Management Plan for the Franco Three Fountains Nature Reserve

Western Cape, South Africa





Protected Area Management Plan

2025-2035

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Protected area management plan format has been developed by CapeNature with input from external partners and industry stakeholders

The development of this revised management plan format has been funded by the Table Mountain Fund.

STATUS

The Franco Three Fountains Nature Reserve has been declared as a Section 23 Nature Reserve.

Declaration Date:	Government Gazette Notice:
2025-04-11	REF NO. 9056

AUTHORISATION

This Protected Area Management Plan for the Franco Three Fountains Nature Reserve was drafted and recommended by the Franco Three Fountains Trust.

Supported by:

- CapeNature Conservation Management
- City of Cape Town: Biodiversity Management Branch

Recommended and adopted by:

Name and Title	Signature and Date
Management Authority Franco Property Trust	
CapeNature Elbe Cloete Landscape Manager: Landscape West	

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Name and Title	Signature and Date
Mr Anton Bredell Minister of Local Government, Environmental Affairs and Development Planning	

Review Date: 2036

PART A • Strategic Management Plan

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Khoe pastoralists, alongside the hunter gatherer San, inhabited the south-western Cape prior to the arrival of the first Europeans in the 15th century and the establishment of the Dutch Cape Colony in 1652. Khoe pastoralists introduced cattle and sheep farming to the south-western Cape around 2000 years ago. The introduction of pastoralism introduced new material culture to the region such as pottery (ceramics) and more refined stone tools (scrapers) & increased usage of grindstones. The West Coast is rich in Middle & Late Stone Age (LSA) archaeology and the coastal rocky outcrops have a high frequency of precolonial burials and shell middens. Known LSA sites in the area include

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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
DEA&DP	Department of Environmental Affairs and Development Planning
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
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
LUPA	Western Cape Land Use Planning Act
MA	Management Authority
MAB	Man and the Biosphere Programme
MCA	Mountain Catchment Area
MCM	National Department of Marine and Coastal Management
MEC	Member of the Executive Council
METT	Management Effectiveness Tracking Tool
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPA	Marine Protected Area
NBA	National Biodiversity Assessment
NEM:BA	National Environmental Management: Biodiversity Act
NEM:PAA	National Environmental Management: Protected Areas Act

NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Area
NGO	Non-governmental Organisation
NN	No Natural
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
SACNASP	South African Council for Natural Scientific Professions
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SDF	Spatial Development Framework
SMP	Strategic Management Plan
SOB	State of Biodiversity Report
SPLUMA	Spatial Planning and Land Use Management Act
SDF	Municipal Spatial Development Framework
SEA	Strategic Environmental Assessment
SMME	Small, Micro and Medium Enterprises
SMP	Strategic Management Plan
SWOT	Strengths, weaknesses, opportunities and threats analysis
TMF	Table Mountain Fund
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCC	United Nations Framework Convention on Climate Change
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
WWF-SA	Word Wildlife Fund for Nature South Africa

PART A

STRATEGIC MANAGEMENT PLAN

1 BACKGROUND

1.1 Purpose of the plan

Management plans for biodiversity stewardship sites are strategic documents that provide the framework for the development and operation of biodiversity stewardship sites. They inform management at all levels, from the landowner through to support staff within CapeNature. The purpose of the management plan is to:

- Provide the primary strategic tool for management of Franco Three Fountains Nature Reserve, informing the need for specific programmes and operational procedures.
- Provide for capacity building, future thinking and continuity of management.
- Enable the landowner to develop and manage Franco Three Fountains Nature Reserve in such a way that its values and the purpose for which it has been established are protected.

1.2 Structure of the plan

Section 1:	Background. Provides an overview of the guiding legislation, an introduction to protected area management planning centred on the adaptive management cycle with a focus on implementing the management support framework.
Section 2:	Site Description. Provides an introduction of the site and ownership as well as the administrative structure. This section looks to establish the context of the biodiversity stewardship site, including the regional and local planning, zonation plan as well as management units. These all provide 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 reserve.
Section 4:	Best Practice Guidelines. Provides guiding principles and factors to be considered for coordinated actions.

1.3 Guiding Legislation

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

The Act establishes the legal basis for the creation and administration of protected areas in South Africa, as its objectives include provisions "for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes". The

Act sets out the mechanisms for the declaration of protected areas and the requirements for their management.

In the Western Cape biodiversity policy is defined in the Western Cape Biodiversity Act, Act 6 of 2021. The Provincial Biodiversity Strategy and Action Plan (PBSAP) 2015 to 2025 outlines the strategic objectives and outcomes for biodiversity management in the Western Cape.

The 2023 Western Cape Biodiversity Spatial Plan and Guidelines provide a comprehensive document and spatial tool for strategic guidelines and planning related to biodiversity in the region.

CapeNature is the Provincial Conservation Authority and its Biodiversity Stewardship Programme facilitates the establishment and management of protected areas on private land.

A detailed list of relevant legislation is provided in Appendix A. Landowners should familiarise themselves with the purpose and contents of the statutes and their subsequent amendments and regulations.

1.3.1 Purpose of declaring protected areas

According to S17 of NEM:PAA, the purpose of declaring an area as a protected area are:

i) to protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas;
ii) to preserve the ecological integrity of those areas;
iii) to conserve biodiversity in those areas;
iv) to protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;
v) to protect South Africa's threatened or rare species;
vi) to protect an area which is vulnerable or ecologically sensitive;
vii) to assist in ensuring the sustained supply of environmental goods and services;
viii) to provide for the sustainable use of natural and biological resources;
ix) to create or augment destinations for nature-based tourism;
x) to manage the interrelationship between natural environmental biodiversity, human settlement and economic development;
xi) generally, to contribute to human, social, cultural, spiritual and economic development; or
xii) to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

1.3.2 Declaration status of the Franco Three Fountains Nature Reserve

The Franco Three Fountains Nature Reserve is declared under Section 23(1) of the National Environmental management: Protected Areas Act (Act 57 of 2003).

See Appendix B – Copy of Franco Three Fountains Nature Reserve Declaration Notice.

1.4 Adaptive management

The preparation of this management plan has been undertaken based on the guiding principles of adaptive management, which is a structured, iterative process in which decisions are made using the best available information, with the aim of obtaining better information through monitoring of performance (Figure 1.1). In this way, decision making is aimed at achieving the best outcome based on current understanding, whilst accruing the information needed to improve future management. Adaptive management can lead to revision of a part or, if necessary, the whole management plan.

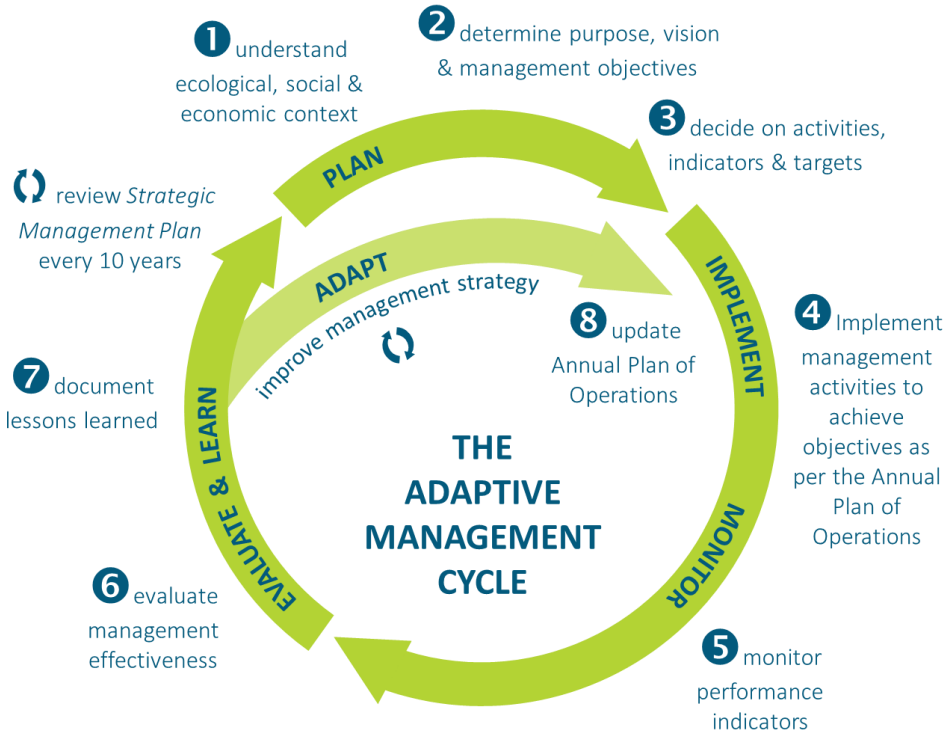


Figure 1.1 The adaptive management cycle

Adaptive management enables landowners and managers to:

