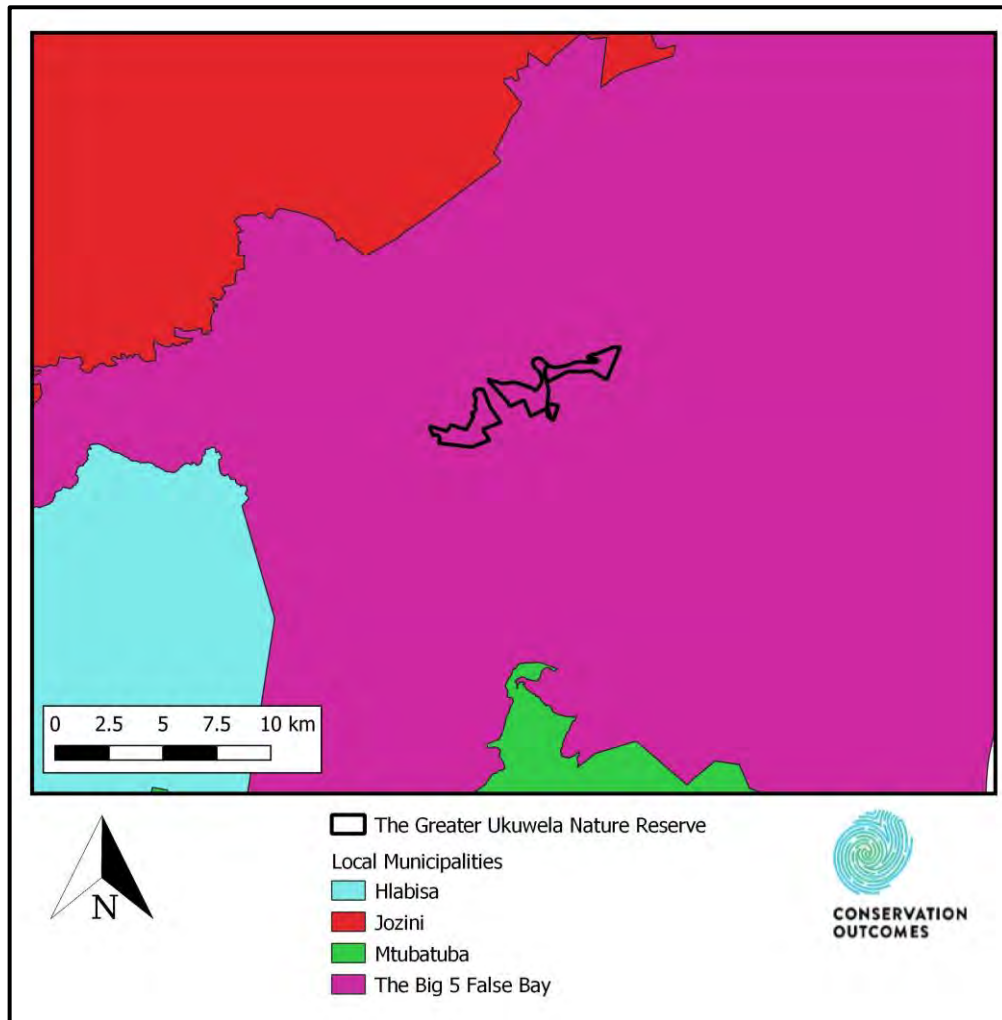


Figure 2.12 Local municipalities within which the Greater Ukuwela Nature Reserve

The Big 5 False Bay Integrated Development Plan (IDP), Local Economic Development (LED) Plan and Spatial Development Framework (SDF) identify tourism, particularly ecotourism, as an important economic driver within the municipality. Linked to this, the SDF identifies the R22, which runs past the Ukuwela Nature Reserve as a Secondary Mobility Route. It has therefore been highlighted as a “Tourism Attraction Connector” (Figure 2.13).

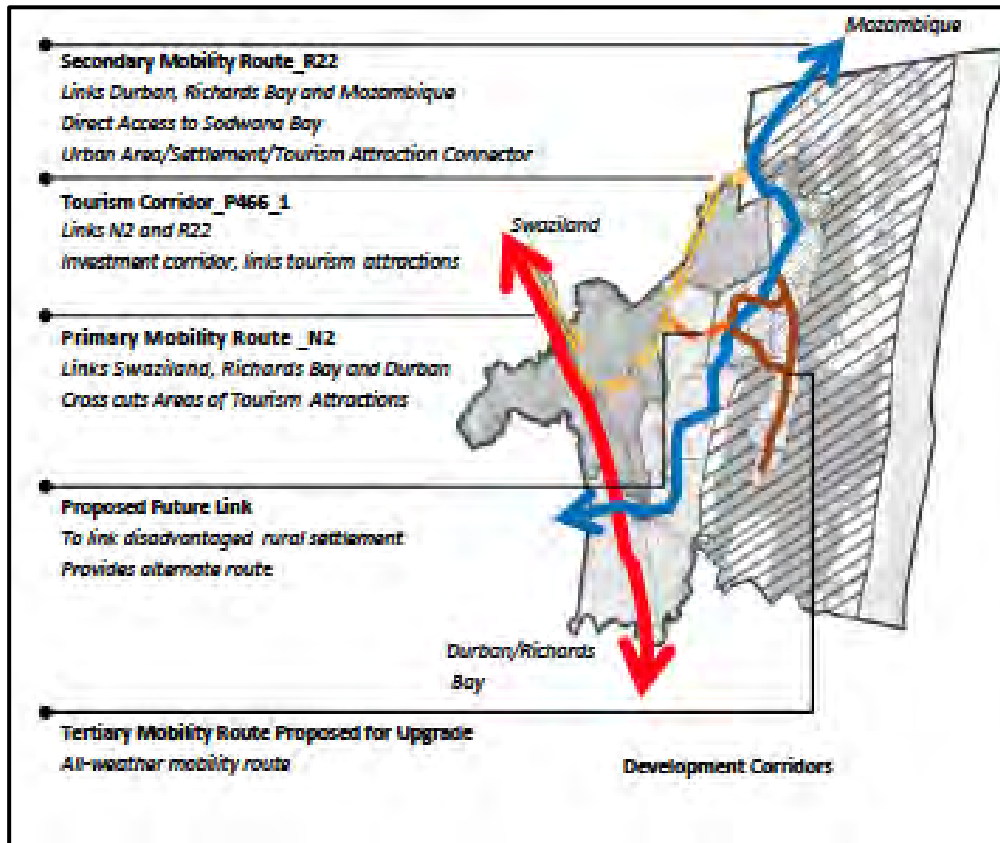


Figure 2.13 Big 5 False Bay Spatial Development Framework Development Corridors

The SDF identifies three nodes that are of relevance to the Greater Ukuwela Nature Reserve:

- The KwaMnqobokazi Traditional Authority: KwaGiba Tertiary Social Node, which envisages the development of an arts and craft centre, a post box centre, workshops, small scale municipal offices, and passive and active open space.
- The KwaMnqobokazi Traditional Authority: KwaMnqobokazi Tertiary Social Node, which envisages the development of retail facilities, a community service centre and the formalisation of an existing hall.
- The KwaMakhasa Traditional Authority: KwaMakhasa Community Multi-use Node, which includes a number of facilities that may be developed in the node such as a police station, health facilities, retail facilities and densification of rural housing.

2.7 Operational management within the Greater Ukuwela Nature Reserve

The core focus of the Greater Ukuwela Nature Reserve is conservation; however, there are potential ecotourism ventures on the property that will allow for its sustainability. On the Mfuleni section of the reserve, the Mzinene Trust has built a small-scale ecotourism venture. It is a two-bedroom self-catering house, that will be rented out to guests.

There are also a number of non-commercial accommodation facilities within the reserve, which are lived in by members of the reserve's constituted body.

The majority of the reserve is owned by the Wild Tomorrow Fund, a Non-Profit Organisation that bought the property solely for conservation purposes. The WTF model is based on fund-raising (predominantly in the USA), however the long-term vision is for the reserve to become financially self-sufficient through the hosting of eco-volunteers and guests. Due to the funding model, there are certain donor-stipulations for the property; for example: no hunting may take place on the reserve.

To enable their plans for financial self-sufficiency, WTF proposes to build a Donor house, which will provide self-catering accommodation to donors and guests and an eco-volunteer tented camp. In addition, they plan to build two more buildings, which will not be for commercial purposes: one more house for management staff and an office.

The Greater Ukuwela Nature Reserve has a constituted body as the management authority, which is comprised of the 4 landowners that make up the reserve. Each of the 4 members will have voting power proportional to the land they own within the constituted body for decision-making purposes. A minimum of 75% majority vote will be required in order to pass a resolution. Issues such as business development, infrastructure development, annual plan of operation, reserve budget and traversing rights will be discussed and decided upon by the constituted body.

General management of the properties fall to the respective landowners, however reserve management duties that are feasibly done as a unit will be allocated by the constituted body to specific members. These include *inter alia*: fire management, security and perimeter fence maintenance.

The game on the reserve is jointly owned by all members, according to the hectareage of their property (Table 2.7.1). The game will be managed according to the game ownership agreement (Appendix F).

Table 2.7.1 Shareholding within the Ukuwela Nature Reserve game-ownership association

Entity	Shareholding (%)
Wild Tomorrow Fund	84.8
Ukuvikela Partnership	1.6
KwaDube	1.6
Mzinene Trust	12.0

2.7.1 Infrastructure

The infrastructure found within the Greater Ukuwela Nature Reserve is primarily related to the management of the reserve, the operation of ecotourism ventures and residential purposes (Figure 2.14). As a result, infrastructure includes:

- A perimeter fence and access gates;
- A road network;
- Anti-poaching camps;
- Residential houses;
- Two houses for guests (one not yet built); and
- A eco-volunteer camp (not yet built).

The Ukuvikela Partnership will be building a house on their property for residential purposes, also shown in Figure 2.14.

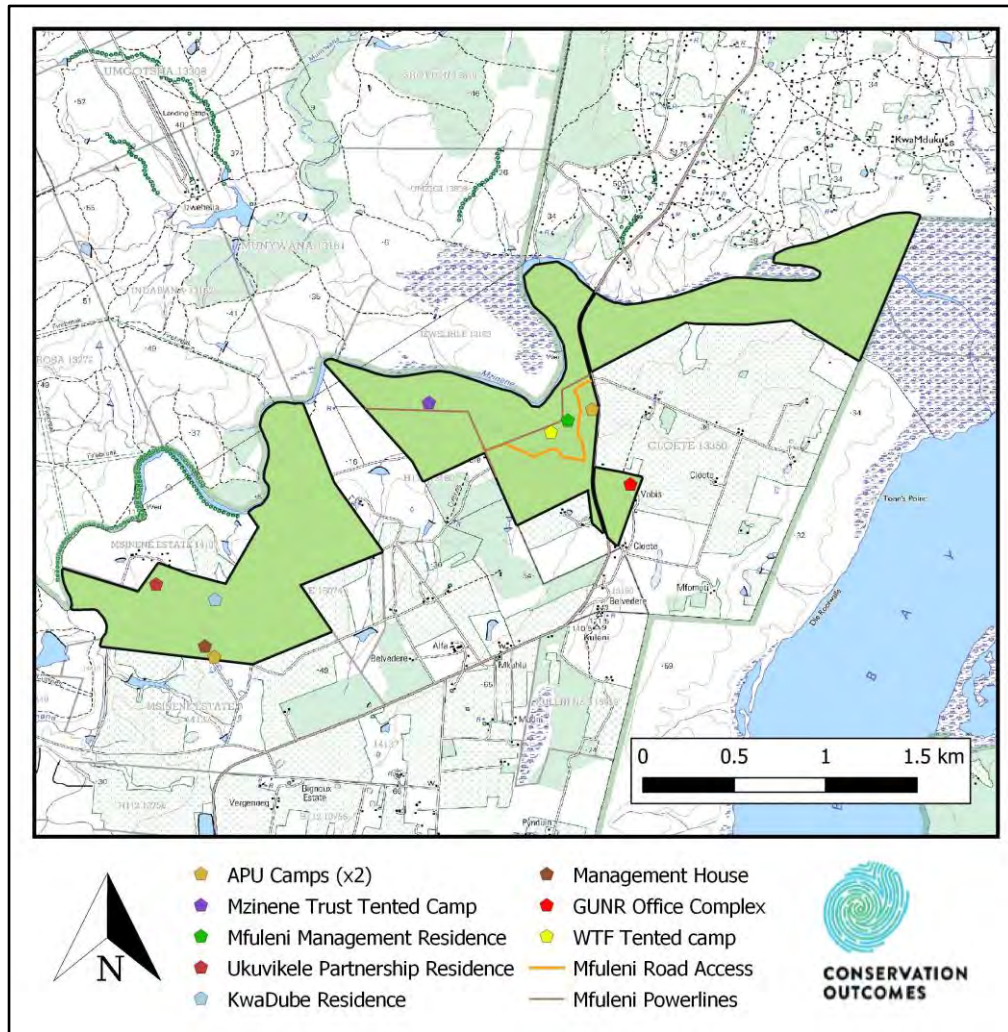


Figure 2.14 Infrastructure located within the Greater Ukuwela Nature Reserve

2.8 Management effectiveness in the Greater Ukuwela Nature Reserve

The Greater Ukuwela Nature Reserve has not yet utilised the Management Effectiveness Tracking Tool; however, as a newly declared Protected Area, this will become an obligation. The METT will assist in identifying management concerns and aid in effective planning. The METT was designed to track and monitor progress towards worldwide protected area management effectiveness and is used to report progress towards the Convention on Biological Diversity.

2.9 Summary of management issues, challenges and opportunities

The following section summarises the key management issues and challenges facing the reserve, which must be addressed through the management plan. The issues and challenges have been grouped under key performance areas, which flow through the strategic and operational management frameworks that follow (Table 2.9.1).

Table 2.9.1 Management issues, challenges and opportunities

Key performance area	Issue	Opportunity	Challenge
Legal compliance and law enforcement	Legal protection of the Greater Ukuwela Nature Reserve through formal proclamation.	Declare the reserve to ensure it is legally protected.	Ensure that all the land within the reserve is declared as a protected area.
	Poaching and security	Collaboration between partners, neighbours and landowners to achieve improved law enforcement.	Increasing poaching pressure.
	Non-compliance with permit requirements	Collaboration with partners to ensure the reserve is fully compliant.	<ul style="list-style-type: none"> ▪ Multiple permits required. ▪ Maintaining compliance with management devolved to multiple members.
Operational Management	Maintenance of infrastructure	Ensuring that all infrastructure and equipment is appropriately managed to avoid unnecessary environmental impacts.	Impacts associated with insufficient maintenance.
	Human resource management systems	Sufficient allocation of budget towards staffing, for employment and staff training	Inefficient management of the reserve due to being under-staffed or lack of adequate training.
	Effective and fair management of the constitutional arrangement.	Ensuring effective decision-making around the APO and the budget.	Ineffective management of the constituted arrangement.
Business management and development	Adequate and fair budget allocation	Ensuring the sustainability of the reserve through sound business decisions.	Ineffective management due to lack of funds and/or mis-allocated budgets.
	Developing synergistic business activities.	Ensuring that business development is in line with the reserve's values.	Business development that is detrimental to the reserve's values, or that is not agreed on by all members.
Conservation Management	Management of the reserves game species mix and numbers.	Maintenance of optimal species mix and numbers that incorporates appropriate ratio of bulk to selective feeders and is within carrying capacity.	Impacts on plant species composition and diversity, associated with over utilization by herbivore species.
	Implementation of a fire management regime based on an ecological approach to burning.	Implement an ecologically-based fire regime, which maintains heterogeneity, ecological functioning of the habitats within the reserve and facilitates a natural	Impacts on plant species and the grass sward, associated with inappropriate burning.

		programme of rest and non-selective grazing.	
	Ensure that conservation targets of endangered, threatened and rare species are met.	Implement management of species along contemporary best practise guidelines.	Having adequate knowledge of the species of conservation importance on the reserve, as well as current best practice methodologies.
Cultural Heritage and sense of place	Protection of the reserve's archaeological, paleontological and historic resources, as per the AMAFA guidelines and legislation.	Partnering with academic institutions to gain a better understanding of the historic resources on the reserve.	Protecting the reserve's archaeological, paleontological and historic resources, without adequate knowledge of them.
Research and Monitoring	Aligning research with key reserve management and operational issues.	Encouragement and support to research and monitoring programmes and projects that can inform key management issues.	Finding research projects that align with reserve management and operational issues.
Socio-economic benefits	Provision of socio-economic benefits to the surrounding communities.	Optimising socio-economic benefits of the reserve, associated with its operation, business activities and sustainable resource use.	Ensuring support for the reserve through linking community upliftment projects with the reserve in the minds of the people.

3) STRATEGIC MANAGEMENT FRAMEWORK

The strategic framework is aimed at providing the basis for the long-term protection, development and operation of the Greater Ukuwela Nature Reserve. The vision describes the long-term goal for the operation and management of the reserve. The objectives and strategic outcomes that follow are intended to provide the basis for the achievement of the vision.

3.1 Ukuwela Nature Reserve's vision

To conserve wildlife and their habitats in northern KwaZulu-Natal; to be a model for sustainable conservation and protected area management, informed by science; and to ensure communities value, protect and benefit from conservation.

3.2 Objectives and strategic outcomes

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

Table 3.1 Objectives and strategic outcomes for Ukuwela Nature Reserve

Key performance area	Objective	Strategic outcome
Legal compliance and law enforcement	Comply with and enforce legislation pertaining to the protection, development and management of the Greater Ukuwela Nature Reserve.	<ul style="list-style-type: none"> • The Greater Ukuwela Nature Reserve is a legally declared nature reserve; • Wildlife risks to neighbours, visitors, staff, infrastructure and livelihoods are minimised; • Maintain a well-trained and adequate ranger team to enable regular patrol; • Ensure all permitting is up-to-date, comprehensive, and compliant; • Develop a register of all servitudes registered against the Title Deeds of the properties making up the nature reserve; and • Ensure clear legally sound mapping of boundaries of constituted properties and perimeter.
Operational Management	Provide adequate human resources, equipment and funding to ensure that the Greater Ukuwela Nature Reserve is protected for the purpose for which the nature reserve was established, and to enable its effective operational management and development.	<ul style="list-style-type: none"> • Facilities and infrastructure in the nature reserve are adequately maintained; • The nature reserve is adequately staffed for its effective management and operation; • Infrastructure on the reserve is managed to minimise environmental harm; • Annual plans of operation include maintenance plans and detailed budgetary requirements; • Ensure effective management of the constituted arrangement, including <i>inter alia</i>: AGMs, operational meetings and budget planning; and • Enable effective information management to ensure that it is usable for applicable parties and facilitates adaptive management.
Business management and development	Support business ventures that are consistent with the purpose of the nature reserve, which ensure its financial viability and	<ul style="list-style-type: none"> • Development of a mutually agreed annual budget, that identifies the resources required to achieve the objectives of the nature reserve; • Support the development of synergistic business ventures that are in line with the vision of the nature reserve and will contribute towards its resilience; and

	sustainability, whilst managing and mitigating impacts.	<ul style="list-style-type: none"> • Development of a mechanism that will enable effective and fair decision making around proposed business activities.
Conservation Management	<p>Protect the ecosystem functioning, ecological integrity, habitat and species of the reserve through active interventions based on principles of adaptive management.</p> <p>Protect and manage the threatened, rare, vulnerable and endemic species to ensure their continued survival.</p>	<ul style="list-style-type: none"> • Maintain optimal species mix and numbers informed by carrying capacity estimates ecological principles; • Ensure the conservation targets of threatened, rare, vulnerable and endemic species are met; • Maintain key and sensitive habitat types in optimal conditions; • Development and implementation of a comprehensive fire management plan for the nature reserve; • Development and implementation of an alien and invasive species control plan for the nature reserve; • Identify and rehabilitate areas that have been affected by soil erosion; • Develop and maintain a road network based on ecological guidelines that is cognisant of tourism needs and compliant with legislation; • Implementation of procedures to manage exotic animals found within the nature reserve; and • If extractive resource use is undertaken, it is done sustainably and conforms to legislation relative to a Nature Reserve.
Cultural Heritage and Sense of place	Protect the sense of place, natural character and cultural heritage of the reserve.	<ul style="list-style-type: none"> • Generate an understanding of the cultural, historical, archaeological and paleontological resources on the reserve; and • The cultural, historical, archaeological, and paleontological resources of the reserve are safeguarded as per the AMAFA guidelines and legislation.
Research and Monitoring	Encourage and support research and monitoring that informs key management interventions and improves knowledge and	<ul style="list-style-type: none"> • Align research and monitoring programmes with reserve management objectives; • Develop and maintain a biodiversity monitoring programme that will enable adaptive management;

	understanding of the reserve's ecology, species and habitats.	<ul style="list-style-type: none"> • Develop and maintain an ecosystem monitoring programme for the reserve that will enable adaptive management; and • Facilitate research and partnerships with recognised educational institutions, organisations and projects that are compliant, ethical, contribute to science, and/or have management implications.
Socio-economic benefits	Foster strong community relationships to ensure strong support for the reserve and meaningful socio-economic benefits to the surrounding communities.	<ul style="list-style-type: none"> • Provide employment and business opportunities to local community members; • Where possible, support programmes focused on health, education, and social upliftment of communities surrounding the reserve, in a manner that community development is directly linked to Ukuwela Nature Reserve; • Support environmental education programmes where suitable; and • Quantify the value of ecosystem services provided by the reserve, to position the conservancy as a key component in the landscape.

