CEDAR ROCK VOETPAD PROTECTED ENVIRONMENT

as part of the

Cedar Rock Voetpad Protected Area

Management Plan

2023 – 2028

Prepared by: Zuurfontein Reserve Trust with assistance from Bionerds (Pty) Ltd, Wilderness Foundation Africa (WFA), South African National Parks (SANParks), WWF South Africa (WWF-SA) and the Leslie Hill Succulent Karoo Trust (LHSKT)

Citation: Cedar Rock Voetpad Protected Environment (CVPE), 2023. Management Plan, Version 1, Northern Cape Province, South Africa

STATUS

The Cedar Rock Voetpad Protected Environment has been declared under Section 28 Protected Environment, under the National Environmental Management: Protected Areas Act (No. 57 of 2003).

Declaration date:	**Government gazette notice:**
YYYY – MM – DD _____	Gazette reference nr. _____

AUTHORIZATION PAGE:

The Cedar Rock Voetpad Protected Environment (CVPE) Management Plan is hereby internally accepted and authorised as required for managing the CVPE in terms of Sections 39 and 41 of the National Environmental Management: Protected Areas Act No 57 of 2003 (NEM:PAA).

Supported by: South African National Parks

Recommended and adopted by:

Name and Title	Signature and Date
Management Authority ZUURFONTEIN RESERVE TRUST ((IT 4826/97)) BY VIRTUE OF A RESOLUTION HEREIN REPRESENTED BY ANTONY PHILIP KINGS (ID NR: 500602 5031 08 1)	Signature: _____ Date: _____
South African National Parks *Name of signatory* _____ *Title of signatory* _____	Signature: _____ Date: _____

APPROVED:

Name and Title	Signature and Date
Department Forest Fisheries and the Environment *Name of signatory* _____ *Title of signatory* _____	Signature: _____ Date: _____

Review Date: October 2028

TABLE OF CONTENTS

ABBREVIATIONS

APO	Annual Plan of Operation
CARA	Conservation of Agricultural Resources Act
CBA	Critical Biodiversity Area
CBD	Convention on Biological Diversity
CEO	Chief Executive Officer
CoAE	Certificate of Adequate Enclosure
CFR	Cape Floristic Region
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMA	Catchment Management Authority
CR	Critically Endangered
CRNR	Cedar Rock Nature Reserve
CRVPA	Cedar Rock Voetpad Protected Area
DAERL	Northern Cape Department: Agriculture, Environmental Affairs, Rural Development and Land Reform
DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
DEA	National Department of Environmental Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DoA	Department of Agriculture Western Cape
DWA	National Department of Water Affairs
eCRAG	Eastern Cederberg Rock Art Group
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EN	Endangered
ESA	Ecological Support Area
EWT	Endangered Wildlife Trust
FEPA	Freshwater Ecosystem Priority Area
FPA	Fire Protection Association
GIS	Geographical Information System
IDP	Integrated Development Plan (Municipal)

IUCN	International Union for the Conservation of Nature
LC	Least Concern
LT	Least Threatened
MA	Management Authority
MCA	Mountain Catchment Area
METT	Management Effectiveness Tracking Tool
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NBA	National Biodiversity Assessment
NEMBA	National Environmental Management: Biodiversity Act
NEMPAA	National Environmental Management: Protected Areas Act (the Act)
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Area
NGO	Non-governmental Organisation
NPAES	National Protected Area Expansion Strategy
NR	Nature Reserve
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act
ONA	Other Natural Area
PA	Protected Area
PAMP	Protected Area Management Plan
PBSAP	Western Cape Provincial Biodiversity Strategy and Action Plan
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SMP	Strategic Management Plan
SOB	State of Biodiversity Report
SDF	Municipal Spatial Development Framework
SEA	Strategic Environmental Assessment
SMP	Strategic Management Plan
VU	Vulnerable
WCBB	Western Cape Biodiversity Bill
WCBF	Western Cape Biodiversity Framework
WCBSP	Western Cape Biodiversity Spatial Plan
WCPAES	Western Cape Protected Area Expansion Strategy

1. BACKGROUND

1.1 PURPOSE OF THE PROTECTED AREA MANAGEMENT PLAN

The Cedar Rock Voetpad Protected Area Management Plan serves as a strategic document that provides the framework for the development and operation of the Cedar Rock Voetpad Protected Area (CVPA) which includes the Cedar Rock Nature Reserve (CRNR) and the *Cedar Rock Voetpad Protected Environment (CRVPE).

The Management Authorities for the above mentioned Protected Areas (PAs) are related and prefer that both the CRNR and CRVPE are managed by means of an aligned Management Plan. Two separate, but similar, Management Plans will be submitted to meet the requirements of NEM: PAA (National Environmental Management: Protected Areas Act) Section 39 (2) for these two PAs. **This document, however, is prepared to be submitted to SANParks for approval to meet the requirements of the Act pertaining to the Cedar Rock Voetpad Protected Environment (CRVPE) specifically.**

The plan has been developed to inform management at all levels, from the Management Authority, to its relevant partners and stakeholders. The purpose of the management plan is to:

1. Provide the primary strategic tool for the management of the CRNR and VPE, informing the need for specific programmes and operational procedures.

2. Provide for capacity building, future thinking, and continuity of management.

3. Enable the landowner to develop and manage the Protected Areas in such a way that its values and the purpose for which it has been established are protected, while its vision and mission are achieved.

---

*For simplification this document will from this point refer to the '*Cedar Rock Voetpad Protected Environment*' (CRVPE) (the official PA name) as the '*Voetpad Protected Environment*'.

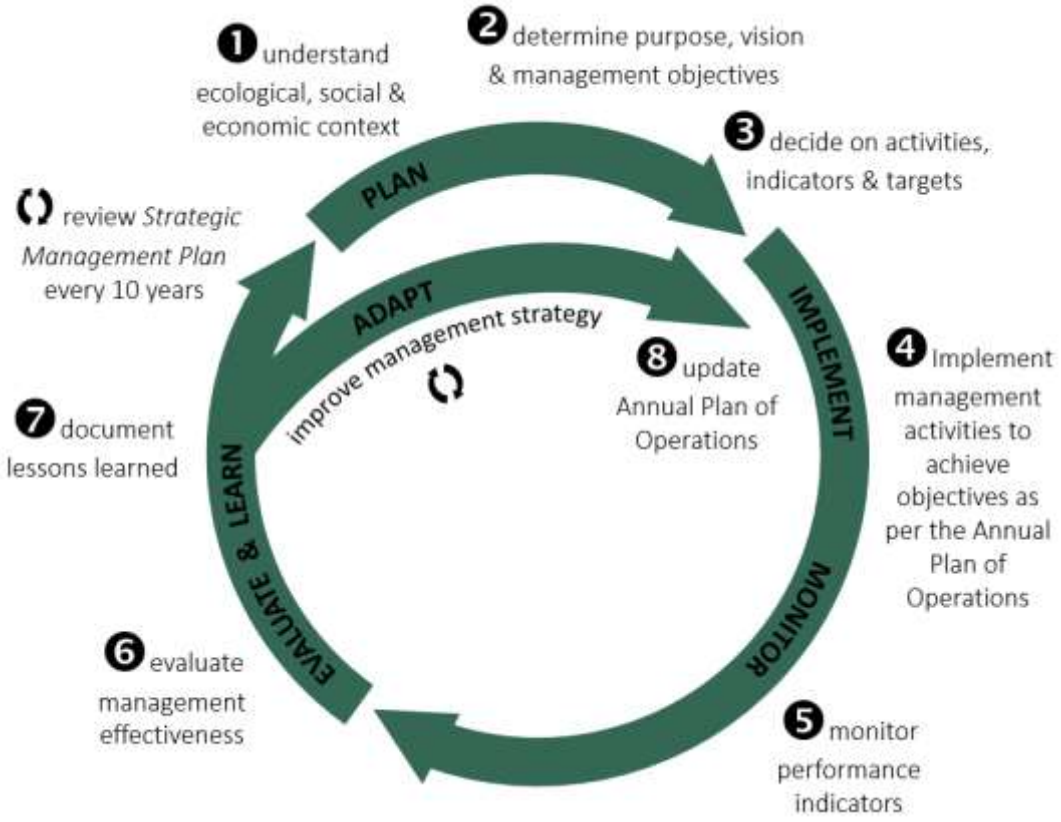
1.2 STRUCTURE OF THE PLAN

SECTION 1: ***BACKGROUND***	Provides an overview of the Protected Area, an introduction to integrated management planning and highlights applicable legislation.
SECTION 2: ***SITE DESCRIPTION***	Establishes the context of the Protected Areas, providing the basis for the strategic management framework that follows.
SECTION 3: ***STRATEGIC MANAGEMENT FRAMEWORK***	Lays out the Management Authority's high-level strategic decisions that guide the operational management of the Protected Areas.
SECTION 4: ***OPERATIONAL MANAGEMENT FRAMEWORK***	Sets out the management targets that must be achieved in managing the Protected Areas.
SECTION 5: ***MANAGEMENT IMPLEMENTATION***	Describes how the Annual Plan of Operation (APO), guides the operational implementation of management objectives laid out in the management plan.

1.3 ADAPTIVE MANAGEMENT

Adaptive management is a structured, iterative process in which decisions are made using the best available information, with the aim of obtaining better information through monitoring of performance. Decision making is therefore 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 learn through experience; take account of, and respond to, changing factors that affect the Protected Areas; develop or refine management processes; adopt best practice and innovation; and demonstrate that management is appropriate and effective.



1.4 GUIDING LEGISLATION

1.4.1 NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT

There is a large body of legislation that is relevant to the management of Nature Reserves and Protected Environments, but the primary legislation guiding the management of protected areas is the National Environmental Management: Protected Areas Act, Act No.57 of 2003 (NEMPA). NEMPA establishes the legal basis for the creation and administration of protected areas in South Africa, as its objectives include provisions "for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes". The act further sets out the mechanisms for the declaration of protected areas and the requirements for their management.

Management Authorities should be familiar with the purpose and contents of the statutes and their subsequent amendments and regulations.

NEM: PAA Section 51 states that development and other activities that may be inappropriate or impede the purpose for which the Voetpad Protected Environment (VPE) was declared, may be published in the Gazette to restrict or regulate such activities. In terms of the VPE, the Section 51 Notice need to be drafted in consultation between SANParks and the Management Authority after the proclamation of the Voetpad Protected Environment. (Proclamation of the VPE has not yet been concluded at the time of compilation of this document, but the Section 51 notice will be included in the revised version of this Management Plan).

The Cedar Rock Nature Reserve is located in the Western Cape Province of which CapeNature is the Provincial Conservation Authority. CapeNature's Biodiversity Stewardship Programme facilitates the establishment and management of protected areas on private land in the Western Cape Province. Voetpad Protected Environment (VPE) is located in the Northern Cape Province of which the Northern Cape Department: Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) are the Conservation Authority responsible for protected area expansion in the Northern Cape Province. However, as the VPE is also located in the expansion footprint of the Tankwa Karoo National Park, South African National Parks (SANParks) has taken on the role of the official Conservation Authority responsible for the establishment of Protected Areas on private land in this area.

The VPE also forms part of the western edge of the *Tankwa Karoo to Cederberg Wilderness Corridor* (TKCWC/ 'the Corridor'). The Corridor is an ecological corridor, consisting of various types of Protected Areas, connecting the Cederberg Wilderness Area with the Tankwa Karoo National Park creating a mega interprovincial protected area.

1.4.2 PURPOSE OF DECLARING PROTECTED AREAS

According to S17 of NEMPA, the purpose of declaring an area as a protected area is:

1) to protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas.

2) to preserve the ecological integrity of those areas.

3) to conserve biodiversity in those areas.

4) to protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa. to protect South Africa's threatened or rare species.

5) to protect an area which is vulnerable or ecologically sensitive.

6) to assist in ensuring the sustained supply of environmental goods and services.

7) to provide for the sustainable use of natural and biological resources.

8) to create or augment destinations for nature-based tourism.

9) to manage the interrelationship between natural environmental biodiversity, human settlement, and economic development.

10) generally, to contribute to human, social, cultural, spiritual, and economic development; or

11) to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

1.4.3 DECLARATION STATUS

Cedar Rock Nature Reserve is declared under Section 23(1) of NEMPAA.

Voetpad Protected Environment is declared under Section 28(1) of NEMPAA.

See Appendix B for the respective Protected Areas Declaration Notices.

The Cedar Rock Nature Reserve and Voetpad Protected Environment are collectively referred to as the '*Cedar Rock Voetpad Protected A*rea' (CRVPA) in this document.

1.4.4 LEGAL FRAMEWORK

While the primary legislation guiding the management of the CRVPA is the National Environmental Management: Protected Areas Act (No. 57 of 2003), other legislation that is also relevant to conservation management in the Nature Reserve is provided below.

1) **National Environmental Management: Biodiversity Act (No. 10 of 2004)**: The Biodiversity Act provides a range of biodiversity conservation planning tools. These include the National Biodiversity Framework, bioregional plans, biodiversity management plans, the listing of threatened and protected species or ecosystems, and the control and enforcement of species and organisms posing a potential threat to biodiversity.

Section 76(1) of the Act requires that the protected area management authority develop an invasive species control and eradication strategy. The alien invasive species regulations (Notice 598, 2014) and alien and invasive species lists (Notice 864, 2016) will apply. Alien invasive species are categorised in the following manner: Category 1a - must be combatted and eradicated while trade and planting is prohibited; Category 1b - must be controlled and wherever possible, removed and destroyed while trade and planting is prohibited; Category 2 - species deemed to be potentially invasive where a permit is required to carry out a restricted activity; Category 3 - may remain in prescribed areas or provinces while further planting, propagation or trade is prohibited.

2) **National Environmental Management Act (No. 107 of 1998); EIA Regulations (Notice 326 of 2017)**: The EIA Regulations of 2017 list activities that cannot proceed without an environmental authorisation from the Provincial Department of Environmental affairs, Development and Planning or the National Department of Environmental Affairs. A Basic Assessment process (Listing Notice 1 and 4) or a Scoping and Environmental Impact Reporting process (Listing Notice 3) is required depending on the location, nature, and extent of certain activities. In terms of Regulation Listing Notice No.3 (Notice 324, April 2017), certain activities within 5 km of a protected area require environmental authorisation, including certain activities within a Critical Biodiversity Area.

It is important to note that the biodiversity stewardship agreement does not negate the requirement for environmental authorisation should the landowner or any other party pursue a listed activity.

3) **National Water Act (No. 36 of 1998)**: The Water Act is concerned with the overall management, equitable allocation, and conservation of water resources in South Africa. The General Authorisations (GA) in terms of Section 39 of the National Water Act identifies certain water uses that cannot proceed without an authorisation from the Department of Water and Sanitation. Section 21c and 21i General Authorisation (Notice 506, August 2016) requires that a Risk Assessment Matrix be undertaken for watercourses (wetlands within 500 m and streams/rivers within 100 m) in order to determine the requirement for a Water Use License Application (moderate to high-risk post mitigation) or General Authorisation (low risk post mitigation). Other GA water uses include water abstraction from a natural water resource (21a), water storage (21b), wastewater discharge and irrigation with wastewater (21e, 21f, 21g, 21h).

It is important to note that the biodiversity stewardship agreement does not negate the requirement for a water use authorisation should the landowner or any other party engage in a water use that requires approval.

4) **National Veld and Forest Fire Act (No. 101 of 1998)**: In terms of the National Veld and Forest Fire Act (No. 101 of 1998), landowners may form fire protection associations for the purpose of predicting, preventing, managing, and extinguishing veld fires. The Act requires landowners to prepare and maintain firebreaks on the boundaries of their lands. The Minister may exempt any owner or group of owners from the duty to prepare and maintain a firebreak for good reason. Furthermore, every landowner must have equipment, protective clothing and trained personnel for extinguishing fires and ensure that in his absence responsible persons are present on or near his or her land. In the case of runaway fires, if the fire spreads from a property

where the landowner is a member of a fire protection association, he will be presumed innocent of negligence in terms of the Act until proven guilty.

5) **Conservation of Agricultural Resources Act (No. 43 of 1983)**: The Conservation of Agricultural Resources Act (CARA) compels landowners to control declared invader plants on their properties and makes provision for penalties for landowners who do not comply. The NEM:BA alien invasive species regulations (Notice 598, 2014) and alien and invasive species lists (Notice 864, 2016) have superseded the CARA. Section 6 of the Act relates to the prescription of measures which all land users have to comply with, e.g., the prohibition of modifying run-off flow patterns and the restoration of eroded land. Section 7 protects any vlei, marsh, water sponge or watercourse. CARA Regulation 9.1 requires that every land user protect the veld on his farm unit effectively against deterioration and destruction: Regulation 10.1 allows for the Department to develop grazing capacity guidelines. Regulation 11.1 requires that every land user restrict the number of animals, expressed as large stock units, kept on the veld of his farm unit to not more than the number that is obtained by dividing the area of the veld of the farm unit concerned, expressed in hectares, by the applicable grazing capacity referred to in regulation 10, in respect of that farm unit: Provided that such number may on occasion be exceeded on condition that the veld shall under all circumstances effectively be protected against deterioration and destruction.

1.5 ADMINISTRATIVE FRAMEWORK

1.5.1 MANAGEMENT AUTHORITY

The Management Authority of the Cedar Rock Voetpad Protected Area (CRVPA) is empowered in terms of the Protected Areas Act to make administrative and management decisions on the protected area, within the framework of the Act and the biodiversity stewardship agreement. CapeNature and SANParks, within their respective domains, will support the management of the Protected Area by providing ecological and other advice.

1.5.2 MANAGEMENT AUTHORITY DETAILS

Management Authority (MA)	Suurfontein Game Reserve CC & Zuurfontein Reserve Trust
MA Representative	Anthony Philip Kings
Contact Details	Tel: 021 531 8212 / Email: sunsetindust@polka.co.za

1.5.3 PROTECTED AREA ADVISORY COMMITTEE

An Advisory Committee will be established for the Protected Area in terms of regulations in the Protected Areas Act. The Advisory Committee will comprise of, at a minimum, a representative of the Management Authority, CapeNature and SANParks. The committee will meet at least once per annum to conduct the annual review, highlight management challenges, and advise on the generation of the following years annual plan of operations.

2. SITE DESCRIPTION

2.1 INTRODUCTION

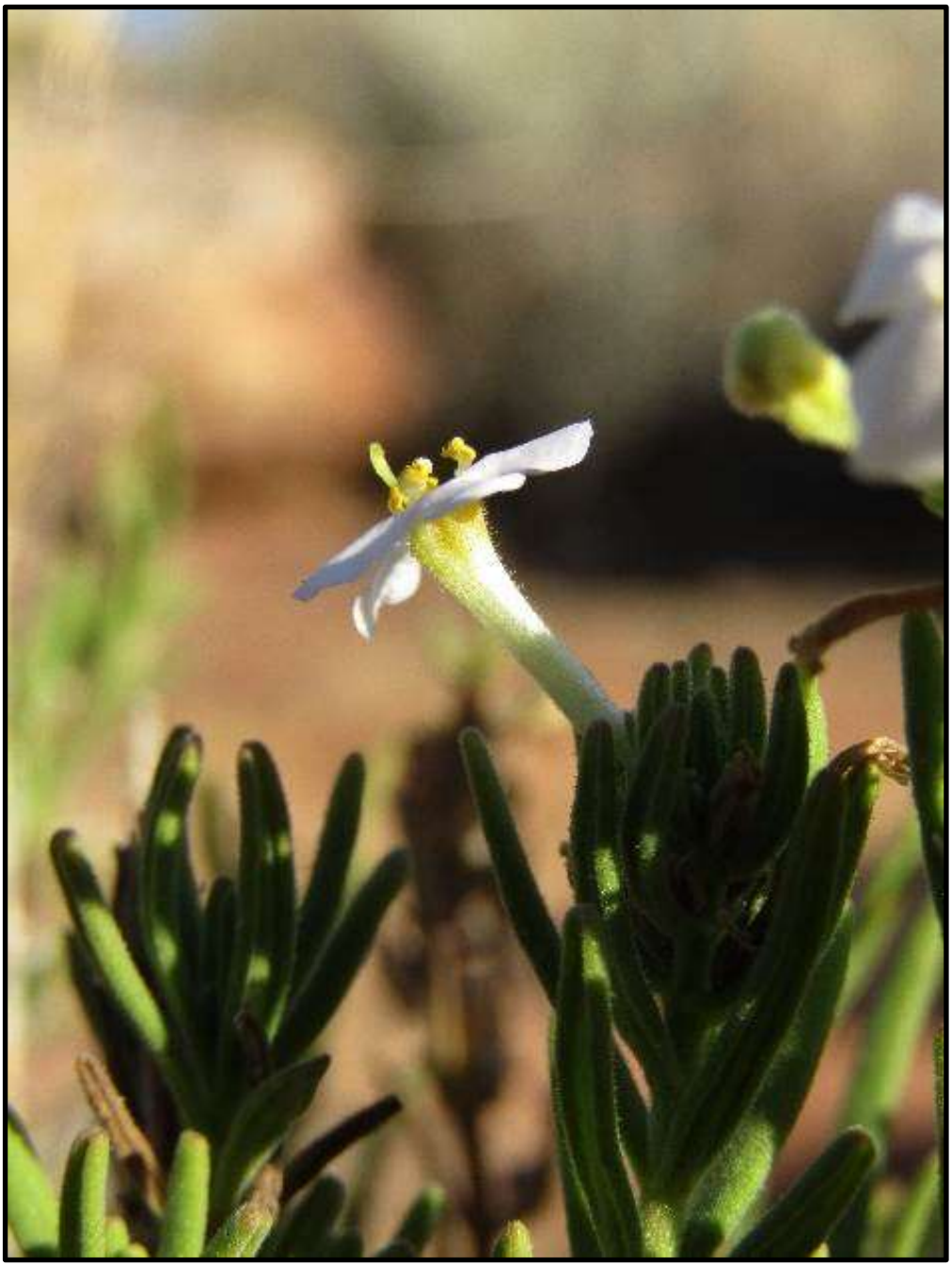
The original peoples of the Cederberg were hunter-gatherers who occupied the region more than half a million years ago during the Early Stone Age, while *Homo sapiens* made Middle Stone Age artefacts in the Cederberg 100 000 years ago. Later Stone Age people, the ancestors of the San, utilised rock shelters in the Cederberg for the past 10 000 years, leaving behind rock paintings in the form of fine-line paintings which illustrated their beliefs and way of life. Approximately 2000 years ago, Khoekhoe herders migrated into Southern Africa with sheep and, eventually, cattle. The Khoe arrival had a major impact on the San way of life, leading to the displacement of hunter-gatherer groups.