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

1.5 Management Support Framework

The National Environmental Management of Protected Areas (NEMPA) Act of 2003 mandates that a management plan must be prepared by the management authority, as outlined in Sections 39 and 41. This plan must include a program for implementation and its associated costs (APO and budget). Section 43 further requires the management authority to monitor and report annually.

To support effective Protected Area management, a range of tools and a structured support system have been developed. These tools provide meaningful assistance and guidance from the provincial conservation authority to landowners. Key components include:

- **Integrated Management Plans**: A template that integrates with the Protected Area (PA) management system.
- **APO Implementation**: An Annual Plan of Operation (APO) that serves as both a management tool and a reporting mechanism based on the PA management plan.
- **Monitoring & Management Solutions**: Identified management gaps from the Management Review, METT Assessments, and PAMP are addressed in the APO, with customized monitoring and implementation strategies.
- **Effective Data Collection, Storage & Analysis**: Development of efficient, secure, and robust data platforms can be tailored to the needs of the PA.

These have all helped contribute towards effective management where improved management decisions can be made from the combined use of these tools. The Management Support Framework, Figure 1.2, provides for an overview on where these tools and structures integrate. In this framework, the Protected Area Management Plan is at the centre. This Management Plan is developed according to the relevant Key Performance Areas (KPAs) and the associated objectives. The APO then translates the Management Plan into prioritized and scheduled actions. Monitoring and evaluation tools, such as the Management Review and METT assessment, are provided to management authorities to help enable focused management and technical support.

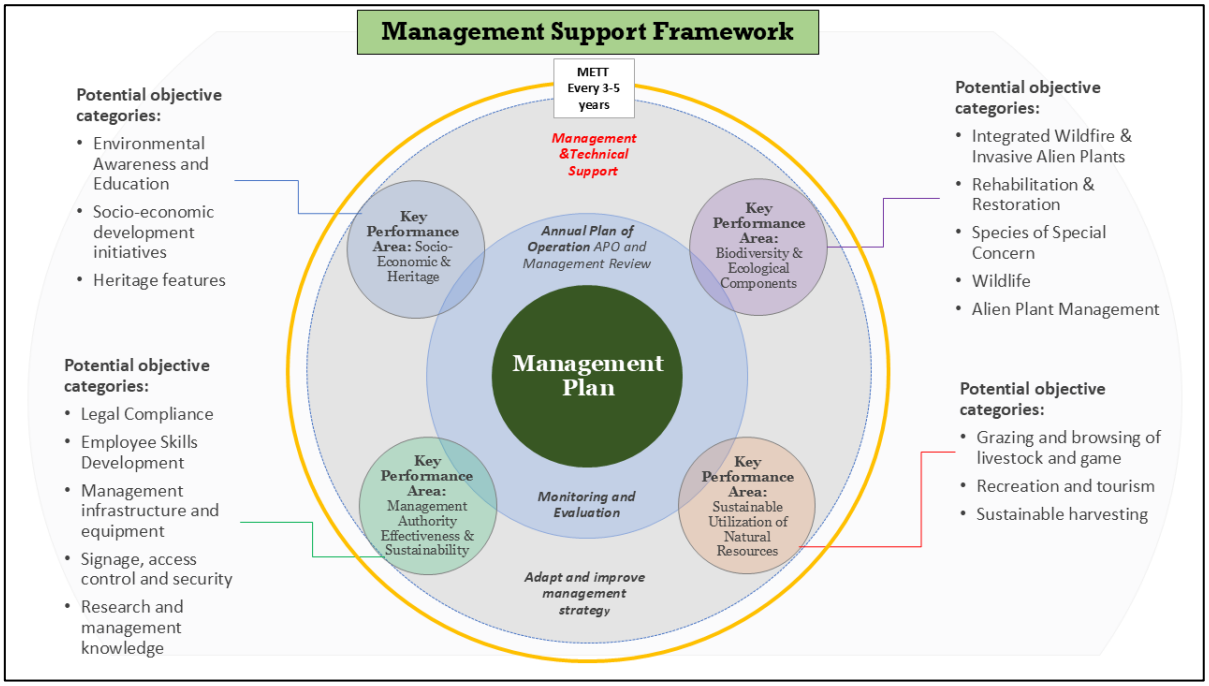


Figure 1.2 The Management Support Framework.

1.6 The Annual Plan of Operation

The Annual Plan of Operation (APO) forms an integral part (Part B) of the Protected Area Management Plan. The APO is documented within an associated excel spreadsheet (as shown in Annexure E) and enables the synthesizing of the Protected Area Management Plan. The following reasons enable better tracking of management progress which leads to better management support for landowners. This APO process allows for:

- for ease of use as a management tool;
- to facilitate updates and changes;
- to simplify the annual audit process;
- to simplify the drafting of subsequent versions of the APO after the annual review and planning workshop.

The Annual Plan of Operation template, or APO as it is commonly referred to, was developed and now maintained through a partnership between Conservation Outcomes, Conservation Management Solutions, and CapeNature with funding made available by the Table Mountain Fund. The initial development of the APO template was made possible by a WWF Nedbank Green Trust grant, and a partnership with Conservation Outcomes. The original template has further been customised specifically for the needs of CapeNature and their Stewardship Program.

This APO tool is intended to be used, firstly, as a tool to facilitate the management of day-to-day tasks of the protected area. Secondly, to provide a platform to compile and submit the Annual Report, and lastly to provide a structure to undertake an Annual Review of management interventions carried out for the year. The APO links directly to the protected area management plan's Key Performance Areas and Objectives. In essence, the APO is a work plan or a short-term schedule for implementing the Operational Plan of the protected area management plan (PAMP). It typically lists tasks required, who will be responsible for each task, when each task will need to be undertaken, and the budget required to implement the work plan.

In the APO, specific Management Activities under each Objective are assigned to a staff member and a time period for completion of the task agreed to. Performance and progress of each assigned staff member's tasks can be tracked monthly throughout the year and problems addressed at regular team meetings. The intention is that if the Management Activities are completed under each Objective and KPA, then the overall Objectives of the protected area will be met and management effectiveness of the protected area will improve.

The second function of the APO tool is its ability to automatically generate an Annual Report based on the contents of the APO. This report can be used to inform the Provincial Conservation Authority, the protected area board, or donor organisations on progress of management of the protected area for the year.

The third function is the ability to undertake an Annual Review of the management effectiveness of the protected area. This can either be in the form of a self-assessment by the management team on the ground, or as a facilitated self-assessment carried out with the guidance and support of an extension officer, or an assessment carried out in the presence of a CapeNature official.