4) ZONATION PLAN

The purpose of the zonation of the Greater Ukuwela Nature Reserve is to identify types and levels of usage that are acceptable based on an area's sensitivity and resilience, and to manage visitor experience and inter-user conflict. Zonation may be used to identify areas in which appropriate uses and infrastructure may be located and developed.

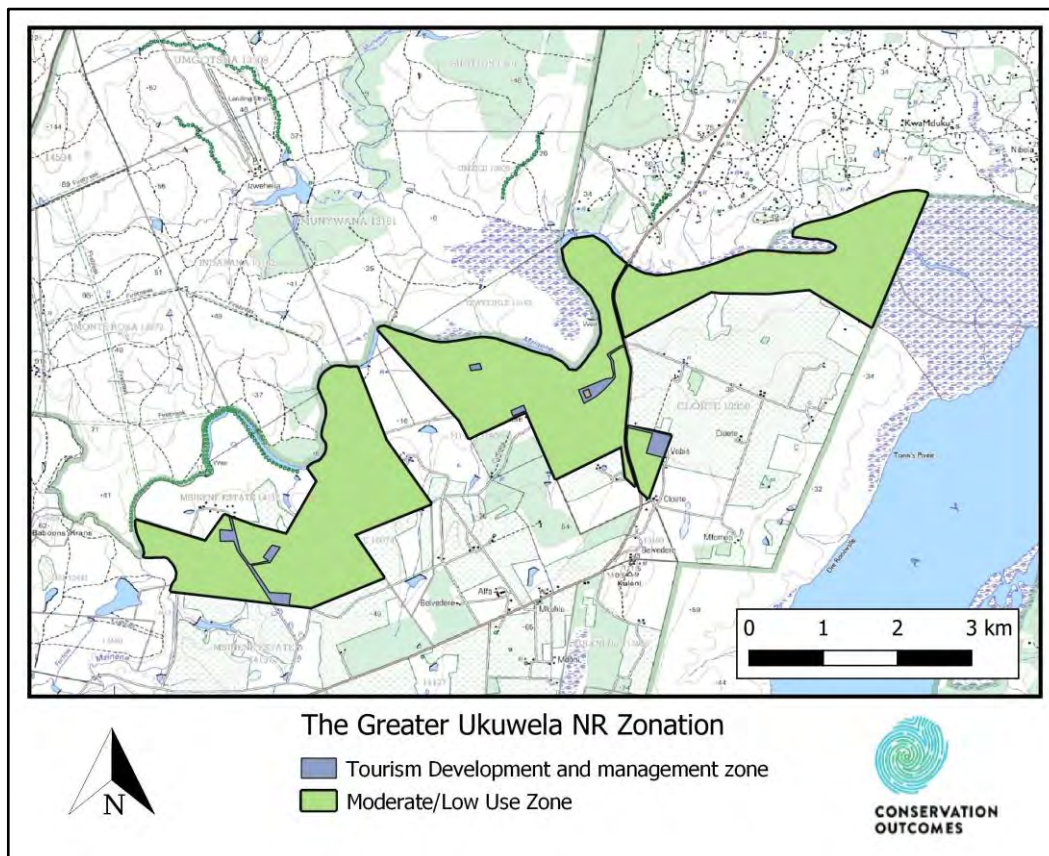


Figure 4.1 Zonation map of the Greater Ukuwela Nature Reserve

Zonation enables a protected area to be zoned along a continuum, from highly sensitive areas subject to low levels of use and impact, to higher intensity nature-based uses. The zonation system adopted for the Greater Ukuwela Nature Reserve (Figure 4.1) recognises and reflects:

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

The zonation system applied to the Greater Ukuwela Nature Reserve includes the following categories:

Moderate / Low use zone	This is an area in which the ecotourism principles of low human impact will prevail, but low levels of usage are permitted; including, game viewing roads and walking trails.
Tourism development and management zone	This zone includes commercial tourism developments such as lodges and picnic areas; as well as reserve management infrastructure such as workshops, sheds, and staff/resident accommodation. This area also includes the main access road network.

4.2 Conceptual development guidelines

4.2.1 Moderate / Low Use Zone

This zone is designated for areas in which activities are to be limited to low-impact ecotourism uses and conservation management interventions. Motor vehicle access into parts of the Greater Ukuwela Nature Reserve, for game viewing and management purposes is allowed in this zone but off-road driving is largely discouraged. The objective of this zone is to enable access and usage of the nature reserve whilst limiting the impacts of this.

Permissible activities:

- Game viewing using game viewing vehicles and guided game walks.
- Development of operational management and tourist infrastructure such as 4x4 vehicle trails (for guided game drives only) and non-permanent field ranger outposts.

Non-permissible activities:

- Non-guided tourist or visitor vehicle use.
- Non-guided quad bike use.
- Clearing of areas for the staging of bush meals or weddings.
- Development of infrastructure other than 4x4 vehicle trails and non-permanent field ranger outposts, unless essential for management purposes.
- The possession or use of firearms unless authorised by reserve management.

4.2.2 Tourism Development and Management Zone

This zone covers areas that encompass key zones for the development of management infrastructure and relatively high levels of tourist and visitor usage. Furthermore, this zone is designated for areas of relatively high vehicle usage such as for visitors travelling to and from the lodges within the nature reserve. The objective of this zone is to accommodate lodge-style developments and to enable the development of operational management infrastructure such as stores, maintenance areas and staff housing within the nature reserve.

Permissible activities:

- Development of lodges and other tourist facilities within the tourism development node.
- Maintenance of the main entry points and access roads through the nature reserve.
- Development of the nature reserve's park management node comprising infrastructure such as entrances, staff housing, offices, workshops, storehouses and bomas.

Non-permissible activities:

- Removal of indigenous plants without the necessary permits.
- Introduction of non-indigenous grasses, trees or shrubs for landscaping purposes.
- Introduction (temporary or permanent) of domestic pets such as dogs or cats, unless authorised by the management authority.
- The possession or use of firearms unless authorised by reserve management.

5) ADMINISTRATIVE STRUCTURE

An indicative organisational structure for the Greater Ukuwela Nature Reserve is set out in Figure 5.1. The figure identifies the role of the site's landowners, the management authority and its staff together with key partners such as Ezemvelo KZN Wildlife.

The constituted body, signed by all landowners, is assigned as the management authority. Each of the landowners will have voting power proportional to the land they own within the constituted body when it comes to management decisions. A 75% majority vote is required to pass a resolution. The management authority's responsibility is to ensure that the reserve is appropriately managed and conserved in terms of the Greater Ukuwela Nature Reserve Constitution. This includes, *inter alia*: ecological management, security and administration / financial management. There are currently two full time reserve managers that are employed by WTF, who oversee the management of the reserve.

In terms of the structure, it is the responsibility of the individual entities to undertake the management of the land under their control, in terms of the Greater Ukuwela Constitution. This includes, *inter alia*: infrastructure maintenance and erosion control.

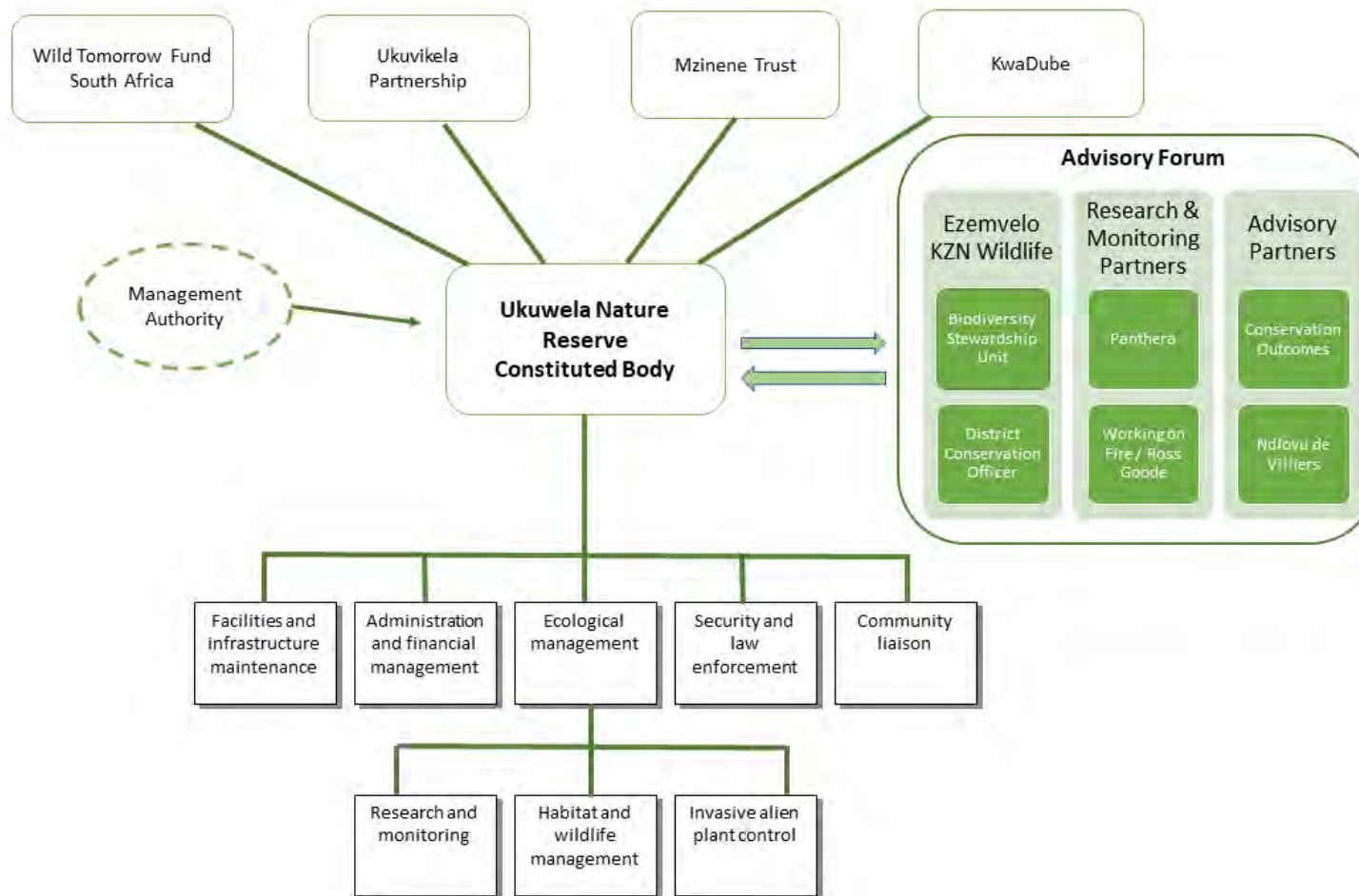


Figure 5.1 Organisational structure for the Greater Ukuwela Nature Reserve

6) OPERATIONAL MANAGEMENT FRAMEWORK

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

6.1 Legal compliance and law enforcement

The owners and managers of the Greater Ukuwela Nature Reserve have a responsibility to ensure that laws related to the conservation of the reserve and efforts to combat illegal activities, in particular poaching, are enforced. Furthermore, it is important that the reserve is properly legally secured, and any legal risks and liabilities are appropriately addressed and managed. On this basis, the following guiding principles apply:

- All reasonable efforts must be made to ensure the effective conservation of biodiversity within and on the boundaries of the nature reserve.
- Law enforcement efforts should be coordinated with the relevant authorities including Ezemvelo KZN Wildlife and the South African Police Service in addressing offences and breaches of the law.
- Law enforcement in the reserve will be undertaken through surveillance, monitoring and appropriate reaction in the event of an offence.
- Wildlife risks to people and infrastructure, both within the reserve and in neighbouring areas, will be managed and minimised to ensure that all minimum legal requirements are met and exceeded.

The operational requirements for legal compliance and law enforcement are set out in Table 6.1.

Table 6.1 Framework for legal compliance and law enforcement

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
NATURE RESERVE DECLARATION						
The Greater Ukuwela Nature Reserve is a legally declared Nature Reserve.	<ul style="list-style-type: none"> The nature reserve must be declared in terms of the Protected Areas Act. 	<ul style="list-style-type: none"> Legal protection of the entire extent of the Greater Ukuwela Nature Reserve in terms of the requirements of the Protected Areas Act. 	<ul style="list-style-type: none"> No title deed endorsement on declared properties. 	Year 1	Completion of legal agreements.	Completion of the declaration process.
LAW ENFORCEMENT						
Maintain a well-trained and adequate ranger team for regular patrol.	<ul style="list-style-type: none"> Enforce applicable legislation to prevent trespassing, and illegal activities such as poaching and plant harvesting in the nature reserve. 	<ul style="list-style-type: none"> Implement appropriate standard operating procedures and processes in responding to illegal incidents. 	<ul style="list-style-type: none"> Illegal access. Arson fires. Losses of species. Losses of rare and endangered plant species. 	Year 1	Develop standard operating procedures.	Prosecution of offenders.
	<ul style="list-style-type: none"> Implement a programme of patrols of the nature reserve and their boundaries. 	<ul style="list-style-type: none"> Regular patrols covering the full extent of the nature reserve. Prosecution of any offender caught committing an offence. 		Ongoing	Provision of staff and resources to undertake patrols.	Prosecution of offenders.
LAND MATTERS						
Ensure all permitting is up-to-date, comprehensive, and compliant	<ul style="list-style-type: none"> The responsibility of ensuring all permitting is up-to-date and comprehensive will be assigned to a member, by the management authority. Permitting will be reviewed annually at the AGM. 	<ul style="list-style-type: none"> A register of all required permits and their respective statuses for the property. A member to take responsibility of all permitting concerns. A fully compliant property. 	<ul style="list-style-type: none"> Non-compliance. Inefficiency as a result of having no designated responsible party. 	Annually	Assign a responsible party and facilitate the completion of all necessary paperwork.	Assistance and advice where required.
Ensure clear, legally sound, mapping of boundaries of constituted properties and perimeter.	<ul style="list-style-type: none"> Preparation of a clear and legally sound map which will enable the title deed endorsement of the declaration. 	<ul style="list-style-type: none"> Title deed endorsement for Nature Reserve status. 	<ul style="list-style-type: none"> Inappropriate mapping for title deed endorsement. 	Year 1	Develop the appropriate maps and hiring of a land surveyor if required.	Mapping assistance and advice.
Develop a register of all servitudes registered against the Title Deeds of the	<ul style="list-style-type: none"> Preparation of a detailed register of all servitudes registered against the title deeds of properties within the reserve. 	<ul style="list-style-type: none"> An up-to-date, accurate servitude register for the reserve. 	<ul style="list-style-type: none"> Uncertainty or ignorance of servitudes and their legal status. 	Year 1	Preparation of the servitude register.	Mapping assistance and advice.

properties making up the nature reserve.						
WILDLIFE RISKS AND LIABILITIES						
Wildlife risks to neighbours, visitors, staff, infrastructure and livelihoods are minimised.	<ul style="list-style-type: none"> Risks and liabilities associated with wildlife-related emergencies and breakouts that may lead to injury, death, damage to infrastructure or impacts on livelihoods are regularly assessed and measures are implemented to minimise them. 	<ul style="list-style-type: none"> Standard operating procedures are regularly reviewed and updated to address risks, procedures and compensation associated with wildlife breakouts and emergencies. 	<ul style="list-style-type: none"> Human injury or death related to wildlife incidents. Damage to infrastructure or crops. 	Year 1	Development of standard operating procedures.	Collaboration on similar issues (e.g. within Mkuze Game Reserve).

6.2 Operational management

6.2.1 Infrastructure and equipment

In order for the Greater Ukuwela Nature Reserve to operate appropriately, adequate infrastructure and equipment need to be provided and maintained both for management and tourism purposes. In addressing infrastructure and equipment needs in the reserve, the following guiding principles will be adhered to:

- Infrastructure and equipment must be maintained to avoid any damage to the environment and ensure the safety of staff of visitors to the nature reserve.
- Infrastructure and equipment must be provided to ensure the effective management and operation of the nature reserve.

6.2.2 Financial and human resources

The Greater Ukuwela Nature Reserve cannot be effectively managed without adequate sustained funding and sufficient human resources. The following guiding principles should be adhered to:

- Adequate funding must be provided for the management of the reserve to ensure its sustained functioning.
- Adequate, properly trained and experienced staff must be employed at the nature reserve to undertake the operations required for its effective management.

6.2.3 Management systems

Management systems are required to ensure the health and safety of visitors, staff and contractors working within the Greater Ukuwela Nature Reserve. Furthermore, standard approaches to addressing specific operational interventions are required. The following guiding principles should be adhered to:

- Risks and legal liabilities related to visitor, staff and contractor health and safety are identified and appropriately addressed.
- Standard operating procedures that ensure consistency in management are developed and implemented.
- There is an information management structure in place, that allows for effective sharing of data between members and enables management decisions.

The detailed operational requirements for infrastructure and equipment, financial and human resources, and management systems are set out in Table 6.2.

Table 6.2: Framework for infrastructure and equipment, financial and human resources, and management systems

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
INFRASTRUCTURE AND EQUIPMENT						
Facilities and infrastructure in the nature reserve are adequately maintained.	<ul style="list-style-type: none"> Develop sufficient facilities and obtain sufficient equipment to enable the effective operation of the nature reserve. Address any issues associated with staff housing. 	<ul style="list-style-type: none"> Sufficient facilities, assets, infrastructure and equipment to support the effective management and operation of the nature reserve. 	<ul style="list-style-type: none"> An inability to effectively manage the reserve due to inadequate infrastructure or equipment. 	Ongoing	Implementation of a maintenance programme.	Provision of advice and assistance with monitoring.
Infrastructure on the reserve is managed to minimize environmental harm.	<ul style="list-style-type: none"> Implement a scheduled maintenance programme to maintain infrastructure and equipment. Ensure proper maintenance is being undertaken for service infrastructure, including that for water supply, electricity and sewerage, and if necessary, upgrade infrastructure. Determine appropriate strategies for the management and recycling of waste in the nature reserve. 	<ul style="list-style-type: none"> Regular scheduled maintenance of all infrastructure and equipment. Appropriately functioning infrastructure and systems that do not cause harm to the environment, in accordance with the environmental maintenance management plan. 	<ul style="list-style-type: none"> Environmental, health and safety incidents associated with infrastructure. Pollution events or incidents associated with service infrastructure and systems. 	Ongoing		
FINANCIAL AND HUMAN RESOURCES						
Annual plans of operation include maintenance plans and detailed budgetary requirements	<ul style="list-style-type: none"> Management costs must be factored in as part of the nature reserve's annual management meeting. 	<ul style="list-style-type: none"> Inclusion of a cost estimate in the Annual Plan of Operation. 	<ul style="list-style-type: none"> Lack of funds to complete management targets. 	Annually	Preparation of budgets.	Assistance in identifying costs and sourcing funds.

<p>The nature reserve is adequately staffed for its effective management and operation.</p>	<ul style="list-style-type: none"> ▪ Undertake periodic reviews of staff and positions to determine the human resource needs to effectively manage the reserve. ▪ Employ sufficient, appropriately skilled staff to meet the management and operational requirements of the nature reserve. ▪ Undertake regular training and skills development to ensure that staff are able to effectively complete their duties. 	<ul style="list-style-type: none"> ▪ Develop a profile of staff members to identify qualifications, skills and experience, and areas in which capacity development is required. ▪ Implement a structured system to assess and determine staff job performance and to identify further training and capacity development needs. ▪ Implement measures to ensure that staff are sufficiently trained and capable to undertake the functions required of their job positions. 	<ul style="list-style-type: none"> ▪ Insufficient staff to undertake the key operational functions of the reserve. ▪ Insufficient expertise and experience within the reserve's staff. 	<p style="text-align: center;">Annually</p>	<p style="text-align: center;">Human resource management of reserve staff</p>	<p style="text-align: center;">Assistance in implementing training and capacity development programmes.</p>
MANAGEMENT SYSTEMS						
<p>Ensure effective management of the constituted arrangement, including <i>inter alia</i>: AGMs, operational meetings and budget planning</p>	<ul style="list-style-type: none"> ▪ Ensure that an Annual General Meeting is held for the members of the constituted body, that allows for effective and fair decision making. ▪ Ensure that routine Operation Meetings are held to enable effective reserve management. ▪ The constituted body must be involved in budget planning for the reserve, which must feed directly into the APO. 	<ul style="list-style-type: none"> ▪ Dates for annual meetings are set at the closing of previous meetings. ▪ Processes are in place that facilitate fair and effective decision making. 	<ul style="list-style-type: none"> ▪ Inefficiency as a result of delayed decisions; ▪ Members are excluded from management decisions unfairly. 	<p style="text-align: center;">Annually</p>	<p style="text-align: center;">Enable annual meetings</p>	<p style="text-align: center;">Advice, where possible.</p>
<p>Enable effective information management to ensure that it is usable for applicable parties and facilitates adaptive management.</p>	<ul style="list-style-type: none"> ▪ Design an information storage solution that will enable members to utilise and share information effectively. ▪ Research findings and information must be useable to enable informed adaptive management systems. ▪ GIS information must be managed in way that allows for usability and integrity of the data. 	<ul style="list-style-type: none"> ▪ A shared source of reserve data and GIS resources that enable informed management decisions. ▪ An information storage system that does not rely on a single individual to be utilised. 	<ul style="list-style-type: none"> ▪ An inability to access information. ▪ An inability to make informed adaptive management decisions. 	<p style="text-align: center;">Year 3</p>	<p style="text-align: center;">Design an information management system</p>	<p style="text-align: center;">Advice and technical expertise where possible.</p>

6.3 Business management and development

The businesses that operate within the Greater Ukuwela Nature Reserve underpin its financial sustainability and viability. They are therefore important in ensuring that the reserve is properly resourced and protected. In addition to the businesses that operate within the reserve; there is significant donor support through the WTF. It is therefore important that the businesses and donor funding are managed such that they are complementary. It is also equally important, that the natural resource base that supports the businesses that operate within the reserve is protected to ensure the long-term sustainability of its nature-based business ventures. In managing and further developing business opportunities within the Greater Ukuwela Nature Reserve, the following guiding principles will apply:

- The development and operation of business ventures and opportunities within the Greater Ukuwela Nature Reserve will be consistent with the values and purpose for which the nature reserve was created.
- Opportunities to optimise income generation, return on investment and value to shareholders and partners will be sought in developing and operating business ventures within the Nature Reserve.
- Opportunities to develop partnerships and collaborate with role players in the region will be sought, in an effort to add value to the Greater Ukuwela Nature Reserve's operations and business ventures.
- Tourist and visitor activities must not threaten its biodiversity or ecological function or lead to unacceptable levels of habitat degradation.
- In developing tourist and visitor infrastructure, requirements for environmental authorisation must be considered and adhered to.