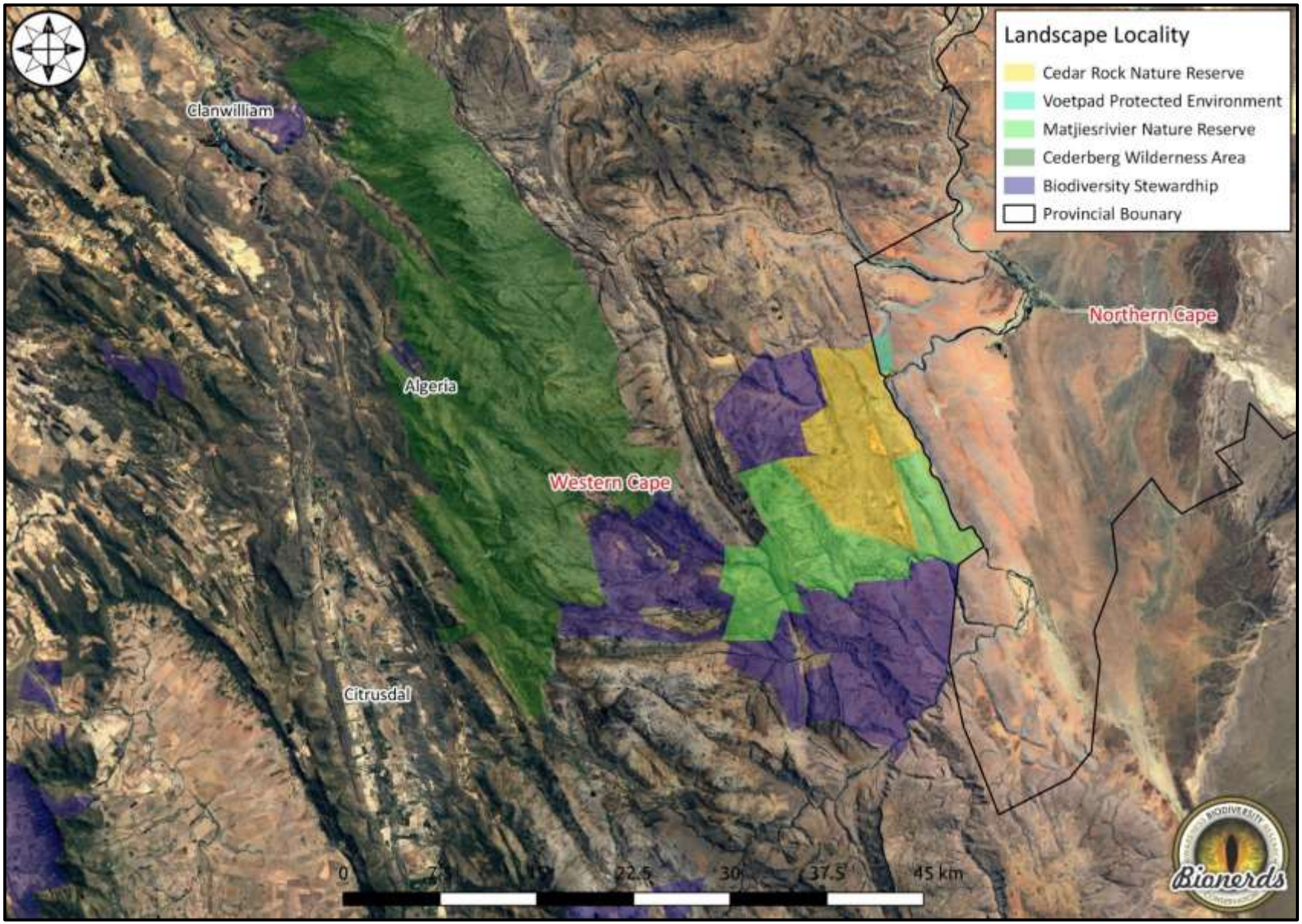
In the colonial period, European stock farmers settled in the south western Cape as vrye (free) burghers in an effort to escape the control of the Dutch East India Company (VOC). These colonial settlers settled the Piketberg and Tulbagh Valley in the early 1700s. The Khoekhoe of the area, the Cochoqua and Guriqua, had their way of life uprooted by the settlers which eventually led to the disintegration of Khoekhoe societies. Smallpox epidemics, violent confrontations and subjugation led to the Khoekhoe being forced into a role of the rural underclass by 1750, relegated to working on settler farms and villages. The Cape Colony passed from Dutch control to British domination in 1806 and shortly thereafter neither San hunter-gatherers nor Khoekhoe herders were still living autonomously in the Cederberg.

In 1876, the "Crown-Land" in the Cederberg was utilised for forestry plantations, with the first forest station created at Garskraal, which would become known as Algeria, situated approximately 35 kilometres from CRVPA. In 1897, the area was declared as Demarcated Forest, while agriculture in the immediate surrounds was limited predominantly to subsistence living. The last plantations were planted above Algeria in 1970 and when management of the region was transferred to the Cape Department of Nature Conservation in 1987, it was decided to phase out exotic plantations and facilitate natural veld recovery. The plantations have since been harvested or have been destroyed by wildfire. The Cederberg was proclaimed as wilderness in 1973 and Matjiesrivier, bordering CRVPA, was proclaimed as a Nature Reserve in 2000 and inscribed as a World Heritage Site in 2014.

Cedar Rock Voetpad Protected Area is comprised of the farms Zuurfontein, Voelfontein, Vaalkloof, Ramkraal, Oukraal, Voetpad and Strassberg. In 1993, Anthony Kings purchased Zuurfontein, adding the remaining farms to the property in 1997. Many of these farms were home to existing shepherds' cottages, which were in varying states of disrepair. Some were renovated and are now chalets which comprise the tourism hub of the Protected Area. The main farmhouse on Zuurfontein, built in the late 1800s, has been restored on its original foundations, as was the old wagon house which now houses the reserve's 4 x 4 vehicles. The old saddlery is now a store, scullery, office, and shop. When the buildings were first explored, one packing crate found amongst the ruins had labels confirming that it had arrived in South Africa on the Birkenhead – which famously was shipwrecked off the coastline near the present town of Gansbaai. The entrance road leading from Matjiesrivier Nature Reserve, passing the CRVPA offices and leading to the Doring River, used to be the old provincial road and main wagon supply route between Citrusdal and Calvinia. Wagon wheel ruts can still be found in some of the rocky passes.

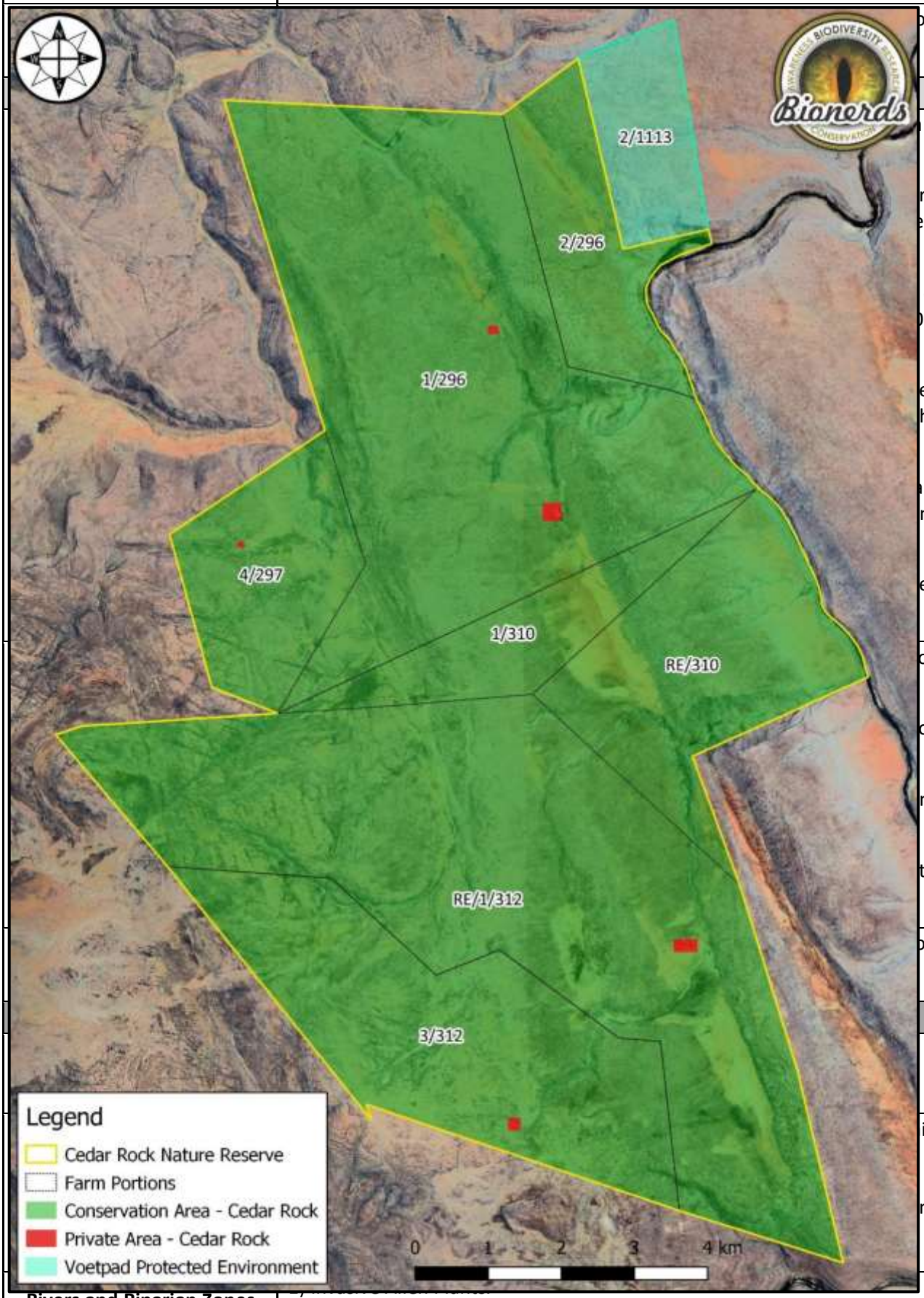
Cedar Rock Voetpad Protected Area is a founding member of the Cederberg Conservancy and works directly with CapeNature and the Cape Leopard Trust on many projects such as the study of the local flora, the Cedar Tree nursery, Leopard monitoring the Greater Cederberg Biodiversity Corridor and the Tankwa Karoo to Cederberg Wilderness Corridor.




Landscape Locality
Cedar Rock Nature Reserve
Voetpad Protected Environment
Matjiesrivier Nature Reserve
Cederberg Wilderness Area
Biodiversity Stewardhip
Provincial Bounary
Clanwilliam
Algeria
Western Cape
Northern Cape
Citrusdal
0
22.5
30
37.5
45 km
Bionerds

2.2 PROPERTY DECSRIPTION - Cedar Rock Voetpad Protected Area			
2.2.1 CEDAR ROCK NATURE RESERVE			
PORTION 0 (THE REMAINING EXTENT) OF FARM NUMBER 310, MATJESKLOOF			
Registration Division	Clanwilliam	Owner Name	Suurfontein Game Reserve CC
Diagram Deed	CLQ8-22/1927	Registration Number	CK94/00038/23
Extent	1012.0593 Hectares	Title Deed Number	T37531/1995
PORTION 1 OF FARM NUMBER 310, MATJESKLOOF			
Registration Division	Clanwilliam	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T1205/1931	Registration Number	4826/97
Extent	441.3370 Hectares	Title Deed Number	T30133/2003
PORTION 1 OF FARM NUMBER 296, OUDEKRAAL			
Registration Division	Clanwilliam	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T10787/1924	Registration Number	4826/97
Extent	3115.1070 Hectares	Title Deed Number	T30133/2003
PORTION 2 OF FARM NUMBER 296, OUDEKRAAL			
Registration Division	Clanwilliam	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T5629/1966	Registration Number	4826/97
Extent	539.8481 Hectares	Title Deed Number	T30133/2003
PORTION 1 (THE REMAINING EXTENT) OF FARM NUMBER 312, NIEUWE GIFT			
Registration Division	Clanwilliam	Owner Name	Suurfontein Game Reserve CC
Diagram Deed	T6695/1910	Registration Number	CK94/00038/23
Extent	3044.1915 Hectares	Title Deed Number	T37531/1995
PORTION 3 OF FARM NUMBER 312, NIEUWE GIFT			
Registration Division	Clanwilliam	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T1203/1931	Registration Number	4826/97
Extent	1391.5722 Hectares	Title Deed Number	T30133/2003
PORTION 4 OF FARM NUMBER 297, VOGELVALLEY			
Registration Division	Clanwilliam	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T9915/1958	Registration Number	4826/97
Extent	626.3401 Hectares	Title Deed Number	T30133/2003
2.2.2 VOETPAD PROTECTED ENVIRONMENT			
PORTION 2 OF FARM NUMBER 1113			
Registration Division	Calvinia	Owner Name	Zuurfontein Reserve Trust
Diagram Deed	T12093/1965	Registration Number	4826/97
Extent	362.4193	Title Deed Number	T30133/2003CTN

2.3 KEY ATTRIBUTES	
The values of a site are those remarkable attributes that led to it being identified as a priority for conservation. The values are important in planning and management, as they are the aspects of the place that must be protected.	
2.3.1 CEDAR ROCK NATURE RESERVE	
Natural Values	1) The CRNR properties fall within the Cederberg Core Corridor of the Greater Cederberg Biodiversity Corridor (GCBC). The properties form part of the Cederberg Conservancy and Rooi Cederberg Karoo Park. 2) The properties are strategically important as the Matjiesrivier Nature Reserve share a boundary with Cedar Rock Nature Reserve on its eastern, western, and southern boundaries. The properties also contribute a vital link between the Cederberg Wilderness, Matjiesrivier Nature Reserve, and the Tankwa Karoo to Cederberg Wilderness Corridor (TKCWC) connection to the Tankwa Karoo National Park. 3) The properties capture large areas of priority ecological process, primarily the ecotone between two biomes (Fynbos and Succulent Karoo). The properties also cover an upland lowland interface as well as an edaphic interface between two soil types from acidic sand to shale. 4) Important river corridors are present on the properties that support limnological processes and migration patterns of native freshwater fishes. 5) The area has been identified as an important historical mammalian movement corridor. Several rare and threatened mammal species (Leopard and Cape Mountain Zebra) have been recorded on the properties. 6) A good representation of endemic, rare and threatened species has been recorded with approximately 20 avifaunal Species of Conservation Concern (SoCC). Reptile SoCC include *Ouroborus cataphractus*, *Goggia hexapora*, *Bitis rubida* and *Naja nigricincta woodi*. 7) The properties need long-term protection for the maintenance of its biodiversity and the provisioning of environmental goods and services.
Ecosystem Service Values	1) Purification and Detoxification: filtration, purification and detoxification of air, water, and soils. 2) Cycling Processes: nutrient cycling, nitrogen fixation, carbon sequestration, soil formation. 3) Regulation and Stabilisation: erosion control, regulation of rainfall and water supply, climate regulation, mitigation of storms and floods. 4) Habitat Provision: refuge for animals and plants, storehouse for genetic material.
Tourism Values	Chalets allow the tourism market to connect with nature and have a cultural, intellectual, and spiritual experience on the properties.
Cultural and Heritage Values	Numerous San Rock Art sites are protected on the properties as well as historical shepherd huts and sheep kraals along with stone age tools.



Rivers and Riparian Zones	2) Non-native Freshwater Fishes.

2.5 ECOLOGICAL CONTEXT

2.5.1 CLIMATE AND WEATHER

The Cederberg falls in the Mediterranean climate zone of South Africa, with hot, dry summers from October to April, and cold, wet winters from May to September. The hottest months on record are January and February while the coldest months recorded are July and August. Winter rains are a result of cold fronts which are a result of frontal depressions that form south of 40° S and are preceded by berg winds that form coastal lows along the west coast. While rainfall is normally associated with cold fronts, thunderstorms in spring and autumn are not uncommon, especially in the eastern portions of the Cederberg where CRVPA is located.

Rainfall measured at Cedar Rock Nature Reserve (2000 - 2019) indicates a sharp peak during June, with the average rainfall far lower than the average for the Cederberg, with an average of 119 mm per annum. Long-term rainfall data of the annual average of monthly median rainfall measured between 1950 and 2000, sourced from the SA Atlas of Climatology and Agrohydrology, indicates that the CRVPA records higher rainfall in the western portions of the Protected Area (PA), 221 mm, and becomes more arid to the eastern portions with an average of 172 mm per annum. This is due to the topography of the PA where the mountains reach elevations greater than 1 000 m, and therefore receive more precipitation in the form of mist than the eastern valleys.

This rainfall variation between the western and eastern portions of the PA is also reflected in long-term mean annual temperatures which reach their lowest average in the west, with an annual average of 13° C, and the highest average in the east with 18.1° C. The hottest month based on long term monthly means of daily average temperature (1950-200) is January, with an average of 19.1° C (maximum mean of 23.9° C) in the west to 25.1° C (maximum mean of 32.5° C) in the east. The same data show that the coldest month is July with an average of 8.3° C (minimum mean of 3.1° C) in the west and 10.9° C (minimum mean of 4.8° C) in the east.

The variation in annual rainfall and temperature results in habitat that is semi-arid in the west and arid in the east, represented in a change from typical Fynbos vegetation in the west to Succulent Karoo habitat in the east. The winter months are dominated by north-westerly winds, while the summer months are associated with south-easterly winds, and can result in increased thunderstorm activity.

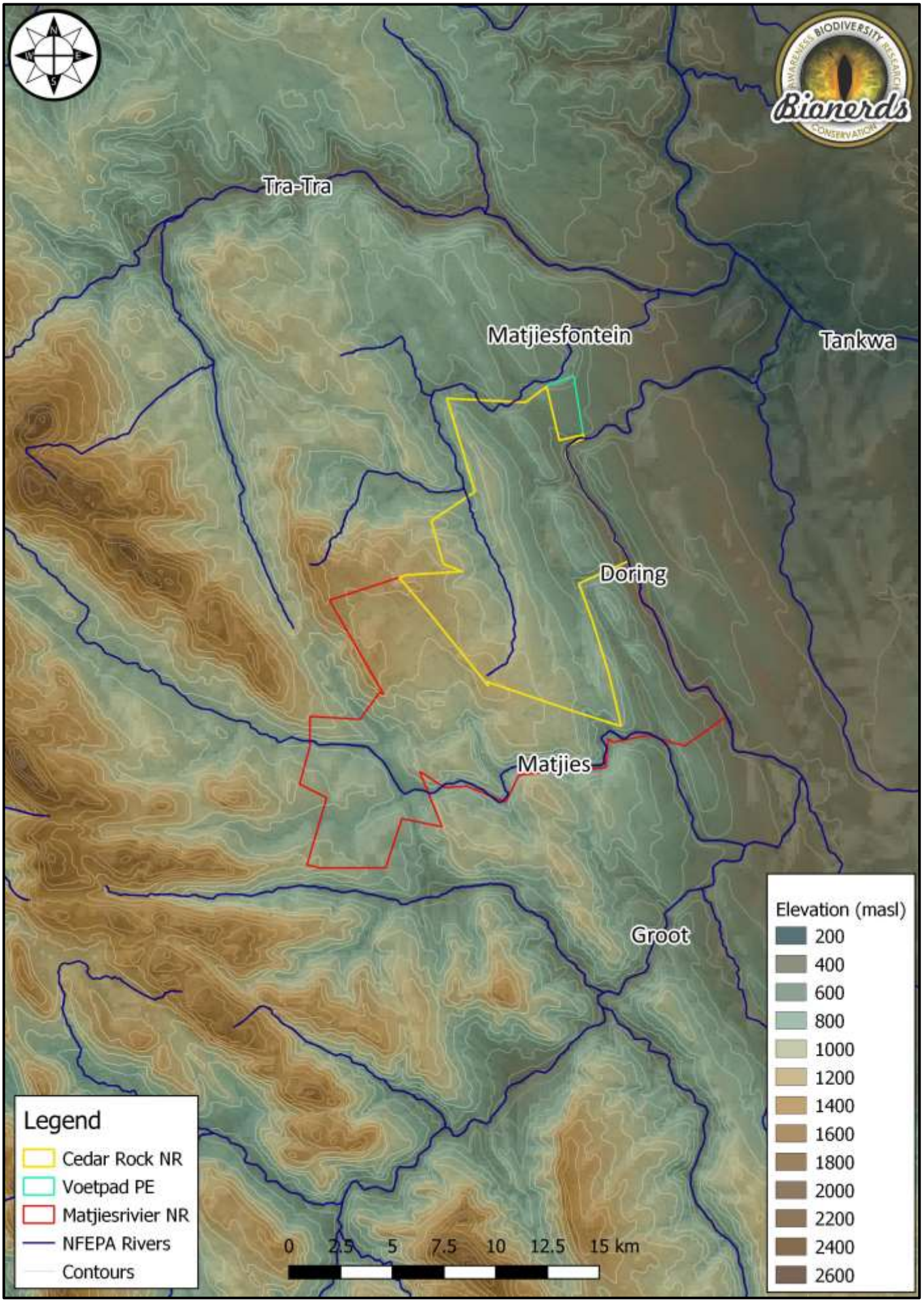
2.5.2 TOPOGRAPHY AND HYDROLOGY

The topography of Cedar Rock Voetpad Protected Area is variable and rugged, with steep valley sides and high ridges in the west of the reserve and valley floors and plateaus in the east. The highest elevation in the CRVPA is in the most western portion of the reserve, at approximately 1 200 meters above sea level (masl). The lowest point is at the deeply incised valley bottoms of the Doring River, approximately 360 masl.

The Cederberg Mountain catchment forms the northern watershed that separates the Olifants River to the west and the Doring River towards the east which form the Olifants-Doring River catchment. CRVPA is located in the watershed that feeds the Matjiesfontein and Matjies Rivers, which feed into the Tra-Tra and Doring Rivers, respectively. The Doring and Tra-Tra Rivers confluence with the Tankwa River near Elandsvlei farm and continues further north as the Doring River which ultimately feeds into the Olifants River system.

The non-perennial rivers in the CRVPA are in a natural condition with the perennial Doring River, which is the eastern boundary of the PA, in a near-natural condition with dense invasive alien stands downstream of the CRVPA. The rivers and the incised valleys not only provide water, but also habitat for the numerous indigenous floral and faunal species. Boreholes are limited to supplying water to the chalets and drinking troughs for game. CapeNature has determined that abstraction is not a significant threat to the freshwater ecosystems in the in the Cederberg Complex.

Of greater concern is the threats posed to rivers from invasive alien plant species in the riparian zones and non-native freshwater fishes within the instream habitat, as well as the presence of invasive alien fish species within the instream habitat. The clearing of invasive alien plants along riparian zones is a priority and is identified as such in the Cederberg Complex PAMP (Protected Area Management Plan) developed by CapeNature.


Tra-Tra
Matjiesfontein
Tankwa
Doring
Matjies
Groot
Legend
Cedar Rock NR
Voetpad PE
Matjiesrivier NR
NFEPA Rivers
Contours
0 2.5 5 7.5 10 12.5 15 km
Elevation (masl)
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600

2.5.3 GEOLOGY AND SOILS

The geology of the eastern Cederberg consists predominantly of quartzites, sandstones and shale bands within the Witteberg formation of the Cape Supergroup developed between 450 - 400 million years ago (Mya) by the sedimentation of silts, mud, and sand. The formations were warped, folded, and uplifted through a subduction zone on the edge of Gondwanaland, and through climate change about 330 Mya ago and the growth of a continental ice sheet, the subsequent drop in sea level exposed the upper Witteberg sediments that could now be eroded. As the Cape Fold Mountains were eroded, parallel ranges developed running in roughly a south to north direction. Further erosion was caused by glacial action when the southern portion of Africa was situated across the South Pole, forming the Dwyka formations, the first stratigraphic layer of the Karoo Supergroup. The Bokkeveld formation was developed approximately 390-370 Mya ago, when shale and sandstone were deposited in river deltas and delta channels to the east. These fossils are exposed in the low-lying riverbeds that have exposed the fossil-bearing horizons of the upper and lower stages of the Bokkeveld formation of the Karoo Supergroup to the east of the Cederberg.