1.7 Monitoring and Evaluation

Monitoring and evaluation is an essential component of the adaptive management process. Long-term monitoring and evaluation forms a clear management baseline and enables the reserve management team to determine if the implemented management activities are achieving the intended outcomes in terms the identified Objectives within each Key Performance Area (KPA). It is recommended that the Protected Area undertakes an Annual Management Review which is built into the APO tool. Additional ecological indicators may be required to effectively monitor species and ecosystem health. Every action in the APO has a Key Performance Indicator (KPI) and target. The Key Performance Indicator reflects whether an action has been identified as being completed, on track, major issues, minor issues, abandoned or planned. The target is the evidence that has been identified as necessary to complete the activity. Monitoring and reporting on these targets enable the assessment of management effectiveness. The 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.

1.8 The Annual Review and Planning Workshop

1.8.1 Management Review

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

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

This Management Review enables insights for more focussed discussion when the Stewardship Facilitator undertakes a site visit. This annual review and APO Annual Report 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 ten-year plan (Section 1.9).

1.8.2 Drafting the next year's APO

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

The following steps should be taken:

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

- You can now revise the year ahead's plan, the associated actions, evidence, responsible person, priority of the action, budget and deadlines, if necessary. If the evidence used previously was found to be an ineffective indicator, specify a different requirement.
- Systematically work through the APO by first addressing the weak management points picked up in the management review and prioritise accordingly.

1.9 Ten-year revision of the Strategic Management Plan

Legislation stipulates a maximum of a ten-year management period prior to the revision of the (Part A) Strategic Management Plan (SMP). The SMP can be revised after a shorter management period and this is recommended for a newly establish Nature Reserve where significant management outcomes and infrastructure development is taking place.

1.10 Annual Costing Plan

The annual budget is captured in the Annual Plan of Operation. See **Appendix E** (copy of APO).

2 Site Description

2.1 Introduction

The Franco Three Fountains Nature Reserve is proclaimed over a portion of Portion 63, Cape Farm Driefonteinen No. 29, located 4km South-East of Atlantis off the Old Mamre road (R304). The local authority is the City of Cape Town municipality, Blaauwberg District.

The site is reasonably flat ranging from 96 – 104 m above sea level. The underlying geology consists primarily of Malmesbury shales overlain in places by grey, regic, alluvial sands. Shales and laterite veins are exposed in the depressions where these heavy, clay soils reduce the water permeability forming seasonal pools and wetlands.

Historically the Driefonteinen farm was used for grazing with some of the vernal pools in the eastern half of the Nature Reserve dug out into dams and the natural drainage lines channelled into these dams for more permanent water. The mineralisation that resulted from these excavations dramatically increased the salt content of these creating hyper-saline conditions. When the larger farm was included into the small holdings area and subdivided, most of the undevelopable natural, seasonal wetlands and pans remained in a single farm – Portion 63.

With the grazing animals removed, alien vegetation – mostly Australian Acacias' – established a mature forest of trees in the 1980's which was removed after the establishment of the reserve. Active restoration of the impacted areas has been ongoing for more than 5 years. Fire was actively excluded from the area since the 1980's, but since 2018, three separate incidents resulted in wild fires within the property with a large fire in 2022 burning through the entire extent of the reserve.

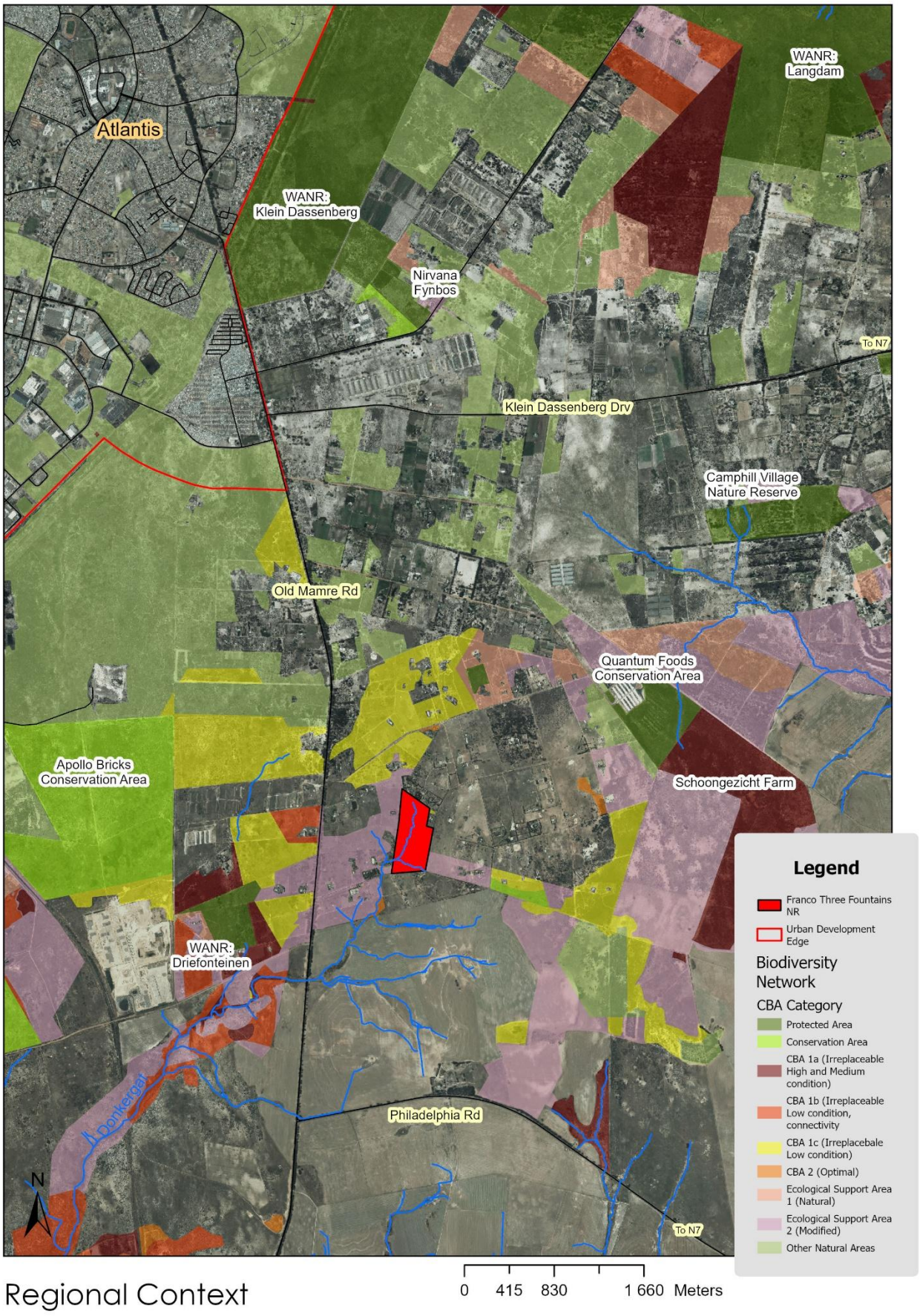


Figure 2.1 Regional location of the Franco Three Fountains Nature Reserve

Landowner details

Owner	Franco Property Trust
Contact person	Tony and Jodie Franco
Contact details – Tel.	072 243 7303
Contact details – email	jodiefranco@gmail.com
Management Authority	Franco Property Trust
Property descriptions	Portion 63, Cape Farm Driefonteinen No. 29
Total property area	21.42 ha

2.2 Administrative structure

The landowner is appointed as the Management Authority for the Nature Reserve as agreed to in the Management Agreement concluded between CapeNature and the landowner. In the case of the Franco Three Fountains Nature Reserve, the Management Authority is the Franco Property Trust.

The Franco Property Trust only has two members, Tony and Jodie Franco who are married, live on the property and manage it together as a lifestyle-type estate.

Where applicable, management decisions can be made collaboratively between the Management Authority, City of Cape Town: Biodiversity Management Branch and CapeNature, however the Management Authority is responsible for the management of the reserve and caries the ultimate decision-making responsibility. The Management Authority is required to submit a copy of their Annual Plan of Operation to CapeNature.