The detailed operational requirements for business management and Development are set out in Table 6.3.

Table 6.3 Framework for business management and development

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
BUSINESS DEVELOPMENT AND OPERATION						
Development of a mutually agreed annual budget, that identifies the resources required to achieve the objectives of the nature reserve.	<ul style="list-style-type: none"> Members of the Greater Ukuwela Nature Reserve will meet annually to develop the reserve budget, which will be directly linked to Annual Plan of Operation (APO). 	<ul style="list-style-type: none"> Optimally designed and agreed upon reserve budget that enables the effective management of the reserve. 	<ul style="list-style-type: none"> Inadequate budget or mis-allocated funding for reserve management. 	Ongoing	Annual development of a reserve budget.	Provision of advice and guidance if required.
Support the development of synergistic business ventures that are in line with the vision of the nature reserve and will contribute towards its resilience	<ul style="list-style-type: none"> Income generation that is in line with the values of the Greater Ukuwela Nature Reserve and will contribute to its resilience is optimised. 	<ul style="list-style-type: none"> There is adequate budget to effectively manage the reserve. 	<ul style="list-style-type: none"> Unsustainable practices that undermine the values and ecological integrity of the reserve. 	Ongoing	Development of new products and approaches.	Provision of advice and support.
Development of a mechanism that will enable effective and fair decision making around proposed business activities.	<ul style="list-style-type: none"> Enable effective discussion and decision-making mechanisms within the reserve management authority. 	<ul style="list-style-type: none"> There is an effective, efficient and fair mechanism in place to enable decision making around proposed business activities. 	<ul style="list-style-type: none"> Inefficient business development as a result of a lack of decisions; Inappropriate business development that is not supported by all members. 	Ongoing	Development of a decision-making mechanism/	Provision of advice and support.

6.4 Conservation management

6.4.1 Ecosystem management

The KwaZulu-Natal systematic biodiversity plan identifies conservation targets for the province. The conservation of the Greater Ukuwela Nature Reserve contributes towards the achievement of a portion of some of these targets (Table 6.4).

Table 6.4 Systematic biodiversity planning conservation targets for vegetation types to which the Greater Ukuwela Nature Reserve contributes

Vegetation type	Threat status	Extent of vegetation within the reserve (ha)	Proportion of provincial extent of veg type within the reserve	Contribution to biodiversity targets
Western Maputaland Clay Bushveld	Vulnerable	330	0.58%	1.14%
Freshwater Wetlands: Subtropical Freshwater Wetlands: Short Grass/ Sedge Wetlands	Least threatened	355	0.92%	3.15%
Maputaland Pallid Sandy Bushveld	Least threatened	232	0.50%	1.15%
Tembe Sandy Bushveld	Least threatened	14	0.02%	0.07%

6.4.2 Species management

Specific management interventions related to animal and plant species will be limited to those that are for the purposes of safeguarding populations of rare and threatened species or enhancing the ecological functioning of the Greater Ukuwela Nature Reserve, to meet set conservation targets. In addition, interventions may be required for problem animal management. In addressing species management, the following guiding principles should be adhered to:

- Species management must be focussed primarily on protecting the ecological functioning of the nature reserve and meeting set conservation targets for species and vegetation types.
- Population management of wildlife species may be required to ensure that such species are not causing ecological degradation of the nature reserve.
- Should population management be required, live sale of game will be the first priority unless it is economically not feasible.
- Animals that become a danger or excessive nuisance to persons and property due to either habituation or aberrant behaviour must be managed in accordance with relevant policies and standard operating procedures.

The operational requirements for ecosystem and species management are set out in Table 6.5.

Table 6.5 Framework for ecosystem and species management

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
ECOSYSTEM AND SPECIES MANAGEMENT						
Maintain optimal species mix and numbers informed by carrying capacity estimates ecological principles	<ul style="list-style-type: none"> Ensure that the vegetation types within the reserve and being managed optimally for biodiversity conservation; Animal populations are managed according to the recommendations of the Veld Monitoring Programme and the results of the annual wildlife census; Wildlife population management is undertaken through live capture of game wherever possible. Animals will only be culled as a last resort and where ever possible, meat must be utilised. 	<ul style="list-style-type: none"> Undertake annual rangeland assessments, as part of the Monitoring Programme, to determine the state of the habitat and the influence of management interventions. Undertake an annual wildlife census to understand population sizes and trends. Modify game species mix and numbers if they are found to be negatively impacting on biodiversity. 	<ul style="list-style-type: none"> Ecological degradation of habitat as shown through rangeland assessments. 	Ongoing	Implementation of rangeland assessments.	Provision of technical assistance.
Ensure the conservation targets of threatened, rare, vulnerable and endemic species are met	<ul style="list-style-type: none"> Adopt procedures for the management of rare and endangered species, based on available literature and known best practices. 	<ul style="list-style-type: none"> If required, veterinary intervention will be utilised for species of conservation concern; Habitat management activities will be cognisant of the requirement of plant species of conservation concern. 	<ul style="list-style-type: none"> Declining numbers of rare and threatened species that occur within the nature reserve. 	Ongoing	Implementation of appropriate management practices.	Provision of technical assistance.
Maintain key and sensitive habitat types in optimal conditions	<ul style="list-style-type: none"> Implement measures to limit human and ecological impacts in unique and sensitive habitat types such as, NFEPA wetlands and any areas of habitat with rare or threatened species. 	<ul style="list-style-type: none"> Implement appropriate measures within sensitive habitats to limit vegetation impacts through over-utilisation through species; Develop standard operating procedures for tourism and management activities within sensitive habitats. 	<ul style="list-style-type: none"> Impacts on unique and sensitive habitat types and the species associated with them. 	Ongoing	Implementation of appropriate standard operating procedures related to unique and sensitive habitat types.	Provision of technical advice

Table 6.5 (continued)

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
ECOSYSTEM AND SPECIES MANAGEMENT						
If extractive resource use is undertaken, it is done sustainably and conforms to legislation relative to a Nature Reserve.	<ul style="list-style-type: none"> ▪ Extractive resource use must comply with the recommendations of the Ecological Monitoring Programme; ▪ Extractive resource use must comply with applicable legislation; ▪ Any extractive resource use must be agreed upon by all members of the management authority. 	<ul style="list-style-type: none"> ▪ If extractive resource use is to take place, it must be done sustainably. 	<ul style="list-style-type: none"> ▪ Unsustainable use of resources, such that their degradation of habitats and/or vegetation. 	Ongoing	Ensure sustainable and compliant resource use.	Provision of technical advice
Develop and maintain a road network based on ecological guidelines that is cognizant of tourism needs and compliant with legislation.	<ul style="list-style-type: none"> ▪ Develop and maintain roads that will complement the tourism activities on the reserve. ▪ Design the road network such that sensitive habitats are avoided. ▪ Maintain the road network such that risk of erosion is minimised and impacts on vegetation are limited. ▪ Develop a tourism and a management version of the official road map. ▪ Demarcate roads using appropriate signage. 	<ul style="list-style-type: none"> ▪ An effective road network is designed and implemented. ▪ Road maintenance is adequately addressed in the APO. ▪ The road network is adequately signposted. 	<ul style="list-style-type: none"> ▪ Road design negatively impacts on sensitive habitats. ▪ Lack of road maintenance leads to soil erosion. 	Ongoing	Ensure adequate road design and maintenance.	Provision of ecological and management advice.

6.4.3 Fire and herbivore management

Fire and herbivore management are heavily inter-related, which requires:

- Herbivore management must allow for the recovery of desirable plant species, which requires periodic rest or alleviated herbivore pressure during the growing season.
- Fire should be used as a management tool to encourage herbivore utilisation on areas that have received a level of rest or reduced usage in the previous season/s.
- The overall long-term stocking rate for the reserve should not exceed its carrying capacity.

Fire plays an important role in southern African ecology, and has important effects on vegetation composition, primary productivity and nutrient cycling. The following guiding principles should be adhered to:

- Burning must be undertaken with consideration of the biodiversity conservation requirements of the site and the need to protect rare and threatened species.
- Burning and fire management must be undertaken in a safe manner that is legally compliant with the National Veld and Forest Fire Act.

6.4.4 Invasive plant species control

A listed invasive species means any species, which is listed in terms of the Conservation of Agricultural Resources Act and section 70 of the Biodiversity Act and its regulations, whose establishment and spread occurs outside of its natural distribution range. In undertaking invasive plant control, the following guiding principles will be adhered to:

- Invasive plant control will require an ongoing programme that prioritises key infestations along watercourses, drainage lines and upper catchment areas.
- Innovative methods for clearing of indigenous problem plants must be sought.
- Initial clearing efforts should focus on containing infestations that are most likely to spread into new areas.
- All follow-up requirements must be strictly adhered to otherwise the problem will be exacerbated.

6.4.5 Soil erosion management

Areas susceptible to soil erosion or showing early signs of soil erosion such as loss of vegetation cover, must be managed to prevent soil erosion.

The operational requirements for fire and herbivore management, invasive plant species control and soil erosion management are set out in Table 6.6.

Table 6.6 Framework for fire and herbivore management, invasive plant species control and soil erosion management

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
FIRE MANAGEMENT						
Development and implementation of a comprehensive fire management plan for the nature reserve.	<ul style="list-style-type: none"> ▪ Development of the Greater Ukuwela Fire Management Plan, in accordance with the findings of the Ukuwela Monitoring Programme and its recommended ecological principles. ▪ Implement the burning regime in accordance with the Greater Ukuwela Nature Reserve’s Fire Management Plan. ▪ The Fire Management Plan must be compliant with the National Veld and Forest Fires Act. 	<ul style="list-style-type: none"> ▪ Establishment of a series of internal firebreaks to facilitate the recommended burning regime. ▪ Burning the reserve in accordance with the fire management plan. ▪ Five-yearly review and update of the Greater Ukuwela Nature Reserve Fire Management Plan. ▪ Compliance with the National Veld and Forests Fires Act. 	<ul style="list-style-type: none"> ▪ Failing to develop a Fire Management Plan. ▪ Inappropriate burning in contravention to the reserve’s fire management plan. ▪ Ecological degradation as a result of the inappropriate use of fire. ▪ Non-compliance with the National Veld and Forest Fires Act. 	Annually	Implementation of the burning regime	Provision of technical advice.
INVASIVE PLANT CONTROL						
Development and implementation of an alien and invasive species control plan for the nature reserve.	<ul style="list-style-type: none"> ▪ Develop an invasive alien plant control plan in accordance with best practise principles. ▪ Implement concerted, sustained control efforts in identified areas of invasive plant infestation, in accordance with the Invasive Alien Plant Control Plan. 	<ul style="list-style-type: none"> ▪ Implementation of invasive alien plant control in accordance with the reserve’s invasive alien plant control plan. ▪ Five-yearly review and update of the Greater Ukuwela Nature Reserve Invasive Alien Plant Control Plan. ▪ Ongoing control and eradication of listed invasive species to a point where maintenance control is all that is required. 	<ul style="list-style-type: none"> ▪ Failure to develop an Invasive Alien Plant Control Plan. ▪ Spread of existing levels of infestation of listed invasive species. ▪ Persistence of existing infestations. ▪ New infestations of listed invasive species. 	Annually	Ensure implementation of invasive plant control measures.	Advice in planning for alien invasive plant control Assistance in the provision of chemicals and/or access to Working for Water.

Table 6.6 (continued)

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
Implementation of procedures to manage exotic animals found within the nature reserve.	<ul style="list-style-type: none"> ▪ Exotic animals, unless under the control of management and / or residence must be removed. ▪ Residents must maintain a list of exotic pets with the members of the management authority. 	<ul style="list-style-type: none"> ▪ Managing exotic animal species that occur on the reserve so that indigenous species are protected. 	<ul style="list-style-type: none"> ▪ Uncontrolled exotic animals inhibiting the success of indigenous populations. 	Ongoing	Implementation of exotic animal management activities.	NA
SOIL EROSION CONTROL						
Identify and rehabilitate areas that have been affected by soil erosion.	<ul style="list-style-type: none"> ▪ Identify the requirements for soil erosion control and rehabilitation within the nature reserve. ▪ Undertake preventative measures in areas with low plant cover that may be at risk of soil erosion. ▪ Implement soil erosion control measures, focussing strategically on areas such as those impacting on watercourses or that are growing larger. ▪ Undertake a detailed soil survey of the reserve. 	<ul style="list-style-type: none"> ▪ Develop a detailed soil map of the reserve. ▪ A map depicting areas of soil erosion within the nature reserve. ▪ Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion. 	<ul style="list-style-type: none"> ▪ Erosion of susceptible areas. ▪ Sedimentation impacts in watercourses and wetland areas. 	Ongoing	<p>Appointment of a specialist to undertake the soil survey.</p> <p>Implementation of erosion and rehabilitation control measures.</p>	Assistance in mapping areas impacted by soil erosion and assistance with advice in managing impacted areas.

6.5 Cultural heritage and sense of place

The Greater Ukuwela Nature Reserve has immense scenic values that relate to the reserve's natural beauty which contribute to its sense of place. However, little is known about the cultural heritage or historic resources of the reserve. When the opportunity arises, the Greater Ukuwela Nature Reserve will therefore enable research into its historical and cultural resources. It is important that these resources and its sense of place are protected. In doing so, the following guidelines apply:

- Development within the reserve must be sensitive to its sense of place and aesthetic appeal and must be designed and constructed to complement them.
- Important historic, archaeological and paleontological sites and artefacts must be properly documented and preserved as an important component of South Africa's scientific, historical and cultural heritage.

6.6 Research and monitoring

The Greater Ukuwela Nature Reserve is committed to facilitating scientific research, particularly for the benefit of conservation. In continuing to undertake scientific research and monitoring within the reserve, the following guiding principles will apply:

- Scientific research and monitoring will primarily be undertaken to assist in improving the knowledge and understanding of species, habitats and key ecological drivers within the Greater Ukuwela Nature Reserve, thus providing for more informed management interventions.
- Scientific research and monitoring that assists in broadening the knowledge and understanding of species, habitats and ecological drivers within natural systems in southern Africa will be encouraged.

The operational requirements for cultural heritage and sense of place, and research and monitoring are set out in Table 6.7.

Table 6.7 Framework for cultural heritage and research and monitoring

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
CULTURAL HERITAGE AND SENSE OF PLACE						
Generate an understanding of the cultural, historical, archaeological and paleontological resources on the reserve.	<ul style="list-style-type: none"> As opportunities arise, the Greater Ukuwela Nature Reserve will enable research into the cultural, historic, archaeological and paleontological resources on the reserve. 	<ul style="list-style-type: none"> Development of a map of the historic resources on the reserve, so as to ensure their protection. If funding is available undertake a more comprehensive inventory of cultural, historical and archaeological artefacts within the reserve. 	<ul style="list-style-type: none"> Loss of artefacts or damage to the integrity of cultural, historical or archaeological sites, as a result of lack of awareness. 	As required	Facilitate research through partnerships with academic institutions and specialists.	Provision of technical advice and expertise.
The cultural, historical, archaeological, and paleontological resources of the reserve are safeguarded as per the AMAFA guidelines and legislation.	<ul style="list-style-type: none"> Identified cultural, historical, archaeological and paleontological sites and artefacts are appropriately managed and protected to ensure that they are adequately preserved. 	<ul style="list-style-type: none"> Visitor activities are controlled and limited in areas that have been identified as particularly sensitive to visitor impacts. 	<ul style="list-style-type: none"> Loss of artefacts or damage to the integrity of cultural, historical or archaeological sites. 	Ongoing	Management of artefacts and sites.	Facilitation of assistance from AMAFA and relevant research organisations.

Table 6.7 (continued)

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
RESEARCH AND MONITORING						
Align research and monitoring programmes with reserve management objectives.	<ul style="list-style-type: none"> Conduct regular reviews of research efforts within the review to determine how their findings may inform management and to identify key gaps in knowledge and understanding. Regularly record research requirements that will aid in reserve management. 	<ul style="list-style-type: none"> An annual review of research efforts is conducted to discuss and disseminate key findings and identify areas where further research is required. Discuss and highlight research needs during planning for the APO. 	<ul style="list-style-type: none"> Gaps in understanding the implications of key management interventions. 	Annually	Organisation of an annual forum to discuss research findings and gaps.	Participation in research forums.
Develop and maintain a biodiversity monitoring program that will enable adaptive management.	<ul style="list-style-type: none"> Maintain a species list that includes the Regionally and Globally Threatened, Near-Threatened, Protected Species, and Endemism status. Maintain ID kits on key species on the reserve. Maintain a camera trapping programme 	<ul style="list-style-type: none"> Development of scientific surveillance and monitoring plan for the reserve that enables effective species monitoring. Monitoring plans for key rare and threatened habitat types and species. Review monitoring strategies annually. 	<ul style="list-style-type: none"> Inability to apply informed adaptive management in response to management interventions. 	Annually	Development and implementation of surveillance and monitoring plans.	Provision of advice and expertise from ecological scientific specialists.
Develop and maintain an ecosystem monitoring program for the reserve that will enable adaptive management.	<ul style="list-style-type: none"> Implement the Biodiversity Monitoring Programme that will assess the Ecological Carrying Capacity, trends in vegetation and inform the burning regime. Monitor and record invasive alien plant removal, as per the IAP Plan. Develop a fine-scale vegetation map of the reserve. Record and monitor fire succession and impact. Monitor wetlands health and associated species biodiversity. 	<ul style="list-style-type: none"> Development of an effective surveillance and monitoring plan for the reserve that will enable adaptive habitat management. Review monitoring strategies annually. Keep accurate records of habitat management activities, including burns and Invasive Alien Plants (IAP) removal. 	<ul style="list-style-type: none"> Lack of historic data on habitat management activities. Inability to apply informed adaptive management in response to management interventions. 	Annually	Development and implementation of surveillance and monitoring plans	Provision of advice and expertise from ecological scientific specialists.
Facilitate research and partnerships with recognized	<ul style="list-style-type: none"> Ensure that the Greater Ukuwela Nature Reserve is included in or is aware of any research that is being 	<ul style="list-style-type: none"> Engagement with partners and research organisations to promote research that 	<ul style="list-style-type: none"> Lack of knowledge or understanding of key 	Annually	Engagement with partners and	Assistance in identifying and

<p>educational institutions, organizations and projects that are compliant, ethical, contribute to science, and/or have management implications.</p>	<p>conducted on rare and endangered species that occur in the reserve, particularly those for which specific conservation targets have been set.</p> <ul style="list-style-type: none"> ▪ Share research gaps that are identified in the annual review with applicable institutions and organisations. 	<p>addresses key ecological management interventions.</p>	<p>flagship habitat types or species.</p>		<p>research organisation.</p>	<p>including the reserve in relevant research efforts.</p>
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6.7 Socio-economic benefits

6.7.1 Fostering community partnerships and support

Constructive relationships with adjacent landowners and neighbouring communities are an important aspect of the effective conservation of protected areas. In ensuring that these groups derive socio-economic benefits from the Greater Ukuwela Nature Reserve, efforts should be aimed at developing a strong sense of partnership between the neighbours and communities around the reserve and its managers. The following guiding principles should be adhered to:

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

6.7.2 Environmental education, awareness and interpretation

Environmental education and interpretation of the Greater Ukuwela Nature Reserve's natural and cultural resources should be aimed at creating awareness, understanding and appreciation of its cultural importance, and the significance of its biodiversity and ecological function. In implementing the environmental education, awareness and interpretation programme, the following guiding principles should be adhered to:

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

6.7.3 Quantification of Ecosystem goods and services

Nature Reserves are an important provider of ecosystem goods and services to society. The conservation community needs to start highlighting their role in the provision of these services, and an important part of doing so is quantifying them. In order to highlight its importance within the landscape, the Greater Ukuwela Nature Reserve will, when resources allow and/or research opportunities arise, enable the quantification of the ecosystem goods and services it provides.