The soils of the CRVPA are predominantly rocky areas with a variety of soils, generally sandy loam to clay loam soils which are derived from the shales and mudstones which are generally highly leached acid sands, low in nutrients with a low moisture retention capacity. Across the Protected Area the bedrock is frequently exposed, while in the flatter areas in valleys deep aeolian sands are found. These soils are derived from shale bands and are more fertile than soils derived from quartzite.

2.5.4 VEGETATION

The Cederberg is located in the Greater Cape Floristic Kingdom and due to the topographic, geological, and climatic diversity, the Cederberg spans two Biodiversity Hotspots, the Cape Floristic Region, the world's smallest but one of the richest floral kingdoms, and the Succulent Karoo, which supports the richest succulent flora on earth.

The vegetation types recorded on CRNR, according to the South African Vegetation Map (Ladislav Mucina and Michael Rutherford) are: Swartruggens Quartzite Fynbos and Swartruggens Quartzite Karoo.

The South African Vegetation Map delineates only Swartruggens Quartszite Karoo vegetation type for the Voetpad Protected Environment.

2.5.4.1 SWARTRUGGENS QUARTZITE FYNBOS

Mountains alternating with broad ridges and plains that support medium dense, moderately tall, restioid and ericoid shrubland with open, emergent, tall proteiod shrubs. The boundary between Fynbos and karoo occurs where the restiods thin out to a point where succulents become dominant.

Endemic taxa – Low Shrubs: *Amphiglossa susannae, Nenax elsieae, Oedera epaleacea, O. foveolate, Phlica pauciflora, Vexatprella amoena.* Succulent Shrubs: *Esterhusenia mucronate, Ruschia littlewoodii.* Herbs: *Moraea fuscomontana, Romulea lilacina.*

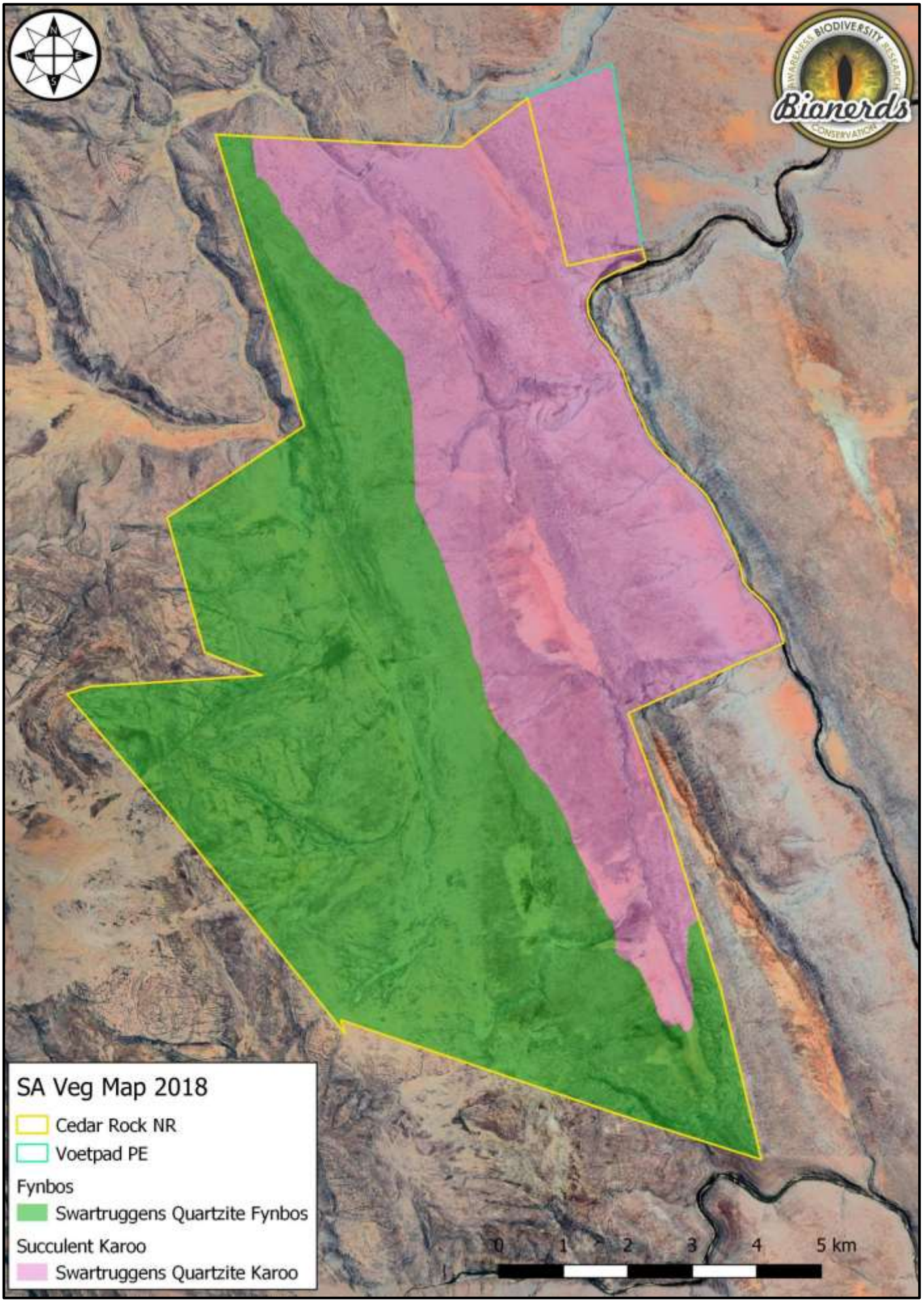
Swartruggens Quartzite Fynbos is a least threatened vegetation type; however, the ecosystem is poorly protected with only 3.7 % of the natural extent (16 1406 hectares) conserved, with a provincial conservation target of 29 %. Approximately 4 % is conserved in Matjiesrivier Nature Reserve, 5 % in Groenfontein Private Nature Reserve and 4 % (5736.32 hectares) conserved in CRNR.

2.5.4.2 SWARTRUGGENS QUARTZITE KAROO

Hilly landscape dissected by valleys and steep rocky slopes supporting succulent shrublands with *Euphorbia, Tylecodon, Phiambolia* represented. Fynbos and renosterveld elements, shared with neighbouring dry sandstone Fynbos units, such as *Willdenowia, Dodonaea* and *Elytropappus* are also important.

Endemic taxa – Succulent Shrubs: *Cephalophyllum alstonii, Phiambolia franciscii, P. hallii, Tylecodon stenocaulis.*

Swartruggens Quartzite Karoo is a least threatened vegetation type; however, the ecosystem is poorly protected with only 5.3 % of the natural extent (28 648 hectares) conserved, with a provincial conservation target of 19 %. Approximately 5 % is conserved in Matjiesrivier Nature Reserve, and 16 % (4645.28 hectares) conserved in CRNR. The proposed proclamation of Aquavita (Os Vley Hoogtens) Contract National Park and Tankwa Protected Environment located in the Tankwa Karoo to Cederberg Wilderness Corridor (TKCWC) will significantly contribute to the protection of Swartruggens Quartzite Karoo vegetation type.


SA Veg Map 2018
Cedar Rock NR
Voetpad PE
Fynbos
Swartruggens Quartzite Fynbos
Succulent Karoo
Swartruggens Quartzite Karoo
0
1
2
3
4
5 km
Bionerds

2.5.5 SPECIES OF CONSERVATION CONCERN
The following Species of Conservation Concern have been recorded on CRVPA.
2.5.5.1 MAMMALS
Cape Mountain Zebra *Equus zebra zebra* Leopard *Panthera pardus* Grey Rhebuck *Pelea capreolus*
2.5.5.2 AVIFAUNA
Verreaux's Eagle *Aquila verreauxii* Cape Eagle-owl *Bubo capensis* Southern Black Korhaan *Afrotis afra* Martial Eagle *Polemaetus bellicosus* Cape Rockjumper *Chaetops frenatus* Ground Woodpecker *Geocolaptes olivaceus*
2.5.5.3 HERPETOFAUNA
Armadillo Girdled Lizard *Ouroborus cataphractus* Cedarberg Dwarf Leaf-toed Gecko *Goggia hexapora* Black Spitting Cobra *Naja nigricincta woodi* Red Adder *Bitis rubida* Berg Adder *Bitis atropos*
2.5.5.4 ARACHNIDS
Cederberg Golden Baboon Spider *Harpactira marksi* Cederberg Dwarf Baboon Spider *Harpactirella sp.* Namaqua Burrowing Scorpion *Opistophthalmus pallipes* Pattison's Burrowing Scorpion *Opistophthalmus pattisoni* Small Rock Scorpion *Hadogenes minor*
2.5.5.5 FLORA
Acanthopsis erosa *Babiana geniculata* *Babiana cederbergensis* *Romulea sulphurea* *Conophytum obcordellum* *Haworthiopsis venosa subsp recurva* *Eriospermum capenses* *Paranomus bracteolaris* *Hoodia gordonii*

2.6 CULTURAL HERITAGE

A rock art survey was implemented on CRVPA and a management plan developed for the Protected Area by the eastern Cederberg Rock Art Group (eCrag) in December of 2013. The purpose of a rock art management plan is to guide activities affecting rock art sites in order to retain their significance and conserve them for future generations. The management plan identifies:

1) ***What needs to be managed*** by surveying and recording the rock art, interviewing local stakeholders, and summarising information on the location of sites, what the rock art comprises and what is known about the history of the CRVPA.

2) ***Who will manage the rock art*** by listing the people who have interests in the place and might be involved in its management.

3) ***The significance of the rock art*** in relation to other local, provincial, and national sites because the plan is designed to retain this significance.

4) ***Key issues that must be addressed*** to retain the significance through consultation with stakeholders.

5) ***The goals, objectives, and strategies*** for management and how they will be implemented.

6) ***Suggestions for documentation and monitoring*** the rock art so that any changes can be detected and the steps that have been taken can be documented.

The Western Cape, with the Cederberg at its core, preserves thousands of rock art sites. In the West Coast region alone, including the Cederberg, the University of Cape Town database has records of about 2500 sites. The quartzites and sandstones of the region have weathered to create a rugged terrain with a high density of suitable surfaces to paint on in rock shelters, overhangs, and boulders.

Rock paintings are the work of the ancestors of San hunter-gatherers (Bushmen), Khoekhoe herders, and people of the recent colonial period. This art includes a wide range of images, types, motifs, and themes, but the diversity can be reduced to a few broadly defined traditions. These are referred to as: fine-line paintings made mainly with a brush (by hunter-gatherers), a range of finger-painted images including dots and lines as well as various types of handprints (mainly by herders), 'crude' images of colonial people, wagons, and horses (made mainly by early European settlers), and graffiti (made by people with writing skills). The value of this art is that it forms part of a complex belief system and historical record spanning many thousands of years. The four categories broadly correlate with people who had vastly different ways of living and held different beliefs. The rock art provides a record of this.

A major problem with much of this art is that it is difficult to date. Consequently, much of the pre-colonial art can only be fitted into a general sequence on the basis of the type of images and how they are associated with other types of archaeological evidence.

Earliest in this sequence is the fine line art, which is also numerically dominant in the Western Cape. Fine lines are generally associated with Later Stone Age Bushmen hunter-gatherers who have a cultural history of at least 8000 years in the region and a much older evolutionary history. The oldest dated fine line images in the region are around 3500 years old, but this simply indicates that older paintings may not have survived or have not been found in a datable context. As the name implies, this is a delicate art, and the red, yellow, orange, white and occasionally black pigments were applied with fine brushes, quills and possibly feathers.

Human figures dominate the fine line images. Both men and women and many figures of indeterminate gender were painted in a number of different social contexts. These include small groups, sometimes depicting dances; solitary hunters driving game into nets; larger 'processions' of people; and therianthropes, which are combinations of human and animal forms. The paintings of animals also had special significance, eland in particular, as well as other antelope. Less frequently painted, but equally significant, were elephants and felines.

The purpose and meaning of the art is difficult to establish in detail without the help of oral history from the original artists. For many years it was thought that the paintings were literal depictions of the landscape in which hunter-gatherers lived. It is now known that the art is more complex than this, and that it was produced within a number of important ritual contexts, such as healing, rainmaking and the initiation of boys and girls into adulthood. The art is therefore essentially religious and relates to complex beliefs and practices.

About 2000 years ago pottery and sheep made their appearance in the Western Cape. They were brought to the region either by immigrants from Botswana or were adopted by local hunter-gatherer groups. Whatever the case, by 1000 CE sheepherding was firmly established. Herders had different belief systems from the hunter-gatherers, and this is reflected in a new set of rock art images that comprise handprints, finger dots and finger lines. Unlike hunter-gatherers, who generally painted their fine line images in rock shelters that were used domestically as camps, herders lived in larger camps out in the open. Finger-painted images may therefore reflect the use of rock shelters in quite different ways that emphasised initiation in seclusion and secrecy, rather than the general communal openness and accessibility of the hunter-gatherer art. Again, it is difficult to date these finger paintings, but it is possible that they date within the last 1500 years and overlap with fine line paintings.

This history of change means that over the last 2000 years hunter-gatherers and herders both shared, and competed over, the Western Cape landscape. The arrival of the Dutch imposed further major social change on the lives of indigenous hunter-gatherers and herders of the Western Cape. Their identities rapidly broke down and by the second half of the 18th century the 'traditional' lifestyles had been displaced and destroyed. Many of these people were incorporated as labour into the rural European farm economy. It is in this late 18th and 19th century context that colonial finger paintings were made.

Lastly, painted rock art sites in the Western Cape sometimes include more recent historical graffiti comprising the names and dates of farm owners and their families or visitors to these sites, as well as Western symbols such as the Christian cross. The idea of graffiti is generally negative, but some graffiti sites provide dates and names that are important at the local level as a record of a family's relationship to their farm. Generally, however, graffiti is gratuitous and often obscures and negatively impacts upon the earlier painted record.

CRNR has 63 sites of which 49 have rock paintings, with a total of 1115 individual paintings, 7 have only stone artefacts, 6 have stone artefacts associated with kraal walling, 1 is a stone-walled kraal without associated artefacts, and 1 is a stone cairn inside a rock shelter.

In addition to rock art, recent archaeological research conducted in the Tankwa Karoo to Cederberg Wilderness Corridor (TKCWC) has resulted in several peer reviewed journal articles published about the Middle Stone Age hunter-gatherers who historically lived in this area. These studies has led to significant archaeological discoveries including the 'Tweefontein' site, which is located in the centre of the TKCWC, about 20km eastwards from the CRVPA. This site is now considered to be the largest Middle Stone Age *unifacial point assemblage in the Northern and Western Cape, for both open air and rock shelter sites. These discoveries are significant in understanding Middle Stone Age adaptations to an arid, marginal environment.

** *unifacial = single bevel of a stone formed as the working edge; Bifacial = both sides of stone sharpened as working edges*

2.6.1 LEGISLATION AFFECTING CULTURAL HERITAGE SITES

CRVPA, together with the entire eastern Cederberg, is an extremely sensitive area in terms of archaeological and environmental protection and conservation. The **National Heritage Resources Act, Act No. 25 of 1999**, defines rock art as "being any form of painting, engraving or other representation on a fixed rock surface,

or loose rock or stone, which was executed by human agency and which is older than 100 years, including an area within 10 metres of such representation". Most of the rock art at CRVPA was executed by ancestors of the San people, and is therefore protected under the Act, together with any other markings made on rock by people more than 100 years ago. In terms of the Act no rock art may be destroyed, damaged, excavated, altered, defaced, or otherwise disturbed or removed without the authorisation of, and a permit from, the responsible heritage authority. For sites located in the Western Cape sections of the CRVPA the authority is Heritage Western Cape, which operates from within the provincial Department of Cultural Affairs and Sport in Cape Town. For sites that may occur on Voetpad Protected Environment it is '*Heritage Northern Cape*' ('*Ngwao Boswa Kapa Bokone'*) which is the Provincial Heritage Resources Authority for the Northern Cape Province and is under the governance of a council appointed by the MEC for Sport, Arts & Culture and is administered by the staff of the Heritage Resources Unit of the Department. A permit is required for the removal of graffiti at a rock art site, for the archaeological excavation or removal of archaeological material from a site, and for the removal of any palaeontological fossils.

2.6.2 SIGNIFICANCE AND VALUE OF ROCK ART ON CRVPA

The rock art and related archaeological sites at CRVPA are significant because they are representative of several layers of history, each of which is the product of a different social and spiritual milieu. The San hunter-gatherer fine-line painting tradition, which began thousands of years ago, reflects not only the cacophony of life in the past, but also the cultural conceptions that influenced the artists when deciding where and what to paint. The tradition persisted in the eastern Cederberg until the influx of Khoekhoe herders who are believed to have introduced the finger-painting tradition within the last 1500 years. In the last 200 years, European settlers, and descendants of the hunter-gatherers and herders, added images of colonial topics. All these paintings therefore have both historical and aesthetic value.

CRVPA is particularly interesting for the number and variety of well-preserved rock art sites which have potential scientific and educational value. Many of the paintings are fairly easily accessible yet their relative isolation has meant that they have authenticity and integrity because they are situated in much the same ecological environment as when they were first painted. The images also retain information about the distribution of fauna because they include animals such as elephant that became extinct in the region within the last two centuries. The Cederberg in general is well known for elaborate depictions of eland that played a particularly important role in San cosmology and beliefs. However, at CRVPA eland are less common than the average at other properties surveyed, comprising 13% of all animals compared with 25% of all animals in 182 sites in the wider eastern Cederberg area. Human figures in dancing postures similar to those adopted by present-day San healers and initiates, illustrate use of the sites for religious and spiritual purposes. While most rock shelters have only a few faded paintings, the larger ones are of a relatively high quality, are in fairly good condition and include a few unusual images.

The CRVPA rock art is of high local significance and would meet the criteria for Grade IIIa in terms of the grading system for heritage sites in the National Heritage Resources Act.

3. STRATEGIC MANAGEMENT FRAMEWORK

3.1 PURPOSE

The primary objective of the Cedar Rock Nature Reserve (CRNR) and Voetpad Protected Environment (VPE) Protected Area Management Plan is to provide a strategic tool for the natural resource management on the protected area according to the key management objectives developed for the site and to inform the implementation of management interventions to fulfil the identified objectives. This allows for the Management Authority to develop and manage the protected areas to ensure that the values and the purpose for which it was established, are achieved, and maintained. Further, the Management Plan will provide for capacity building, future thinking, and continuity of management in both principle and application.

This Management Plan has been developed in accordance with the requirements of the National Environmental Management: Protected Areas Act (Act No. 53 of 2003). The Management Plan has been compiled for the Management Authority by Bionerds (PTY) Ltd and Wilderness Foundation Africa. Where applicable emphasis has been placed on 1) providing conservation management principles and guidelines, and 2) scheduling specific management interventions and activities.

3.2 VISION

The vision describes the management authorities' goals for the operation, protection, and development of the site.

The Vision of the Cedar Rock Nature Reserve and Voetpad Protected Environment is to ensure the long-term preservation of ecosystem structure and function to ensure the conservation of biodiversity through natural processes. The Management Authority of the Protected Areas will strive to achieve effective ecological management through continual improvement of all activities - environmentally, socially, and economically.

3.3 MISSION

The mission determines the purpose of the Management Authority and focuses and directs the realization of the essence of the Reserve.

Suurfontein Game Reserve CC and the Trustees of the Zuurfontein Reserve Trust undertake to hold the principles of biodiversity conservation paramount in their decision-making with respect to the management of Cedar Rock Nature Reserve and Voetpad Protected Environment to ensure that the Vision is achieved.

3.4. POLICY STATEMENTS AND GUIDING MANAGEMENT PRINCIPLES

The guiding policy of the CRVPA is to ensure that ecosystems will be managed with minimal interference to natural processes and the decision making associated with the resilience of ecosystems will be informed by scientifically accepted principles and concepts of conservation biology. When specific management interventions are necessary, where the structure or function of ecosystems have been significantly altered by past management practices, interventions will only be implemented where there are no other alternatives to restore ecological integrity. For example, the manipulation of naturally occurring processes through fire exclusion (firebreaks) may only take place when no alternative exists and where monitoring programmes have demonstrated, that without direct management intervention: 1) the objectives of the management plan may not be realised; 2) there will be significant impact on neighbouring properties; and 3) the protected area itself will be threatened. Should direct management interventions be required, they must be based on scientific information, and will be based on rehabilitation methods that simulate natural processes.

3.4.1 VEGETATION MANAGEMENT POLICY

Vegetation management and monitoring must be implemented to prevent habitat degradation. Management actions such as stocking rates, ecological carrying capacity and veld condition assessments are required for sustainable game management and will form part of the vegetation management policy. Grazing capacities of vegetation types should be managed and calculated based on the current veld condition.

3.4.2 ALIEN VEGETATION MANAGEMENT POLICY

Invasive alien plants (IAP) may not be introduced onto the CRVPA. An alien vegetation management strategy will be developed according to the requirements of Section 76 of the National Environment Management: Biodiversity Act; and associated regulations (Notice 598, 2014) and alien and invasive species lists (Notice 864, 2016). The control of IAP should be implemented where financial resources are available.

3.4.3 FIRE MANAGEMENT POLICY

The CRVPA will strive to maintain a natural fire regime where the guiding principle is that management burns will not be implemented if not supported by ecological data. Natural fires where the ignition point is lightning will only be allowed to burn within CRVPA if ecological monitoring data indicates that fire is required to ensure ecosystem resilience. Should ecological and monitoring data indicate that fire should be excluded, fire exclusion and suppression will be practiced. Infrastructure must be protected.

3.5 MANAGEMENT OBJECTIVES UNDER KEY PERFORMANCE AREAS

The management objectives derived from the CRVPA vision, mission, purpose, and policy are grouped under Key Performance Areas (KPAs) below. In the Annual Plan of Operations, the objectives are prioritised in terms of importance and urgency and management activities are described that will deliver the desired outcomes under each objective.