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 highlight the reasons behind the site being declared as a protected area. Summarising these key attributes into specific biodiversity targets then enables measurable goals to be generated and aimed at conserving and enhancing the reasons for the site being recognised as a priority for conservation. These targets are designed to ensure that protected areas effectively contribute to the overall conservation of biodiversity and the sustainable use of natural resources.

The values of Franco Three Fountains Nature Reserve include:

Natural values	Protection of unique Cape vernal pools habitat within, Atlantis Sand Fynbos (Endangered, Poorly Protected) and Swartland Shale Renosterveld (Critically Endangered, Not Protected). No other Cape Vernal Pools habitat is conserved in any statutory Conservation or Protected areas. At least 22 Species of Conservation Concern is protected including Critically Endangered *Marasmodes fasciculata* and *Hermannia procumbens*. Several other threatened species on site • *Gladiolus quadrungulus* (EN) • *Muraltia mitior* (EN) • *Lampranthus sociorum* (EN) • *Cleretum clavatus* (EN) • *Metalasia octoflora* (EN) • *Gladiolus meliusculus* (VU) • *Hermannia rugosa* (VU) The Vernal pool habitat will serve as receptor site for a number of spectacularly rare, local, aquatic plant species that would historically have occurred in the area including *Senecio cadiscus* (CR), *Oxalis natans* (CR) & potentially *Cotula myriophylloides* (CR). The property contains small populations of micro frogs Cape Caco (NT) and the more recently described Klipheuwel Caco.
Ecosystem service values	Seasonal, freshwater wetlands contribute significantly to groundwater infiltration and replenishment of groundwater aquifers. The sandy topsoils filter out organic accumulates from runoff continually improving the quality of the water which most of the surrounding land owners are dependent on for small-scale irrigation, drinking water for animals and household use in areas with no municipal, potable water supply. Nature Reserve is a key land parcel in the Schoongezicht Cluster and is the only viable upland-lowlands link to the coast along the Donkergat river.
Tourism values	No tourism initiatives are currently planned.
Cultural and heritage values	No requirements around cultural or heritage aspects at present.
Socio-Economic values	Employ local labour for tasks such as alien clearing, fire break construction and active restoration.

2.4 Summary of management challenges and opportunities

A summary of the key management challenges and opportunities, addressed in the management plan are highlighted in the table below.

Table 2.3 Management challenges and opportunities

BIODIVERSITY & ECOLOGICAL COMPONENTS

Management Focus Area	Challenges and Opportunities
Integrated Wildfire Control	Cutting of fire breaks late October to early November.
Integrated Invasive Alien Species Control	Maintain reserve free of woody invasive, alien species. Gradually restore areas invaded by herbaceous invasive species with locally indigenous Fynbos species.
Aquatic and Riparian Systems	Monitor quality of water flowing through the reserve and respond to instances of erosion during peak rainy season.
Rehabilitation and Restoration	Continue with active restoration of impacted areas post-alien clearing. Consider reshaping and restoring historically impacted vernal pools to natural condition and function.
Species of Special Concern	Annually monitor populations of Critically Endangered species. Period visit by CREW to monitor other SOCC.
Wildlife	Setting up of camera traps to monitor presence/absence of species of wildlife occurring in the reserve.

SUSTAINABLE UTILISATION OF NATURAL RESOURCES

Management Focus Area	Challenges and Opportunities
Grazing and Browsing of Livestock and Game	Keep livestock and inappropriate wildlife from accessing the reserve. Monitor populations of indigenous game for potential impacts on restoration areas.
Recreation and Tourism	Nothing required.
Sustainable Harvesting	Careful collection of fire wood (from brush piles of invasive alien vegetation from the reserve.

SOCIO-ECONOMIC & HERITAGE

Management Focus Area	Challenges and Opportunities
Environmental Awareness and Education	Nothing required, but can be incorporated if an opportunity is available.
Socio-economic Development Initiatives	Utilise local labour for alien clearing, fire break construction and active restoration initiatives.
Heritage Features	No heritage features applicable

MANAGEMENT AUTHORITY EFFECTIVENESS & SUSTAINABILITY

Management Focus Area	Challenges and Opportunities
Legal Compliance	Conclude Title Deed endorsements
Employee Skills Development	Nothing required.
Management Infrastructure and Equipment	Monitor rust in horse camp fence. Consider replacing in the next three years. Periodically patrol perimeter fence and inspect for damage or unlawful access.

Signage, Access Control and Security	New signage installed 2024. Check condition of signage annually and replace when necessary – likely around 2029.
Research and Management Knowledge	Provides the opportunities to research and monitor the last remaining population of critically endangered Marasmodes fasciculata and Hermannia procumbens and potential for introductions of other Critically Endangered species such as *Senecio cadiscus*.

2.5 Historical and current landuse

Historically, the area would have been included into the Groene Kloof and Brakke Fontyn outposts of the Dutch East India Company named by Olaf Bergh in 1682. In 1700 the Company gave a contract to Henning Huising to graze cattle from "the three springs on this side of Groene Kloof" and to graze his cattle as far as Saldanha Bay. Due to excessive cattle theft by the Hottentots, the Governor of the Cape, Willem Adriaan van der Stel, sent a sergeant and ten men to establish a permanent military outpost in 1701 at Groene Kloof, now Mamre. The protection offered by the Company meant more and more grazing applications from farmers in the area and by 1709, all the Company's cattle as far as Stellenbosch was transferred there making it the biggest ranch in the Cape. In 1791, as the Company was on the verge of bankruptcy, the outposts were abolished and sold off except for Groene Kloof that remained government property and was put out to lease (Athiros et. al. 2009).

In the 1970's Atlantis was established by the apartheid government as an industrial centre and a community for Cape Town's coloured population. To draw industries in, government instituted a programme to encourage industry through subsidies and other incentives. This proved unsuccessful and when the subsidies were withdrawn, most of the industry moved closer to the CBD. Currently, less than 3 % of the original companies remain. Some of the surrounding farms in Atlantis was rezoned and allowed to subdivide into small holdings.

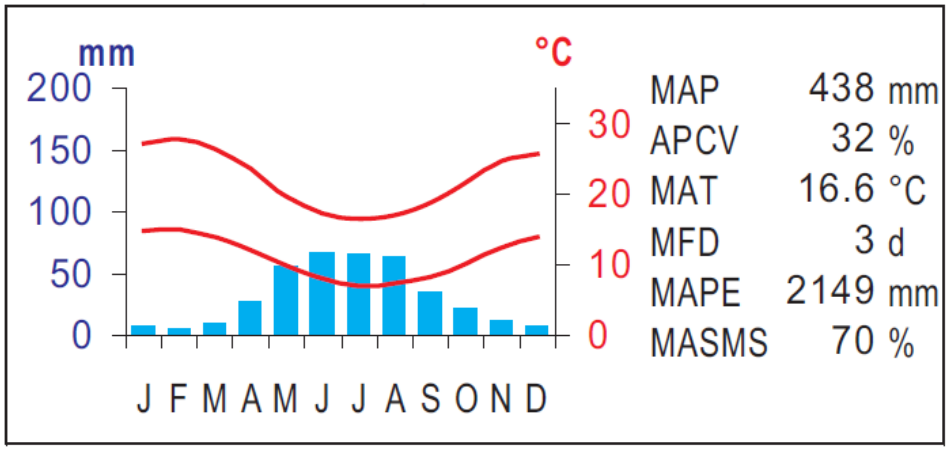
The original Farm Driefonteinen (Cape Farm 29) of +/- 1070 ha was subdivided into > 100 small holdings ranging from 8 to 28 ha averaging around 14 ha. Most of the smallholdings are lifestyle properties with livestock farming, equestrian centres, nurseries or have multiple buildings with tenants. The Franco Three Fountains Nature Reserve property was historically used for livestock grazing and as the small holdings became smaller, eventually some small game including springbok and bontebok which proved unsuccessful in the seasonally saturated soils and hyper-saline conditions during summer. The previous landowner excavated portions to increase the sizes of the dams and trenches were dug to channel water flow. Some construction historically took place and the remains of the foundation of a building are located in the nature reserve. The site was also heavily infested with rooikrans (Acacia cyclops) and encroached on by couch grass (Cynodon dactylon), but is being controlled.