The operational requirements for socio-economic benefits are set out in Table 6.8

Table 6.8 Framework for socio-economic benefits

Strategic outcome	Management activities	Management targets	Indicators of Concern	Timing	Mgt. authority responsibility	Partner responsibility
FOSTERING COMMUNITY PARTNERSHIPS AND SUPPORT						
Provide employment and business opportunities to local community members.	<ul style="list-style-type: none"> Ensure that the surrounding community members are considered first for all job openings and business support. 	<ul style="list-style-type: none"> Wherever possible, all employment opportunities and business support are provided to local communities. 	<ul style="list-style-type: none"> Employment and business support provided to people from afar. 	Ongoing	Implementation of employment policies and other efforts aimed at providing benefits to the communities.	Provision of advice and support, including potentially assisting with skills and capacity development efforts.
Where possible, support programs focused on health, education, and social upliftment of communities surrounding the reserve, in a manner that community development is directly linked to Greater Ukuwela Nature Reserve.	<ul style="list-style-type: none"> Where possible, actively enable community development and ensure that this development is directly linked to the Greater Ukuwela Nature Reserve in the minds of the people. 	<ul style="list-style-type: none"> Community development projects result in positive relationships and trust with the surrounding communities. 	<ul style="list-style-type: none"> The Greater Ukuwela Nature Reserve provides no benefit to the local communities; Upliftment initiatives are seen by local communities to be unrelated to the nature reserve. 	Ongoing	Enable active community development in a way that fosters positive relationships with local communities.	Provision of advice and support where necessary.
ENVIRONMENTAL EDUCATION, AWARENESS AND INTERPRETATION						
Support environmental education programs where suitable.	<ul style="list-style-type: none"> Focus on environmental interpretation and education amongst the nature reserve's neighbouring communities and visitors. Employ and train members of the local community to assist in and to implement the programme. 	<ul style="list-style-type: none"> Provision of environmental interpretation to members of the neighbouring local communities, implemented in terms of the reserve's existing programme. 	<ul style="list-style-type: none"> Lack of interest in implementing the programme. 	Ongoing	Implementation of the education, awareness and interpretation programme.	Provision of advice and support, if required.

ECOSYSTEM GOODS AND SERVICES

<p>Quantify the value of ecosystem services provided by the reserve, to position the conservancy as a key component in the landscape.</p>	<ul style="list-style-type: none"> ▪ Enable research into the ecosystem services provided by the nature reserve. 	<ul style="list-style-type: none"> ▪ When resources allow, and research opportunities present themselves; the ecosystem services provided by the nature reserve are quantified. 	<ul style="list-style-type: none"> ▪ Lack of interest in quantifying the benefits provided by the Greater Ukuwela Nature Reserve to society. 	<p>Ongoing</p>	<p>Enabling research into the Ecosystem services provided by the Greater Ukuwela Nature Reserve.</p>	<p>Provision of advice and support, if required.</p>
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7) MONITORING AND REPORTING

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

7.1 Annual monitoring

The annual monitoring schedule should be designed to monitor the implementation of aspects of the management plan. It should be designed to be straightforward and relatively easy to implement by on-site staff.

Records should be maintained of key management interventions and of problem events or incidents such as uncontrolled access, poaching, illegal plant collection or uncontrolled/arson fires.

Scientific monitoring programmes may be established to monitor specific management interventions such as measures for the protection of flagship species. Most of the outcomes of the monitoring process will be captured in an annual report, which will be used to inform the following year's annual plan of operation.

The Greater Ukuwela Nature Reserve conducts a game count annually to assist with their grazing and browse management, as well as a veld condition assessment. These are reported on an annual basis.

Monthly Reporting

In addition to the annual monitoring, the reserve utilises the EarthRanger and CyberTracker applications to streamline their monthly monitoring and reporting. This includes:

- Wildlife monitoring: body condition, herd structure, and population densities;
- Camera trap surveys;
- Alien plant species;
- Trespassing;
- Poaching; and
- Rainfall

On this basis, a monitoring schedule for the Greater Ukuwela Nature Reserve is set out in Table 7.1.

Table 7.1 Annual monitoring schedule for the Greater Ukuwela Nature Reserve

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
Law enforcement	Schedule of patrols	Written record	Weekly	Management authority	Annual report
	Recovery of snares	Photographs/written record	Weekly		Annual report
	Illegal incidents	Written record	Per event		Record of event
Species monitoring reports	Specific reports to be prepared for the following: <ul style="list-style-type: none"> ▪ Threatened, Endangered and/or protected species. 	Written record	Annually	Management authority	Annual reports
Fire Management	Burning of firebreaks as part of fire management	Written record/map/photography	Annually	Management authority	Annual report
	Burning of blocks as part of controlled burning		Annually		Annual report
	Unplanned wildfires	Written record/map/photography	Per event		Record of event
Game Management	<ul style="list-style-type: none"> ▪ Annual game census; and ▪ Camera Trapping Programme 	Written record	Annually	Management authority	Annual report
Rangeland condition	Biodiversity Monitoring Programme Report	Grass and browse assessment	Biennially	Management authority / Ross Goode	Five-yearly report

Table 7.1 (continued)

Management issue	Parameters to be monitored	Monitoring measures	Monitoring frequency	Responsibility	Reporting requirements
Invasive Alien Plant Control	Areas subject to invasive plant control	Photographs/written record	Quarterly	Management authority	Annual report
	State of areas in which invasive plants have been eradicated				
	Records of labour hours/days	Written record	Annually		Annual report
	Herbicide usage	Written record	Annually		Annual report
Soil Erosion Control	Areas subject to erosion control	Photographs/written record	Quarterly	Management authority	Annual report
	State of rehabilitated areas of erosion				Annual report
Human Resources	Staff and training levels	Annual report on staff	Annually	Management authority	Annual report
Financial management	Reserve capital and operational finances	Written record	Annually	Management authority	Annual report
Facilities and infrastructure	State of roads, paths, fences and dams	Photographs/written records	Quarterly	Management authority	Annual report
	State of facilities and service infrastructure	Maintenance schedule/written records	Monthly	Management authority	Annual report
	Pollution events	Photographs/written records	Per event		Record of event

7.3 Annual protected area management plan implementation review

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

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

The minutes of the annual management meeting will form the basis of the report on the management plan review. The minutes should include records of recommendations for update/changes to the five-year plan so that when the five-year plan is revised for the subsequent five years, these recommendations can be assessed and included where necessary.

8) GREATER UKUWELA NATURE RESERVE'S ANNUAL PLAN OF OPERATION

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

8.1 Implementation of the management plan

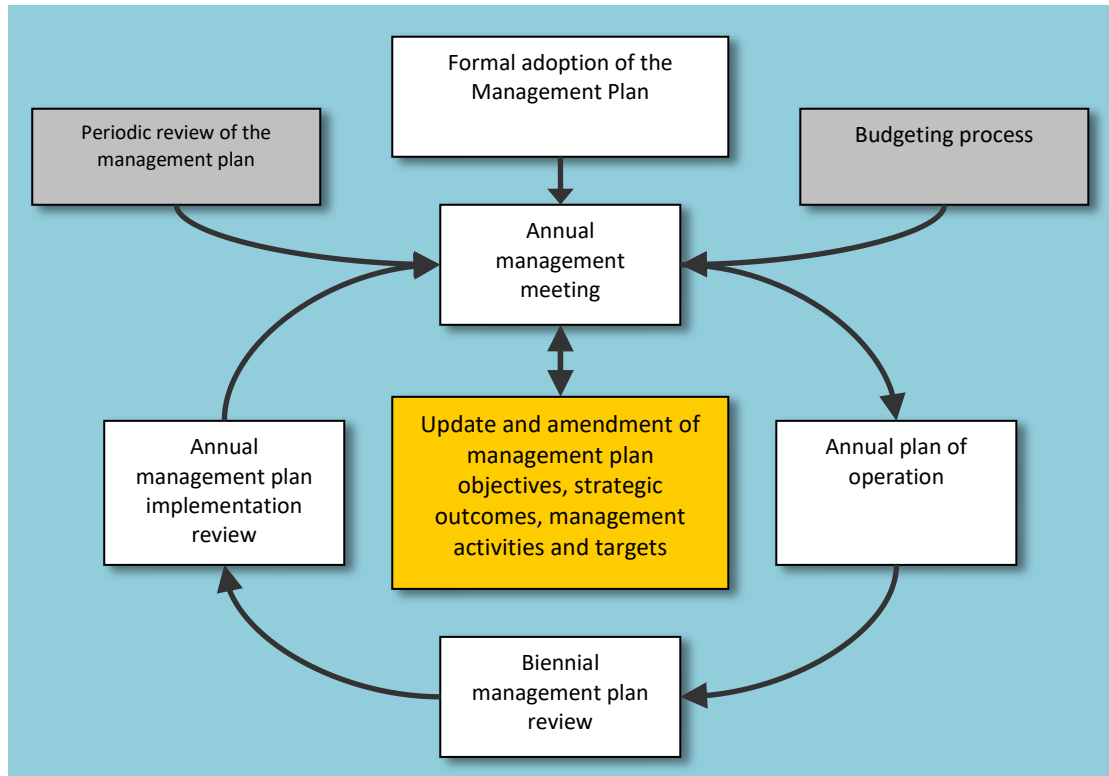


Figure 8.1 Process for the implementation of Management Plans

Each year an annual management meeting is to be held for the biodiversity stewardship site. In terms of the implementation of the management plan, the purpose of the annual management meeting for the Greater Ukuwela Nature Reserve will be to:

- Finalise the annual report, as part of the annual management plan review described in Section 7.2 above.
- As part of the annual performance review, determine the need to modify or change any of the management plan's objectives, strategic outcomes, management activities or targets.
- Determine management activities for the coming year and to set goals for the year, based on the key performance areas set out in the management plan.
- Determine how budgets will be spent in an effort to achieve the goals for each of the quarters of the coming year.

The minutes and notes of the annual management meeting will be compiled in an annual plan of operation, which will include all of the information, set out above, and will determine what management activities need to be completed for the coming year, based on the management plan. A pro forma annual plan of operation is set out in Appendix E.

8.2 Responsibilities in implementing the protected area management plan

In the tables in the operational management framework, the responsibilities for the completion of management activities are identified. In many cases the people responsible for implementing the activities will be in attendance at the annual management meeting and the requirements for the achievement of the management activities can be discussed and agreed to at the meeting. In some cases, however, it may be required to refer the management activities to an individual within another partner to ensure that they implement the management activity.

8.3 The Greater Ukuwela Nature Reserve's resource requirements

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

8.3.1 Staff and equipment

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

- Administration and management of the reserve.
- Patrolling of the site and its boundaries.
- Community liaison and the implementation of socio-economic projects aimed at improving livelihoods within the communities surrounding the reserve.
- Implementation of an education, awareness and interpretation programme for the Greater Ukuwela Nature Reserve.
- Periodic rangeland condition assessments and other technical ecological management activities.
- An annual game census.
- Annual game off-takes and population control, if required.
- An annual burning programme and firefighting response to wildfires.
- An ongoing invasive alien plant species control programme.
- An ongoing soil erosion control and rehabilitation programme.
- The implementation and maintenance of scientific research, surveillance and monitoring programmes.

- Maintenance of roads, paths and fences within the site.
- Maintenance of facilities and infrastructure within the site.
- Human resource management, and staff training and capacity development.
- Compliance with requirements in terms of the Occupational Health and Safety Act.

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DEFINITIONS OF TERMS

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

Ecosystem services	<p>As defined in Section 1 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) as “environmental goods and services” meaning:</p> <ol style="list-style-type: none"> Benefits obtained from ecosystems such as food, fuel and fibre and genetic resources. Benefits from the regulation of ecosystem processes such as climate regulation, disease and flood control and detoxification. Cultural non-material benefits obtained from ecosystems such as benefits of a spiritual, recreational, aesthetic, inspirational, educational, community and symbolic nature;” <p>For the purposes of this IMP, sustainable water production is also specifically included under this definition.</p>
Environmental degradation	<p>The deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the loss of species or undesirable reduction of species population numbers from a specific area from an environmental health perspective</p>
Ezemvelo KZN Wildlife	<p>Nature Conservation Service as established in terms of the KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997.</p>
Indigenous species	<p>In relation to a specific protected area, means a species that occurs, or has historically occurred, naturally in a free state of nature within that specific protected area, but excludes a species introduced in that protected area as a result of human activity (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).</p>
Invasive species	<p>Means any species whose establishment and spread outside of its natural distribution range –</p> <ol style="list-style-type: none"> Threaten ecosystems, habitats or other species or have a demonstrable potential to threaten ecosystems, habitats or other species. May result in economic and environmental harm or harm to human health. <p>(As per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).</p>
Joint management	<p>The agreed co-ordination of management and/or management actions by landowners and/or mandated managers on their individual or combined properties in order to achieve common management objectives.</p>
Local community	<p>Any community of people living or having rights or interests in a distinct geographical area (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).</p>
Management	<p>In relation to a protected area, includes control, protection, conservation, maintenance and rehabilitation of the protected area with due regard to the use and extraction of biological resources, community-based practices and benefit sharing activities in the area in a manner consistent with the Biodiversity Act (as per the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).</p>

Management authority	In relation to a protected area, means the organ of state or other institution or person in which the authority to manage the protected area is vested (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).
Monitoring	The collection and analysis of repeated observations or measurements to evaluate change in status, distribution or integrity in order to track the impacts of directed management implemented to achieve a stated management objective.
Nature conservation	The conservation of naturally occurring ecological systems, the sustainable utilisation of indigenous plants and animals therein, and the promotion and maintenance of biological diversity (as per the KwaZulu-Natal Nature Conservation Management Act, 1997 [Act No.9 of 1997]).
Neighbouring community	The communities and people permanently living in the local municipal area/s bordering onto the Nature Reserve.
Natural heritage	As defined in Article 2 of the World Heritage Convention (UNESCO) 1972 'natural heritage' is as: "natural features consisting of physical and biological formations or groups of such formations, which are of (...) value from the aesthetic or scientific point of view, geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of (...) value from the point of view of science or conservation, natural sites or precisely delineated natural areas of (...) value from the point of view of science, conservation or natural beauty." For the purposes of this IMP, this would include the required ecological integrity of the protected area for the production of ecosystem services.
Partnerships	A co-operative and / or collaborative arrangement between the Game Reserve management / EKZNW and a third party that supports the achievement of the Game Reserve management objectives.
Protected areas	<ul style="list-style-type: none"> • Means any area declared or proclaimed as such in terms of section 3 or listed in the Second Schedule to the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997); or • Means any of the protected areas referred to in section 9 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
Protected area management committee	Is the management body that deals with the day-to-day management of the protected area and is chaired by the OIC.
Ramsar Convention	Means: "The Convention on Wetlands of International Importance, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources." (There are presently 158 Contracting Parties to the Convention, the Convention has broadened its scope to cover all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities.)

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

LIST OF STATUTES TO WHICH UKUWELA NATURE RESERVE IS SUBJECT

Biodiversity and Cultural Resource Management and Development:

- Animals Protection Act [No. 71 of 1962]
- Atmospheric Pollution Prevention Act [No. 45 of 1965]
- Conservation of Agricultural Resources Act [No. 43 of 1983]
- Constitution of the Republic of South Africa [No. 108 of 1996]
- Criminal Procedures Act [1977]
- Environment Conservation Act [No. 73 of 1989]
- Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act [No. 36 of 1947]
- Forest Act [No. 122 of 1984]
- Hazardous Substances Act [No. 15 of 1973]
- KwaZulu Nature Conservation Act [No. 8 of 1975]
- KwaZulu-Natal Heritage Management Act [No. 10 of 1997]
- KwaZulu-Natal Nature Conservation Management Act [No. 9 of 1997]
- National Environmental Management Act [No. 107 of 1998]
- National Environmental Management: Biodiversity Act [No. 10 of 2004]
- National Environmental Management: Protected Areas Act [No. 57 of 2003]
- National Forests Act [No. 84 of 1998]
- National Heritage Resources Act [No. 25 of 1999]
- National Water Act [No. 36 of 1998]
- National Water Amendment Act [No. 45 of 1999]
- National Veld and Forest Fire Act [No 101 of 1998]
- Nature Conservation Ordinance [No. 15 of 1974]

General Management:

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

Financial Management:

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

Human Resource Management:

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

COPY OF UKUWELA NATURE RESERVE'S NATURE RESERVE DECLARATION

PROVINSIALE KOERANT, 27 MEI 2021

No. 2290 5

PROVINCIAL NOTICE 49 OF 2021

KWAZULU-NATAL DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS

DECLARATION OF THE GREATER UKUWELA NATURE RESERVE IN TERMS OF SECTION 23(1) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003

I, Ravigasen Ranganathan Pillay, in my capacity as Member of the KwaZulu-Natal Executive Council for Economic Development, Tourism and Environmental Affairs, and under powers vested in me by section 23(1) of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("the Act"), hereby declare that –

- (a) subsequent to consultation with the relevant parties as contemplated in section 32(2) of the Act;
- (b) subsequent to the publication of Notice Number 111 of 14 October 2020 in Provincial Gazette 2220, and an advert in two national newspapers, in which my intention to declare the Greater Ukuwela Nature Reserve was duly published in accordance with the requirements of section 33(1) of the Act;
- (c) subsequent to an agreement being concluded with the landowners in accordance with section 23(3) of the Act; and
- (d) with effect from the date of publication of this Notice,

the properties described in the Schedule hereto are a Nature Reserve, known as the Greater Ukuwela Nature Reserve, as contemplated in sections 23(1)(a)(i) and section 23(1)(b) of the Act.

Given under my hand at **DURBAN** this ____ day of **MARCH**, Two Thousand and Twenty-one

Mr. R R Pillay, MPL
Member of the KwaZulu-Natal Executive Council
responsible for environmental affairs

SCHEDULE

Description of properties comprising the Greater Ukuwela Nature Reserve

The Nature Reserve comprises the following immovable properties:

- (a) Remaining extent of the Farm Cloete No. 13350, Registration Division HV, Province of KwaZulu-Natal, measuring 192.1809 hectares in extent and held by Deed of Transfer T27351/2014;
- (b) Portion 12 of the Farm Cloete No. 13350, Registration Division HV, Province of KwaZulu-Natal, measuring 40.8733 hectares in extent and held by Deed of Transfer T27351/2014;
- (c) Remaining extent of Portion 13 of the Farm Cloete No. 13350, Registration Division HV, Province of KwaZulu-Natal, measuring 20.4406 hectares in extent and held by Deed of Transfer T27351/2014;
- (d) Portion 14 of the Farm Cloete No. 13350, Registration Division HV, Province of KwaZulu-Natal, measuring 40.8733 hectares in extent and held by Deed of Transfer T27351/2014;
- (e) Portion 34 of the Farm Cloete No. 13350, Registration Division HV, Province of KwaZulu-Natal, measuring 20.4384 hectares in extent and held by Deed of Transfer T27351/2014;
- (f) Remaining extent of Lot H1115 No. 13180, Registration Division HV, Province of KwaZulu-Natal, measuring 154.0205 hectares in extent and held by Deed of Transfer T7467/2005;
- (g) Portion 39 of the Farm Msinene Estate No. 14137, Registration Division HV, Province of KwaZulu-Natal, measuring 20.7696 hectares in extent and held by Deed of Transfer T21634/2014;
- (h) Portion 38 of the Farm Msinene Estate No. 14137, Registration Division HV, Province of KwaZulu-Natal, measuring 20.2382 hectares in extent and held by Deed of Transfer T4997/2017; and
- (i) The Farm Pineapple No. 16074, Registration Division HV, Province of KwaZulu-Natal, measuring 499,7700 hectares in extent and held by Deed of Transfer T14714/2017.