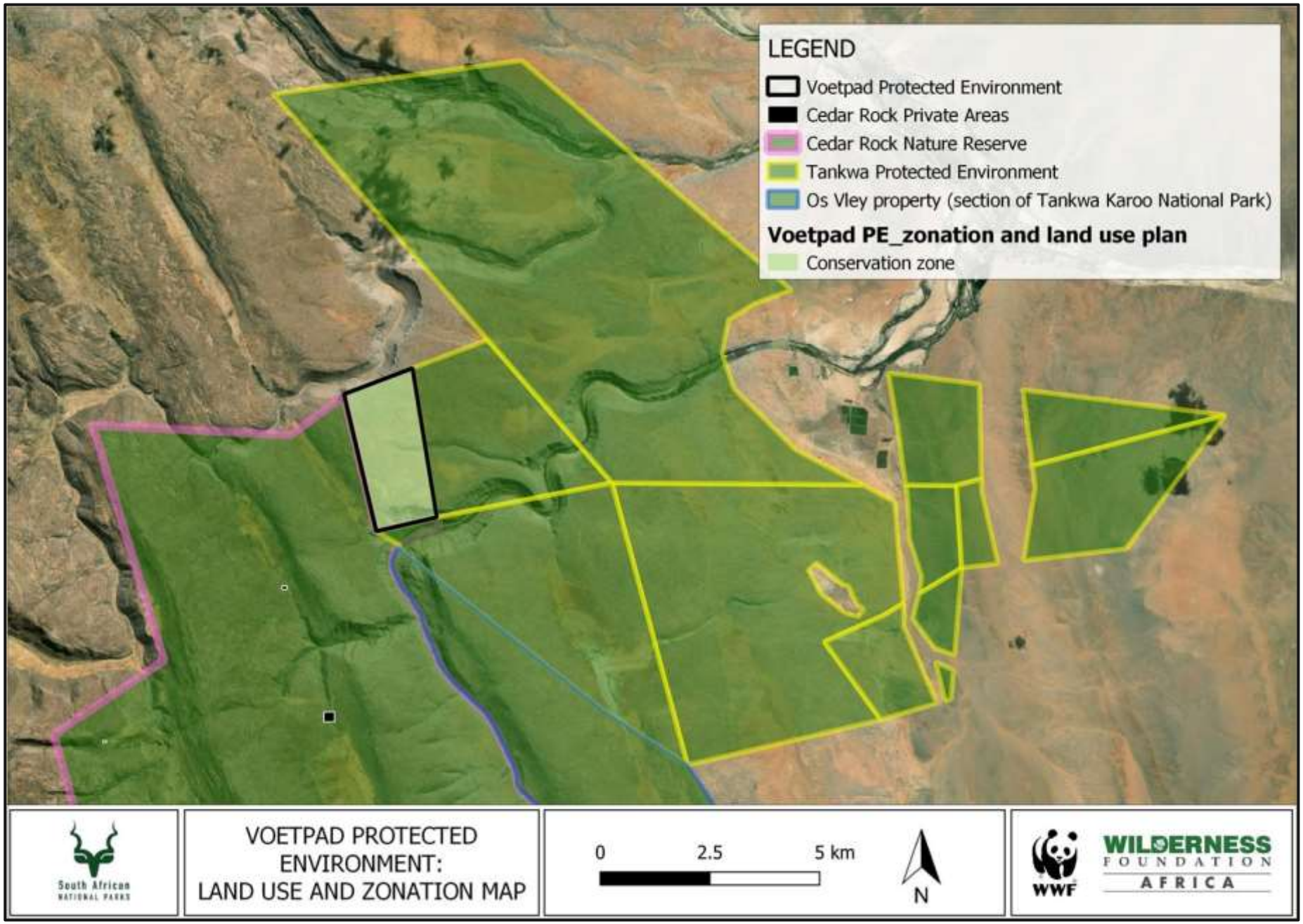
KEY PERFORMANCE AREAS: BIODIVERSITY AND ECOLOGICAL COMPONENTS		
OBJECTIVE	**OBJECTIVE STATEMENT**	**KEY DELIVERABLES**
Integrated Management	*To manage invasive alien plants and the risks associated with uncontrolled wildfire in an integrated way to limit negative impacts on biodiversity and ecosystem function.*	Wildfire: Allow natural fire processes to take place and reduce the risk of uncontrolled wildfire. Alien Vegetation Management: Eradicate invasive alien plant species using mechanical methods.
Aquatic and Riparian Systems	*To conserve the biodiversity and ecosystem function of aquatic and riparian systems on the reserve.*	To determine the health of aquatic ecosystems and identify threats as well as the management actions to be implemented to safeguard and improve aquatic health.
Rehabilitation and Restoration	*To identify areas of degraded ecosystems and habitat in the reserve, understand the causes of degradation and implement rehabilitation measures.*	To limit the loss of biodiversity and disruption to ecological processes due to degraded habitat by determining the extent and cause of degradation (such as soil erosion) and implement rehabilitation measures.
Species of Conservation Concern	*To ensure the biodiversity security of fauna and flora on Cedar Rock Nature Reserve.*	Addressing the threat of Illegal harvesting and collection of charismatic, rare, and endemic fauna and flora.
Wildlife: Game Management	*To ensure effective conservation of faunal species, populations, and inter-relationships in order to enhance biodiversity and maintain and improve ecosystem functioning.*	To manage the introduction of wildlife, evaluate the health of faunal populations, estimate the impact of fauna on the ecosystem.
Wildlife: Veld Condition and Stocking Rate	*Game are effectively used as a management tool to ensure the health of natural vegetation.*	Veld condition assessments are used to determine carrying capacity relative to climatic and rainfall cycles and a grazing plan is compiled which takes into consideration veld condition, game numbers, game species, herd size, camp sizes and grazing frequency per camp with game numbers managed to meet the ecological carrying capacity.
Recreation and Tourism	*To generate income from tourism businesses that make a sustainable contribution towards the conservation management costs of the Protected Area (PA).*	Tourism infrastructure and operations must not have a negative impact on any of the conservation objectives of the reserve while profits from tourism operations should make a meaningful contribution towards conservation management costs.
KEY PERFORMANCE AREAS: CULTURAL HERITAGE		
OBJECTIVE	**OBJECTIVE STATEMENT**	**KEY DELIVERABLES**
Heritage	*To locate, document, and conserve archaeological, paleontological, and cultural heritage features on the PA.*	Systematically map and document all archaeological, paleontological, and cultural features while supporting the study of on-reserve features by experts and to conserve the integrity of all archaeological and heritage features on the PA.

KEY PERFORMANCE AREAS: MANAGEMENT AUTHORITY EFFECTIVENESS AND SUSTAINABILITY

OBJECTIVE	OBJECTIVE STATEMENT	KEY DELIVERABLES
Legal Compliance	*To ensure all reserve declaration documentation is in order and that all activities are compliant with relevant legislation and policies.*	Be fully compliant with all relevant environmental legislation.
Infrastructure and Equipment	*The PA has the necessary infrastructure and equipment to enable the cost-effective achievement of the management objectives.*	Infrastructure and equipment needed to support personnel in implementing the management plan is in place, adequately maintained and kept in safe working order.
Access and Security	*Signage, access control and security measures are put in place that effectively address related threats.*	The perimeter boundary of the PA should be clearly marked with fencing and signage while access onto the property is restricted with locked gates and controlled through a limited number of managed entry points. These security measures must be put in place to address specific threats.
Research and Knowledge	*Knowledge on how to achieve management objectives is gathered, documented, and shared to increase management effectiveness.*	Address knowledge gaps through desk-top research, scientific research, and expert advice to improve management effectiveness.
Monitoring and Evaluation	*To gather data that can inform the PA's management strategy by monitoring threats, tracking progress towards the achievement of management objectives and prioritising budget allocation for management activities.*	Monitoring and Evaluation requirements are documented, and responsibilities assigned. Monitoring activities must be implemented, and data captured, stored, and collated. Monitoring data must be evaluated, and management practices adapted based on insights to improve effectiveness of management through a process of learning and adaption.

3.6 ZONATION PLAN

ZONE	ZONE DESCRIPTION	MANAGEMENT OBJECTIVES	ALLOWED ACTIVITIES
CONSERVATION ZONE	Intrinsically wild appearance and character. Areas where users will seldom encounter other human groups or presence. Any visible human impact or infrastructure inside the zone is unobtrusive. Human activities outside zone may be audible or visible in places. Include extensive areas of sensitive or threatened habitats & species in this low use zone when sites do not meet the criteria for wilderness. *Infrastructure*: Deviation from the natural and/or pristine state to be minimised. No visible infrastructure in Wilderness view sheds. May provide isolated, small, unobtrusive accommodation facilities for up to 16 guests on restricted footprints, particularly for overnight hiking trails. May have defined or beaconed hiking routes, management access roads, tracks, and firebreaks. Roads for visitor's use may only be existing roads or new routes that also allow access for essential management needs. All roads, tracks or trails located and constructed to reduce maintenance, visibility, and erosion.	a) To limit visitor use, numbers, and infrastructure to minimise impact in sensitive environments. b) To reduce need for management of users and visitor impacts. Manage to conserve natural and cultural resources, ecological processes, and wild appearance & character. c) Allows for minimal or more intensive biodiversity management intervention. d) Users: To provide an experience of solitude in natural landscapes with little nearby evidence of human presence. e) Habitats with lower or higher management requirements. (May be natural burning zones.)	**1) The following activities are allowed in the Conservation zone:** *Visitor access:* a) Guided or unguided nature observation; b) Primarily intended for hiking or walking access; c) Only allows for 4x4 routes; and d) Only allows for non-hiking accommodation node if specifically considered and noted. *Visitor Management:* *a)* Restrict numbers of visitors and allow for no-use rest periods if required; *b)* All facilities to be small, basic, self-catering and distributed to avoid contact between users; *c)* There should be limited if any interaction between groups; *d)* Since visitor use usually cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species; *e)* Trail layout, design and construction must reduce maintenance requirements; and *f)* Visible & audible human impacts from adjacent zones should be mitigated. *Conservation Management:* a) Manage ecological fires; b) Prevent or restore visible trampling or any other visitor impact; and c) Rehabilitate non-useful roads to natural vegetation. *Consumptive Use:* a) Sustainable use can be appropriate under controlled circumstances subject to a formal assessment and application in accordance with SANParks policies where applicable. **2) No person may:** Undertake any activity which is not in line with the management philosophy and objectives of the Voetpad Protected Environment. Activities implemented in this zone should be conservation and/or eco tourism orientated.


LEGEND
Voetpad Protected Environment
Cedar Rock Private Areas
Cedar Rock Nature Reserve
Tankwa Protected Environment
Os Vley property (section of Tankwa Karoo National Park)
Voetpad PE_zonation and land use plan
Conservation zone
South African NATIONAL PARKS
VOETPAD PROTECTED ENVIRONMENT: LAND USE AND ZONATION MAP
0
2.5
5 km
N
WWF
WILDERNESS FOUNDATION AFRICA

4. OPERATIONAL MANAGEMENT GUIDELINES

This section translates the strategic framework described above into Key Deliverables and Management Activities, which will be used to inform the Annual Plans of Operation and allocate resources required to implement them. The management targets will form the basis for monitoring of performance in implementing the plan and are thus measurable.

4.1 BIODIVERSITY AND ECOLOGICAL COMPONENTS

4.1.1 INTEGRATED MANAGEMENT

OBJECTIVE STATEMENT: To manage invasive alien plants and the risks associated with uncontrolled wildfire in an integrated way to limit negative impacts on biodiversity and ecosystem function.

4.1.1.1 WILDFIRE

Wildfire Deliverables – Allow natural fire processes to take place and reduce the risk of uncontrolled wildfire.

Fire plays an important role in southern African ecology, and has important effects on vegetation composition, regeneration, primary productivity, and nutrient cycling. The most important use of fire for conservation management is to maintain viable populations of all existing plant and animal species. The use of fire to achieve other management objectives should always take this into account. These may include the reduction in fuel load to prevent unmanageable wildfires, the control of invasive alien plants, increasing water yield from catchments, promoting desirable plants for the flower picking industry, or improving grazing. In developing a fire management strategy, the following guiding principles should be adhered to:

1) Burning should be undertaken in such a way that it maintains spatial and temporal heterogeneity within the landscape.
2) A patch mosaic of burnt and unburnt areas should be maintained. The precautionary principle should be followed, which suggests that a variety of burn practices and veld ages is the best way to maintain species diversity.
3) The burning of areas should be undertaken in such a way that promotes patchy burns (within the block being burnt, some patches will remain unburnt rather than aiming for a complete burn).
4) Season - burn vegetation at the end of autumn, never in winter or spring. Generally, a late summer or early autumn burn is best for Fynbos species, however, prescribed burning in the summer months (Nov – Feb) is seldom advised due to the risk of runaway fires. Burning is usually only feasible in March and April. The season for prescribed burns in the Western Cape is the 15 January – 15 May.
5) Frequency – Do not burn too frequently. Fynbos should be burnt at intervals between 8 and 20 years, while Renosterveld at 7 to 12-year intervals. No fire should be permitted in Fynbos until at least 50% of the population of the slowest-maturing species in an area have flowered for at least three successive seasons. Similarly, a fire is probably not necessary unless a third or more of the plants of these slow-maturing species are senescent (dying or no longer producing flowers and seeds). Prescribed burns should generally not occur more often than every seven years as this may result in a loss of species that have not matured and produced seeds. Research suggests that, under natural conditions, Fynbos should be burnt between eight and 20 years after the last fire. Fire at intervals greater than 25 years may result in the Fynbos becoming senescent but should be informed by the climate and rainfall.
6) The intensity of a fire is influenced by the fuel load, fuel moisture, relative humidity, and wind speed. The intensity can be manipulated by either reducing the fuel load (burning more often) or by selecting the conditions that will lead to the desired type of fire. Most Fynbos species require high intensity fires for survival; however, low intensity burns are often favoured for safety reasons.
7) Burning must be undertaken with consideration of the biodiversity conservation requirements of the site and the need to protect rare and endangered species.
8) The fire breaks should be prepared and maintained annually in a manner that is least damaging to the environment and aesthetics of the property. To this end where possible current management roads and tracks should be utilised.

9) Burning and fire management must be undertaken in a safe manner that is legally compliant with the National Veld and Forest Fire Act (No.101 of 1998).

CapeNature developed a Protected Area Management Plan for the Cederberg Complex which stresses that as large parts of the montane Fynbos within the Cederberg are typically dry and slow to mature, with re-seeding species taking longer to reach reproductive maturity. Preliminary data indicates that a minimum fire return interval of 20 years should be considered for most parts of the Cederberg Complex. Proteaceae pre-fire flowering data collected in two permanent Protea plots indicate that with dry Cederberg Sandstone Fynbos of nine years veld age, only 35 % of plants have flowered more than three times. In moister 10-year-old veld, 45 % of species had flowered more than three times. It is likely that arid Swartruggens Quartzite Fynbos on CRNR, a minimum veld age of 25 years should be considered the threshold to support ecological burns. The Cederberg Complex PAMP does not recommend Swartruggens Quartzite Karoo vegetation in the Matjiesrivier Nature Reserve as an ecosystem that should be included in a fire regime, and the principle is likewise adopted by the CRVPA.

It is recommended that the CRVPA adopt a natural fire management strategy, whereby fires that naturally occur within the landscape are not suppressed where the thresholds for ecological burns in ecosystems are met. Should these requirements not be met, effort should be made to exclude and suppress fires from these ecosystems. Infrastructure must have measures in place to ensure adequate protection from possible fire at all times.

A landscape strategy should be developed for the Cederberg Complex that includes strategic firebreaks and prioritises an ecological burn strategy that includes criteria for when fires are left to burn without suppression activities. The process should be driven by CapeNature, the local Fire Protection Association, Biodiversity Stewardship sites and private landowners, and CRVPA must participate within the process when the opportunity arises.

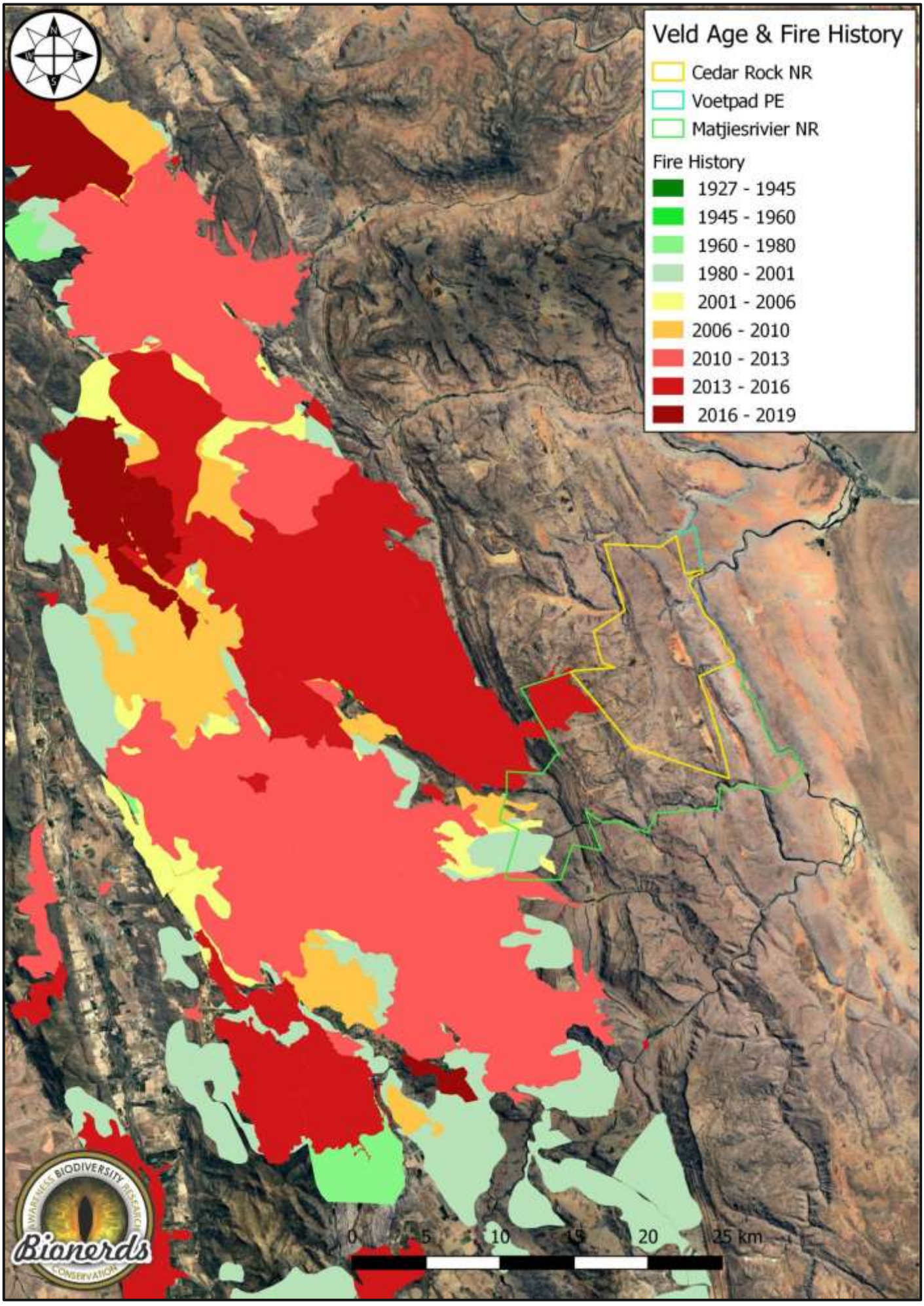
4.1.1.2 ALIEN VEGETATION MANAGEMENT

Alien Vegetation Management Deliverables – Eradicate invasive alien plant species using mechanical methods.

Landowners are under a legal obligation to control invading alien plants occurring on their properties. Planning this procedure is essential for the long-term success of the programme. A listed invasive species means any species, which is listed in terms of section 70 of the Biodiversity Act, whose establishment and spread occurs outside of its natural distribution range. When undertaking invasive plant control, the following guiding principles should be adhered to:

1) Invasive plant control will require an ongoing programme that prioritises key infestations along water courses, drainage lines and upper catchment areas.
2) Initial clearing efforts should focus on areas of young, less dense alien plants, as well as those areas containing infestations that are most likely to spread into new areas.
3) The ability and resources available for follow up operations should determine the size and location of the initial clearing operation.
4) All follow-up requirements must be strictly adhered to otherwise the problem will be exacerbated.

Apart from the AIP infestations in the Doring River along the north eastern boundary of the CRVPA, the PA is in a maintenance phase with respect to IAP. Alien vegetation management should be prioritised wherever recruitment of IAP is discovered, with areas that have recently burnt prioritised for monitoring and clearing should any species be located on site. Where funding is available and deemed feasible for all stakeholders, AIP clearing along the Doring River sections of the PA is recommended to be conducted on a landscape scale. The strategic clearing plan should include combining long terms clearing efforts by neighbours along the Doring River i.e. CapeNature (Matjiesrivier) and SANParks (Aquavita Contract National Park, and Tankwa Protected Environment) and also other infested upstream properties.


Veld Age & Fire History
Cedar Rock NR
Voetpad PE
Matjiesrivier NR
Fire History
1927 - 1945
1945 - 1960
1960 - 1980
1980 - 2001
2001 - 2006
2006 - 2010
2010 - 2013
2013 - 2016
2016 - 2019
0
5
10
15
20
25 km
Bionerds

4.1.2 AQUATIC AND RIPARIAN SYSTEMS

OBJECTIVE STATEMENT: To conserve the biodiversity and ecosystem function of aquatic and riparian systems on the Protected Area.

Aquatic and Riparian Systems Deliverables – To determine the health of aquatic ecosystems and identify threats as well as the management actions to be implemented to safeguard and improve aquatic health.

Aquatic systems are landscape features. Rivers and streams carve a channel through which they flow and are continuous longitudinal systems that are also recognisable by their lateral dimension, the actual water, and the riparian zone. Wetlands, although obvious during the rainy season, are somewhat more amorphous. They are more easily recognised by their vegetation, as supported in the National Water Act (36 of 1998) "…land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

As such, water and these systems are one of the most important natural resources in South Africa and the effective management of catchments, wetlands and river systems secures the availability of this resource for current and future generations. Wetlands play an important role in improving water quality and are also home to unique biodiversity.

The impact of siltation due to erosion and stream bank degradation, have significant negative impacts on wetlands and river systems. Erosion and pollution control measures should always be a priority management objective.

River systems require a minimum *ecological reserve* of water flow in order to support aquatic ecosystems. Upstream extraction for agricultural, industrial, and domestic use can significantly impact river health downstream. It is important to note that landowners do not own the water travelling over or under their lands and any water extraction therefore requires a water use license from the Department of Water and Sanitation.

In managing these aquatic systems, the following guiding principles should be maintained –

1) Where possible, manage the aquatic system together with landowners both up- and down-stream.