2.6 Ecological context

This section describes the ecological factors that influence biodiversity and ecological processes on Franco Three Fountains Nature Reserve.

2.6.1 Climate and weather

The Mediterranean-type winter-rainfall regime generates some unique climate characteristics with hot and dry summers followed by cold and wet winters. Peak summer temperatures (Jan & Feb) can often exceed 40 degrees with an average maximum of 26.7°C. Winters are cool with the temperatures very seldom dropping below zero (< 3 days per year) at an average minimum of 7.5°C (July). The region receives between 350 – 900 mm of rain per year with a mean of 424 mm. Mists (Fog) is common in winter and provides additional precipitation. Hot and dry South-easterly winds dominate in summer creating hazardous fire conditions while strong frontal North-westerly winds bring the rain in winter (see Fig. 2.6.1).



MAP: Mean Annual Precipitation
APCV: Annual Precipitation Coefficient of Variance
MAT: Mean Annual Temperature
MFD: Mean Frost Days
MAPE: Mean Annual Potential Evaporation
MASMS: Mean Annual Soil Moisture Stress

Figure 2.6.1. Climate diagram for Atlantis area (Mucina & Rutherford 2006).

2.6.2 Topography, Hydrology and Soils

The Fynbos Biome is topographically diverse and this heterogeneity of habitats has been a major driving force in the creation of arguably the most diverse and unique of the temperate floras. Geology determines topography by influencing the slopes and soils in an area. The site however is reasonably flat ranging from 96 – 104 m above sea level. The underlying geology consists primarily of Malmesbury shales (clays) containing veins of laterite (gravel) overlain by alluvial sands.

Around 560 to 540 million years ago the region was submerged in an ancient sea on the edge of the continent where mud and muddy sands were deposited on the sea bed. Continental drift around 540 million years ago released submerged magma from inside the crust that pushed up and solidified to form the Cape granites (Dassenberg Hills). Over the next 170 million years, mud and sands washed off the continent continued to settle on top of the horizontal layers of shale and granite. More and more sand was deposited until it formed a layer 7 km thick (Cape Supergroup) that compressed and cemented the shales. Between 280 and 235 million years ago the collision of continents lifted the region folding, compressing and crumpling up to form the Cape Fold Belt Mountains. Over time, the easily eroded sandstone weathered away revealing the shales and granites again in places.

At Three Fountains, shales and laterite veins crop out sporadically with clay and silty soils. The depressions in these reduce the water permeability forming seasonal pools and wetlands. Shale and laterite derived soils have a high clay content, which mean they have higher Cation Exchange Capacity (holds on to minerals better making it more fertile) and water-holding capacity than sandy soils. However, if these soils become degraded, a hard crust can form on the surface, which hinders water infiltration and the emergence of seedlings (see Fig. 2.6.1 & 2.6.2).

More sodic soils and pools can be found on the south-eastern boundary that was colonised by typical strandveld/thicket species gradually becoming fresher lower down the gradient. This could potentially be a result of the salty water pushed up by the nearby springs or an ancient estuary depositing the salts in the soils and brought to the surface through leaching.

Refer to Figure 2.6.1

Figure 2.6.1 Exposed shale with hints of laterite (gravel pellets).

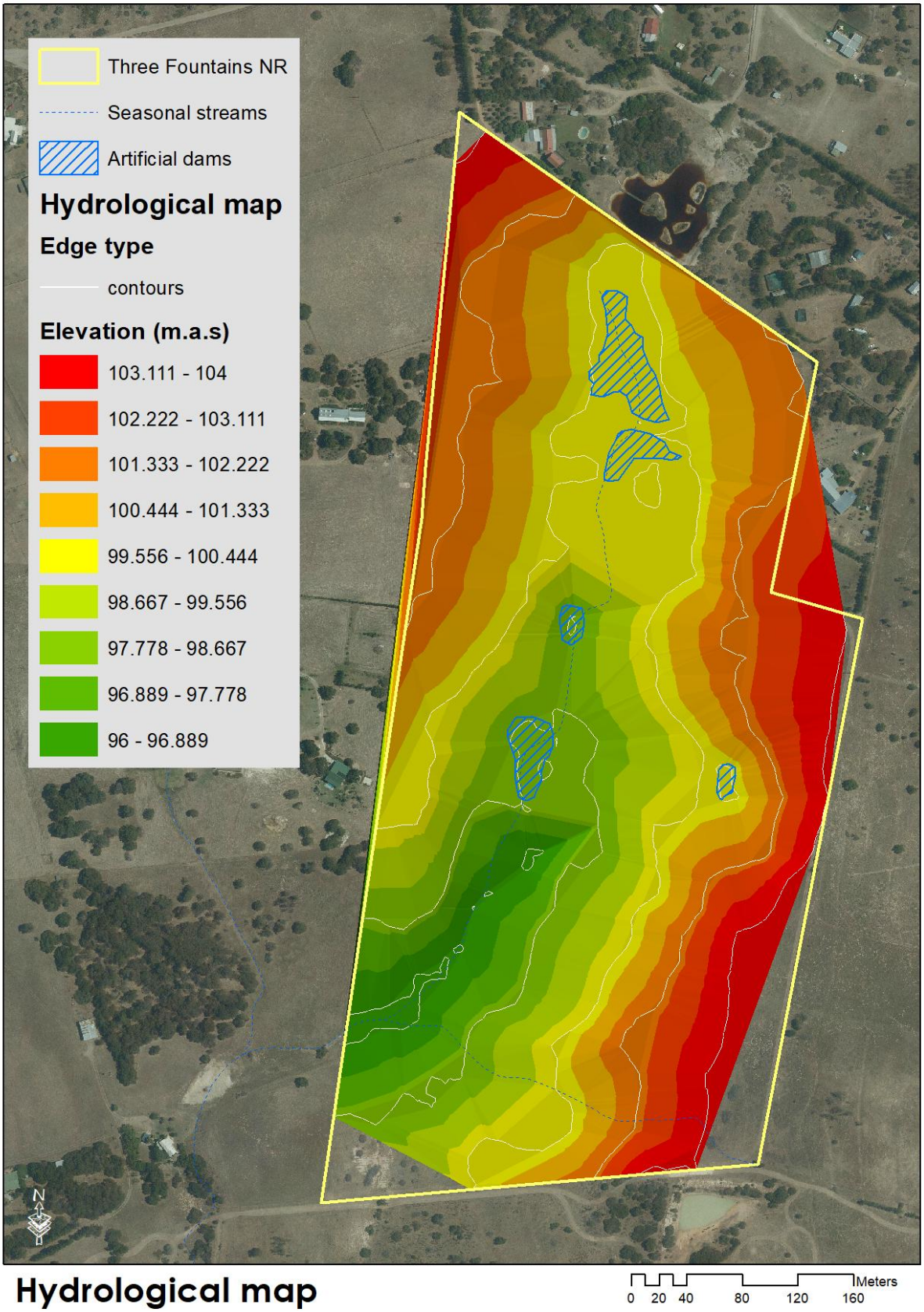


Figure 2.6.2 Topographical and Hydrological map for Three Fountains NR.