SPECIES LISTS

Mammals					
Scientific Name	Common Name	Regional	Global	OTHER	Survey / Study
<i>Acinonyx jubatus</i>	Cheetah	Vulnerable	Vulnerable	Appendix I CITES, TOPS Vulnerable, Watchlist Threat.	Transient - break outs from Phinda
<i>Aepyceros melampus melampus</i>	Impala				C. Wright 2017
<i>Atilax paludinosus</i>	Water Mongooses (Marsh Mongoose)			South Africa Endemism Edge of Range	Zululand Lodge 2017
<i>Canis adustus</i>	Side-striped Jackal				C. Wright 2017
<i>Cephalophus natalensis</i>	Red Duiker	Near Threatened	Least Concern		C. Wright 2017
<i>Chlorocebus pygerythrus</i>	Vervet Monkey			CITES II	C. Wright 2017
<i>Connochaetes taurinus</i>	Blue Wildebeest				C. Wright 2017
<i>Crocuta crocuta</i>	Spotted Hyena	Near Threatened	Not Assessed	TOPS Protected	Camera trap survey 2017
<i>Dendromus mystacalis</i>	Chestnut Climbing Mouse				Jordaan, Wright and Wright 2017
<i>Equus quagga</i>	Burchell's Zebra (Plain's Zebra)	Least Concern	Near Threatened		C. Wright 2017
<i>Leptailurus serval</i>	Serval	Near Threatened	Least Concern	Tops Protected, CITES II.	Identified by patrol 2017
<i>Genetta tigrina</i>	Cape Genet (Cape Large-spotted Genet, South African Large-spotted Genet)			Endemic to South Africa and Lesotho	C. Wright 2017 and Camera Trap Survey 2017
<i>Gerbilliscus leucogaster</i>	Hairy-footed Gerbil sp. (Bushveld Gerbil)				Jordaan, Wright and Wright 2017
<i>Giraffa camelopardalis</i>	Giraffe	Least Concern	Vulnerable		Introduced November 2017 and May 2018
<i>Herpestes sanguineus</i>	Common Slender Mongoose				Zululand Lodge 2017
<i>Hippopotamus amphibius</i>	Hippopotamus	Least Concern	Vulnerable	CITES II	C. Wright 2017
<i>Hystrix africaeaustralis</i>	Cape Porcupine				C. Wright 2017
<i>Ichneumia albicauda</i>	White-tailed Mongoose				C. Wright 2017
<i>Kobus ellipsiprymnus</i>	Waterbuck				C. Wright 2018
<i>Lemniscomys rosalia</i>	Single-striped Mouse (Single Striped Lemniscomys)				C. Wright 2017

<i>Lepus saxatilis</i>	Scrub Hare			Southern African endemic. South Africa sub-species possibly endemic	C. Wright 2017
<i>Lycaon pictus</i>	African Wild Dog	Endangered	Endangered	TOPS Endangered.	Transient Species break outs from Mkhuze
<i>Mellivora capensis</i>	Honey Badger			TOPS Protected. CITES III (Botswana)	C. Wright 2017 and Camera Trap Survey 2017
<i>Mungos mungo</i>	Banded Mongoose			Endemism Edge of Range	C. Wright 2017
<i>Mus minutoides</i>	Pygmy Mouse				C. Wright 2017
<i>Nesotragus moschatus</i>	Suni	Endangered	Least Concern	TOPS Vulnerable. Edge of Range. Sub-species Southern African endemic	A. Roberts. Confirmed camera trap in April and May 2018
<i>Nycteris thebaica</i>	Egyptian Slit-faced Bat (Cape Long-eared Bat)				B. Wright 2017
<i>Orycteropus afer</i>	Aardvark				Camera Trap Survey 2017, diggings.
<i>Otolemur crassicaudatus crassicaudatus</i>	Greater Bushbaby (Greater Thick-tailed Galago)			CITES II	C. Wright 2017
<i>Panthera pardus</i>	Leopard	Vulnerable	Vulnerable IUCN; Appendix I CITES	TOPS Vulnerable. CITES I	C. Wright 2017
<i>Papio ursinus</i>	Chacma Baboon		Least Concern	CITES II	B. Wright 2017
<i>Petrodromus tetradactylus</i>	Four-toed Sengi (Elephant Shrew)	Near Threatened	Least Concern	TOPS Endangered. Edge of Range	C. Wright 2017
<i>Phacochoerus africanus</i>	Common Warthog				C. Wright 2017
<i>Potamochoerus larvatus</i>	Bushpig				C. Wright 2017
<i>Redunca arundinum</i>	Common Reedbuck (Southern Reedbuck)			TOPS Protected	C. Wright 2017
<i>Saccostomus campestris</i>	Southern African Pouched Mouse				Jordaan, Wright and Wright 2017
<i>Steatomys pratensis</i>	Fat Mouse				C. Wright 2017
<i>Sylvicapra grimmia</i>	Grey Duiker (Common Duiker)				C. Wright 2017
<i>Thryonomys swinderianus</i>	Greater Cane Rat				C. Wright 2018
<i>Tragelaphus angasii</i>	Nyala				C. Wright 2017
<i>Tragelaphus strepsiceros</i>	Greater Kudu				Bruce Taylor 2017

BIRDS					
Alphabetical Name	Scientific Name	Regional Status	Endemism	Local Status	Ukuwela
Apalis, Rudd's	<i>Apalis ruddi</i>		Southern African Near Endemic	Common Resident	R. Goode 2017
Apalis, Yellow-breasted	<i>Apalis flavida</i>			Common Resident	C. Wright 2017
Babbler, Arrow-marked	<i>Turdoides jardineii</i>			Common Resident	C. Wright 2017
Barbet, Acacia Pied	<i>Tricholaema leucomelas</i>		Southern African Near Endemic	Common Resident	R. Goode 2018
Barbet, Black-collared	<i>Lybius torquatus</i>			Common Resident	C. Wright 2017
Barbet, Crested	<i>Trachyphonus vaillantii</i>			Common Resident	R. Goode 2018
Barbet, White-eared	<i>Stactolaema leucotis</i>			Common Resident	C. Wright 2017
Bateleur	<i>Terathopius ecaudatus</i>	Endangered		Common Resident	C. Wright 2017
Batis, Chinspot	<i>Batis molitor</i>			Common Resident	C. Wright 2017
Batis, Woodward's	<i>Batis fratrum</i>		Southern African Near Endemic	Common Resident	R. Goode 2017
Bee-eater, European	<i>Merops apiaster</i>			Common Summer Migrant	C. Wright 2017
Bee-eater, Little	<i>Merops pusillus</i>			Common Resident	C. Wright 2017
Bishop, Southern Red	<i>Euplectes orix</i>			Outside of Distribution Range	C. Wright 2017
Boubou, Southern	<i>Laniarius ferrugineus</i>		Southern African Endemic	Common Resident	C. Wright 2018
Brownbul, Terrestrial	<i>Phyllastrephus terrestris</i>			Common Resident	B. Eggers 2018
Brubru	<i>Nilaus afer</i>			Common Resident	C. Wright 2017
Bulbul, Dark-capped	<i>Pycnonotus tricolor</i>			Common Resident	C. Wright 2017
Bunting, Golden-breasted	<i>Emberiza flaviventris</i>			Common Resident	J. Balmer 2018
Bush-shrike, Gorgeous	<i>Chlorophoneus viridis</i>			Common Resident	C. Wright 2017
Bush-shrike, Grey-headed	<i>Malaconotus blanchoti</i>			Common Resident	C. Wright 2017
Bush-shrike, Orange-breasted	<i>Chlorophoneus sulfureopectus</i>			Common Resident	C. Wright 2017
Bustard, Black-bellied	<i>Lissotis melanogaster</i>			Common Resident	C. Wright 2017
Buttonquail, Common (Kurrichane)	<i>Turnix sylvaticus</i>			Common Resident	C. Wright 2017
Canary, Brimstone	<i>Crithagra sulphurata</i>				C. Wright 2019

Canary, Yellow-fronted		<i>Crithagra mozambica</i>			Common Resident	C. Wright 2017
Chat, Mocking Cliff		<i>Thamnolaea cinnamomeiventris</i>			Common Resident	C. Wright 2017
Cisticola, Pale-crowned		<i>Cisticola cinnamomeus</i>			Uncommon Resident	R. Goode 2018
Cisticola, Rattling		<i>Cisticola chiniana</i>			Common Resident	J. Balmer 2018
Cisticola, Red-faced		<i>Cisticola erythropis</i>			Common Resident	R. Goode 2018
Cisticola, Zitting		<i>Cisticola juncidis</i>			Common Resident	R. Goode 2018
Cormorant, Reed		<i>Phalacrocorax africanus</i>			Common Resident	C. Wright 2017.
Cormorant, White-breasted		<i>Phalacrocorax lucidus</i>			Common Resident	C. Wright 2017.
Coucal, Burchell's		<i>Centropus burchellii</i>			Common Resident	C. Wright 2017.
Courser, Bronze-winged		<i>Rhinoptilus chalcopterus</i>			Common Resident	C. Wright 2018.
Crombec, Long-billed		<i>Sylvietta rufescens</i>			Common Resident	C. Wright 2017
Cuckoo, African		<i>Cuculus gularis</i>			Uncommon Summer Migrant	C. Wright 2017
Cuckoo, African Emerald		<i>Chrysococcyx cupreus</i>			Common Summer Migrant	R. Goode 2018
Cuckoo, Black		<i>Cuculus clamosus</i>			Common Summer Migrant	C. Wright 2017
Cuckoo, Diederik		<i>Chrysococcyx caprius</i>			Common Summer Migrant	C. Wright 2017
Cuckoo, Jacobin		<i>Clamator jacobinus</i>			Uncommon Summer Migrant	C. Wright 2017
Cuckoo, Klaas's		<i>Chrysococcyx klaas</i>			Common Resident	C. Wright 2017
Cuckoo, Levallant's		<i>Clamator levallantii</i>			Common Summer Migrant	R. Goode 2018
Cuckoo, Red-chested		<i>Cuculus solitarius</i>			Common Summer Migrant	C. Wright 2017
Cuckooshrike, Black		<i>Campephaga flava</i>			Common Resident	J. Balmer 2018
Darter, African		<i>Anhinga rufa</i>			Common Resident	C. Wright 2017
Dove, Cape Turtle		<i>Streptopelia capicola</i>			Common Resident	C. Wright 2017
Dove, Emerald-spotted Wood		<i>Turtur chalcospilos</i>			Common Resident	C. Wright 2017
Dove, Laughing		<i>Streptopelia senegalensis</i>			Common Resident	R. Goode 2018
Dove, Namaqua		<i>Oena capensis</i>			Uncommon Resident	C. Wright 2017
Dove, Red-eyed		<i>Streptopelia semitorquata</i>			Common Resident	C. Wright 2017
Dove, Rock		<i>Columba livia</i>			INTRODUCED	R. Goode 2018
Dove, Tambourine		<i>Turtur tympanistria</i>			Common Resident	R. Goode 2018
Drongo, Fork-tailed		<i>Dicrurus adsimilis</i>			Common Resident	C. Wright 2017
Drongo, Square-tailed		<i>Dicrurus ludwigii</i>			Common Resident	R. Goode 2018

Duck, White-faced Whistling	<i>Dendrocygna viduata</i>			Common resident	C. Wright 2017
Duck, Yellow-billed	<i>Anas undulata</i>			Common resident	A. Roberts 2017
Eagle, African Fish	<i>Haliaeetus vocifer</i>			Common resident	R. Goode 2018
Eagle, African Hawk	<i>Aquila spilogaster</i>			Uncommon Resident	R. Goode 2018
Eagle, Black-chested Snake	<i>Circaetus pectoralis</i>			Uncommon Resident	C. Wright 2017
Eagle, Brown Snake	<i>Circaetus cinereus</i>			Common resident	C. Wright 2017
Eagle, Crowned	<i>Stephanoaetus coronatus</i>	Vulnerable		Common resident	R. Goode 2018
Eagle, Lesser Spotted	<i>Clanga pomarina</i>			Common Summer migrant	C. Wright 2017
Eagle, Long-crested	<i>Lophaetus occipitalis</i>			Common resident	C. Wright 2017
Eagle, Martial	<i>Polemaetus bellicosus</i>	Endangered		Common resident	C. Wright 2017
Eagle, Southern Banded Snake	<i>Circaetus fasciolatus</i>	Critically Endangered		Uncommon Resident	C. Wright 2017
Eagle, Wahlberg's	<i>Hieraaetus wahlbergi</i>			Common Summer migrant	R. Goode 2018
Egret, Great	<i>Egretta alba</i>			Common resident	C. Wright 2017
Egret, Little	<i>Egretta garzetta</i>			Common resident	C. Wright 2018
Eremomela, Burnt-necked	<i>Eremomela usticollis</i>			Common resident	R. Goode 2018
Falcon, Amur	<i>Falco amurensis</i>			Uncommon Summer migrant	C. Wright 2019
Finfoot, African	<i>Podica senegalensis</i>	Vulnerable		Uncommon Resident	A. Roberts 2016
Firefinch, African	<i>Lagonosticta rubricata</i>			Common resident	R. Goode 2018
Firefinch, Jameson's	<i>Lagonosticta rhodopareia</i>			Common resident	C. Wright 2017
Firefinch, Red-billed	<i>Lagonosticta senegala</i>			Common resident	C. Wright 2017
Fiscal, Southern (Common)	<i>Lanius collaris</i>			Common resident	C. Wright 2017
Flycatcher, African Dusky	<i>Muscicapa adusta</i>			Common resident	B. Eggers 2017
Flycatcher, African Paradise	<i>Terpsiphone viridis</i>			Common resident	C. Wright 2017
Flycatcher, Ashy	<i>Muscicapa caerulescens</i>			Common resident	R. Goode 2018
Flycatcher, Blue-mantled Crested	<i>Trochocercus cyanomelas</i>			Common resident	R. Goode 2018
Flycatcher, Grey Tit-	<i>Myioparus plumbeus</i>			Common resident	R. Goode 2018
Flycatcher, Pale	<i>Bradornis pallidus</i>			Common resident	R. Goode 2018
Flycatcher, Southern Black	<i>Melaenornis pammelaina</i>			Common resident	C. Wright 2017
Flycatcher, Spotted	<i>Muscicapa striata</i>			Common Summer Migrant	R. Goode 2018

Francolin, Crested	<i>Dendroperdix sephaena</i>			Common resident	C. Wright 2017
Goose, Egyptian	<i>Alopochen aegyptiaca</i>			Common resident	C. Wright 2017
Goose, Spur-winged	<i>Plectropterus gambensis</i>			Common resident	C. Wright 2017
Goshawk, African	<i>Accipiter tachiro</i>			Common resident	C. Wright 2017
Goshawk, Gabar	<i>Melierax gabar</i>			Uncommon resident	R. Goode 2018
Grebe, Little	<i>Tachybaptus ruficollis</i>			Common resident	C. Wright 2018
Greenbul, Sombre	<i>Andropadus importunus</i>			Common Resident	C. Wright 2017
Greenbul, Yellow-bellied	<i>Chlorocichla flaviventris</i>			Common Resident	C. Wright 2017
Greenshank, Common	<i>Tringa nebularia</i>			Common Summer Migrant	R. Goode 2018
Guineafowl, Crested	<i>Guttera pucherani</i>			Common Resident	C. Wright 2017
Guineafowl, Helmeted	<i>Numida meleagris</i>			Common Resident	C. Wright 2017
Hamerkop	<i>Scopus umbretta</i>			Common Resident	C. Wright 2017
Harrier, African Marsh	<i>Circus ranivorus</i>	Endangered		Common Resident	R. Goode 2018
Hawk, African Harrier-	<i>Polyboroides typus</i>			Common Resident	C. Wright 2017
Helmet-shrike, Retz's	<i>Prionops retzii</i>			Common Resident	R. Goode 2018
Helmet-shrike, White-crested	<i>Prionops plumatus</i>			Common Resident	C. Wright 2017
Heron, Black-crowned Night	<i>Nycticorax nycticorax</i>			Common Resident	C. Wright 2017
Heron, Black-headed	<i>Ardea melanocephala</i>			Common Resident	R. Goode 2018
Heron, Goliath	<i>Ardea goliath</i>			Common Resident	R. Goode 2018
Heron, Green-backed	<i>Butorides striata</i>			Common Resident	C. Wright 2017
Heron, Grey	<i>Ardea cinerea</i>			Common Resident	C. Wright 2016
Heron, Purple	<i>Ardea purpurea</i>			Common Resident	R. Goode 2018
Heron, Squacco	<i>Ardeola ralloides</i>			Uncommon Resident	R. Goode 2018
Honeyguide, Greater	<i>Indicator indicator</i>			Common Resident	J. Balmer 2018
Honeyguide, Lesser	<i>Indicator minor</i>			Common Resident	C. Wright 2017
Honeyguide, Scaly-throated	<i>Indicator variegatus</i>			Common Resident	R. Goode 2018
Hoopoe, African	<i>Upupa africana</i>			Common Resident	C. Wright 2017
Hornbill, Crowned	<i>Tockus alboterminatus</i>			Common Resident	C. Wright 2017
Hornbill, Trumpeter	<i>Bycanistes bucinator</i>			Common Resident	C. Wright 2017
Ibis, Glossy	<i>Plegadis falcinellus</i>			Common Resident	R. Goode 2018

Ibis, Hadedea	<i>Bostrychia hagedash</i>			Common Resident	C. Wright 2017
Indigobird, Dusky	<i>Vidua funerea</i>			Common Resident	C. Wright 2017
Indigobird, Village	<i>Vidua chalybeata</i>			Common Resident	C. Wright 2017
Jacana, African	<i>Actophilornis africanus</i>			Common Resident	R. Goode 2018
Kingfisher, African Pygmy	<i>Ispidina picta</i>			Common Summer Migrant	R. Goode 2018
Kingfisher, Brown-hooded	<i>Halcyon albiventris</i>			Common Resident	C. Wright 2017
Kingfisher, Giant	<i>Megaceryle maxima</i>			Common Resident	C. Wright 2017
Kingfisher, Half-collared	<i>Alcedo semitorquata</i>	Near Threatened		Common Resident	R. Goode 2018
Kingfisher, Malachite	<i>Alcedo cristata</i>			Common Resident	C. Wright 2017
Kingfisher, Pied	<i>Ceryle rudis</i>			Common Resident	C. Wright 2017
Kingfisher, Striped	<i>Halcyon chelicuti</i>			Common Resident	C. Wright 2017
Kingfisher, Woodland	<i>Halcyon senegalensis</i>			Common Summer Migrant	R. Goode 2018
Kite, Black-shouldered	<i>Elanus caeruleus</i>			Common Resident	R. Goode 2018
Kite, Yellow-billed	<i>Milvus aegyptius</i>			Common Summer Migrant	C. Wright 2017
Korhaan, Red-crested	<i>Lophotis ruficrista</i>		Southern African Near Endemic	Common Resident	C. Wright 2017
Lapwing, African Wattled	<i>Vanellus senegallus</i>			Common resident	C. Wright 2018
Lapwing, Blacksmith	<i>Vanellus armatus</i>			Common resident	R. Goode 2018
Lapwing, Crowned	<i>Vanellus coronatus</i>			Common resident	C. Wright 2018
Lapwing, Senegal	<i>Vanellus lugubris</i>			Common resident	C. Wright 2017
Lark, Flappet	<i>Mirafra rufocinnamomea</i>			Common resident	C. Wright 2017
Lark, Rufous-naped	<i>Mirafra africana</i>			Common resident	C. Wright 2017
Lark, Sabota	<i>Calendulauda sabota</i>			Common resident	C. Wright 2017
Longclaw, Yellow-throated	<i>Macronyx croceus</i>			Common resident	C. Wright 2018
Mannikin, Bronze	<i>Lonchura cucullata</i>			Common resident	C. Wright 2017
Mannikin, Magpie	<i>Lonchura fringilloides</i>			Uncommon Resident	C. Wright 2017
Moorhen, Common	<i>Gallinula chloropus</i>			Common resident	R. Goode 2018
Moorhen, Lesser	<i>Paragallinula angulata</i>			Uncommon Summer Migrant	R. Goode 2018
Mousebird, Red-faced	<i>Urocolius indicus</i>			Common resident	C. Wright 2017
Mousebird, Speckled	<i>Colius striatus</i>			Common resident	C. Wright 2017
Myna, Common	<i>Acridotheres tristis</i>			INTRODUCED. Common Resident	C. Wright 2017
Neddicky	<i>Cisticola fulvicapilla</i>			Common Resident	R. Goode 2018
Nicator, Eastern	<i>Nicator gularis</i>			Common Resident	C. Wright 2017

Nightjar, European	<i>Caprimulgus europaeus</i>			Common Summer Migrant	R. Goode 2018
Nightjar, Fiery-necked	<i>Caprimulgus pectoralis</i>			Common Resident	C. Wright 2017
Nightjar, Square-tailed	<i>Caprimulgus fossii</i>			Common Resident	R. Goode 2018
Nightjar, Swamp	<i>Caprimulgus natalensis</i>	Vulnerable		Common Resident	R. Goode 2018
Openbill, African	<i>Anastomus lamelligerus</i>			Common Resident	C. Wright 2017
Oriole, Black-headed	<i>Oriolus larvatus</i>			Common Resident	R. Goode 2018
Osprey, Western	<i>Pandion haliaetus</i>			Common Summer Migrant	R. Goode 2018
Owl, African Wood	<i>Strix woodfordii</i>			Common Resident	C. Wright 2017
Owl, Spotted Eagle-	<i>Bubo africanus</i>			Common Resident	C. Wright 2017
Owl, Verreaux's Eagle-	<i>Bubo lacteus</i>			Uncommon resident	R. Goode 2018
Owl, Western Barn	<i>Tyto alba</i>			Common Resident	C. Wright 2017
Oxpecker, Red-billed	<i>Buphagus erythrorhynchus</i>			Common Resident	C. Wright 2017
Painted-snipe, Greater	<i>Rostratula benghalensis</i>	Near Threatened		Uncommon resident	R. Goode 2018
Pelican, Great White	<i>Pelecanus onocrotalus</i>	Vulnerable		Common Resident	C. Wright 2017
Pelican, Pink-backed	<i>Pelecanus rufescens</i>	Vulnerable		Common Resident	R. Goode 2018
Penduline-tit, Grey	<i>Anthoscopus caroli</i>			Common Resident	R. Goode 2018
Petronia, Yellow-throated	<i>Gymnoris supercilialis</i>			Common Resident	R. Goode 2018
Pigeon, African Green	<i>Treron calvus</i>			Common Resident	C. Wright 2017
Pipit, African	<i>Anthus cinnamomeus</i>			Common Resident	R. Goode 2018
Plover, Kittlitz's	<i>Charadrius pecuarius</i>			Common Resident	R. Goode 2018
Plover, Three-banded	<i>Charadrius tricollaris</i>			Common Resident	C. Wright 2017
Pratincole, Collared	<i>Glareola pratincola</i>			Common Summer Migrant	R. Goode 2018
Prinia, Tawny-flanked	<i>Prinia subflava</i>			Common Resident	R. Goode 2017
Puffback, Black-backed	<i>Dryoscopus cubla</i>			Common Resident	R. Goode 2018
Pytilia, Green-winged	<i>Pytilia melba</i>			Common Resident	R. Goode 2018
Quail-finch, African	<i>Ortygospiza fuscocrissa</i>			Common Resident	Ross Goode 2018
Quail, Common	<i>Coturnix coturnix</i>			Common Summer Migrant	R. Goode 2018
Quelea, Red-billed	<i>Quelea quelea</i>			Uncommon Resident	C. Wright 2017