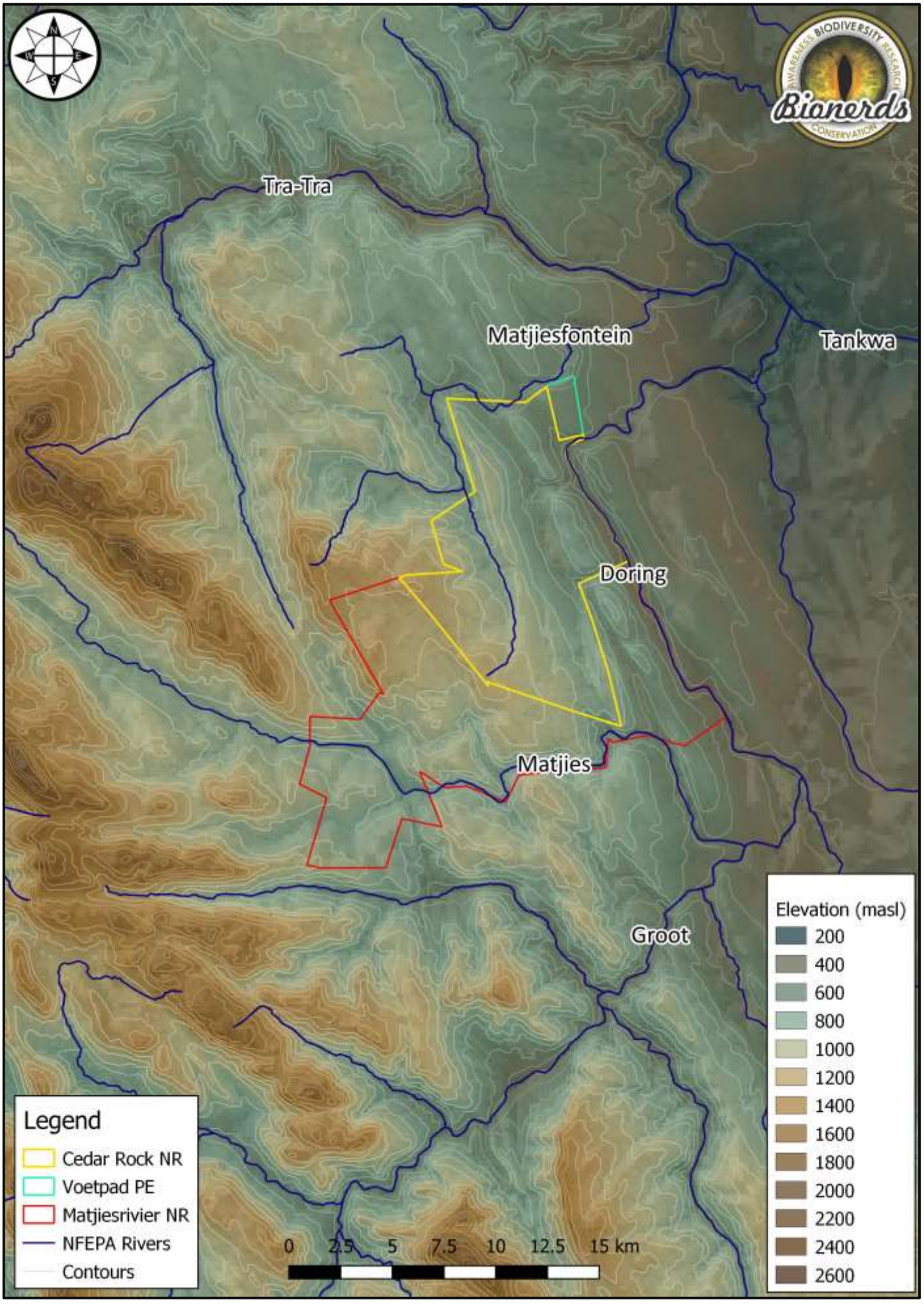
The CRVPA contributes to the catchment of the Matjies, Matjiesfontein and Doring Rivers. The Doring River is of primary concern as the upstream river sections in the Matjiesrivier Nature Reserve are invaded and this affects the riparian health of the Doring River which forms part of the eastern boundary of CRVPA.

2) Prevent excessive water abstraction from rivers, in order to maintain seasonal flow differences.

Minimal extraction occurs on CRVPA and will not contribute towards affecting seasonal flow. Any changes within extraction of water on CRVPA must follow the relevant environmental legislation requirements.

3) Maintain a buffer area adjacent to the river and wetland habitats, clear all alien plants from riparian areas and rehabilitate where required (bank stabilisation).

As rivers are longitudinal systems that require management on the landscape scale, it is necessary to ensure that management of the Doring River must include engagement with CapeNature to ensure that the clearing of IAP upstream is first initiated to effectively control the spread and impact of alien plants on the Doring River. A clearing strategy that includes any invaded portion upstream and downstream of the CRVPA will ensure that management interventions are feasible and sustainable for all landowners involved. This is especially necessary for the Doring and Matjies Rivers which support numerous threatened and endemic freshwater species, including *Austroglanis gilli*, Clanwilliam rock catfish (Vulnerable); *Pseudobarbus calidus* Clanwilliam redfin (Near Threatened); *Pseudobarbus serra* Clanwilliam sawfin (Near Threatened); *Labeo seeberi* Clanwilliam sandfish (Endangered); *Labeobarbus seeberi* Clanwilliam Yellowfish (Near Threatened); *Pseudobarbus sp. "*phlegethon Doring*"* Doring fiery redfin (Critically Endangered). To promote the conservation of these freshwater fishes, it is necessary to develop a multi-stakeholder initiative that will promote the stabilisation of riverbanks, removal of invasive alien plants, control of non-native freshwater fishes and the abstraction of freshwater. The CRVPA should be included in the list of stakeholders that participate in any river management partnerships that are initiated.


Tra-Tra
Matjiesfontein
Tankwa
Doring
Matjies
Groot
Legend
Cedar Rock NR
Voetpad PE
Matjiesrivier NR
NFEPA Rivers
Contours
0 2.5 5 7.5 10 12.5 15 km
Elevation (masl)
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600

4.1.3 REHABILITATION AND RESTORATION

OBJECTIVE STATEMENT: To identify areas of degraded ecosystems and habitat in the Protected Area, understand the causes of degradation and implement rehabilitation measures.

Rehabilitation and Restoration Deliverables – To limit the loss of biodiversity and disruption to ecological processes due to degraded habitat by determining the extent and cause of degradation (such as soil erosion) and implement rehabilitation measures.

Areas of the reserve that have been degraded due to past human activities (over-grazing or inappropriately sited roads and tracks) or are left exposed due to alien plant clearing activities, can have a negative impact on the biodiversity value of the protected area. The primary goal of restoration following degradation is to re-establish a structurally representative stand of indigenous vegetation that fulfils the major ecosystem functions and prevents any further soil structure loss. Where soil structure and other ecological components are intact, the management objective is to restore the area back to a natural state. Where these components have been disturbed, the management goal is to rehabilitate the site so that vegetation resembles the structure and species composition of the naturally occurring vegetation type. It is important to note that disturbed areas that can only be rehabilitated to structurally resemble a natural state can still perform an important role in ecological connectivity.

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

1) Prioritize areas linked to road networks that are degrading road surfaces and increasing erosion through poor water drainage management.

2) Areas impacted by soil erosion should be stabilised and re-vegetated with indigenous plant species to prevent the spread of listed invasive plant species.

4) 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.

5) Keep records of all invaded sites being restored.

4.1.3.1 CRVPA ROAD NETWORK SOIL EROSION

Soil erosion on the CRVPA is limited to drainage issues on the reserve road network. Where soil erosion is encountered the following protocol should be followed:

1) GPS Coordinates for the site recorded along with the extent of erosion, type of erosion and cause of erosion.

2) A soil erosion control intervention developed and initiated.

3) Fixed point photography points set up to assess the rate and success of the rehabilitation intervention.

4.1.3.2 CRVPA ACCESS ROAD SOIL EROSION

Access to CRVPA is through the Matjiesrivier Nature Reserve at a locked gate (S 32°27'30.86" E 19°22'48.02) which is reached by turning off at the Stadsaal Caves infrastructure at a locked gate (S 32°29'58.50" E 19°20'19.20). The road condition in Matjiesrivier Nature Reserve has led to road maintenance and infrastructure development, supported financially and materially by the CRVPA, to minimise the continued degradation of the road surface and increased erosion along the road network, such as point S 32°28'26.54" E 19°22'57.16 illustrated below.

It is critical to ensure that the management of road infrastructure is continued to minimise further damage to the road surface, decrease surface water runoff and associated erosion along the road network, minimise damage to vehicles utilising the road and allow for speedy access to CRVPA in the event of medical or ecological (fire) emergency. Engagement with the Matjiesrivier Nature Reserve management team regarding the timeframe for completion of the road maintenance and soil erosion mitigation, as illustrated below, is important to establish a timeframe for the management intervention conclusion.

4.1.4 SPECIES OF CONSERVATION CONCERN

OBJECTIVE STATEMENT: To ensure the biodiversity security of fauna and flora on Cedar Rock Voetpad Protected Area.

Species of Conservation Concern – Addressing the threat of Illegal harvesting and collection of charismatic, rare, and endemic fauna and flora.

The second biggest threat to faunal and floral species after the destruction of their habitat is illegal hunting and harvesting, which has devastating effects on the local community structure of species and can cause irreparable damage to sensitive ecosystems. There has been an exponential growth in the illegal harvesting of charismatic, endemic, and rare species of fauna and flora in South Africa. Any signs of illegal harvesting, collection or the presence of suspicious persons or activities must be reported to SAPS Crime Stop Hotline at 0860010111, the CapeNature's Biodiversity Crime Unit at 021 866 8000, to the TRAFFIC Wildlife Trade Specialists at 012 342 8304/5, or to the National Environmental Crimes & Incidents Hotline (24 hours) at 0800 205 005. Record as much detail as possible: vehicle registration numbers, vehicle colour, make and model, number of people, time of day, location, and direction of travel – and if possible, take photographs, without risking your well-being.

The species of conservation concern in the Cedar Rock Voetpad Protected Area is highlighted above in Section 2.5.5 Species of Conservation Concern.

4.1.5 WILDLIFE

4.1.5.1 GAME MANAGEMENT

OBJECTIVE STATEMENT: To ensure effective conservation of faunal species, populations, and inter-relationships in order to enhance biodiversity and maintain and improve ecosystem functioning.

Wildlife Deliverables – To manage the introduction of wildlife, evaluate the health of faunal populations, estimate the impact of fauna on the ecosystem.

Many wildlife species are indigenous to the Western Cape region, and the conservation of these species is an important contribution to maintaining ecosystem functioning. Any wildlife management program must integrate the ecological and socio-economic objectives, so as to maximise the value to biodiversity and the protected area, but also to minimize the human-wildlife conflict.

The careful reintroduction of species can enhance the conservation value of the area and increase the marketability of the Protected Area. All reintroductions must be based on sound ecological principles. CapeNature and SANParks (where applicable) must be consulted on the translocation and reintroduction of all fauna.

Small antelope (Cape Grysbok, Common (Grey) Duiker, Steenbok and Vaal (Grey) Rhebok) occur naturally in the area and move freely between farms. There is currently no need to manage these populations.

In managing these wildlife species, the following guiding principles should be maintained –

1) Maintain only those species indigenous to your region.

2) Remove extralimital species from the property.

3) Is the habitat still suitable for the species?

4) Obtain all necessary permits from CapeNature and/or DAERL (Northern Cape Department: Agriculture Environment, Rural Development and Land Reform (where applicable to the Northern Cape) for game management.

Guidelines for Veld and Wildlife Management where developed for the CRNR by Ken Coetzee of Conservation Management Services. The report focussed on the game species that were extirpated from the region and would be viable for reintroduction from the perspective of historical incidence. Springbok, *Antidorcas marsupialis*, Gemsbok, *Oryx gazella*, and Cape Mountain Zebra, *Equus zebra zebra,* were all species that qualified for introduction to the Nature Reserve. Prior to the introduction of Cape Mountain Zebra, a population of Hartmann's Mountain Zebra, *Equus zebra hartmannae*, were captured and removed from CRNR. Habitat assessments indicated that the nature reserve is suitable for the species and all necessary permits were obtained from CapeNature prior to the introduction of all game to CRNR.

4.1.5.2 VELD CONDITION AND STOCKING RATE

OBJECTIVE STATEMENT: Game are effectively used as a management tool to ensure the health of natural vegetation.

Veld Condition and Stocking Rate Deliverables – Veld condition assessments are used to determine carrying capacity relative to climatic and rainfall cycles and a grazing plan is compiled which takes into consideration veld condition, game numbers, game species, herd size, camp sizes and grazing frequency per camp with game numbers managed to meet the ecological carrying capacity.

Vegetation (natural rangelands) has evolved with indigenous grazers and browsers and it is best to emulate their foraging habits. Under natural conditions, one would encounter a high concentration of animals of mixed feeding habits (bulk, selective and concentrate feeders) exerting high pressure on the vegetation and when the quantity of forage decreased, they moved off. The veld then had a period in which to recover and because all plants had been utilised equally the composition was not altered.

Where grazers and browsers have been contained, mismanagement of game numbers and game composition can not only alter vegetation species composition, reduce cover, and cause erosion, but can also threaten biodiversity and the long-term financial viability of this production. The correct utilisation of vegetation by livestock and game is an essential tool to maintain vegetation health and composition. Key factors to ensure that grazing and browsing has a beneficial impact include:

1) Stocking rates Ha/LAU (hectares per large animal unit) – The eastern Cederberg does not have high forage productivity with extreme summer drought and soils low in nutrients not supportive of high stocking rates. Historical grazing practices with domestic livestock proved injudicious and overgrazing left vegetation cover in poor condition. Stocking rates for wildlife must therefore take into consideration the limited carrying capacity of the habitat, the seasonality of forage availability and the need for veld rehabilitation and improvement.

Suitable stocking rates developed for CRNR by Ken Coetzee of Conservation Management Services were guided by the above factors and the vision of the Protected Area. As such the primary objective for the introduction of game is to conserve viable groups of locally indigenous species together with their habitat and not the production of game for offtake as a financial venture. The limitations of available forage also preclude game production as a long-term objective. Stocking rates developed for CRNR were thus conservative and should never exceed 90 Ha/LAU. Habitat assessments on CRNR during the development of the Veld and Wildlife Management Plan grouped ecosystems into three broad habitat types, namely Succulent Karoo on sand, Succulent Karoo on rocky slopes and gravel plains, and Fynbos. The extent and distribution of these habitat types are illustrated in the map below.

The stocking rates for specific habitat types as developed by Conservation Management Services are given below:

Habitat Type	Estimated Area	Stocking Rate	Large Animal Units
Succulent Karoo on sand	1463 Ha	80 Ha/LAU	18.3 LAU
Succulent Karoo on rocky slopes and gravel plains	7087 Ha	90 Ha/LAU	78.7 LAU
Fynbos	975 Ha	125 Ha/LAU	7.8 LAU
	9525 Ha		**104.8 LAU**

The LAU's expressed as game units and recommended by Conservation Management Services are given below:

Species	LAU's / Species	LAU to Game Conversion	Maximum Number	Initial Ceiling
Cape Mountain Zebra	35 LAU	1.61	56	30
Gemsbok	30 LAU	1.79	54	30
Springbok	25 LAU	6.67	167	100
Other Wildlife	14.8 LAU			
	104.8 LAU			

The above figures provide an estimated guide to possible stocking rates for CRNR. The initial ceiling of game numbers is utilised based on the fact that rarely is the entire habitat across a nature reserve utilised by game, as species tend to concentrate on "sweet hotspots" with large areas of habitat not utilised. An amount of 14.8 LAU is reserved for smaller wildlife which are often omitted from consideration of stocking rates for larger animals. These species include dassies, hares, baboon, grey rhebok, klipspringer, and the amount of 14.8 LAU is therefore a small compensation and not an attempted calculation of the actual requirement.

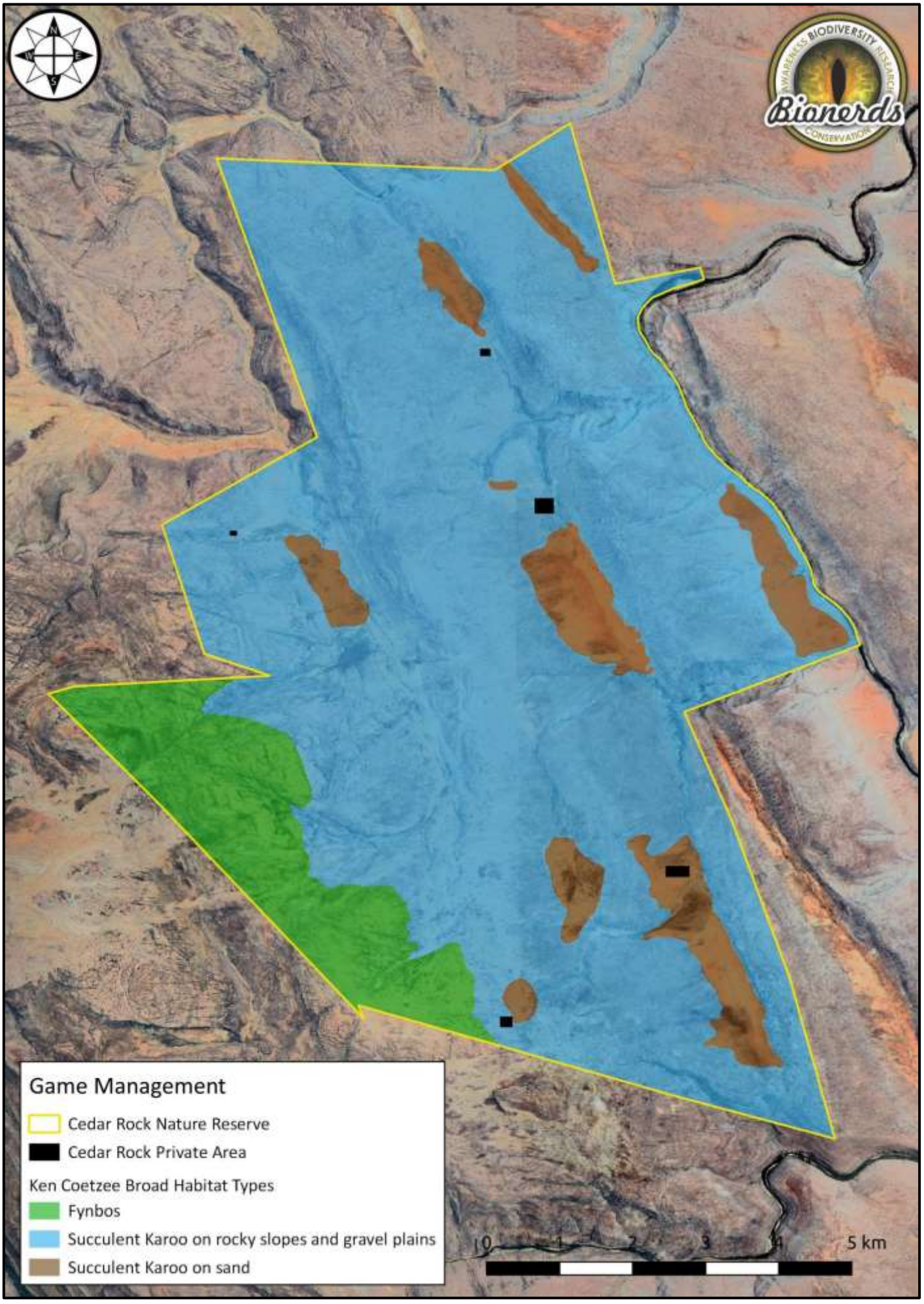
Wilderness Foundation Africa, with input from various Tankwa Karoo farmers, grazing specialists, ecologists and botanists developed 'The Tankwa Karoo to Cederberg Wilderness Corridor Ecological Management Guidelines'. These guidelines include recommended stocking rates for vegetation types occurring in the area including those found on the CRVPA. The recommendations herein are specifically relevant to the drier, less vegetated Tankwa Karoo region which would only be relevant to the Voetpad Protected Environment towards the eastern section of

the CRVPA. As the VPE section was not included in the suitable stocking rates document developed by Conservation Management Services for the CRVPA, it is recommended that 'The Tankwa Karoo to Cederberg Wilderness Corridor Ecological Management Guidelines' recommended stocking rates be applied to the Voetpad Protected Environment. See table below.

Vegetation	Agricultural Carrying Capacity (ha/LAU)	% of Agricultural Carrying Capacity	Recommended ha/LAU for corridor PEs
Swartruggens Quartzite Karoo (Voetpad PE)	72	50%	144

2) Vegetation Monitoring – Vegetation monitoring is the regular, repeatable measurement of the condition of the veld and climate and the evaluation of these measurements in terms of the game management objectives. The results of vegetation monitoring are, therefore, essential in making decisions with respect to veld conditions and indigenous game dependant of the veld. Monitoring systems must be fixed and objective to eliminate subjective opinions about veld condition.

Habitat condition and quality should be evaluated annually to ensure that stocking rates do not exceed the potential of the vegetation to support specific LAU's. Habitat quality and condition is linked to climate and pressure on the veld and cannot be considered fixed. Monitoring, while often considered non-essential by landowners, is critical, especially in semi-arid areas with relatively poor grazing.


Game Management
Cedar Rock Nature Reserve
Cedar Rock Private Area
Ken Coetzee Broad Habitat Types
Fynbos
Succulent Karoo on rocky slopes and gravel plains
Succulent Karoo on sand
0
1
2
3
4
5 km
Bionerds
AWARENESS BIODIVERSITY RESEARCH CONSERVATION

- Fixed Point Photography – a system of vegetation monitoring points should be established at which a photographic record of the vegetation can be made and at which plant species and their density are regularly recorded. A network of photographic monitoring points provides an objective record which can be consulted for an indication of veld condition trends of time. The methodology for fixed point photography monitoring is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.

- Exclusion Plots – one exclusion plot should be established in each broad habitat type. Exclusion plots help assess veld recovery in the absence of utilisation and provide an indication of the pressure of game on veld condition. The methodology for establishing exclusion plots is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.

- Veld Condition Assessments – permanent vegetation transects for recording plant species composition; forage cover abundance and plant utilisation should be established to record improvement or deterioration in the vegetation cover and species condition in relation to grazing pressure. This critical monitoring method provides invaluable information about veld condition and is highly recommended as a basis for informed decision making about veld condition and carrying capacity. The methodology for implementing veld condition assessments is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.

- Rainfall Measurement – rainfall should be accurately recorded at a number of fixed points on the property. Site selection will depend on the ability of management to service and record rainfall at each gauge. Rainfall records are important to help interpret changes in vegetation and wildlife movements and to make informed decisions about wildlife management. The methodology for rainfall measurement is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.

4.2 RECREATION AND TOURISM

OBJECTIVE STATEMENT: To generate income from tourism businesses that make a sustainable contribution towards the conservation management costs of the Protected Area.

Recreation and Tourism Deliverables – Tourism infrastructure and operations must not have a negative impact on any of the conservation objectives of the reserve while profits from tourism operations should make a meaningful contribution towards conservation management costs.

Recreation in natural areas is an excellent tool for reconnecting people with the environment. Besides the important educational function, it is also a possible income stream and there are several opportunities that can be developed without compromising the conservation integrity of the area.

In developing tourism within the protected area, the following guiding principles should be adhered to:

1) Tourism products must be appropriate to the site's values and must not threaten its biodiversity or ecological function.

2) In developing tourism products, requirements for environmental authorisation must be considered and adhered to.

3) Tourism products should be designed to capitalise on the unique beauty and biodiversity features of the site.

4) Tourism products should be developed in response to tourism market demands and opportunities within the site and should be carefully assessed to determine their viability.