2.6.3 Vegetation

The Cape Floristic Kingdom, one of six world floral kingdoms, is internationally renowned for its special rich flora containing an estimated 9 000 species of vascular plants of which almost 69% are endemic (restricted to the region). This makes it one of the richest regions in the world in terms of botanical diversity. It is characterized by five endemic families and by the conspicuous presence of, amongst others, species belonging to the families Aizoaceae, Ericaceae, Fabaceae, Iridaceae, Orchidaceae, Proteaceae, Restionaceae, Rutaceae and Scrophulariaceae (Goldblatt & Manning, 2000).

The ecological sustainability of a site and overall ecosystem health is driven by the quality of the vegetation. In a natural system with functional ecosystem processes, little management effort is needed, but the more degraded the vegetation becomes the more management interventions are required. In the Fynbos biome, the plants that inhabit the area create the habitats needed for everything from soil microbes to insects, birds and animals to survive. The vegetation binds the soil preventing erosion, regulates soil temperature and water permeability. The type of vegetation impacts on evapotranspiration rates and longevity of available groundwater. The loss in natural vegetation results in the loss of insect, bird and animal diversity and makes the site susceptible to invasion by alien species (both fauna and flora) that in turn upset the water cycle, fire regime and soil nutrients which then leads to additional loss of biodiversity and the massive cascade effects thereof. Unhealthy and unbalanced ecosystems are unpredictable spawning pests and 'natural disasters' ultimately degrading the quality of life for the people living on the land.

Fynbos vegetation types typically correspond to a specific geological substratum (soil type). At Three Fountains, the Atlantis Sand Fynbos species occur on the deeper acidic sands, the Swartland Shale Renosterveld elements on the exposed clay soils and Cape Vernal Pool vegetation is restricted to the seasonally flooded pools and wetlands. Little islands with thicket species represent some elements of Cape Flats Dune Strandveld. The uniqueness of the Nature Reserve lies in the fact that it is comprised almost entirely out of ecotonal (transitional) elements from the major vegetation types were 161 plant species have already been identified by Custodians of Rare and Endangered Wildflowers (CREW) volunteers. For a small reserve it has a substantial number of species despite the heavy disturbances from the past. Species of Conservation Concern include Marasmodes fasciculata (Critically Endangered), Hermannia procumbens (Critically Endangered), five Endangered species (Gladiolus quadrangulus, Lampranthus reptans & Muraltia mitior), three Vulnerable species (Lachenalia reflexa, Hermannia rugosa & Gladiolus meliusculus) and 8 species that are either Near Threatened or Declining in numbers (See Appendix F for a full species list).

According to the latest National Ecosystem Conservation Status, Atlantis Sand Fynbos, Swartland Shale Renosterveld vegetations and the Cape Vernal Pools are Critically Endangered with Cape Flats Dune Strandveld vegetation listed as Endangered. Due to the high levels of irreversible natural habitat loss and the high number of threatened plant species found in these vegetation types, national conservation targets have been set to try and ensure the security of the remaining patches of these vegetation types and to preserve their ecological processes before the remnants become too small and isolated to function.

Atlantis Sand Fynbos:

Atlantis Sand Fynbos is a true Fynbos vegetation type dominated by retios, proteas and containing patches of ericatious Fynbos, mostly in seeps. It has significantly higher levels of biodiversity than the northern Sand Fynbos vegetations and a record of 76 species was identified in a 50 m2 plot at Pella research site near Atlantis. Endemic species are mostly from the Protea family and include Leucospermum parile (EN), Serruria linearis (VU), Serruria roxburghii (EN), Serruria scoparia (CR). Erica malmesburyensis (CR) currently persists only in two known subpopulations.

Figure 2.6.3.1 Typical dry, deep, acidic sands with lowlands Atlantis Sand Fynbos vegetation at the Klein Dassenberg section of the Witzands Aquifer Nature Reserve.

Distribution:

Western Cape Province: Rondeberg to Blouberg on the West Coast coastal flats; along the Groen River on the eastern side of Dassenberg-Darling Hills through Riverlands to the area between Altantis and Kalbaskraal, also between Klipheuwel and Paardeberg with outliers west of the Berg River east and north of Riebeek-Kasteel between Hermon and Heuiningberg. Altitude 40-250m

Conservation:

Listed as Critically Endangered, a target of 30% was set, but currently only 6% is formally conserved in Riverlands/Pella Research site and Paardenberg. More than 40% of the historic range has been transformed to cultivation (agricultural smallholdings and pastures) and urban sprawl of Atlantis. Most of the remaining vegetation is heavily invaded by woody aliens including Acacia saligna, Acacica cyclops and various species of Eucalyptus and Pinus. Impacts from erosion are considered very low.

Swartland Shale Renosterveld:

Renosterveld, unlike true Fynbos vegetation typically has no Protea, Erica or Restio components and are associated with clay soils that are more nutrient rich. As a result, most of the vegetation type has been transformed for agriculture and only tiny, isolated islands remain usually on top of hills or rocky outcrops. Dominated by members of the daisy family (Asteraceae), including renosterbos (Dicerothamnus rhinocerotus), the west coast renosterveld veld types has a rich diversity of geophytes many of which are locally endemic. Also embedded into the vegetation type are various unique habitats including vernal pools, ferricrete gravels, quartz patches and seasonal wetlands all ranking amongst the most threatened habitats in the Cape containing many endemic species.

Figure 2.6.3.2 Typical Swartland Shale Renosterveld vegetation on the top of the hill at the Diemersdal Wine Estate Conservation Area.

Distribution

Limited to the Western Cape Province, Swartland Shale Renosterveld used to span a large (4 945.766 km2), generally continuous area across the Swartland and Boland on the West Coast lowlands. Stretching from Het Kruis in the north, southwards between the Piketberg and Olifantsrivierberge, widening appreciably in the region around Mooreesburg between Gouda and Hopefield and encompassing Riebeek-Kasteel, Klipheuwel, Philadelphia, Durbanville, Stellenbosch to the South and Sir Lowry's Pass village near Gordon's Bay. Altitude of the rolling hills landscape ranged from 50 to 350 m.a.s.

Conservation

Currently listed as Critically Endangered with an unattainable national target of 26 %, more than 90% of the area has been totally transformed mainly for cropland. Remnants are restricted to isolated pockets usually on steeper ground and often heavily impacted by overgrazing and too frequent fire regimes. So far only a few patches have been included in conservation schemes (e.g. Elandsberg, Paardenberg). Disturbance is often followed by invasions of exotic Acacia's (Acacia saligna, Acacia mearnsii) as well as several species of Eucalyptus. Alien annual grasses of the genera Avena, Briza, Bromus, Lolium, Phalaris and Vulpia are a primary problem in remnant patches. Other

serious aliens include herbs such as Erodium cicutarium, Erodium moschatum, Erodium plantagineum and Petrorhagia prolifera.

Cape Vernal Pools:

On special soil types and/or under certain hydrogeological conditions, sections of veld experience waterlogging or seasonal flooding conditions which can often exert an overriding influence on the floristic composition, structure and dynamics of the site. Although it remains strongly linked to the surrounding vegetation, the species composition and driving forces behind speciation is different and it is therefore characterised as a unique vegetation type.

Figure 2.6.3.3 Typical Cape Vernal Pool vegetation at the Nieuwepost Conservation Area.

Cape Vernal Pools are characterized by unique fringing species that occupy the waterlogged soils surrounding the pools plus specialized aquatics that are rooted in the mud but often have floating stems or leaves. The zone of fringing species which grow in water up to 2 cm deep comprises a band up to 2m wide of various small annuals, typically Crassulas (C. vaillantii, C. natans) and Cotula (C. coronopifolia) along with several small geophytes such as Trachyandra spp. The small aquatic Limosella spp. with floating leaves is also found in this zone. Later in the season as the margins dry out larger bulbs such as Ornithogalum thyrsoides predominate. The specialized aquatics grow in waters deeper than 2 cm although seldom more than 10 cm and typically include a domination of one or two species with floating stems e.g. Oxalis natans, O. disticha or Senecio cadiscus plus one or two geophytes.