Quelea, Red-headed	<i>Quelea erythrops</i>			Uncommon Summer Migrant	R. Goode 2018
Robin-chat, Red-capped	<i>Cossypha natalensis</i>			Common Resident	C. Wright 2017
Robin-chat, White-browed	<i>Cossypha heuglini</i>			Common Resident	R. Goode 2018
Robin-chat, White-throated	<i>Cossypha humeralis</i>		Southern African Endemic	Common Resident	R. Goode 2017
Robin, Bearded Scrub	<i>Cercotrichas quadrivirgata</i>			Common Resident	R. Goode 2018
Robin, White-browed Scrub	<i>Cercotrichas leucophrys</i>			Common Resident	J. Balmer 2018
Roller, Broad-billed	<i>Eurystomus glaucurus</i>			Common Summer Migrant	R. Goode 2018
Roller, European	<i>Coracias garrulus</i>	Near Threatened		Common Summer Migrant	R. Goode 2018
Roller, Lilac-breasted	<i>Coracias caudatus</i>			Common Resident	R. Goode 2018
Roller, Purple	<i>Coracias naevius</i>			Common Resident	R. Goode 2018
Ruff	<i>Philomachus pugnax</i>			Common Summer Migrant	R. Goode 2018
Sandpiper, Common	<i>Actitis hypoleucos</i>			Common Summer Migrant	R. Goode 2018
Sandpiper, Marsh	<i>Tringa stagnatilis</i>			Common Summer Migrant	R. Goode 2018
Saw-wing, Black	<i>Psalidoprocne pristoptera</i>			Common Resident	R. Goode 2018
Scimitarbill, Common	<i>Rhinopomastus cyanomelas</i>			Common Resident	C. Wright 2017
Secretarybird	<i>Sagittarius serpentarius</i>	Vulnerable		Common Resident	A. Roberts 2016
Shikra	<i>Accipiter badius</i>			Common Resident	C. Wright 2017
Shrike, Red-backed	<i>Lanius collurio</i>			Common Summer Migrant	R. Goode 2018
Snipe, African	<i>Gallinago nigripennis</i>				R. Goode 2018
Sparrow, House	<i>Passer domesticus</i>			INTRODUCED. Common Resident.	C. Wright 2017
Sparrow, Southern Grey-headed	<i>Passer diffusus</i>			Common Resident	R. Goode 2018
Sparrowhawk, Black	<i>Accipiter melanoleucus</i>			Common Resident	R. Goode 2018
Sparrowhawk, Little	<i>Accipiter minullus</i>			Common Resident	C. Wright 2017
Spoonbill, African	<i>Platalea alba</i>			Common Resident	C. Wright 2017
Starling, Cape Glossy	<i>Lamprotornis nitens</i>			Common Resident	C. Wright 2017
Starling, Wattled	<i>Creatophora cinerea</i>			Uncommon Resident	C. Wright 2017
Stilt, Black-winged	<i>Himantopus himantopus</i>			Uncommon Resident	R. Goode 2018
Stonechat, African	<i>Saxicola torquatus</i>			Common Resident	C. Wright 2017

Stork, Saddle-billed	<i>Ephippiorhynchus senegalensis</i>	Endangered		Common Resident	C. Wright 2017
Stork, White	<i>Ciconia ciconia</i>			Common Summer Migrant	C. Wright 2017
Stork, Woolly-necked	<i>Ciconia episcopus</i>			Common Resident	C. Wright 2017
Sunbird, Amethyst	<i>Chalcomitra amethystina</i>			Common Resident	B. Eggers 2017
Sunbird, Collared	<i>Anthodiaeta collaris</i>			Common Resident	R. Goode 2018
Sunbird, Grey	<i>Cyanomitra veroxii</i>			Common Resident	R. Goode 2018
Sunbird, Marico	<i>Cinnyris mariquensis</i>			Common Resident	J. Balmer 2018
Sunbird, Neergaard's	<i>Cinnyris neergaardi</i>	Vulnerable	Southern African Endemic	Common Resident	C. Wright 2017
Sunbird, Purple-banded	<i>Cinnyris bifasciatus</i>			Common Resident	R. Goode 2018
Sunbird, Scarlet-chested	<i>Chalcomitra senegalensis</i>			Common Resident	C. Wright 2017
Sunbird, White-bellied	<i>Cinnyris talatala</i>			Common Resident	C. Wright 2017
Swallow, Barn	<i>Hirundo rustica</i>			Common Summer Migrant	C. Wright 2017
Swallow, Lesser Striped	<i>Cecropis abyssinica</i>			Common resident	B. Eggers 2017
Swallow, White-throated	<i>Hirundo albigularis</i>			Common Summer Migrant	C. Wright 2017
Swallow, Wire-tailed	<i>Hirundo smithii</i>			Common resident	R. Goode 2018
Swift, African Palm	<i>Cypsiurus parvus</i>			Common resident	R. Goode 2018
Swift, Little	<i>Apus affinis</i>			Common resident	R. Goode 2018
Tchagra, Black-crowned	<i>Tchagra senegalus</i>			Common resident	C. Wright 2017
Tchagra, Brown-crowned	<i>Tchagra australis</i>			Common resident	R. Goode 2018
Teal, Cape	<i>Anas capensis</i>			Uncommon Resident	R. Goode 2018
Teal, Hottentot	<i>Anas hottentota</i>			Common resident	R. Goode 2018
Teal, Red-billed	<i>Anas erythrorhyncha</i>			Common resident	R. Goode 2018
Tern, Whiskered	<i>Chlidonias hybrida</i>			Common resident	R. Goode 2018
Tern, White-winged	<i>Chlidonias leucopterus</i>			Uncommon Summer Migrant	R. Goode 2018
Thick-knee, Spotted	<i>Burhinus capensis</i>			Common resident	R. Goode 2018
Thick-knee, Water	<i>Burhinus vermiculatus</i>			Common resident	C. Wright 2017
Thrush, Kurrichane	<i>Turdus libonyanus</i>			Common resident	R. Goode 2018
Tinkerbird, Red-fronted	<i>Pogoniulus pusillus</i>			Common resident	C. Wright 2017
Tit, Southern Black	<i>Parus niger</i>			Common resident	B. Eggers 2017
Trogon, Narina	<i>Apaloderma narina</i>			Common resident	Zululand Lodge 2017

Turaco, Purple-crested		<i>Tauraco porphyreolophus</i>			Common Resident	C. Wright 2017
Twinspot, Green		<i>Mandingoa nitidula</i>			Common Resident	B. Wright 2017
Twinspot, Pink-throated		<i>Hypargos margaritatus</i>		Southern African Endemic	Common Resident	R. Goode 2018
Vulture, Lappet-faced		<i>Torgos tracheliotos</i>	Endangered		Common Resident	B. Taylor 2018
Vulture, White-backed		<i>Gyps africanus</i>	Critically Endangered		Common Resident	B. Taylor 2018
Wagtail, African Pied		<i>Motacilla aguimp</i>			Common Resident	C. Wright 2017
Warbler, African Reed		<i>Acrocephalus baeticatus</i>			Common Resident	R. Goode 2018
Warbler, Dark-capped Yellow		<i>Iduna natalensis</i>			Common Winter Migrant	R. Goode 2018
Warbler, Great Reed		<i>Acrocephalus arundinaceus</i>			Common Summer Migrant	R. Goode 2018
Warbler, Lesser Swamp		<i>Acrocephalus gracilirostris</i>			Common Resident	R. Goode 2018
Warbler, Little Rush		<i>Bradypterus baboecala</i>			Common Resident	R. Goode 2018
Warbler, Marsh		<i>Acrocephalus palustris</i>			Common Summer Migrant	R. Goode 2018
Warbler, Sedge		<i>Acrocephalus schoenobaenus</i>			Uncommon Summer Migrant	R. Goode 2018
Warbler, Stierling's Wren-		<i>Calamonastes stierlingi</i>			Common Resident	R. Goode 2018
Warbler, Willow		<i>Phylloscopus trochilus</i>			Common Summer Migrant	R. Goode 2018
Waxbill, Blue		<i>Uraeginthus angolensis</i>			Common Resident	C. Wright 2017
Waxbill, Common		<i>Estrilda astrild</i>			Common Resident	R. Goode 2018
Waxbill, Grey		<i>Estrilda perreini</i>			Common Resident	C. Wright 2017
Waxbill, Orange-breasted		<i>Amandava subflava</i>			Uncommon Resident	R. Goode 2018
Waxbill, Swee		<i>Coccygia melanotis</i>		South Africa Near Endemic. Southern Africa Endemic.	Common Resident	R. Goode 2018
Weaver, Dark-backed		<i>Ploceus bicolor</i>			Common Resident	C. Wright 2017
Weaver, Red-headed		<i>Anaplectes rubriceps</i>			Uncommon Resident	C. Wright 2017
Weaver, Southern Brown-throated		<i>Ploceus xanthopterus</i>			Common Resident	R. Goode 2018
Weaver, Southern Masked		<i>Ploceus velatus</i>			Common Resident	C. Wright 2017
Weaver, Spectacled		<i>Ploceus ocularis</i>			Common Resident	B. Wright 2017

Weaver, Thick-billed	<i>Amblyospiza albifrons</i>			Common Resident	C. Wright 2017
Weaver, Village	<i>Ploceus cucullatus</i>			Common Resident	C. Wright 2017
Weaver, Yellow	<i>Ploceus subaureus</i>			Common Resident	C. Wright 2017
Whimbrel, Common	<i>Numenius phaeopus</i>			Common Summer Migrant	R. Goode 2018
White-eye, African Yellow	<i>Zosterops senegalensis</i>			Common Resident	R. Goode 2018
Whydah, Long-tailed Paradise	<i>Vidua paradisaea</i>			Common Resident	C. Wright 2017
Whydah, Pin-tailed	<i>Vidua macroura</i>			Common Resident	C. Wright 2017
Widowbird, Fan-tailed	<i>Euplectes axillaris</i>			Common Resident	R. Goode 2018
Widowbird, Red-collared	<i>Euplectes ardens</i>			Common Resident	C. Wright 2017
Widowbird, White-winged	<i>Euplectes albonotatus</i>			Common Resident	C. Wright 2017
Wood-hoopoe, Green	<i>Phoeniculus purpureus</i>			Common Resident	R. Goode 2018
Woodpecker, Bearded	<i>Dendropicus namaquus</i>			Uncommon Resident	R. Goode 2018
Woodpecker, Cardinal	<i>Dendropicus fuscescens</i>			Common Resident	C. Wright 2017
Woodpecker, Golden-tailed	<i>Campethera abingoni</i>			Common Resident	C. Wright 2017

REPTILES				
<i>Scientific Name</i>	Common Name	Regional	Endemism	Ukuwela
<i>Stigmochelys pardalis</i>	Leopard Tortoise			A. Roberts 2016
<i>Kinixys zombensis</i>	Eastern Hinged-back Tortoise	Least Concern		A. Roberts 2016
<i>Pelusios sinuatus</i>	Serrated Hinged Terrapin			C. Wright 2017
<i>Crocodylus niloticus</i>	Nile Crocodile	Vulnerable		C. Wright 2017
<i>Python natalensis</i>	Southern African Python			A. Roberts 2016
<i>Boaedon capensis</i>	Common House Snake (Brown House Snake)			C. D. Wright 2018
<i>Gonionotophis nyassae</i>	Black File Snake			Jordaan, Wright and Wright 2017
<i>Dipsadoboa aulica</i>	Marbled Tree Snake			P. Jordaan 2017
<i>Prosymna stuhlmannii</i>	East African Shovel-snout			Jordaan, Wright and Wright 2017
<i>Dasypeltis scabra</i>	Rhombic Egg-eater (common)		possibly Southern Africa Endemic	C. Wright 2018
<i>Atractaspis bibronii</i>	Bibron's Stiletto Snake (Bibron's Burrowing Asp)			Zululand Lodge 2017
<i>Dispholidus typus</i>	Boomslang			A. Roberts 2016
<i>Thelotornis capensis</i>	Southern Twig Snake (Vine Snake)		Southern Africa Endemic	B. Wright 2018
<i>Psammophis mossambicus</i>	Olive Grass Snake			C. Wright 2017
<i>Psammophis brevirostris</i>	Short-snouted grass snake		Southern Africa Endemic	C. Wright 2017
<i>Aparallactus capensis</i>	Black-headed Centipede-eater (Cape Centipede-eater)			Jordaan, Wright and Wright 2017
<i>Naja mossambica</i>	Mozambique Spitting Cobra			Zululand Lodge 2017
<i>Naja annulifera</i>	Snouted Cobra			Zululand Lodge 2017
<i>Dendroaspis polylepis</i>	Black Mamba			A. Roberts 2016
<i>Amblyodipsas polylepis polylepis</i>	Common Purple-glossed snake			C. Wright 2018
<i>Homoroselaps dorsalis</i>	Striped Harlequin Snake			Jordaan, Wright and Wright 2017
<i>Xenocalamus bicolor lineatus</i>	Striped Quil-snouted Snake		Southern Africa Endemic	Zululand Lodge 2017
<i>Varanus niloticus</i>	Nile Monitor (Water Monitor)			C. Wright 2017
<i>Acamthocercus atricollis atricollis</i>	Southern Tree Agama			C. Wright 2017
<i>Trachylepis margaritifer</i>	Rainbow Skink			C. Wright 2017

<i>Trachylepsis varia</i>	Variable Skink			Jordaan, Wright and Wright 2017
<i>Afroablepharus wahlbergii</i>	Wahlberg's Snake-Eyed Skink			Jordaan, Wright and Wright 2017
<i>Chamaeleo dilepis</i>	Common Flap-necked Chameleon			C. Wright 2019
<i>Bradypodion setaroi</i>	Setaro's Dwarf Chameleon			A. Roberts 2016
<i>Homopholis walbergii</i>	Wahlberg's Velvet Gecko			I. Engelbrecht 2017
<i>Hemidactylus mabouia</i>	Tropical House Gecko (Mareau's)			C. Wright 2017
<i>Lygodactylus capansis</i>	Common Dwarf Gecko (cape)			Jordaan, Wright and Wright 2017
<i>Acontia plumbeus</i>	Giant Legless Skink		Southern Africa Endemic	C. Wright 2017

AMPHIBIANS			
Scientific Name	Common Name	Endemism	Ukuwela
<i>Amietophrynus garmani</i>	Eastern Olive Toad (Garman's Toad)		C. Wright 2017
<i>Amietophrynus gutturalis</i>	Guttural Toad		C. Wright 2017
<i>Cacosternum boettgeri</i>	Boettger's Caco (Boettger's Dainty Frog)		Jordaan, Wright and Wright 2017
<i>Chiromantis xerampelina</i>	Southern Foam Nest Frog (Gray Tree Frog)		C. Wright 2017
<i>Hyperolius marmoratus</i>	Painted Reed Frog		C. Wright 2018
<i>Kassina senegalensis</i>	Bubbling Kassina (Senegal Running Frog)		C. Wright 2017
<i>Leptopelis mossambicus</i>	Brown-backed Tree Frog (Mozambique Tree Frog)	Endemic in Southern Africa	I. Engelbrecht 2018
<i>Phrynobatrachus mababiensis</i>	Dwarf Puddle Frog (Mababe River Frog)		C. Wright 2017
<i>Phrynobatrachus natalensis</i>	Snoring Puddle Frog (Natal Puddle Frog)		Jordaan, Wright and Wright 2017
<i>Phrynomantis bifasciatus</i>	Banded Rubber Frog (South African Snake-necked Frog)		C. Wright 2017
<i>Poyntonophrynus fenoulheti</i>	Northern Pygmy Toad (Transvaal Dwarf Toad)		Jordaan, Wright and Wright 2017
<i>Pyxicephalus edulis</i>	African Bullfrog (Edible Bullfrog)		A. Roberts 2017
<i>Schismaderma carens</i>	Red Toad		Jordaan, Wright and Wright 2017
<i>Tomopterna cryptotis</i>	Tremolo Sand Frog (Cryptic Sand Frog)		Jordaan, Wright and Wright 2017
<i>Tomopterna krugerensis</i>	Knocking Sand Frog		C. Wright 2017
<i>Hyperolius argus</i>	Argus Tree Frog		C. Wright 2019

FISH AND CRUSTACEANS		
Alphabetical Name	Scientific Name	Ukuwela
Barb, Straightfin	<i>Barbus paludinosus</i>	Recorded
Barb, Threespot	<i>Barbus trimaculatus</i>	Recorded
Catfish, Blunt-tooth African	<i>Clarias ngamensis</i> *	Recorded
Catfish, Sharp-tooth	<i>Clarias gariepinus</i>	Recorded
Labeo, Silver	<i>Labeo ruddi</i> *	Recorded
Labeo, Silver	<i>Labeo ruddi</i> *	Recorded
Perchlet, Commerson's Glassy	<i>Ambassis ambassis</i>	Recorded
Tilapia, Black	<i>Oreochromis placidus</i> *	Recorded
Tilapia, Mozambique	<i>Oreochromis mossambicus</i>	C. Wright 2017
Tilapia, Northern Redbreast	<i>Tilapia rendalli</i>	Recorded
Fresh Water Crab	<i>Potamonautes sp</i>	C. Wright 2019

TREES				
Common Name	Scientific Name	Status	Endemism	Survey / Study
Flame Thorn	<i>Acacia ataxacantha</i>			R. Goode 2018
Sticky Acacia	<i>Acacia borleae</i>			R. Goode 2018
Prickly Thorn	<i>Acacia brevispica subsp. dregeana</i>			R. Goode 2018
Black Monkey Thorn	<i>Acacia burkei</i>			C. Wright 2017
Red Thorn	<i>Acacia gerrardii</i>			R. Goode 2018
Sweet Thorn	<i>Acacia karoo</i>			C. Wright 2017
Balloon Thorn	<i>Acacia luederitzii var retinens</i>			R. Goode 2018
Pale-bark Sweet Thorn	<i>Acacia natalitia</i>			R. Goode Veld Assessment 2018
Scented Thorn	<i>Acacia nilotica</i>			R. Goode 2018
Brack Thorn	<i>Acacia robusta</i>			R. Goode 2018
River Climbing Thorn	<i>Acacia schweinfurthii</i>			R. Goode Veld Assessment 2018
Three-hook Thorn	<i>Acacia senegal</i>			R. Goode 2018
Umbrella Thorn	<i>Acacia tortillis</i>			C. Wright 2017
Fever Tree	<i>Acacia xanthophloea</i>			C. Wright 2017
Large-leaf Albizia	<i>Albizia versicolor</i>			R. Goode 2018
	<i>Aloe parvibracteata</i>			R. Goode Veld Assessment 2018
White Pear	<i>Apodytes dimidiata</i>			R. Goode Veld Assessment 2018
Bee-Sting Bush/Needle Bush	<i>Azima tetraacantha</i>			R. Goode Veld Assessment 2018