All considerations for recreation and tourism have been made to ensure that the vision, mission, and purpose of the nature reserve are achieved with the support of a quality tourism product which facilitates the nature-based tourism experience with minimal impact on ecosystems of CRVPA.

4.3 HERITAGE

OBJECTIVE STATEMENT: To locate, document, and conserve archaeological, paleontological, and cultural heritage features on the reserve.

Heritage Deliverables – Systematically map and document all archaeological, paleontological, and cultural features while supporting the study of on-reserve features by experts and to conserve the integrity of all archaeological and heritage features on the reserve.

The Management Authority is not only a custodian of the reserve in space, but also in time. The landscape in which the Protected Area is located has a number of paleontological, archaeological, and cultural features that need to be discovered, understood, and shared. Partnering with specialists in these fields is necessary to identify these features and ensure they are not damaged and that the sites are suitably preserved for further study.

4.3.1 HERITAGE OBJECTIVES AND DELIVERABLES

The eastern Cederberg Rock Art Group (eCrag) developed a conducted a rock art survey and developed a management plan for the CRVPA in December 2013. Several objectives were identified in the rock art management plan.

Objective 1: Retain the cultural significance of sites at CRVPA by keeping the existing ambience of sites intact.

The following strategies should be implemented to achieve the objective:

1.1) Do not advertise Cedar Rock as a major rock art destination.

1.2) Do not introduce fencing or barriers without consultation with eCRAG or Heritage Western Cape.

1.3) Monitor vegetation around rock art sites and trim back encroaching branches where needed to prevent abrasion and fire damage.

1.4) At least once a year, visit rock art sites that might be frequented by visitors and do a condition assessment.

1.5) Request Janette Deacon to remove existing charcoal graffiti with a permit from Heritage Western Cape.

1.6) Report any damage to rock art to eCRAG through Janette Deacon (janette@conjunction.co.za), the archaeologist at Heritage Western Cape (021 483 9685), or Heritage Northern Cape at 053 831 3319/ rtimothy@nbkb.org.za.

Objective 2: Manage visitor behaviour by understanding the needs, volume, and behaviour of CRVPA visitors and provide appropriate information to raise awareness and educate visitors.

2.1) Check the visitors' book at Leopard Rock regularly for any comments on the rock art and react to threats or changes as required.

2.2) Take necessary action against inappropriate behaviour at rock art sites.

2.3) The Code of Conduct (Appendix D) must be brought to the attention of visitors through an information sheet to be placed in all chalets. This will raise awareness of the role visitors can play in conserving the rock art at Cedar Rock by not touching or brushing against the paintings, not wetting, or putting any substance on them, walking carefully to avoid stirring up dust, not making fires, lighting candles, or smoking in rock art sites, not removing artefacts, identifying potential threats, and keeping the sites clean.

Objective 3: Monitor and keep the painted surfaces and floors of rock shelters stable by following the principle of doing as little as is possible and as much as is necessary.

3.1) Keep prints of photos of rock art sites that are visited regularly in a file at Cedar Rock so they can be compared with the paintings on site to identify changes in condition.

3.2) Monitor the floors and surroundings of sites regularly and record any changes that might threaten the rock art or artefacts.
3.3) Do not try to 'improve' paintings or sites and their surroundings without professional advice from an archaeologist or trained conservator.

Objective 4: Provide opportunities for research that add to the value of the rock art at CRVPA.

4.1) Notify eCRAG of rock art sites that are not listed in Annexure 5 and should be included in the SAHRIS database.

4.2) Encourage researchers to investigate aspects of the rock art at Cedar Rock.

4.3.2 HERITAGE DOCUMENTATION AND MONITORING

All site record sheets, digital photos and site location maps for CRVPA have been entered into the SAHRIS national heritage resources database. Access to SAHRIS can be arranged for the property owner if requested. All new sites will be added to the database.

As monitoring of sites is an important feature of the management plan, it is recommended that a monitoring schedule be drawn up for the next five years. It should be reviewed and revised at the end of that period.

The monitoring schedule can consist of a table which lists the site number, the GPS co-ordinates, the date of each visit, and comments on the condition of the site and surroundings. Copies of monitoring reports should be sent to eCRAG.

4.4 MANAGEMENT AUTHORITY EFFCTIVENESS AND SUSTAINABILITY

The objectives in this key performance area are often overlooked in management plans as it is 'taken for granted' that the Management Authority has already addressed them in other areas of their business. These objectives are however fundamentally important for the long-term, successful implementation of the protected area management plan.

4.4.1 LEGAL COMPLIANCE

OBJECTIVE STATEMENT: To ensure all reserve declaration documentation is in order and that all activities are compliant with relevant legislation and policies.

Legal Compliance Deliverables – Be fully compliant with the Protected Area legislation.

Through the landowners of the Protected Area, the Management Authority has been mandated to enforce laws related to the conservation of the site, which prohibit particular activities. In fulfilling this role, the managers of CRVPA will adhere to the following guiding principles:

1) The Management Authority will comply with its legal and reporting commitments, according to the National Environmental Management: Protected Areas Act.

2) The Management Authority will adhere to legislative requirements and permitting for all development, water management and biodiversity management activities.

4.4.2 INFRASTRUCTURE AND EQUIPMENT

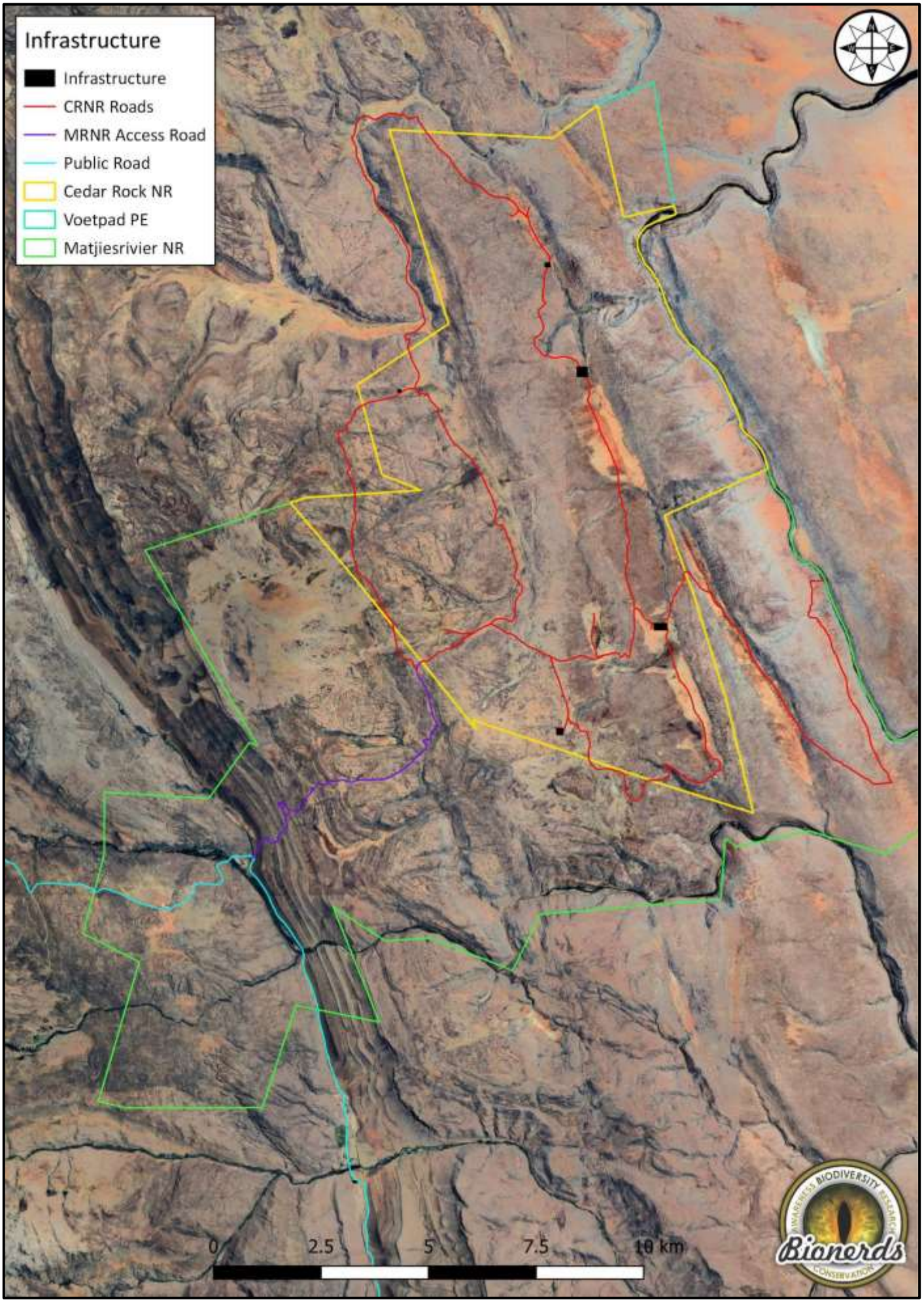
OBJECTIVE STATEMENT: The Protected Area has the necessary infrastructure and equipment to enable the cost-effective achievement of the management objectives.

Infrastructure and Equipment Deliverables – Infrastructure and equipment needed to support personnel in implementing the management plan is in place, adequately maintained and kept in safe working order.

In order for the Protected Area (PA) to operate appropriately, adequate infrastructure needs to be developed and maintained both for management and tourism purposes. In addressing infrastructure needs at the site, the following guiding principles will be adhered to:

1) Infrastructure must be provided to ensure the effective management and operation of the PA.

2) Infrastructure must be maintained to avoid any damage to the environment and ensure the safety of staff and visitors to the site.


Infrastructure
Infrastructure
CRNR Roads
MRNR Access Road
Public Road
Cedar Rock NR
Voetpad PE
Matjiesrivier NR
0
2.5
5
7.5
10 km
Bionerds

4.4.3 SIGNAGE, ACCESS CONTROL AND SECURITY
OBJECTIVE STATEMENT: Signage, access control and security measures are put in place that effectively address related threats.
Signage, Access Control and Security Deliverables – The perimeter boundary of the PA should be clearly marked with fencing and signage while access onto the property is restricted with locked gates and controlled through a limited number of managed entry points. These security measures must be put in place to address specific threats.
Access to the Protected Area (PA) needs to be controlled and conditions of entry for visitors into the PA should be clearly stipulated on signboards at access points. Fencing needs to be effective in terms of demarcating the property boundary, restricting, or allowing the movement of wildlife and livestock and performing a security function if required. Law enforcement efforts should be coordinated with the relevant authorities including CapeNature, SANParks and the South African Police Service in addressing offences and breaches of the law. Law enforcement at the site will be undertaken through surveillance, monitoring and appropriate reaction in the event of an offence.
4.4.4 RESEARCH AND MANAGEMENT KNOWLEDGE
OBJECTIVE STATEMENT: Knowledge on how to achieve management objectives is gathered, documented, and shared to increase management effectiveness.
Research and Management Knowledge Deliverables – Address knowledge gaps through desk-top research, scientific research, and expert advice to improve management effectiveness.
In order to effectively achieve the intended outcomes of the management objectives, the Management Authority needs to apply sound knowledge and, at times, the findings of scientific research to determine the most effective management strategy. Much of this knowledge may historically reside with the Management Authority, however some specialised insights may need to be gathered from partner organisations and/or subject matter experts. In some cases, specific research may be required to determine the best course of action to achieve a desired outcome. Establishing partnerships with academic institutions, making the Protected Area an attractive site for student researchers, and compiling a list of management problems that can be addressed by research projects will help to grow the knowledge base through scientific research.

5. MONITORING PLAN

5.1 MONITORING AND EVALUATION

OBJECTIVE STATEMENT: To gather data that can inform the reserves management strategy by monitoring threats, tracking progress towards the achievement of management objectives and prioritising budget allocation for management activities.

Monitoring and Evaluation Deliverables – Monitoring and Evaluation requirements are documented, and responsibilities assigned. Monitoring activities must be implemented, and data captured, stored, and collated. Monitoring data must be evaluated, and management practices adapted based on insights to improve effectiveness of management through a process of learning and adaption.

Monitoring and evaluation is an essential component of the adaptive management process.

5.1.1 ECOLOGCAL MONITORING

Long-term ecological monitoring, from a clear baseline, enables the Protected Area management team to determine if the implemented management activities are achieving the intended outcomes in terms of species conservation and ecological health. Additional ecological indicators may be required to effectively monitor species and ecosystem health. The implementation of veld condition monitoring as developed in the Guidelines for Veld and Wildlife Management by Conservation Management Services.

5.1.2 MONITORING MANAGEMENT EFFECTIVENESS

Every action in the APO has a Key Performance Indicator (KPI) and target. Monitoring and reporting on these targets enable the assessment of management effectiveness. These KPIs and targets can also be used to measure the performance of personnel responsible for implementing the different aspects of the Management Plan. During the annual review and planning workshop, performance against KPI targets must be assessed in order to accurately inform the actions in the following year's APO.

6. IMPLEMENTING THE PROTECTED AREA MANAGEMENT PLAN

6.1 THE ANNUAL REVIEW AND PLANNING WORKSHOP

6.1.1 THE ANNUAL REVIEW

The purpose of undertaking an annual review of implementation of the protected area Management Plan will be to:

1) Determine how effectively the Management Plan has been implemented.

2) Assist in determining the focus for the annual plan of operation and the setting of appropriate time frames.

3) Enable effective adaptive management by identifying changes and modifying management interventions.

The annual audit will form the basis of the Management Plan review. This should include records of recommendations for update/changes to the annual revision of the management schedules as well as the five-year plan.

6.1.2 THE ANNUAL PLAN OF OPERATION

The Annual Plan of Operation (APO), provided in Appendix E, forms an integral part of the Protected Area Management Plan. The APO is documented for the following reasons:

1) To allow for ease of use as a management tool.

2) To facilitate updates and changes.

6.1.3 DRAFTING THE NEXT YEAR'S ANNUAL PLAN OF OPERATION

Either as part of the review process or directly after the review, the PA management team should compile the list of management actions for the following years APO.

The following steps should be taken:

1) Review performance of previous year's management actions under each Management Objective. Make note of actual performance relative to the targets set. Discuss challenges experienced and ways to overcome them.

2) You can now revise the targets, person responsible, budget and deadlines if necessary. If the indicators used previously were found to be an ineffective indicator, specify a new indicator.

3) Systematically work through the APO in this manner one management objective at a time.

6.2 FIVE YEAR REVISION OF THE PROTECTED AREA MANAGEMENT PLAN

Legislation stipulates a maximum of a five-year management period prior to the revision of the Strategic Management Plan (SMP) section of the PAMP. The SMP can be revised after a shorter management period and this is recommended for a newly established Protected Area where significant management outcomes and infrastructure development is taking place.

Appendices:

APPENDIX A - List of statutes to which the Protected Area is subject

Biodiversity and Cultural Resource Management and Development:

- Animals Protection Act [No. 71 of 1962]
- Atmospheric Pollution Prevention Act [No. 45 of 1965]
- Conservation of Agricultural Resources Act [No. 43 of 1983]
- Constitution of the Republic of South Africa [No. 108 of 1996]
- Criminal Procedures Act [1977]
- Environment Conservation Act [No. 73 of 1989]
- Forest Act [No. 122 of 1984]
- Hazardous Substances Act [No. 15 of 1973]
- Western Cape Heritage Management Act [No. 10 of 1997]
- Western Cape 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:

- Companies Act [No.71 of 2008]
- Promotion of Access to Information Act [No. 2 of 2000]
- Occupational Health and Safety Act [No. 85 of 1993]
- Western Cape Planning and Development Act [No. 5 of 1998]
- 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]
- Water Services Act [No. 108 of 1997]

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]

APPENDIX B - Copies of Cedar Rock Nature Reserve and Voetpad Protected Environment proclamation notices.

(TO BE ADDED WHEN AVAILABLE)

APPENDIX C - Species Lists

CRNR BOTANICAL SPECIES LIST (1 OF 5)

FAMILY	GENUS	SPECIES	STATUS	TRADE RISK
AGAVACEAE	*Chlorophytum*	*undulatum*	LC	
AIZOACEAE	*Conophytum*	*obcordellum subsp. obcordellum*	LC	HIGH
AIZOACEAE	*Galenia*	*africana*	LC	
AIZOACEAE	*Mesembryanthemum*	*crystallinum*	LC	
AIZOACEAE	*Oscularia*	*cedarbergensis*	LC	
AIZOACEAE	*Ruschia*	*marianae*	DDT	
AIZOACEAE	*Tetragonia*	*distorta*	DDT	
AMARANTHACEAE	*Salsola*	*kali*	Not Evaluated	
AMARYLLIDACEAE	*Boophone*	*haemanthoides*	LC	
AMARYLLIDACEAE	*Brunsvigia*	*bosmaniae*	LC	
AMARYLLIDACEAE	*Crinum*	*variabile*	LC	
AMARYLLIDACEAE	*Crossyne*	*flava*	LC	
AMARYLLIDACEAE	*Gethyllis*	*verticillata*	LC	
ANACARDIACEAE	*Searsia*	*undulata*	LC	
APIACEAE	*Polemanniopsis*	*marlothii*	LC	
APOCYNACEAE	*Gomphocarpus*	*cancellatus*	LC	
APOCYNACEAE	*Gomphocarpus*	*fruticosus subsp. fruticosus*	LC	
APOCYNACEAE	*Hoodia*	*gordonii*	DDT	HIGH
APOCYNACEAE	*Huernia*	*barbata*	LC	MEDIUM
APOCYNACEAE	*Microloma*	*armaturm var. armaturm*	LC	
APOCYNACEAE	*Microloma*	*sagittatum*	LC	
APOCYNACEAE	*Quaqua*	*mammilaris*	LC	MEDIUM
APOCYNACEAE	*Stapelia*	*arenosus*	LC	MEDIUM
APOCYNACEAE	*Tridentea*	*parvipuncta subsp. truncata*	LC	MEDIUM
APONOGETONACEAE	*Aponogeton*	*distachyos*	LC	
ASPHODELACEAE	*Aloe*	*comosa*	LC	
ASPHODELACEAE	*Aloe*	*microstigma*	LC	
ASPHODELACEAE	*Bulbine*	*falax*	LC	
ASPHODELACEAE	*Bulbine*	*mesembryanthemoides*	LC	
ASPHODELACEAE	*Haworthia*	*nortieri*	LC	MEDIUM
ASPHODELACEAE	*Haworthiopsis*	*venosa subsp. recurva*	VU	HIGH
ASPHODELACEAE	*Trachyandra*	*bulbinifolia*	LC	
ASPHODELACEAE	*Trachyandra*	*laxa var. laxa*	LC	
ASTERACEAE	*Amellus*	*alternifolius*	LC	
ASTERACEAE	*Amphiglossa*	*grisea*	LC	
ASTERACEAE	*Amphiglossa*	*rudolphii*	LC	
ASTERACEAE	*Amphiglossa*	*tomentosa*	LC	
ASTERACEAE	*Arctotheca*	*prostata*	LC	
ASTERACEAE	*Arctotis*	*revoluta*	LC	
ASTERACEAE	*Crassothonna*	*cf. cylindrica*	LC	
ASTERACEAE	*Crassothonna*	*protecta*	LC	
ASTERACEAE	*Chrysocoma*	*ciliata*	LC	
ASTERACEAE	*Cineraria*	*canescens*	LC	
ASTERACEAE	*Dicoma*	*picta*	LC	
ASTERACEAE	*Elytropappus*	*rhinocerotis*	LC	

CRNR BOTANICAL SPECIES LIST (2 OF 5)

FAMILY	GENUS	SPECIES	STATUS	TRADE RISK
ASTERACEAE	*Eriocephalus*	*punctulatus*	LC	
ASTERACEAE	*Euryops*	*wagenari*	LC	
ASTERACEAE	*Felicia*	*dubia*	LC	
ASTERACEAE	*Helichrysum*	*aureofolium*	LC	
ASTERACEAE	*Helichrysum*	*hebelepis*	LC	
ASTERACEAE	*Helichrysum*	*moeserianum*	LC	
ASTERACEAE	*Helichrysum*	*zeyheri*	LC	
ASTERACEAE	*Hirpicium*	*alienatum*	LC	
ASTERACEAE	*Lasiospermum*	*brachyglossum*	LC	
ASTERACEAE	*Metalasia*	*dregeana*	LC	
ASTERACEAE	*Oncosiphon*	*grandiflorum*	LC	
ASTERACEAE	*Osteospermum*	*grandiflorum*	LC	
ASTERACEAE	*Othonna*	*euphorbioides*	LC	
ASTERACEAE	*Othonna*	*perfoliata*	LC	
ASTERACEAE	*Othonna*	*cf. heterophylla*	LC	
ASTERACEAE	*Othonna*	*quercifolia*	LC	
ASTERACEAE	*Othonna*	*spinescens*	DDT	
ASTERACEAE	*Pegolettia*	*retrofacta*	LC	
ASTERACEAE	*Pteronia*	*cinerea*	LC	
ASTERACEAE	*Pteronia*	*divericata*	LC	
ASTERACEAE	*Pteronia*	*fastigiata*	LC	
ASTERACEAE	*Pteronia*	*glomerata*	LC	
ASTERACEAE	*Pteronia*	*membranacea*	LC	
ASTERACEAE	*Pteronia*	*paniculata*	LC	
ASTERACEAE	*Pteronia*	*undulata*	LC	
ASTERACEAE	*Pteronia*	*viscosa*	LC	
ASTERACEAE	*Senecio*	*cinerascens*	LC	
ASTERACEAE	*Senecio*	*sarcoides*	LC	
ASTERACEAE	*Senecio*	*sophioides*	LC	
ASTERACEAE	*Ursinia*	*anthemoides subsp anthemoides*	LC	
ASTERACEAE	*Ursinia*	*nana subsp.nana*	LC	
ASTERACEAE	*Ursinia*	*pilifera*	LC	
BRASSICACEAE	*Heliophila*	*amplexicaulis*	LC	
BRASSICACEAE	*Heliophila*	*arenaria*	LC	
BRASSICACEAE	*Heliophila*	*variabilis*	LC	
CAPPARACEAE	*Cadaba*	*affila*	LC	
CARYOPHYLLACEAE	*Dianthus*	*bolusii*	LC	
COLCHICACEAE	*Colchicum*	*scabromarginatum*	LC	
COLCHICACEAE	*Ornithoglossum*	*undulatum*	LC	
CRASSULACEAE	*Adromischus*	*hemisphaericus*	LC	
CRASSULACEAE	*Cotyledon*	*orbiculata var. orbiculata*	LC	
CRASSULACEAE	*Crassula*	*alpestris subsp. alpestris*	LC	
CRASSULACEAE	*Crassula*	*atropupurea var. cultiformis*	LC	
CRASSULACEAE	*Crassula*	*atropurpurea var. purcelli*	LC	
CRASSULACEAE	*Crassula*	*brevifolia*	LC	
CRASSULACEAE	*Crassula*	*corallina*	LC	
CRASSULACEAE	*Crassula*	*columnaris subsp. columnaris*	LC	

CRNR BOTANICAL SPECIES LIST (3 OF 5)