Distribution

Naturally rare sites are spread across the Western and Northern Cape Provinces from Cape Peninsula, Cape Flats and West Coast (especially between Hopefield and Piketberg) as far north as the surrounds of Vanrhysdorp and Nieuwoudtville. The combined total area for this vegetation type covers roughly 0.2 km2 and is embedded within the shale renosterveld and sand fynbos units of the Fynbos Biome. Altitude 50 - 850 m.

Conservation

Listed as Critically Endangered in the 2006 National Vegetation Type assessment, the vegetation type was removed in 2018 as the area occupied was too small to accurately map and was embedded into a number of larger ecosystems. No habitat is currently conserved in statutory conservation areas. Only 1 other informal Conservation Area was established to protect this habitat type.

Reference site:

The challenge with a site that has been subject to poor ecological management in the past and now requires restoration effort, but is mostly within ecotonal vegetation that it is not typically representative of any of the mapped vegetation types for it, is to find an appropriate reference site that is still in a near pristine condition. In this case, the Schoongezicht Core Flora Site (located 2.7 km east) makes a fairly decent reference site also containing the same vegetation types with the same edaphic and aquatic interfaces, only lacking the vernal pools component. See Figure 2.6.3.4 below showing the interface between seasonal, alkaline wetlands and the neutral, lowland, Shale Renosterveld (denser shrubbery in the back) at Schoongezicht.

Figure 2.6.3.4 Reference site with good quality in-tact ecotonal vegetation at Schoongezicht Core Flora Site.

Fire regime

Fire is an essential ecosystem process in fynbos. It provides the disturbance and stimulus that has contributed to the unprecedented floristic response we experience in our landscape. Fire is an ecosystem process that is essential for the continued functioning of the ecosystem as well as the continued evolution of biota therein. Due to fragmentation of the natural landscape however, fire can no longer operate naturally on a landscape scale. We therefore need to facilitate the process within these smaller compartments to ensure persistence of biodiversity whilst ensuring the safety of persons and property.

Wildfires as well as the use of fire as a management tool pose serious potential risks. Consult the National Veld and Forest Fire Act (101 of 1998) to acquaint yourself with the legal obligations of landowners in fire-prone landscapes.

Fire is used for different objectives like: reducing vegetation fuel-load to reduce the unpredictable unmanageable wildfires, reducing bush thickening, control of alien invasive vegetation, and promote desirable plants. Fire rejuvenates senescent or moribund habitats and is vital in fixing depleted nitrogen in the soil making it available for use by organisms.

At the Franco Three Fountains Nature Reserve the occurrence of fire is normally managed very carefully. Areas of active rehabilitation need to have fire excluded for the first five to ten years to ensure that the new plants establishes themselves and produces sufficient seed to recover after fire. Sections that are more recently cleared of aliens need a rejuvenating burn to clear accumulated fuel load, remove pathogens and stimulate seeds from the seed bank that would boost natural recovery.

Unfortunately, during the past five years, the opposite has been true;

After having fire excluded from the property, likely for more than 30 years, three successive wild fires burnt through the reserve in 2018, 2021 & 2022.

- On 29 January 2018, following a catastrophically dry year of 2017, a worker on the neighbouring property was cutting with a grinder in the dry grass on the border of the reserve that caused a fire that burnt across 9.2 ha. The fire stopped naturally on the edges of the pans where the vegetation is very low and was further contained along the fire breaks along the eastern boundary on the edge of the recreational area by the City's Biodiversity Management Branch and Fire & Rescue.

- On 18 February 2021, one of the hottest days of that year, another fire started on the same boundary and burnt the north-western corner of the property, a section that didn't burn in 2018, and was mostly contained along the fire breaks of the Nature Reserve with a small section burning into the adjoining property to the north.

- On Saturday, 29 January 2022, after a weeklong heatwave, glass isolators left behind by Eskom contractors, ignited the dry grass in the south-western corner where three properties meet. As

the vegetation was still very grassy from the fire the year before and the wind was blowing quite strong, the fire spread very quickly burning across the entire extent of the reserve and twelve other nearby properties before it was finally subdued.

Ideally, the dry Sand Fynbos vegetation on the peripherals of the reserve should burn on a 10 – 15 year cycle. The exposed clays with the seasonally wet Shale Renosterveld interface would naturally be more resistant to fire with a slightly longer interval of 15 – 25 years. The thicket-like islands between the wetlands would likely be very resistant to fire and would burn very infrequently > 25 year cycles.

The historic invasion of Australian Acacias (Port Jackson – *Acacia saligna* & Rooikrnas – *Acacia cyclops*), that have subsequently been cleared, are natural nitrogen fixators to the soil. Over the years, these dense infestations would have resulted in the unnatural build-up of nitrogen in the soil which inhibits the natural recovery of many lowlands, wetland species, but creates the ideal environment for invasive alien grasses to dominate in late spring (October/November) which is then able to carry a hot fire into these thickets allowing them to burn too frequently.

The challenge for the next 10 years would be to **keep all fires out** through strict fire break maintenance and trying to reduce the impact of the secondary invasive species (alien, annual grasses) still feeding off the accumulated nitrogen in the soils until such a time that annual leaching of nutrients from the soils again reinstates a more natural balance allowing the Renosterveld species to make a stronger comeback and establish a more natural structure which can be augmented with annual propagation and planting (see subsidiary Restoration Plan).

Refer to Figure 2.5.8.1 - Veld age map.