Small Green Thorn	<i>Balanites pedicellaris</i>			R. Goode Veld Assessment 2018
Red Ivory	<i>Berchemia zeyheri</i>			R. Goode Veld Assessment 2018
Coast Silver Oak	<i>Brachylaena discolor</i>			R. Goode 2018
Blue Sweetberry	<i>Bridelia cathartica</i>		Near endemic	R. Goode 2018
Mauve Cadaba	<i>Cadaba natalensis</i>			R. Goode 2018
Cape Chestnut	<i>Calodendrum capense</i>			R. Goode 2018
Common Turkey-berry	<i>Canthium inerme</i>			R. Goode 2018
Narrow-leaf Caper-bush	<i>Capparis brassi</i>			R. Goode 2018
Wild Capper-bush	<i>Capparis sepiaria</i>			R. Goode 2018
Woolly Caper-bush	<i>Capparis tomentosa</i>			R. Goode Veld Assessment 2018
Sand Forest Num-Num	<i>Carissa tetramera</i>		Near endemic	R. Goode Veld Assessment 2018
Forest Num-Num	<i>Carrisa bispinosa</i>			R. Goode Veld Assessment 2018
Round-leaved vine	<i>Cissus rotundifolia</i>			R. Goode Veld Assessment 2018
Small Bone-Apple	<i>Coddia rudis</i>			R. Goode Veld Assessment 2018
Velvet Bushwillow	<i>Combretum molle</i>			R. Goode Veld Assessment 2018
Septee	<i>Cordia caffra</i>			R. Goode Veld Assessment 2018
Cape Rattle Pod	<i>Crotalaria natalensis</i>			R. Goode 2018
Maputaland Fever-Berry	<i>Croton steenkampianus</i>		Endemic	C. Wright 2018
Zulu Cabbage-Tree	<i>Cussonia zuluensis</i>			R. Goode 2018
Sicklebush	<i>Dichrostachys cinerea</i>			C. Wright 2017
Bluebush	<i>Diospyros lycoides</i>			R. Goode Veld Assessment 2018
Sourberry Kei-apple	<i>Dovyalis rhamnoides</i>			R. Goode 2018
Apricot Kei-apple	<i>Dovyalis zeyheri</i>			R. Goode 2018
Kei-apple	<i>Dovyalis caffra</i>			R. Goode Veld Assessment 2018
Sandpaper-bush	<i>Ehretia amoena</i>			R. Goode Veld Assessment 2018
Puzzle Bush	<i>Ehretia rigida</i>			R. Goode Veld Assessment 2018
Transvaal Saffron	<i>Elaeodendron transvaalense</i>	Protected	RL - Near Threatened. Protected Tree	R. Goode Veld Assessment 2018
Coast Coral Tree	<i>Erythrina caffra</i>			R. Goode 2018
Dwarf Coral Tree	<i>Erythrina humeana</i>			B. Wright 2019
Common Coral Tree	<i>Erythrina lysistemon</i>			R. Goode 2018
-	<i>Euclea crispa</i>			R. Goode 2018
White-stem Guarri	<i>Euclea daphnoides</i>			R. Goode Veld Assessment 2018
Magic Guarri	<i>Euclea divinorum</i>			R. Goode Veld Assessment 2018
Natal Guarri	<i>Euclea natalensis</i>			R. Goode Veld Assessment 2018

Common Guarri	<i>Euclea undulata</i>			R. Goode 2018
Common tree Euphorbia	<i>Euphorbia ingens</i>			C. Wright 2017
Rubber Euphorbia	<i>Euphorbia tirucalli</i>			R. Goode Veld Assessment 2018
Common Wild Fig	<i>Ficus burkei</i> (= <i>F. thonningii</i>)			R. Goode 2018
Lowveld Fig	<i>Ficus stuhlmannii</i>			R. Goode 2018
Common Cluster Fig	<i>Ficus sycomorus</i>			R. Goode Veld Assessment 2018
White-berry Bush	<i>Flueggea virosa</i>			R. Goode Veld Assessment 2018
Transvaal Privet	<i>Galpinia transvaalica</i>			R. Goode Veld Assessment 2018
Tonga Gardenia	<i>Gardenia cornuta</i>			R. Goode Veld Assessment 2018
Transvaal Gardenia	<i>Gardenia volkensii</i>			R. Goode 2018
Cross-berry	<i>Grewia occidentalis</i>			R. Goode Veld Assessment 2018
	<i>Gymnosporia heterophylla</i>			R. Goode Veld Assessment 2018
	<i>Gymnosporia maranguensis</i>			R. Goode Veld Assessment 2018
Red Spikethorn	<i>Gymnosporia senegalensis</i>			R. Goode Veld Assessment 2018
False Horsewood	<i>Hippobromus pauciflorus</i>			R. Goode Veld Assessment 2018
Lala Palm	<i>Hyphaene coriacea</i>			R. Goode Veld Assessment 2018
Rhino-Coffee	<i>Kraussia floribunda</i>			R. Goode Veld Assessment 2018
Broad-bean Tree	<i>Maerua angolensis</i>			R. Goode 2018
Spider Bush	<i>Maerua caffra</i>			R. Goode Veld Assessment 2018
Rough-skin Bush-cherry	<i>Maerua juncea subsp. Crustata</i>			B.Wright 2018
Cork Bush	<i>Mundelea sericea</i>			R. Goode 2018
Catepillar Bush	<i>Ormocarpum trichocarpum</i>			R. Goode Veld Assessment 2018
Resin-tree	<i>Ozoroa paniculosa</i>			R. Goode 2018
Jacket-Plum	<i>Pappea capensis</i>			R. Goode Veld Assessment 2018
Narrow-leaf Brides-bush	<i>Pavetta gracilifolia</i>			R. Goode Veld Assessment 2018
Weeping Wattle	<i>Peltophorum africanum</i>			R. Goode 2018
Wild Date Palm	<i>Phoenix reclinata</i>			R. Goode 2018
Potato Bush	<i>Phyllanthus reticulatus</i>			R. Goode Veld Assessment 2018
False Turjey-Berry	<i>Plectroniella armata</i>			R. Goode Veld Assessment 2018
False Forest Spike-Thorn	<i>Putterlickia verrucosa</i>			R. Goode 2018
Baboon Grape	<i>Rhoicissus digitata</i>			R. Goode 2018
Lowveld Grape	<i>Rhoicissus schlechteri</i>			R. Goode 2018

Bushman's Grape	<i>Rhoicissus tridentata</i>			R. Goode Veld Assessment 2018
	<i>Salacia kraussii</i>			R. Goode 2018
Weeping Boer-bean	<i>Schotia brachypetalata</i>			R. Goode Veld Assessment 2018
Dwarf Boer-bean	<i>Schotia capitata</i>			R. Goode 2018
Marula	<i>Sclerocarya birrea subsp. Caffra</i>	Protected		C. Wright 2017
	<i>Scolopia zeyheri</i>			R. Goode 2018
Cat-Thorn	<i>Scutia myrtina</i>			R. Goode Veld Assessment 2018
Thorny karee	<i>Searsia gueinzii</i>			R. Goode Veld Assessment 2018
Crow-berry	<i>Searsia pentheri</i>			R. Goode 2018
White Milkwood	<i>Sideroxylon inerme</i>	Protected		R. Goode 2018
Tamboti	<i>Spirostachys africana</i>			C. Wright 2017
Green Monkey Orange	<i>Strychnos spinosa</i>			R. Goode Veld Assessment 2018
Toad Tree	<i>Tabernaemonta elegans</i>			R. Goode 2018
Wild Tulip Tree	<i>Thespesia acutiloba</i>			R. Goode Veld Assessment 2018
	<i>Thilachium africanum</i>			R. Goode 2018
Natal Mahogany	<i>Trichilia emetica</i>			B. Wright 2018
Wild Honeysuckle Tree	<i>Turraea floribunda</i>			R. Goode 2018
Small Honeysuckle Tree	<i>Turraea obtusifolia</i>			R. Goode 2018
Wild Medlar	<i>Vangueria infausta</i>			R. Goode 2018
Lowveld Bitter tea	<i>Vernonia colorata</i>			R. Goode Veld Assessment 2018
Blue Sourplum	<i>Ximenia americana</i>			R. Goode 2018
Sourplum	<i>Ximenia caffra</i>			R. Goode 2018
Small Knobwood	<i>Zanthoxylum capensis</i>			R. Goode Veld Assessment 2018
Buffalo-Thorn	<i>Ziziphus mucronata</i>			R. Goode Veld Assessment 2018
Donkeyberry	<i>Grewia flavescens</i>			B. Wright 2019

GRASSES			
Scientific Name	Common Name	Type	Ukuwela
<i>Panicum coloratum</i>	Small Buffalo Grass	Decreaser	R Goode
<i>Panicum deustum</i>	Broad-leaved Panicum	Decreaser	R Goode
<i>Panicum maximum</i>	White Buffalo Grass	Decreaser	R Goode
<i>Themeda triandra</i>	Red Grass	Decreaser	R Goode
<i>Melinis repens</i>	Natal Red-top	Increaser II	C. Wright 2017
<i>Sporobolus nitens</i>	Curly-leaved Dropseed	Increaser II	R Goode
<i>Urochloa mosambicensis</i>	Bushveld Signal Grass	Increaser II	R Goode
<i>Leptachloe chinensis</i>			R Goode
<i>Cyperus dives</i>	Giant sedge		R Goode

WILD FLOWERS

Scientific Name	Common Name	Regional	Endemism	Ukuwela
<i>Abutilon sonneratianum</i>	Forest Abutilon			W. Hapgood 2018
<i>Barleria elegans</i>	White Bushveld Barleria			B.Wright 2018
<i>Cienfuegosia hildebrandtii</i>	Small Cotton Bush			B. Wright 2019
<i>Commelina africana</i>	Yellow Commelina			B.Wright 2018
<i>Corchorus asplenifolius</i>	-			B.Wright 2019
<i>Crassula expansa</i>	Fragile Crassula			B.Wright 2019
<i>Crinum acaule</i>	Maputaland Grass Crinum	Near Threatened	Endemic	B.Wright 2018
<i>Crossandra zuluensis</i>	Zulu Crossandra		Endemic	B.Wright 2018
<i>Cyphostemma natalitium</i>	-			B. Wright 2019
<i>Erianthemum dregei</i>	Hairy Mistletoe			B. Wright 2019
<i>Evolvulus alsinoides</i>	Blue Haze			B.Wright 2018
<i>Gossypium herbaceum</i>	Wild Cotton			R. Goode Veld Assessment 2018
<i>Jasminum multipartitum</i>	Common Wild Jasmin (Starry)			B.Wright 2018
<i>Jasminum streptopus</i>				R. Goode Veld Assessment 2018
<i>Justicia flava</i>	Yellow Justicia			B.Wright 2018
<i>Kalanchoe rotundifolia</i>	Common Kalanchoe			B.Wright 2018
<i>Lobelia flaccida</i>	Wild Lobelia			B.Wright 2018
<i>Nymphaea nouchali</i>	Blue Waterlily			B.Wright 2018
<i>Polygala amatymbica</i>	Dwarf Polygala			B.Wright 2018
<i>Sansevieria hyacinthoides</i>	Mother-in-law's-tongue			C. Wright 2018
<i>Sansevieria metallica</i>	Giant Sansevieria	Critically rare	South Africa Endemic	C. Wright 2017
<i>Scadoxus multiflorus subsp. multiflorus</i>	Fire-ball Lily			C. Wright 2017
<i>Senecio barbertonicus</i>	Succulent Bush Senecio			B.Wright 2018
<i>Senecio brachypodus</i>	-			B.Wright 2019
<i>Sesamum alatum</i>	Wing-seeded Sesame			B.Wright 2018
<i>Solanum spp.</i>				R. Goode Veld Assessment 2018
<i>Stylochiton natalensis</i>	Bushveld Arum			B.Wright 2018
<i>Thunbergia dregeana</i>	Haarbossie			R. Goode Veld Assessment 2018
<i>Tribulus terrestris</i>	Devil Thorns			B. Wright 2018
<i>Viscum verrucosum</i>	Warty Mistletoe			B. Wright 2018
<i>Zornia capensis</i>	Caterpillar Bean			B. Wright 2018
<i>Solanum nigrum</i>	Black night shade			B. Wright 2018
<i>Ehretia rigida</i>	Puzzle Bush			B. Wright 2018
<i>Chlorophytum cooperi</i>				B. Wright 2018
<i>Vernonia sp.</i>				B. Wright 2018
<i>Hypoxis sp.</i>	Star-flower			B. Wright 2018
<i>Turbina oblongata</i>				B. Wright 2018

<i>Ruellia</i> sp.	Wild petunia		B. Wright 2018
<i>Eulophia speciosa</i>	Orchid		C. D. Wright 2018
<i>Elichrysum revolutum</i>	Pale everlasting		B. Wright 2018
<i>Heliotropium</i> sp.	Heliotrope		B. Wright 2018
<i>Lasiosiphon</i> sp.	Yellowhead		B. Wright 2018
<i>Sesbania sesban</i> ssp. <i>sesban</i> var. <i>nubica</i>	River-bean		B. Wright 2018
<i>Senecio viminalis</i>			B. Wright 2018
<i>Aizoon canariense</i>	African baconfig		B. Wright 2018
<i>Gardenia cornuta</i>	Gardenia		B. Wright 2018
<i>Delosperma tradescantioides</i>	Stone plant		B. Wright 2018
<i>Helichrysum argyrosphaerum</i>	Wild everlasting		B. Wright 2019
<i>Priva adhaerens</i>			B. Wright 2019
<i>Carissa bispinosa</i>			B. Wright 2019
<i>Psychotria capensis capensis</i>	Black birdberry		B. Wright 2019
<i>Stlylochaeton natalensis</i>	Bushveld Arum		B. Wright 2019
<i>Stapelia gigantea</i>	Carrion flower		B. Wright 2019

FUNGI		
Scientific Name	Common Name	Ukuwela
<i>Pycnoporus sanguineus</i>	Bracket fungi	B. Wright 2018
<i>Usnea</i> sp.	Beard lichen	B. Wright 2018
<i>Teloschistes</i> sp.	Sac fungi	B. Wright 2018
<i>Schizophyllum commune</i>	Splitgill mushroom	B. Wright 2018
<i>Agaricus crocopeplus</i>	Golden fleece mushroom	B. Wright 2019
<i>Termitomyces</i> sp.	Gilled mushroom	C. B. Wright 2019

INSECTS			
Family	Scientific Name	Common Name	Ukuwela
Tettigoniidae	<i>Terpnistria zebrata</i>	Acacia katydid	B. Wright 2017
Tettigoniidae	<i>Cymatomera denticollis</i>	Bark katydid	B. Wright 2017
Pyrgomorphidae	<i>Dictyophorus spumans</i>	Koppie foam grasshopper	B. Wright 2017
Pyrgomorphidae	<i>Zonocerus elegans</i>	Elegant grasshopper	B. Wright 2017
Acrididae	<i>Cyrtacanthacris tatarica</i>	Grasshopper	B. Wright 2017
Tettigoniidae	<i>Eurycorypha</i> sp.	Leaf katydid	B. Wright 2017
Gryllidae	<i>Gryllus bimaculatus</i>	Common garden cricket	B. Wright 2017
Reduviidae	<i>Platymeris</i> sp.	Giant assassin bug	B. Wright 2017
Scutelleridae	<i>Sphaerocoris</i> sp.	Picasso bug	B. Wright 2017
Mantidae	<i>Dystacta alticeps</i>	Praying mantis	B. Wright 2017
Mantidae	<i>Epitenodera</i> sp.	Praying mantis	B. Wright 2017

Mantidae	<i>Mantis religiosa</i>	European mantis	B. Wright 2017
Hymenopodidae	<i>Oxypilus</i> sp.	Bird dropping mantis	B. Wright 2017
Vespididae	<i>Synagris analis</i>	Potter wasp	B. Wright 2017
Chrysididae	<i>Stilbum</i> sp.	Cuckoo wasp	B. Wright 2017
Vespididae	<i>Delta emarginatum</i>	Potter wasp	B. Wright 2017
Apidae	<i>Amegilla atrocincta</i>	Bee	B. Wright 2017
Apidae	<i>Apis mellifera</i>	Honey bee	B. Wright 2017
Meloidae	<i>Hycleus oculatus</i>	CMR bean beetle	B. Wright 2017
Meloidae	<i>Actenodia</i> sp.	Red-banded blister beetle	B. Wright 2017
Carabidae	<i>Graphipterus</i> sp.	Velvet ground beetle	B. Wright 2017
Carabidae	<i>Craspedophorus</i> sp.	Yellow-spotted ground beetle	B. Wright 2017
Tenebrionidae	<i>Metallonotus aerugineus</i>	Royal tree darkling beetle	B. Wright 2017
Scarabaeidae	<i>Scarabeus nigroaeneus</i>	Large copper dung beetle	B. Wright 2017
Scarabaeidae	<i>Pachylomera femoralis</i>	Flattened giant dung beetle	B. Wright 2017
Coccinellidae	<i>Cheilomenes lunata</i>	Lunate ladybird	B. Wright 2017
Lymexylidae	<i>Atractocerus brevicornis</i>	Ship-timber beetle	B. Wright 2017
Chrysomelidae	<i>Aspidomorpha</i> sp.	Fools gold beetle	B. Wright 2019
Dermestidae	<i>Dermestes maculatus</i>	Museum beetle	B. Wright 2017
Scarabaeidae	<i>Dischista</i> sp.	Chafer beetle	B. Wright 2017
Libellulidae	<i>Palpopleura lucia</i>	Lucia widow	B. Wright 2017
Libellulidae	<i>Trithemis arteriosa</i>	Red-veined dropwing	B. Wright 2017
Libellulidae	<i>Crocothemis sanguinolenta</i>	Small scarlet	B. Wright 2017
Hodotermitidae	<i>Hodotermes mossambicus</i>	Northern harvester termite	B. Wright 2017
Termitidae	<i>Trinervitermes</i> sp.	Snouted harvester termite	B. Wright 2017
Blaberidae	<i>Gyna caffrorum</i>	Tree cockroach	B. Wright 2017
Ectobiidae	<i>Supella dimidiata</i>	Cockroach	B. Wright 2017
Sibyllidae	<i>Sibylla pretiosa</i>	Sibyllid mantis	B. Wright 2019
Hymenopodidae	<i>Pseudocreobotra wahlbergii</i>	Eyed-flower mantis	B. Wright 2019
Hymenopodidae	<i>Harpagomantis tricolor</i>	Flower mantis	B. Wright 2019
Mantidae	<i>Tarachodes</i> sp.	Bark mantis	B. Wright 2019
Mantidae	<i>Sphodromantis gastrica</i>	Giant mantid	B. Wright 2019
Mantidae	<i>Pyrgomantis rhodesica</i>	Grass mantid	B. Wright 2018

Mantidae	<i>Popa sp.</i>	Twig mantid	B. Wright 2018
Thespididae	<i>Hoplocoryphella grandis</i>		B. Wright 2019
Empusidae	<i>Idolomorpha dentifrons</i>	Cone-headed mantis	B. Wright 2018
Carabidae	<i>Cerapterus laceratus</i>	Bombadier ant's guest beetle	B. Wright 2017
Buprestidae	<i>Agelia petelii</i>	Meloid-mimicking jewel beetle	B. Wright 2017
Lycidae	<i>Lycus sp.</i>	Hook-winged net-winged beetle	B. Wright 2019
Coccinellidae	<i>Declivitata hamata pygmaea</i>	Humbug ladybird	B. Wright 2018
Cerambycidae	<i>Zographus niveisparsus</i>	Zebra longhorn	B. Wright 2019
Cerambycidae	<i>Macrotoma sp.</i>	Large brown longhorn	B. Wright 2017
Reduviidae	<i>Pantolestes princeps</i>	Assassin bug	B. Wright 2019
Reduviidae	<i>Ectrichodia crux</i>	Millipede assassin bug	B. Wright 2017
Reduviidae	<i>Lopodytes grassator</i>	Grass assassin bug	B. Wright 2017
Membracidae	<i>Oxyrachis sp.</i>	Treehopper	B. Wright 2017
Gryllidae	<i>Brachytrupes membranaceus</i>	Giant burrowing cricket	B. Wright 2018
Tettigoniidae	<i>Enyaliopsis sp.</i>	Korn cricket	B. Wright 2017
Tettigoniidae	<i>Ruspolia sp.</i>	Cone-headed katydid	B. Wright 2017
Tettigoniidae	<i>Clonia wahlbergi</i>	Winged predatory katydid	B. Wright 2019
Gryllidae	<i>Oecanthus sp.</i>	Tree cricket	B. Wright 2018
Euschmidtidae	<i>Euschmidtia sp.</i>	Bush hopper	B. Wright 2019
Pyrgomorphidae	<i>Phymateus viridipes</i>	Green milkweed locust	B. Wright 2017
Acrididae	<i>Acanthacris ruficornis</i>	Garden locust	B. Wright 2018
Acrididae	<i>Orthochotha dasyncnemis</i>		B. Wright 2019
Acrididae	<i>Acanthoxia gladiator</i>	Grass-mimicking grasshopper	B. Wright 2017
Glossinidae	<i>Glossina sp.</i>	Tsetse fly	B. and C. Wright 2017
Scarabaeidae	<i>Garreta nitens</i>	Green dung beetle	B. Wright 2017
Fulgoridae	<i>Eddara euchroma</i>	Painted snout bug	B. Wright 2019
Myrmeleontidae	<i>Palpares sp.</i>	Dotted veld antlion	B. Wright 2019
Ascalaphidae	<i>Tmesibasis sp.</i>	Blotched long-horned antlion	B. Wright 2019