FAMILY	GENUS	SPECIES	STATUS	TRADE RISK
CRASSULACEAE	*Crassula*	*dejecta*	LC	
CRASSULACEAE	*Crassula*	*expansa subsp expansa*	LC	
CRASSULACEAE	*Crassula*	*expansa subsp pyrifolia*	LC	
CRASSULACEAE	*Crassula*	*fallax*	LC	
CRASSULACEAE	*Crassula*	*muricata*	LC	
CRASSULACEAE	*Crassula*	*muscosa*	LC	
CRASSULACEAE	*Crassula*	*muscosa var. muscosa*	Not Evaluated	
CRASSULACEAE	*Crassula*	*namaquensis subsp. lutea*	LC	
CRASSULACEAE	*Crassula*	*nudicaulis var. nudicaulis*	LC	
CRASSULACEAE	*Crassula*	*pubescens subsp. pubescens*	LC	
CRASSULACEAE	*Crassula*	*rupestris subsp. Rupestris*	LC	
CRASSULACEAE	*Crassula*	*saxifraga*	LC	
CRASSULACEAE	*Crassula*	*subaphylla var. subaphylla*	LC	
CRASSULACEAE	*Crassula*	*tomentosa var. tomentosa*	LC	
CRASSULACEAE	*Crassula*	*tomentosa var. glabrifolia*	LC	
CRASSULACEAE	*Crassula*	*unbella*	LC	
CRASSULACEAE	*Tylecodon*	*occultans*	LC	
CRASSULACEAE	*Tylecodon*	*paniculatus*	LC	
CRASSULACEAE	*Tylecodon*	*reticulatus subsp. reticulatus*	LC	
CRASSULACEAE	*Tylecodon*	*ventricosus*	LC	
CRASSULACEAE	*Tylecodon*	*wallichii subsp. wallichii*	LC	
CUCURBITACEAE	*Kedrostis*	*africana*	LC	
EUPHORBIACEAE	*Euphorbia*	*hamata*	LC	
EUPHORBIACEAE	*Euphorbia*	*loricata*	LC	
EUPHORBIACEAE	*Euphorbia*	*mauritanica*	LC	
FABACEAE	*Aspalathus*	*shawii*	LC	
FABACEAE	*Lessertia*	*macroflora*	LC	
FABACEAE	*Wiborgia*	*monoptera*	LC	
GERANIACEAE	*Monsonia*	*crassicaulis*	LC	
GERANIACEAE	*Pelargonium*	*alternans*	LC	
GERANIACEAE	*Pelargonium*	*carneum*	LC	
GERANIACEAE	*Pelargonium*	*crithmefolium*	LC	
GERANIACEAE	*Pelargonium*	*dasyphyllum*	LC	
GERANIACEAE	*Pelargonium*	*magenteum*	LC	
GUNNERACEAE	*Gunnera*	*perpensa*	LC	
HYACINTHACEAE	*Albuca*	*spiralis*	LC	
HYACINTHACEAE	*Lachenalia*	*elegans*	LC	
HYACINTHACEAE	*Lachenalia*	*framesii*	LC	
HYACINTHACEAE	*Lachenalia*	*multifolia*	LC	
HYACINTHACEAE	*Massonia*	*depressa*	LC	
HYACINTHACEAE	*Ornithogalum*	*thyrsoides*	LC	
HYPOXIDACEAE	*Empodium*	*flexile*	LC	
IRIDACEAE	*Babiana*	*cederbergensis*	Rare	HIGH
IRIDACEAE	*Babiana*	*praemorsa*	Rare	HIGH
IRIDACEAE	*Freesia*	*occidentalis*	LC	
IRIDACEAE	*Lapeirousia*	*fabricii*	LC	
IRIDACEAE	*Moreae*	*unguiculata*	LC	

CRNR BOTANICAL SPECIES LIST (4 OF 5)

FAMILY	GENUS	SPECIES	STATUS	TRADE RISK
IRIDACEAE	*Romulea*	*sulphurea*	VU	HIGH
IRIDACEAE	*Xenoscapa*	*fistulosa*	LC	
MENISPERMACEAE	*Antizoma*	*miersiena*	LC	
MESEMBRIANTHEMACEAEA	*Antimima*	*paucifolia*	LC	
MESEMBRIANTHEMACEAEA	*Aridaria*	*brevicapra*	LC	
MESEMBRIANTHEMACEAEA	*Aridaria*	*noctiflora subsp. noctiflora*	LC	
MESEMBRIANTHEMACEAEA	*Braunsia*	*apiculata*	LC	
MESEMBRIANTHEMACEAEA	*Brownanthus*	*vaginatus*	LC	
MESEMBRIANTHEMACEAEA	*Cephalophyllum*	*alstonii*	LC	
MESEMBRIANTHEMACEAEA	*Conophytum*	*obcordellum var. obcordellum*	LC	
MESEMBRIANTHEMACEAEA	*Drosanthemum*	*framesii*	LC	
MESEMBRIANTHEMACEAEA	*Drosanthemum*	*hispidum*	LC	
MESEMBRIANTHEMACEAEA	*Lampranthus*	*martleyi*	DDT	
MESEMBRIANTHEMACEAEA	*Lampranthus*	*uniflorus*	LC	
MESEMBRIANTHEMACEAEA	*Lampranthus*	*watermeyeri*	LC	
MESEMBRIANTHEMACEAEA	*Leipoldtia*	*schultzei*	LC	
MESEMBRIANTHEMACEAEA	*Malephora*	*prupurae-crocea*	LC	
MESEMBRIANTHEMACEAEA	*Mesembryanthemum*	*crystallinum*	LC	
MESEMBRIANTHEMACEAEA	*Mesembryanthemum*	*excavatum*	LC	
MESEMBRIANTHEMACEAEA	*Mesembryanthemum*	*nodiflorum*	LC	
MESEMBRIANTHEMACEAEA	*Phyllobolus*	*nitidus*	LC	
MESEMBRIANTHEMACEAEA	*Prenia*	*pallens*	LC	
MESEMBRIANTHEMACEAEA	*Prenia*	*tertragona*	LC	
MESEMBRIANTHEMACEAEA	*Psilocaulon*	*coriarium*	LC	
MESEMBRIANTHEMACEAEA	*Psilocaulon*	*junceum*	LC	
MESEMBRIANTHEMACEAEA	*Ruschia*	*caroli*	LC	
MESEMBRIANTHEMACEAEA	*Ruschia*	*cederbergensis*	LC	
MESEMBRIANTHEMACEAEA	*Ruschia*	*incumbens*	Not Known	
MESEMBRIANTHEMACEAEA	*Ruschia*	*spinosa*	LC	
MESEMBRIANTHEMACEAEA	*Ruschia*	*valida*	DDT	
MESEMBRIANTHEMACEAEA	*Scopelogona*	*bruynsii*	LC	
MOLLUGINACEAE	*Limeum*	*africanum*	LC	
MONTINIACEAE	*Montinia*	*caryophyllacea*	LC	
NEURADACEAE	*Grielum*	*humifusum var. pes-capreae*	LC	
OROBANCHACEAE	*Harveya*	*purpurea*	LC	
OROBANCHACEAE	*Hyobancha*	*glabrata*	LC	
OROBANCHACEAE	*Hyobancha*	*sanguinea*	LC	
OXALIDACEAE	*Oxalis*	*convescula*	LC	
OXALIDACEAE	*Oxalis*	*dregei*	LC	
OXALIDACEAE	*Oxalis*	*pes-caprae van pes-caprae*	LC	
OXALIDACEAE	*Oxalis*	*obtusa*	LC	
PLANTAGINACEAE	*Plantago*	*leanceolata*	LC	
POACEAE	*Cynodon*	*dactylon*	LC	
POACEAE	*Pentaschistis*	*aristifolia*	Not Evaluated	
POLYGALACEAE	*Muraltia*	*spinosa*	LC	
PORTULACACEAE	*Anacampseros*	*cf. albidiflora*	LC	
PORTULACACEAE	*Anacampseros*	*retusa*	LC	

CRNR BOTANICAL SPECIES LIST (5 OF 5)

FAMILY	GENUS	SPECIES	STATUS	TRADE RISK
PROTEACEAE	*Brabejum*	*stellatifolium*	LC	
PROTEACEAE	*Leucadendron*	*brunioides*	LC	
PROTEACEAE	*Leucadendron*	*glaberrimum subsp. glabberrimum*	LC	
PROTEACEAE	*Leucadendron*	*nitidum*	LC	
PROTEACEAE	*Leucadendron*	*pubescens*	LC	
PROTEACEAE	*Leucadendron*	*salignum*	LC	
PROTEACEAE	*Leucospermum*	*calligerum*	LC	
PROTEACEAE	*Paranomus*	*bracteolaris*	NT	
PROTEACEAE	*Protea*	*glabrata*	LC	
PROTEACEAE	*Protea*	*laurifolia*	LC	
ROSACEAE	*Cliffortia*	*ruscifolia*	LC	
RUSCACEAE	*Eriospermum*	*capense*	VU	
RUSCACEAE	*Eriospermum*	*descendens*	LC	
RUSCACEAE	*Eriospermum*	*paradoxum*	LC	
SANTALACEAE	*Thesium*	*capituliflorum*	LC	
SCROPHULARIACEAE	*Chaenostoma*	*violaceum*	LC	
SOLANACEAE	*Lycium*	*bosciifolium*	LC	
SOLANACEAE	*Lycium*	*cinereum*	LC	
TECOPHILAEACEAE	*Cyanella*	*hyacinthoides*	LC	
THYMELAEACEAE	*Struthiola*	*leptantha*	LC	
ZYGOPHYLLACEAE	*Augea*	*capensis*	LC	
ZYGOPHYLLACEAE	*Zygophyllum*	*simplex*	LC	

VPE BOTANICAL SPECIES LIST 1 of 1

Number of species recorded:		**16**			
Species of Conservation Concern:		**1**			
STATUS	**ENDEMIC STATUS**	**GROWTHFORM**	**FAMILY**	**SPECIES**	**COMMON NAMES**
Rare	Swartruggens Quartzite Karoo	dwarfshrub	ACANTHACEAE	*Acanthopsis erosa*	
		stem succulent	ASPHODELACEAE	*Aloe comosa*	Clanwilliam-aalwyn/Clanwilliam aloe
		shrub	MERNISPERMACEAE	*Antizoma miersiana*	
		leaf succulant	AIZOACEAE	*Braunsia apiculata*	
		succulent	ASPHODELACEAE	*Bulbine succulenta*	
		leaf succulant	CRASSULACEAE	*Cotyledon orbiculata var. spuria*	plakkie
		dwarf succulent	CRASSULACEAE	*Crassula alpestris subsp. alpestris*	
		herb	ASTERACEAE	*Dicoma picta*	knoppiesdoringbossie
		dwarfshrub	AIZOACEAE	*Galenia africana*	geelbos/kraalbos
		succulent	AIZOACEAE	*Mesembryanthemum guerichianum*	soutslaai
		stem succulent	GERANIACEAE	*Monsonia crassicaulis*	boesmankers
		stem succulent	GERANIACEAE	*Pelargonium alternans*	
		shrub	ASTERACEAE	*Pteronia fasciculata*	
		grass	POACEAE	*Stipagrostis ciliata var. capensis*	langbeenboesmangras
		grass	POACEAE	*Stipagrostis obtusa*	kortbeenboesmangras
		stem & leaf succulent	CRASSULACEAE	*Tylecodon wallichii*	krimpsiek

CRVPA AMPHIBIAN SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS
Bufonidae	*Capensibufo*	*tradouwi*	Tradouw Toadlet	LC
Bufonidae	*Sclerophrys*	*capensis*	Raucous Toad	LC
Pyxicephalidae	*Amietia*	*fuscigula*	Cape River Frog	LC
Pyxicephalidae	*Strongylopus*	*grayii*	Clicking Stream Frog	LC
Pyxicephalidae	*Tomopterna*	*delalandii*	Cape Sand Frog	LC

CRVPA SCORPION SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
BUTHIDAE	*Parabuthus*	*calvus*	Common Thicktail Scorpion	LC	
BUTHIDAE	*Parabuthus*	*granulatus*	Rough Thicktail Scorpion	LC	
BUTHIDAE	*Uroplectes*	*carinatus*	Common Lesser-thicktail Scorpion	LC	
BUTHIDAE	*Uroplectes*	*marlothi*	Marloth's Lesser-thicktail Scorpion	LC	
HORMURIDAE	*Hadogenes*	*minor*	Dwarf Flat Rock-scorpion	LC	MEDIUM
SCORPIONIDAE	*Opistophthalmus*	*pallipes*	Namaqua Burrower	LC	HIGH
SCORPIONIDAE	*Opistophthalmus*	*pattisoni*	Pattison's Burrower	LC	HIGH

CRVPA COLEOPTERA SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
SCARABAEIDAE	*Epirinus*	*aeneus*	Common Dungbeetle		HIGH
SCARABAEIDAE	*Epirinus*	*flagellatus*	Common Dungbeetle		HIGH
SCARABAEIDAE	*Scarabaeus*	*intricatus*	Common Scarab Beetle		HIGH

CRVPA MAMMAL SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
BATHYERGIDAE	*Cryptomys*	*hottentotus*	Southern African Mole-rat	Least Concern	
BOVIDAE	*Oreotragus*	*oreotragus*	Klipspringer	Least Concern	
BOVIDAE	*Oryx*	*gazella*	Gemsbok	Least Concern	
BOVIDAE	*Pelea*	*capreolus*	Vaal Rhebok	Near Threatened	MEDIUM
BOVIDAE	*Raphicerus*	*campestris*	Steenbok	Least Concern	
BOVIDAE	*Raphicerus*	*melanotis*	Cape Grysbok	Least Concern	
BOVIDAE	*Sylvicapra*	*grimmia*	Duiker	Least Concern	
BOVIDAE	*Tragelaphus*	*strepsiceros*	Kudu	Least Concern	
CANIDAE	*Canis*	*mesomelas*	Black-backed Jackal	Least Concern	
CANIDAE	*Otocyon*	*megalotis*	Bat-eared Fox	Least Concern	
CEROPITHECIDAEA	*Papio*	*ursinus*	Chacma Baboon	Least Concern	
CHRYSOCHLORIDAE	*Chrysochloris*	*asiatica*	Cape Golden Mole	Data Deficient	
EQUIDAE	*Equus*	*asinus*	Ass	Introduced	
EQUIDAE	*Equus*	*zebra zebra*	Cape Mountain Zebra	Vulnerable	HIGH
FELIDAE	*Caracal*	*caracal*	Caracal	Least Concern	
FELIDAE	*Felis*	*silvestris*	Wildcat	Least Concern	
FELIDAE	*Panthera*	*pardus*	Leopard	Vulnerable	HIGH
HERPESTIDAE	*Atilax*	*paludinosus*	Water Mongoose	Least Concern	
HERPESTIDAE	*Herpestes*	*pulverulentus*	Cape Gray Mongoose	Least Concern	
HYAENIDAE	*Proteles*	*cristata*	Aardwolf	Least Concern	
HYSTRICIDAE	*Hystrix*	*africaeaustralis*	Cape Porcupine	Least Concern	
LEPOPRIDAE	*Lepus*	*capensis*	Cape Hare	Least Concern	
LEPOPRIDAE	*Lepus*	*saxatilis*	Scrub Hare	Least Concern	
MACROSCELIDIDAE	*Elephantulus*	*edwardii*	Cape Elephant Shrew	Least Concern	
MACROSCELIDIDAE	*Macroscelides*	*proboscideus*	Short-eared Elephant Shrew	Least Concern	

MURIDAE	*Acomys*	*subspinosus*	Cape Spiny Mouse	Least Concern
MURIDAE	*Aethomys*	*granti*	Grant's Rock Mouse	Least Concern
MURIDAE	*Aethomys*	*namaquensis*	Namaqua Rock Mouse	Least Concern
MURIDAE	*Gerbilliscus*	*afra*	Cape Gerbil	Least Concern
MURIDAE	*Gerbilliscus*	*paeba*	Paeba Hairy-footed Gerbil	Least Concern
MURIDAE	*Micaelamys*	*granti*	Grant's Micaelamys	Least Concern
MURIDAE	*Otomys*	*irroratus*	Southern African Vlei Rat	Least Concern
MURIDAE	*Rhabdomys*	*pumilio*	Xeric Four-striped Grass Rat	Least Concern
MUSTELIDAE	*Mellivora*	*capensis*	Honey Badger	Least Concern
NESOMYIDAE	*Dendromus*	*mesomelas*	Brants's African Climbing Mouse	Least Concern
ORYCTEROPODIDAE	*Orycteropus*	*afer*	Aardvark	Least Concern
PROCAVIIDAE	*Procavia*	*capensis*	Cape Rock Hyrax	Least Concern
SORICIDAE	*Crocidura*	*cyanea*	Reddish-gray Musk Shrew	Least Concern
SORICIDAE	*Myosorex*	*varius*	Forest Shrew	Least Concern
SORICIDAE	*Suncus*	*varilla*	Lesser Dwarf Shrew	Least Concern
VESPERTILIONIDAE	*Cistugo*	*lesueuri*	Lesueur's Wing-gland Bat	Least Concern
VESPERTILIONIDAE	*Eptesicus*	*hottentotus*	Long-tailed Serotine Bat	Least Concern
VESPERTILIONIDAE	*Neoromicia*	*capensis*	Cape Serotine Bat	Least Concern
VIVERRIDAE	*Genetta*	*genetta*	Common Genet	Least Concern
VIVERRIDAE	*Genetta*	*tigrina*	Cape Genet	Least Concern

CRVPA ODONATA SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
AESHNIDAE	Anax	imperator	Blue Emperor	LC	
AESHNIDAE	Anax	speratus	(Eastern) Orange Emperor	LC	
AESHNIDAE	Pinheyschna	subpupillata	Stream Hawker	LC	
AESHNIDAE	Zosteraeschna	minuscula	Friendly Hawker	LC	
COENAGRIONIDAE	Africallagma	glaucum	Swamp Bluet	LC	
COENAGRIONIDAE	Africallagma	sapphirinum	Sapphire Bluet	LC	
COENAGRIONIDAE	Ceriagrion	glabrum	Common Citril	LC	
COENAGRIONIDAE	Ischnura	senegalensis	Tropical Bluetail	LC	
COENAGRIONIDAE	Pseudagrion	sp.			
COENAGRIONIDAE	Pseudagrion	citricola	Yellow-faced Sprite	LC	
COENAGRIONIDAE	Pseudagrion	draconis	Mountain Sprite	LC	
COENAGRIONIDAE	Pseudagrion	furcigerum	Palmiet Sprite	NT	
GOMPHIDAE	Ceratogomphus	pictus	Common Thorntail	LC	
GOMPHIDAE	Ceratogomphus	triceraticus	Cape Thorntail	NT	
LIBELLULIDAE	Crocothemis	erythraea	Broad Scarlet	LC	
LIBELLULIDAE	Crocothemis	sanguinolenta	Little Scarlet	LC	
LIBELLULIDAE	Nesciothemis	farinosa	Eastern Blacktail	LC	
LIBELLULIDAE	Orthetrum	caffrum	Two-striped Skimmer	LC	
LIBELLULIDAE	Orthetrum	capicola	Cape Skimmer	LC	
LIBELLULIDAE	Orthetrum	julia	Julia Skimmer	LC	
LIBELLULIDAE	Palpopleura	jucunda	Yellow-veined Widow	LC	
LIBELLULIDAE	Trithemis	sp.			
LIBELLULIDAE	Trithemis	arteriosa	Red-veined Dropwing	LC	
LIBELLULIDAE	Trithemis	dorsalis	Highland Dropwing	LC	
LIBELLULIDAE	Trithemis	furva	Navy Dropwing	LC	
LIBELLULIDAE	Trithemis	pluvialis	Russet Dropwing	LC	
LIBELLULIDAE	Trithemis	stictica	Jaunty Dropwing	LC	
PLATYCNEMIDIDAE	Elattoneura	frenulata	Sooty Threadtail	LC	
PLATYCNEMIDIDAE	Elattoneura	glauca	Common Threadtail	LC	

CRVPA REPTILE SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK

AGAMIDAE	*Agama*	*atra*	Southern Ground Agama	LC	MEDIUM
COLUBRIDAE	*Dispholidus*	*typus typus*	Cape Boomslang	LC	
CORDYLIDAE	*Cordylus*	*mclachlani*	McLachlan's Girdled Lizard	LC	
CORDYLIDAE	*Hemicordylus*	*capensis*	Graceful Crag Lizard	LC	
CORDYLIDAE	*Karusasaurus*	*polyzonus*	Karoo Girdled Lizard	LC	
CORDYLIDAE	*Ouroborus*	*cataphractus*	Armadilla Girdled Lizard	LC	HIGH
GEKKONIDAE	*Goggia*	*hexapora*	Cederberg Pygmy Gecko	LC	
GEKKONIDAE	*Goggia*	*microlepidota*	Small-scaled Gecko	LC	
GEKKONIDAE	*Pachydactylus*	*formosus*	Southern Rough Gecko	LC	
GEKKONIDAE	*Pachydactylus*	*mariquensis*	Marico Gecko	LC	
LACERTIDAE	*Aaustralolacerta*	*australis*	Southern Rock Lizard	LC	
LACERTIDAE	*Meroles*	*knoxii*	Knox's Desert Lizard	LC	
LACERTIDAE	*Nucras*	*tessellata*	Western Sandveld Lizard	LC	
LACERTIDAE	*Pedioplanis*	*burchelli*	Burchell's Sand Lizard	LC	
LACERTIDAE	*Pedioplanis*	*lineoocellata pulchella*	Spotted Sand Lizard	LC	
LAMPROPHIIDAE	*Boaedon*	*capensis*	Brown House Snake	LC	
LAMPROPHIIDAE	*Lamprophis*	*guttatus*	Spotted Rock Snake	LC	
LAMPROPHIIDAE	*Psammophylax*	*rhombeatus*	Spotted Skaapsteker	LC	
SCINCIDAE	*Trachylepis*	*capensis*	Cape Skink	LC	
SCINCIDAE	*Trachylepis*	*homalocephala*	Red-sided Skink	LC	
SCINCIDAE	*Trachylepis*	*variegata*	Variegated Skink	LC	
VIPERIDAE	*Bitis*	*rubida*	Red Adder	LC	HIGH
VIPERIDAE	*Bitis*	*atropos*	Berg Adder	LC	HIGH