Sphecidae	<i>Ammophila</i> sp.	Thread-waisted wasp	B. Wright 2018
Blattidae	<i>Pseudoderopeltis albilatera</i>	Orange-shouldered cockroach	B. Wright 2017
Platystomatidae	<i>Bromophila caffra</i>	Red-headed fly	B. Wright 2017
Tachinidae	<i>Dejeania</i> sp.	Tachinid fly	B. Wright 2018
Muscidae	<i>Musca domestica</i>	House fly	B. Wright 2018
Tabanidae	<i>Tabanus biguttatus</i>	Hippo fly	B. Wright 2017
Syrphidae	<i>Eristalis</i> sp.	Drone fly	B. Wright 2018
Reduviidae	<i>Reduvius</i> sp.	Masked hunter	B. Wright 2017
Scarabaeidae	<i>Oryctes monoceros</i>	Dung beetle	B. Wright 2017
Termitidae	<i>Odontotermes</i> sp.	Common fungus-growing termite	B. Wright 2017
Cerambycidae	<i>Xystrocera dispar</i>	Longhorn beetle	B. Wright 2017
Cerambycidae	<i>Purpuricenus laetus</i>	Longhorn beetle	C. Wright 2017
Curculionidae	<i>Ocladius</i> sp.	Snout beetle	B. Wright 2017
Oestridae	<i>Gedoelestia</i> sp.	Botfly	C. Wright 2017
Brentidae	<i>Episus</i> sp.	Weevil	B. Wright 2017
Scarabaeidae	<i>Pedinorrhina trivittata</i>	Fruit chafer	B. Wright 2017
Chrysomelidae	<i>Polyclada</i> sp.	Arrow-poison leaf beetle	B. Wright 2017
Cerambycidae	<i>Crossotus plumicornis</i>	Longhorn beetle	B. Wright 2017
Tettigoniidae	<i>Horatosphaga</i> sp.	Dimorphic katydid	B. Wright 2018
Chrysomelidae	<i>Conchyloctenia tripuncticollis</i>	Tortoise beetle	B. Wright 2018
Scarabaeidae	<i>Coptorhina</i> sp.	Mushroom dung beetle	B. Wright 2018
Cerambycidae	<i>Pycnopsis brachyptera</i>	Yellow striped longhorn	B. Wright 2018
Pyrrhocoridae	<i>Dysdercus</i> sp.	Cotton stainer	B. Wright 2018
Acrididae	<i>Acrida</i> sp.	Striped acrida	B. Wright 2018
Vespidae	<i>Polistes</i> sp.	Paper wasp	B. Wright 2018
		Webspinners	B. Wright 2018
Pyrgomorphidae	<i>Phymateus baccatus</i>	Milkweed grasshopper	B. Wright 2018
Aphididae	<i>Aphis nerii</i>	Oleander aphid	B. Wright 2018
Coccinellidae	<i>Cheilomenes sulphurea</i>	Sulfurous ladybird	B. Wright 2018
Apidae	<i>Thyreus</i> sp.	Cuckoo bee	B. Wright 2018
Asilidae	<i>Proagonistes</i> sp.	Robber fly	B. Wright 2018
Mantidae	<i>Miomantis caffra</i>	South African mantis	B. Wright 2018
Pentatomidae	<i>Gynenica</i> sp.	Grass stink bug	B. Wright 2018
Scarabaeidae	<i>Anisorrhina algoensis</i>	Fruit chafer	B. Wright 2018

Vespidae	<i>Belonogaster sp.</i>	Paper wasp	B. Wright 2018
Cleridae	<i>Phloiocopus sp.</i>	Checkered beetle	B. Wright 2018
Tettigoniidae	<i>Pseudorhynchus hastifer</i>	Horned katydid	B. Wright 2019
Brachyceridae	<i>Beachycerus labrusca</i>	Snout beetle	B. Wright 2019
Mantidae	<i>Cilnia sp.</i>	Mantis	B. Wright 2019
Gryllacrididae	<i>Stictogryllacris sp.</i>	Raspy cricket	B. Wright 2019
Acrididae	<i>Paracinema tricolor</i>	Grasshopper	B. Wright 2019
Scutelleridae	<i>Hotea sp.</i>	Shield-backed bug	B. Wright 2019
Tettigoniidae	<i>Arantia tanzanica</i>	Katydid	B. Wright 2019
Scarabaeidae	<i>Kheper lamarcki</i>	Dung beetle	B. Wright 2019
Cerambycidae	<i>Ceroplesis ferrugator</i>	Longhorn beetle	B. Wright 2019
Termitidae	<i>Macrotermes natalensis</i>	Large fungus-growing termite	B. Wright 2019
Termitidae	<i>Amitermes sp.</i>	Black-mound termite	B. Wright 2019
Apidae	<i>Thyreus sp.</i>	Cuckoo bee	B. Wright 2019

BUTTERFLIES AND MOTHS

Family	Scientific Name	Common Name	Ukuwela
Nymphalidae	<i>Byblia ilithyia</i>	Spotted joker	B. Wright 2018
Nymphalidae	<i>Charaxes brutus natalensis</i>	White-barred emperor	B. Wright 2017
Nymphalidae	<i>Charaxes jahlusa</i>	Pearl-spotted emperor	B. Wright 2018
Nymphalidae	<i>Charaxes varanes varanes</i>	Pearl emperor	B. Wright 2017
Pieridae	<i>Colotis auxo</i>	Sulphur orange tip	R. Tippet 2017
Pieridae	<i>Colotis daae annae</i>	Scarlet tip	B. Wright 2018
Pieridae	<i>Colotis ione</i>	Bushveld purple tip	B. Wright 2017
Pieridae	<i>Colotis regina</i>	Queen purple tip	B. Wright 2017
Nymphalidae	<i>Danaus crysipus aegyptius</i>	African Monarch	B. Wright 2017
Pieridae	<i>Eronia cleodora cleodora</i>	Vine-leaf vagrant	B. Wright 2017
Pieridae	<i>Eronia leda</i>	Autumn-leaf vagrant	B. Wright 2017
Nymphalidae	<i>Eurytela dryope angulata</i>	Golden piper	B. Wright 2018
Nymphalidae	<i>Hypolimnas misipus</i>	Common diadem	B. Wright 2018
Nymphalidae	<i>Junonia hierta cebrene</i>	Yellow pansy	B. Wright 2017
Nymphalidae	<i>Junonia oenone oenone</i>	Blue pansy	B. Wright 2017
Nymphalidae	<i>Melanitis leda helena</i>	Twilight Brown (Evening brown)	B. Wright 2017
Papilionidae	<i>Papilio demodocus demodocus</i>	Citrus swallowtail	B. Wright 2017
Nymphalidae	<i>Vanessa cardui</i>	Painted lady	B. Wright 2018

Saturniidae	<i>Imbrasia forda</i>	Pallid emperor moth	B. Wright 2017
Pterophoridae	<i>Agdistis sp.</i>	Pustule plume moth	B. Wright 2017
Thyretidae	<i>Thyretes caffra</i>	Bar maiden	B. Wright 2017
Noctuidae	<i>Erebus macrops</i>	Walker"s owl	B. Wright 2017
Sphingidae	<i>Hippotion celerio</i>	Silver-striped hawk moth	B. Wright 2017
Sphingidae	<i>Acherontia atropos</i>	Death's head hawk moth	B. Wright 2017
Saturniidae	<i>Gynanisa maja</i>	Speckled emperor	B. Wright 2019
Geometridae	<i>Zamarada plana</i>		B. Wright 2017
Geometridae	<i>Heterorachis devocata</i>	Red-lined emerald	B. Wright 2017
Noctuidae	<i>Sphingomorpha chlorea</i>	Sundowner moth	B. Wright 2017
Noctuidae	<i>Egybolis vaillantina</i>	Peach moth	B. Wright 2018
Erebidae	<i>Euchromia amoena</i>	Pleasant hornet	B. Wright 2018
Limacodidae	<i>Latoia latistriga</i>	Plum slug	B. Wright 2019
Noctuidae	<i>Heraclia sp.</i>	Superb false tiger	B. Wright 2017
Erebidae	<i>Amata alicia</i>	Heady maiden	B. Wright 2018
Lasiocampidae	<i>Philotherma rosa</i>	Lappet moth	B. Wright 2018
Noctuidae	<i>Thyatirina achatina</i>	Blossom moth	B. Wright 2018
Erebidae	<i>Cropera testacea</i>	Coated orange peel	B. Wright 2018
Saturniidae	<i>Goodia kuntzei</i>	Lunar prince	B. Wright 2018
Noctuidae	<i>Omphalestra mesoglauca</i>	Dart moth	B. Wright 2019
Geometridae	<i>Scopula pulchellata rufinubes</i>	Mocha moth	B. Wright 2019
Adelidae	<i>Ceromitia sp.</i>	Long horned moth	B. Wright 2019
Notodontidae	<i>Antheua tricolor</i>	Prominent moth	B. Wright 2019

ARACHNIDS

Scientific Name	Common Name	Regional	Global	Ukuwela
<i>Araneus apricus</i>	Green pea spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Argiope australis</i>	Garden Orb	Not Assessed	Not Assessed	B. Wright 2017
<i>Caerostris sexcuspidata</i>	Bark Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Castianeira sp.</i>	Ant-like spider			B. Wright 2017
<i>Cyclosa sp.</i>	Garbage-line Spiders	Not Assessed	Not Assessed	B. Wright 2018
<i>Isoxya tabulata</i>	Kite Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Isoxya stuhlmanni</i>	Kite Spider			B. Wright 2017
<i>Neoscona sp.</i>		Not Assessed	Not Assessed	B. Wright 2017

<i>Myrmarachne ichneumon</i>	Ant-mimicking jumping spider			B. Wright 2019
<i>Hippasa</i> sp.	Funnel-web wolf spider			B. Wright 2017
<i>Leucage kibonotensis</i>	Tailed vlei spider			B. Wright 2018
<i>Hersilia</i> sp.	Long-spinnered Bark Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Cheiracanthium</i> sp.	Sac Spiders	Not Assessed	Not Assessed	B. Wright 2017
<i>Smeringopus</i> sp.	Daddy Longleggs	Not Assessed	Not Assessed	B. Wright 2017
<i>Euprostenops</i> sp.	Nurseryweb Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Platyoides</i> sp.	Scorpion spider			B. Wright 2017
<i>Portia schultzi</i>	Jumping Spiders	Not Assessed	Not Assessed	B. Wright 2018
<i>Scytodes</i> sp.	Spitting Spiders	Not Assessed	Not Assessed	B. Wright 2017
<i>Ariadna</i> sp.	Tunnelweb Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Leucage kibonotensis</i>	Tailed vlei spider	Not Assessed	Not Assessed	B. Wright 2018
<i>Nephilengys cruentata</i>	Hermit Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Nephila inaurata madagascariensis</i>	Redlegged Banded Golden Orb	Not Assessed	Not Assessed	B. Wright 2017
<i>Nephila senegalensis</i>	Banded-legged nephila	Not Assessed	Not Assessed	B. Wright 2017
<i>Latrodectus geometricus</i>	Brown Widow Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Thomisus</i> sp.	Crab Spiders	Not Assessed	Not Assessed	B. Wright 2018
<i>Uloborus plumipes</i>	Feather-legged Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Pachyballus flavipes</i>	Jumping Spider			
<i>Hermippus Septemguttatus</i>	Burrowing Spider	Not Assessed	Not Assessed	B. Wright 2017
<i>Brachionopus</i> sp.	Baboon spider			B. Wright 2017
<i>Loxosceles</i> sp.	Violin spider			B. Wright 2018
<i>Cydrela</i> sp.	Ant eating spider			C. Wright 2018
<i>Leucage kibonotensis</i>				B. Wright 2018
<i>Ancylotrypa</i> sp.	Wafer lid trapdoor spider			B. Wright 2017
<i>Deinopsis</i> sp.	Net casting spider			B. Wright 2019
<i>Panaretella</i> sp.	Forest huntsman spider			B. Wright 2018
<i>Pseudolychas pegleri</i> (Purcell, 1901)	Thick tailed buthid scorpions			I. Engelbrecht 2017
<i>Uroplectes formosus</i> Pocock, 1890	Thick tailed buthid scorpions			R. Tippitt 2017
<i>Cheloctonus jonesii</i> Pocock, 1892	Burrowing scorpions			I. Engelbrecht 2017
<i>Opisthacanthus asper</i> (Peters, 1861)	Thin tailed scorpions			B. Wright 2017
<i>Amblyomma hebraeum</i>	African bont tick			B. Wright 2017
<i>Damon</i> sp.	Tailless whip scorpion			B. Wright 2019

MYRIAPODS

Scientific Name	Common Name	Ukuwela
<i>Alipes</i> sp.	Flag tail centipede	B. Wright 2017
<i>Cormocephalus nitidus</i>	Centipede	B. Wright 2017
<i>Scolopendra</i> sp.	Centipede	B. Wright 2017

PRO FORMA ANNUAL PLAN OF OPERATION

**Notes of a management meeting for Ukuwela Nature Reserve held at ...
on ...**

Present:

Apologies:

CC:

Table 1 Progress and goals set for the Greater Ukuwela Nature Reserve

LEGAL COMPLIANCE AND LAW ENFORCEMENT					
Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
NATURE RESERVE DECLARATION					
Legal protection of the entire extent of Ukuwela Nature Reserve in terms of the requirements of the Protected Areas Act.			Year 1	Ezemvelo KZN Wildlife	
LAW ENFORCEMENT					
Implement appropriate standard operating procedures and processes in responding to illegal incidents.			Year 1	Management Authority	Provision of advice from Ezemvelo
Regular patrols covering the full extent of the nature reserve.			Ongoing	Management Authority	
Prosecution of any offender caught committing an offence.			Ongoing	Management Authority	Requires the assistance of EKZNW
LAND MATTERS					
<ul style="list-style-type: none"> • A register of all required permits and their respective statuses for the property. • A member to take responsibility of all permitting concerns. • A fully compliant property. 			Annually	Management Authority	EKZNW to engage as part of the process
Title deed endorsement for Nature Reserve status.			Year 1	Management Authority	Conservation Outcomes to assist
An up-to-date, accurate servitude register for the reserve			Year 1	Management Authority	
WILDLIFE RISKS AND LIABILITIES					

Standard operating procedures are regularly reviewed and updated to address risks, procedures and compensation associated with wildlife breakouts and emergencies			Year 1	Management Authority	EKZNW to assist in reviewing
OPERATIONAL MANGEMENT					
Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
INFRASTRUCTURE AND EQUIPMENT					
Sufficient facilities, assets, infrastructure and equipment to support the effective management and operation of the nature reserve.			Ongoing	Management Authority	
Regular scheduled maintenance of all infrastructure and equipment.			Ongoing	Management Authority	
Appropriately functioning infrastructure and systems that do not cause harm to the environment, in accordance with the environmental maintenance management plan.			Ongoing	Management Authority	
FINANCIAL AND HUMAN RESOURCES					
Inclusion of a cost estimate in the Annual Plan of Operation.			Annually	Management Authority	
Develop a profile of staff members to identify qualifications, skills and experience, and areas in which capacity development is required			Annually	Management Authority	
Implement a structured system to assess and determine staff job performance and to identify further training and capacity development needs.			Annually	Management Authority	
Implement measures to ensure that staff are sufficiently trained and capable			Annually	Management Authority	

to undertake the functions required of their job positions.					
MANAGEMENT SYSTEMS					
Dates for annual meetings are set at the closing of previous meetings			Year 3	Management Authority	
Processes are in place that facilitate fair and effective decision making			Year 3	Management Authority	
BUSINESS MANAGEMENT AND DEVELOPMENT					
Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
BUSINESS DEVELOPMENT AND OPERATION					
Optimally designed and agreed upon reserve budget that enables the effective management of the reserve.			Ongoing	Management Authority	
There is adequate budget to effectively manage the reserve.			Ongoing	Management Authority	
There is an effective, efficient and fair mechanism in place to enable decision making around proposed business activities.			Annually	Management Authority	With assistance of EKZNW
CONSERVATION MANAGEMENT					
Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
ECOSYSTEM AND SPECIES MANAGEMENT					
Undertake annual rangeland assessments, as part of the Monitoring Programme, to determine the state of the habitat and the influence of management interventions.			Annually	Management Authority	With the assistance of the Biodiversity Stewardship Unit
Undertake an annual wildlife species census to determine animal numbers and required off-takes.			Annually	Management Authority	

Modify game species mix and numbers if they are found to be negatively impacting on biodiversity.			Annually	Management Authority	
If required, veterinary intervention will be utilised for species of conservation concern.			Ongoing	Management Authority	
Habitat management activities will be cognisant of the requirement of plant species of conservation concern.			Ongoing	Management Authority	
Implement appropriate measures within sensitive habitats to limit vegetation impacts through over-utilisation through species			Ongoing	Management Authority	
Develop standard operating procedures for tourism and management activities within sensitive habitats.			Ongoing	Management Authority	
If extractive resource use is to take place, it must be done sustainably			Ongoing	Management Authority	
An effective road network is designed and implemented.			Ongoing	Management Authority	
Road maintenance is adequately addressed in the APO.			Ongoing	Management Authority	
The road network is adequately signposted.			Ongoing	Management Authority	
FIRE MANAGEMENT					
Establishment of a series of internal firebreaks to facilitate the recommended burning regime.			Annually	Management Authority	

Burning the reserve annually in accordance with the fire management plan.			Annually	Management Authority	
Five-yearly review and update of the Ukuwela Nature Reserve Fire Management Plan.			Annually	Management Authority	With support from Working on Fire
Compliance with the National Veld and Forest Fires Act.			Annually	Management Authority	
INVASIVE PLANT CONTROL					
Implementation of invasive alien plant control in accordance with the reserve's invasive alien plant control plan.			Annually	Management Authority	
Five-yearly review and update of the Ukuwela Nature Reserve Invasive Alien Plant Control Plan			Annually	Management Authority	
Ongoing control and eradication of listed invasive species to a point where maintenance control is all that is required.			Annually	Management Authority	
Managing exotic animal species that occur on the reserve so that indigenous species are protected.			Ongoing	Management Authority	
SOIL EROSION CONTROL					
Develop a detailed soil map of the reserve.			Year 3	Management Authority	With technical inputs from partners
A map depicting areas of soil erosion within the nature reserve			Year 1	Management Authority	
Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion.			Ongoing	Management Authority	
CULTURAL HERITAGE AND RESEARCH AND MONITORING					

Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
CULTURAL HERITAGE AND SENSE OF PLACE					
Development of a map of the historic resources on the reserve, so as to ensure their protection.			As required	Management Authority	
If funding is available undertake a more comprehensive inventory of cultural, historical and archaeological artefacts within the reserve.			As required	Management Authority	
Visitor activities are controlled and limited in areas that have been identified as particularly sensitive to visitor impacts.			Ongoing	Management Authority	
RESEARCH AND MONITORING					
An annual review of research efforts is conducted to discuss and disseminate key findings and identify areas where further research is required.			Annually	Management Authority	
Discuss and highlight research needs during planning for the APO.			Year 5	Management Authority	With inputs from research partners
Development of scientific surveillance and monitoring plan for the reserve that enables effective species monitoring.					
Monitoring plans for key rare and threatened habitat types and species.			Annually	Management Authority	
Review monitoring strategies annually.			Annually		
Development of an effective surveillance and monitoring plan for the reserve that will enable adaptive habitat management.			Annually	Management Authority	

Keep accurate records of habitat management activities, including burns and IAP removal.			Ongoing	Management Authority	
Engagement with partners and research organisations to promote research that addresses key ecological management interventions.				Management Authority	Engagement with research partners.
SOCIO-ECONOMIC BENEFITS					
Management target	2018/19 Progress	2019/20 goals	Completion date	Responsibility	Action
FOSTERING COMMUNITY PARTNERSHIPS AND SUPPORT					
Wherever possible, all employment opportunities and business support are provided to local communities.			Ongoing	Management Authority	
Community development projects result in positive relationships and trust with the surrounding communities.			Ongoing	Management Authority	
ENVIRONMENTAL EDUCATION, AWARENESS AND INTERPRETATION					
Provision of environmental interpretation to members of the neighbouring local communities, implemented in terms of the reserve's existing programme.			Ongoing	Management Authority	
ECOSYSTEM GOODS AND SERVICES					
When resources allow, and research opportunities present themselves; the ecosystem services provided by the nature reserve are quantified			Ongoing	Management Authority	

UKUWELA GAME OWNERSHIP AGREEMENT



Game Ownership Protocol

It is understood by all members that the purpose of the Association is not for wildlife to be used for profiting by sales, intensive breeding or other uses; but rather to restore and maintain ecological functioning and to contribute to regional wildlife conservation. It is further understood that with the lack of large predators and GUNR being fenced, wildlife numbers will need to be managed, preferably by live sales or donation to other conservation-focused wildlife reserves. The proceeds of any sales will be for the benefit of the Association. Management of wildlife is the responsibility of the Reserve Manager.

New Members and Equalisation

Prior to acceptance of new member application, applicant will provide the Association with a verified count of wildlife on their portion.

Any new member will be required to enter a Game Ownership Agreement and a Game Equalisation Agreement, said documents to be made available on Application for Membership.

Wildlife Purchases

Members that contribute to the purchase of wildlife will share in the value of that wildlife, the value of which will be based on the value of the contribution to purchase.

Members who choose not to contribute to the purchase of wildlife will not share in the value of that purchased wildlife; they will, however, share in the value of any offspring, based on proportional property ownership.

Termination of Membership

Upon termination of membership, as laid out in the constitution, the member may be entitled to a game equalisation process and will be required to provide verified game count figures. A representative of the management team must be present during the game count process. An equalisation process will then commence based on wildlife figures prior to incorporation and at time of termination of membership.

This may be waived based on agreement by parties concerned and recorded in writing.

General

Records of wildlife will be maintained by reserve management and will be available for all members of the Association. These records will include, at minimum, an annual game count, births, deaths, purchases and sales, as well as wildlife acquisitions by donations or rehabilitated wildlife release.

Value of wildlife will be based on value at purchase or where wildlife is not purchased or is already present, at the value of said wildlife at the time, based on mean price attained from wildlife sales within the country and preferably within the region.

REGISTERED SERVITUDES ON THE GERATER UKUWELA NATURE RESERVE

(awaiting SG diagrams from the Land Surveyor)