CRVPA ARACHNID SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
ARANEIDAE	*Argiope*	*australis*	Common garden orb-web spiders	LC	
ARANEIDAE	*Argiope*	*trifasciata*	Banded garden orb-web spiders	LC	
CAPONIIDAE	*Caponia*	*sp.*	Eight-eyed orange lungless spiders	LC	
DICTYNIDAE	*Dictynidae*	*sp.*	Grass mesh-web spiders	LC	
ERESIDAE	*Paradonea*	*sp.*	Decorated velvet spiders	LC	
EUTICHURIDAE	*Cheiracanthium*	*sp.*	Sac spiders	LC	
GNAPHOSIDAE	*Megamyrmaekion*	*schreineri*	Schriener's curly-legged ground spiders	LC	
GNAPHOSIDAE	*Xerophaeus*	*sp.*	Mouse spiders	LC	
HERSILIIDAE	*Tyrotama*	*incerta*	Nieuwoudtville long spinnered spider	LC	
OXYOPIDAE	*Oxyopes*	*sp.*	Grass lynx spiders	LC	
PHOLCIDAE	*Smeringopus*	*sp.*	Common daddy longlegs spiders	LC	
PISAURIDAE	*Rothus*	*sp.*	Crowned pisaurids	LC	
SCYTODIDAE	*Scytodes*	*sp.*	Spitting spiders	LC	
SELENOPIDAE	*Anyphops*	*sp.*	flatties or wall spiders	LC	
SICARIIDAE	*Hexophthalma*	*sp.*	Six eyed sand spiders and voilin spiders	LC	
SPARASSIDAE	*Palystes*	*martinfilmeri*	Filmers Rain Spider	LC	
SPARASSIDAE	*Parapalystes*	*sp.*	Rain Spider	LC	
TETRAGNATHIDAE	*Tetragnatha*	*sp.*	Long-jawed water orb-web spiders	LC	
THERAPHOSIDAE	*Harpactira*	*marksi*	Cederberg Golden Baboon Spider	LC	HIGH
THERAPHOSIDAE	*Harpactira*	*namaquensis*	Namaqua Baboon Spider	LC	HIGH
THERAPHOSIDAE	*Harpactirella*	*sp.*	Dwarf Baboon Spider	LC	HIGH
THERIDIIDAE	*Latrodectus*	*geometricus*	Common brown button spiders	LC	
THERIDIIDAE	*Theridion*	*sp.*	Comb-footed or cobweb spiders	LC	
THOMISIDAE	*Synema*	*sp.*	African mask crab spiders	LC	

CRVPA BUTTERFLY SPECIES LIST

FAMILY	GENUS	SPECIES	COMMON NAME	STATUS	TRADE RISK
HESPERIIDAE	*Borbo*	*fatuellus fatuellus*	Long-horned swift		
LYCAENIDAE	*Chrysoritis*	*pan lysander*	Lysander opal		
LYCAENIDAE	*Durbaniopsis*	*saga*	Boland rocksitter		
LYCAENIDAE	*Phasis*	*thero cedarbergae*	Silver arrowhead		
NOCTUIDAE	*Brephos*	*decora*	Unknown		
NOCTUIDAE	*Diaphone*	*eumela*	Unknown		
NYMPHALIDAE	*Charaxes*	*pelias*	Protea charaxes		
NYMPHALIDAE	*Danaus*	*chrysippus orientis*	African plain tiger		
NYMPHALIDAE	*Junonia*	*hierta cebrene*	Yellow pansy		
NYMPHALIDAE	*Junonia*	*oenone oenone*	Dark blue pansy		
NYMPHALIDAE	*Melanitis*	*leda*	Common evening brown		
NYMPHALIDAE	*Neptis*	*saclava marpessa*	Spotted sailer		
NYMPHALIDAE	*Protogoniomorpha*	*parhassus*	Common Mother-of-pearl		
NYMPHALIDAE	*Tarsocera*	*cassus cassus*	Spring widow		
NYMPHALIDAE	*Vanessa*	*cardui*	Painted lady		
PAPILIONIDAE	*Papilio*	*demodocus demodocus*	Citrus swallowtail		
PIERIDAE	*Belenois*	*creona severina*	African caper white		
PIERIDAE	*Dixeia*	*pigea*	Small ant-heap white		
PIERIDAE	*Eurema*	*brigitta brigitta*	Broad-bordered grass yellow		
PIERIDAE	*Mylothris*	*agathina agathina*	Eastern dotted border		

CRVPA AVIFAUNAL SPECIES LIST (1 OF 3)

Common group	Common species	Genus	Species
Barbet	Acacia Pied	*Tricholaema*	*leucomelas*
Batis	Pririt	*Batis*	*pririt*
Batis	Cape	*Batis*	*capensis*
Bee-eater	European	*Merops*	*apiaster*
Bishop	Yellow	*Euplectes*	*capensis*
Bishop	Southern Red	*Euplectes*	*orix*
Bokmakierie	Bokmakierie	*Telophorus*	*zeylonus*
Bulbul	Cape	*Pycnonotus*	*capensis*
Bunting	Cape	*Emberiza*	*capensis*
Bunting	Lark-like	*Emberiza*	*impetuani*
Bustard	Ludwig's	*Neotis*	*ludwigii*
Buzzard	Jackal	*Buteo*	*rufofuscus*
Buzzard	Steppe	*Buteo*	*vulpinus*
Canary	Black-headed	*Serinus*	*alario*
Canary	Cape	*Serinus*	*canicollis*
Canary	White-throated	*Crithagra*	*albogularis*
Canary	Yellow	*Crithagra*	*flaviventris*
Canary	Brimstone	*Crithagra*	*sulphuratus*
Chat	Familiar	*Cercomela*	*familiaris*
Chat	Karoo	*Cercomela*	*schlegelii*
Chat	Sickle-winged	*Cercomela*	*sinuata*
Chat	Tractrac	*Cercomela*	*tractrac*
Cisticola	Grey-backed	*Cisticola*	*subruficapilla*
Cisticola	Levaillant's	*Cisticola*	*tinniens*
Cisticola	Zitting	*Cisticola*	*juncidis*
Cormorant	Reed	*Phalacrocorax*	*africanus*
Crombec	Long-billed	*Sylvietta*	*rufescens*

Crow	Pied	*Corvus*	*albus*
Crow	Cape	*Corvus*	*capensis*
Cuckoo	Diderick	*Chrysococcyx*	*caprius*
Cuckoo	Klaas's	*Chrysococcyx*	*klaas*
Darter	African	*Anhinga*	*rufa*
Dove	Laughing	*Streptopelia*	*senegalensis*
Dove	Namaqua	*Oena*	*capensis*
Dove	Rock	*Columba*	*livia*
Duck	African Black	*Anas*	*sparsa*
Duck	Yellow-billed	*Anas*	*undulata*
Eagle	Booted	*Aquila*	*pennatus*
Eagle	Verreaux's	*Aquila*	*verreauxii*
Eagle	Martial	*Polemaetus*	*bellicosus*
Eagle-owl	Spotted	*Bubo*	*africanus*
Eagle-owl	Cape	*Bubo*	*capensis*
Eremomela	Karoo	*Eremomela*	*gregalis*
Fiscal	Common (Southern)	*Lanius*	*collaris*
Fish-eagle	African	*Haliaeetus*	*vocifer*
Flycatcher	African Dusky	*Muscicapa*	*adusta*
Flycatcher	Fairy	*Stenostira*	*scita*
Flycatcher	Fiscal	*Sigelus*	*silens*
Francolin	Grey-winged	*Scleroptila*	*africanus*
Goose	Egyptian	*Alopochen*	*aegyptiacus*
Goose	Spur-winged	*Plectropterus*	*gambensis*
Goshawk	Southern Pale Chanting	*Melierax*	*canorus*
Grassbird	Cape	*Sphenoeacus*	*afer*
Guineafowl	Helmeted	*Numida*	*meleagris*

CRVPA AVIFAUNAL SPECIES LIST (2 OF 3)

Common group	Common species	Genus	Species
Hamerkop	Hamerkop	*Scopus*	*umbretta*
Harrier	Black	*Circus*	*maurus*
Harrier-Hawk	African	*Polyboroides*	*typus*
Heron	Black-headed	*Ardea*	*melanocephala*
Heron	Grey	*Ardea*	*cinerea*
Honeyguide	Greater	*Indicator*	*indicator*
Honeyguide	Lesser	*Indicator*	*minor*
Hoopoe	African	*Upupa*	*africana*
House-martin	Common	*Delichon*	*urbicum*
Ibis	Hadeda	*Bostrychia*	*hagedash*
Kestrel	Rock	*Falco*	*rupicolus*
Kingfisher	Giant	*Megaceryle*	*maximus*
Kingfisher	Malachite	*Alcedo*	*cristata*
Kingfisher	Pied	*Ceryle*	*rudis*
Kite	Black-shouldered	*Elanus*	*caeruleus*
Korhaan	Southern Black	*Afrotis*	*afra*
Lapwing	Blacksmith	*Vanellus*	*armatus*
Lark	Cape Clapper	*Mirafra*	*apiata*
Lark	Karoo	*Calendulauda*	*albescens*
Lark	Karoo Long-billed	*Certhilauda*	*subcoronata*
Lark	Large-billed	*Galerida*	*magnirostris*
Lark	Red-capped	*Calandrella*	*cinerea*
Lark	Spike-heeled	*Chersomanes*	*albofasciata*
Martin	Brown-throated	*Riparia*	*paludicola*
Martin	Rock	*Hirundo*	*fuligula*
Masked-weaver	Southern	*Ploceus*	*velatus*
Mousebird	White-backed	*Colius*	*colius*

Mousebird	Red-faced	*Urocolius*	*indicus*
Mousebird	Speckled	*Colius*	*striatus*
Neddicky	Neddicky	*Cisticola*	*fulvicapilla*
Nightjar	Freckled	*Caprimulgus*	*tristigma*
Olive-pigeon	African	*Columba*	*arquatrix*
Ostrich	Common	*Struthio*	*camelus*
Owl	Barn	*Tyto*	*alba*
Paradise-flycatcher	African	*Terpsiphone*	*viridis*
Pigeon	Speckled	*Columba*	*guinea*
Pipit	African	*Anthus*	*cinnamomeus*
Pipit	Nicholson's	*Anthus*	*nicholsoni*
Prinia	Karoo	*Prinia*	*maculosa*
Quail	Common	*Coturnix*	*coturnix*
Raven	White-necked	*Corvus*	*albicollis*
Reed-warbler	African	*Acrocephalus*	*baeticatus*
Robin-chat	Cape	*Cossypha*	*caffra*
Rock-jumper	Cape	*Chaetops*	*frenatus*
Rock-thrush	Cape	*Monticola*	*rupestris*
Rush-warbler	Little	*Bradypterus*	*baboecala*
Sandgrouse	Namaqua	*Pterocles*	*namaqua*
Scrub-robin	Karoo	*Cercotrichas*	*coryphoeus*
Seedeater	Streaky-headed	*Crithagra*	*gularis*
Seedeater	Protea	*Crithagra*	*leucopterus*
Shelduck	South African	*Tadorna*	*cana*
Siskin	Cape	*Crithagra*	*totta*
Sparrow	Cape	*Passer*	*melanurus*
Sparrow	House	*Passer*	*domesticus*
Spurfowl	Cape	*Pternistis*	*capensis*

CRVPA AVIFAUNAL SPECIES LIST (3 OF 3)

Common group	Common species	Genus	Species
Starling	Pale-winged	*Onychognathus*	*nabouroup*
Starling	Pied	*Spreo*	*bicolor*
Starling	Red-winged	*Onychognathus*	*morio*
Starling	Common	*Sturnus*	*vulgaris*
Starling	Wattled	*Creatophora*	*cinerea*
Stonechat	African	*Saxicola*	*torquatus*
Sugarbird	Cape	*Promerops*	*cafer*
Sunbird	Malachite	*Nectarinia*	*famosa*
Sunbird	Orange-breasted	*Anthobaphes*	*violacea*
Sunbird	Southern Double-collared	*Cinnyris*	*chalybeus*
Sunbird	Dusky	*Cinnyris*	*fuscus*
Swallow	Greater Striped	*Hirundo*	*cucullata*
Swallow	Barn	*Hirundo*	*rustica*
Swallow	Pearl-breasted	*Hirundo*	*dimidiata*
Swallow	White-throated	*Hirundo*	*albigularis*
Swamp-warbler	Lesser	*Acrocephalus*	*gracilirostris*
Swift	Alpine	*Tachymarptis*	*melba*
Swift	White-rumped	*Apus*	*caffer*
Swift	Common	*Apus*	*apus*
Thrush	Karoo	*Turdus*	*smithi*
Thrush	Olive	*Turdus*	*olivaceus*
Tit	Grey	*Parus*	*afer*
Tit-babbler	Layard's	*Parisoma*	*layardi*

Tit-babbler	Chestnut-vented	*Parisoma*	*subcaeruleum*
Turtle-dove	Cape	*Streptopelia*	*capicola*
Wagtail	Cape	*Motacilla*	*capensis*
Warbler	Cinnamon-breasted	*Euryptila*	*subcinnamomea*
Warbler	Namaqua	*Phragmacia*	*substriata*
Warbler	Rufous-eared	*Malcorus*	*pectoralis*
Waxbill	Common	*Estrilda*	*astrild*
Weaver	Cape	*Ploceus*	*capensis*
Wheatear	Mountain	*Oenanthe*	*monticola*
Wheatear	Capped	*Oenanthe*	*pileata*
White-eye	Cape	*Zosterops*	*virens*
Whydah	Pin-tailed	*Vidua*	*macroura*
Woodpecker	Cardinal	*Dendropicos*	*fuscescens*
Woodpecker	Ground	*Geocolaptes*	*olivaceus*
Woodpecker	Olive	*Dendropicos*	*griseocephalus*

APPENDIX D – Heritage Code of Conduct

The following guidelines are widely accepted behaviour for visitors to rock art sites – both paintings and engravings.

- Enjoy the rock art and behave as you would in an art gallery. The longer you look at the paintings or engravings, the more you will see.
- Do not touch the paintings. Your fingers leave behind traces of oil and dirt that builds up and cannot be removed.
- Never put water or any other substance on painted surfaces to enhance the colour or detail. It causes salts to be drawn to the surface and they cannot be removed. Photos of faded paintings can be digitally enhanced, and this is much better than wetting the originals.
- It is an offence in terms of the National Heritage Resources Act (No. 25 of 1999) to write on rock shelter walls, damage or "touch up" paintings or engravings. It alters the significance of the original art and spoils the experience for other visitors. If convicted of this offence, you could be liable for a fine of between R10,000 and R100,000.
- Avoid stirring up dust when you visit a painted rock shelter as the dust adheres to the rock walls and is difficult to remove. If you are going to spend some time in a rock shelter, put down a ground sheet to control dust and avoid disturbing archaeological deposits.
- Trim vegetation away from painted surfaces to stop branches brushing against paintings and to reduce the damaging effects of veld fires.
- Remove all litter after visiting a rock art site.
- Visitors to rock shelters should remove back packs to avoid their brushing against painted surfaces.
- Do not make fires in or near painted rock shelters as the smoke and cooking fumes can damage the art and discolour the rock walls.
- If you are obliged to seek shelter overnight in a rock art site, avoid leaving candle wax on rock surfaces.

The following basic guidelines are useful for the owners of properties with rock art.

- A permit must be obtained from the relevant provincial heritage resources authority for any interventions such as installation of fences, boardwalks, or information boards at a rock art site.
- Seek advice from the provincial heritage resources authority or a rock art specialist if you wish to open rock art sites to the public.
- Avoid placing rubbish bins in or near to painted rock shelters as they attract animals and are often overturned, spreading the litter.
- Train a guide to take visitors to rock art sites or print a leaflet with clear instructions for all visitors.

APPENDIX E – CRVPA Annual Plan of Operations

CRVPA ANNUAL PLAN OF OPERATION - 2021				
KEY PERFORMANCE AREAS: BIODIVERSITY AND ECOLOGICAL COMPONENTS				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
INTEGRATED MANAGEMENT	Wildfire: Allow natural fire processes to take place and reduce the risk of uncontrolled wildfire.	1. Ensure that infrastructure is adequately protected.	Ongoing	MA
		2. Maintain fire response equipment.	Ongoing	MA
		3. Ensure Fire Protection Association Membership.	Ongoing	MA
		4. Participate in developing Landscape Strategy for Fire Management with CapeNature, SANParks, FPA and neighbouring landowners which prioritises burn regimes and strategic firebreaks.	Medium to Long Term (5 Year)	CapeNature, SANParks, FPA, MA
	Alien Vegetation Management: Eradicate invasive alien plant species using mechanical methods.	1. Assess the spread of IAP across the reserve.	Ongoing	MA
		2. Control the spread of IAP where necessary.	Ongoing	MA
		3. Ensure current Maintenance Phase is upheld.	Ongoing	MA
AQUATIC AND RIPARIAN SYSTEMS	To determine the health of aquatic ecosystems and identify threats as well as the management actions to be implemented to safeguard and improve aquatic health.	1. Participate in the development of a Doring River riparian management plan with a specific focus on IAP and non-native freshwater species.	Medium to Long Term (5 Year)	CapeNature, SANParks, MA
REHABILITATION AND RESTORATION	To limit the loss of biodiversity and disruption to ecological processes due to degraded habitat by determining the extent and cause of degradation (such as soil erosion) and implement rehabilitation measures.	1. Record soil erosion sites across the PA.	Ongoing	MA
		2. Implement soil erosion management interventions where feasible.	Where Applicable	MA
		3. Implement Fixed Point Photography of rehabilitated sites.	Where Applicable	MA
		4. Halt ongoing degradation and implement management interventions on CRVPA access road in Matjiesrivier Nature Reserve.	Priority	CapeNature (MA to Assist)
SPECIES OF CONSERVATION CONCERN	Addressing the threat of Illegal harvesting and collection of charismatic, rare, and endemic fauna and flora.	1. Report suspicious activity to SAPS, CapeNature, SANParks and Traffic.	Where Applicable	MA

CRNR ANNUAL PLAN OF OPERATION - 2021				
KEY PERFORMANCE AREAS: BIODIVERSITY AND ECOLOGICAL COMPONENTS				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
WILDLIFE: VELD CONDITION AND STOCKING RATE	Veld condition assessments are used to determine carrying capacity relative to climatic and rainfall cycles and a grazing plan is compiled which takes into consideration veld condition, game numbers, game species, herd size, camp sizes and grazing frequency per camp with game numbers managed to meet the ecological carrying capacity.	1. Implement vegetation monitoring and habitat condition assessments as recommended in the Guidelines for Veld and Wildlife Management report developed by Ken Coetzee of Conservation Management Services.	Annually	MA
		2. Implement Fixed Point Photography across vegetation monitoring points as recommended in the Guidelines for Veld and Wildlife Management report developed by Ken Coetzee of Conservation Management Services.	Annually	MA
		3. One exclusion plot should be established in each broad habitat type. Exclusion plots help assess veld recovery in the absence of utilisation and provide an indication of the pressure of game on veld condition. The methodology for establishing exclusion plots is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.	Annually	MA
		4. Permanent vegetation transects for recording plant species composition; forage cover abundance and plant utilisation should be established to record improvement or deterioration in the vegetation cover and species condition in relation to grazing pressure. The methodology for implementing veld condition assessments is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.	Annually	MA
		5. Rainfall should be accurately recorded at a number of fixed points on the property. Site selection will depend on the ability of management to service and record rainfall at each gauge. The methodology for rainfall measurement is provided in the Guidelines for Veld and Wildlife Management developed by Ken Coetzee of Conservation Management Services.	Ongoing	MA
CRVPA ANNUAL PLAN OF OPERATION - 2021				

KEY PERFORMANCE AREAS: BIODIVERSITY AND ECOLOGICAL COMPONENTS				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
WILDLIFE: GAME MANAGEMENT	To manage the introduction of wildlife, evaluate the health of faunal populations, estimate the impact of fauna on the ecosystem.	1. Ensure all permit conditions are in place.	Ongoing	MA
RECREATION AND TOURISM	Tourism infrastructure and operations must not have a negative impact on any of the conservation objectives of the PA while profits from tourism operations should make a meaningful contribution towards conservation management costs.	Ensure that the vision, mission, and purpose of CRVPA are achieved with the support of a quality tourism product which facilitates the nature-based tourism experience with minimal impact on ecosystems of the PA.	Ongoing	MA
KEY PERFORMANCE AREAS: MANAGEMENT AUTHORITY EFFECTIVENESS AND SUSTAINABILITY				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
LEGAL COMPLIANCE	Be fully compliant with the Protected Area legislation.	1. Adhere to all environmental legislation pertinent to activities on CRVPA.	Ongoing	MA
INFRASTRUCTURE AND EQUIPMENT	Infrastructure and equipment needed to support personnel in implementing the management plan is in place, adequately maintained and kept in safe working order.	1. Maintain all infrastructure and equipment as required.	Ongoing	MA
SIGNAGE, ACCESS, AND SECURITY	The perimeter boundary of the PA should be clearly marked with fencing and signage while access onto the property is restricted with locked gates and controlled through a limited number of managed entry points. These security measures must be put in place to address specific threats.	1. Ensure signage is in place.	Ongoing	MA
		2. Ensure entry points are effectively controlled.	Ongoing	MA
RESEARCH AND MANAGEMENT KNOWLEDGE	Address knowledge gaps through desk-top research, scientific research, and expert advice to improve management effectiveness.	1. Implement Veld Condition Monitoring as recommended in Guidelines for Veld and Wildlife Management developed by Conservation Management Services and adapt management as required.	Ongoing	MA

CRVPA ANNUAL PLAN OF OPERATION - 2021				
KEY PERFORMANCE AREAS: MANAGEMENT AUTHORITY EFFECTIVENESS AND SUSTAINABILITY				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
MONITORING AND EVALUATION	Monitoring and Evaluation requirements are documented, and responsibilities assigned. Monitoring activities must be implemented, and data captured, stored, and collated. Monitoring data must be evaluated, and management practices adapted based on insights to improve effectiveness of management through a process of learning and adaption.	1. Implement Veld Condition Monitoring as recommended in Guidelines for Veld and Wildlife Management developed by Conservation Management Services.	Ongoing	MA
		2. Implement Heritage Site monitoring as recommended the eastern Cederberg Rock Art Group.	Ongoing	MA
ANNUAL REVIEW	To determine how effectively the management plan has been implemented and assist in determining the focus for the annual plan of operation and the setting of appropriate timeframes to enable effective adaptive management by identifying changes and modifying management interventions.	1. Implement Annual Review.	Annually	MA, CapeNature & SANParks
		2. Develop next year's APO.	Annually	MA
		3. Submit Annual Review and APO to CapeNature and SANParks.	Annually	MA
		4. Revise Management Plant.	2026	MA
KEY PERFORMANCE AREAS: HERITAGE				
OBJECTIVES	**KEY DELIVERABLES**	**ACTION**	**TIMEFRAME**	**RESPONSIBILITY**
HERITAGE	Systematically map and document all archaeological, paleontological, and cultural features while supporting the study of on-reserve features by experts and to conserve the integrity of all archaeological and heritage features on the PA.	1. Retain the cultural significance of sites at CRVPA by keeping the existing ambience of sites intact.	Ongoing	MA
		2. Manage visitor behaviour by understanding the needs, volume, and behaviour of CRVPA visitors and provide appropriate information to raise awareness and educate visitors.	Ongoing	MA
		3. Monitor and keep the painted surfaces and floors of rock shelters stable by following the principle of doing as little as is possible and as much as is necessary.	Annually	MA
		4. Provide opportunities for research that add to the value of the rock art at CRVPA.	Where Applicable	MA
		5. Implement Rock Art Monitoring according to methodology developed and recommended by eastern Cederberg Rock Art Group.	Annually	MA


AWARENESS BIODIVERSITY RESEARCH
Bionerds
CONSERVATION
WILDERNESS
FOUNDATION
AFRICA