Extensive fire from January 2022

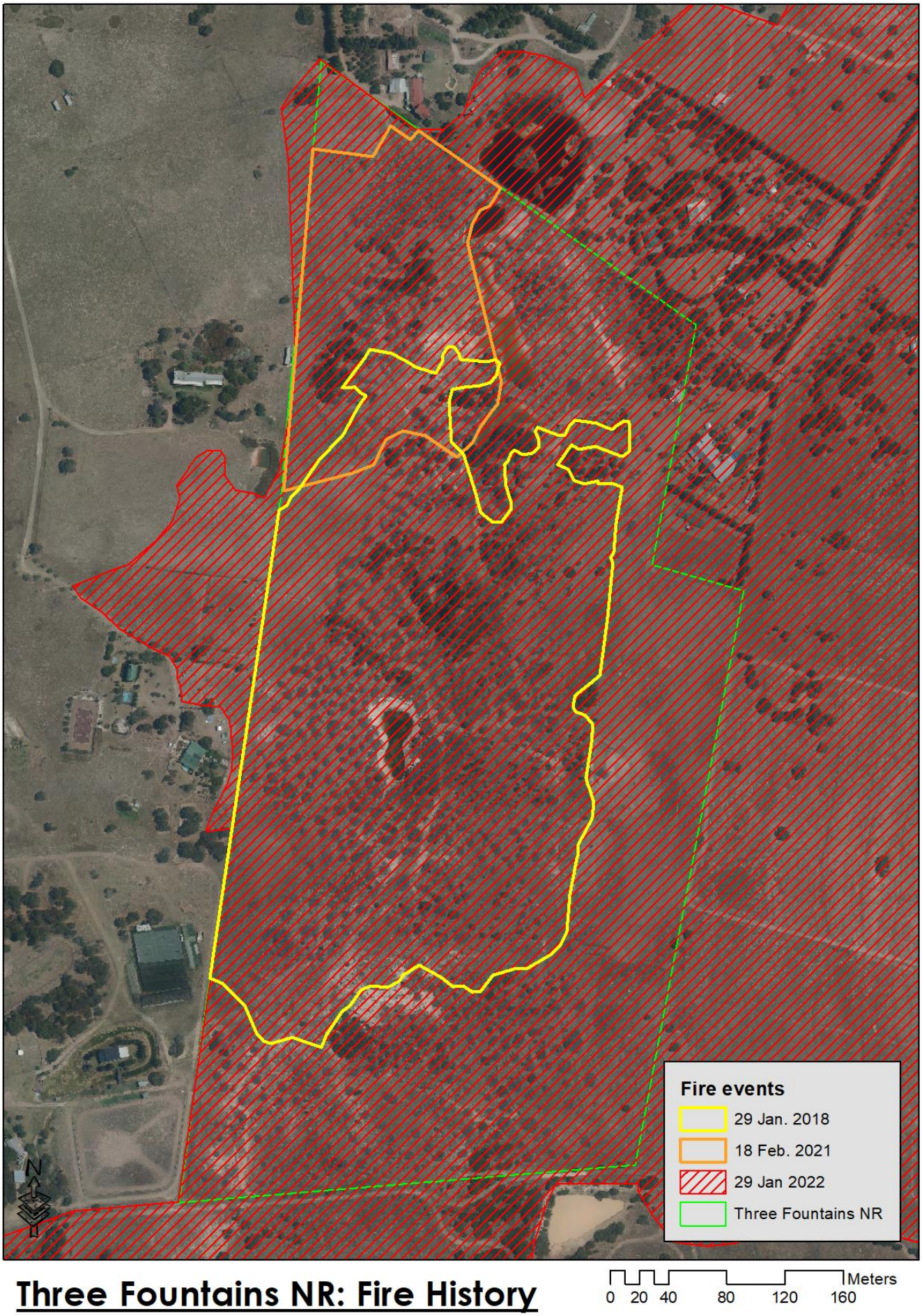
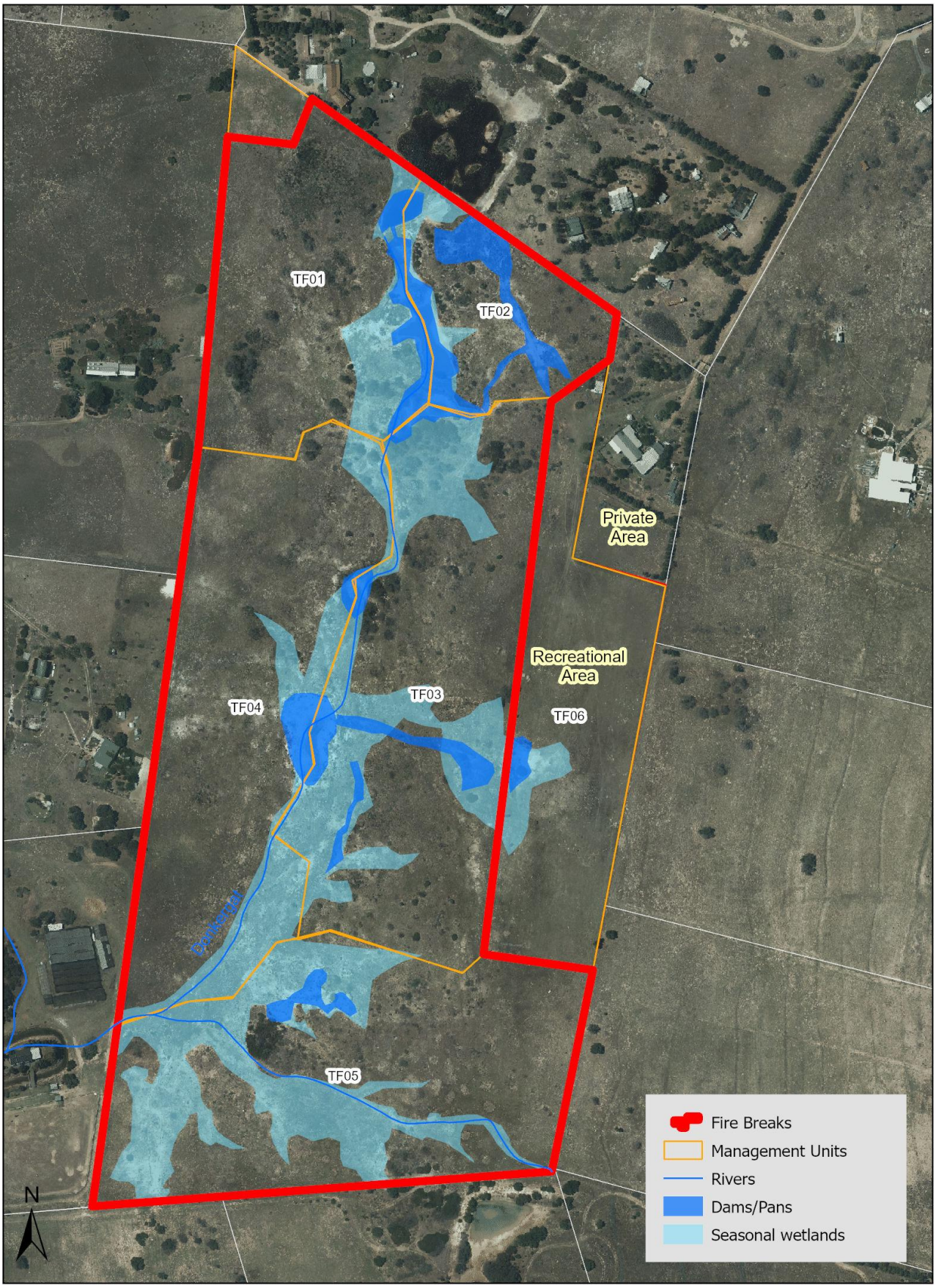


Figure 2.5.8.1 Veld Age map Franco Three Fountains Nature Reserve



Fire Management

Figure 2.5.8.1 Fire Management Map for Franco Three Fountains Nature Reserve

2.6.4 Invasive species

Any land management programme in South Africa will inevitably include an alien plant control program. Alien control programs are essential to protect valuable resources such as surface and ground water, biodiversity and the landscapes of our country.

In terms of Section 76 of the National Environmental Management: Biodiversity Act (No.10 of 2004), the management authority of a protected area must incorporate an invasive species control plan in the protected area management plan. This is addressed in section 4.1 below.

An alien control program however requires a high level of commitment, coordination between landowners and authorities, professional planning and implementation and a good dose of common sense. The guidelines provided are compiled from a wide source and will hopefully provide insight to land managers in order for financial and human resources to be effectively used in an integrated control programme.

The first step is to prioritise areas to be controlled:

- Areas requiring follow up treatment take precedence over areas which still require initial clearing. Follow up treatment is essential to curb regrowth and spread of the alien vegetation which has already had time and money spend on it.
- Start with low density Management Blocks first to arrest the invasion and prevent the build-up of seed banks. Starting with less dense areas also requires fewer resources and these areas will also be easier to carry out follow up treatment in.
- Dense mature stands should ideally be left for last, as they most probably won't increase in density or pose a greater threat than they are at the moment. Starting to clear dense areas also means that you have to be dedicated to expensive follow up treatments thereafter.
- Collective management and planning with neighbours allows for more cost effective clearing and maintenance.
- One should always consider the natural gradient of the area being cleared, all operations should follow the gradient of the e.g. the slope or drainage lines.
- It also helps using existing roads or visible land marks for demarcating the boundaries of management units.

Following these principles, the TFNR can be divided into 6 conservation management blocks as depicted in Figure 2.6.5. All woody invasive alien plants should be cleared per block according to the alien clearing schedule (Table 2.6.1).

The Franco Three Fountains Nature Reserve has had all initial clearing completed with at least two to three Follow-ups. The site is now in maintenance phase requiring only an annual inspections and periodic clearing of emergent seedlings

See Figure 2.6.5 for Invasive vegetation map and management units.
A table summarising the alien spp., density and age classes can be inserted here. See example of table below.

Table 2.6.1 Alien Species, Density and Age on Franco Three Fountains Nature Reserve

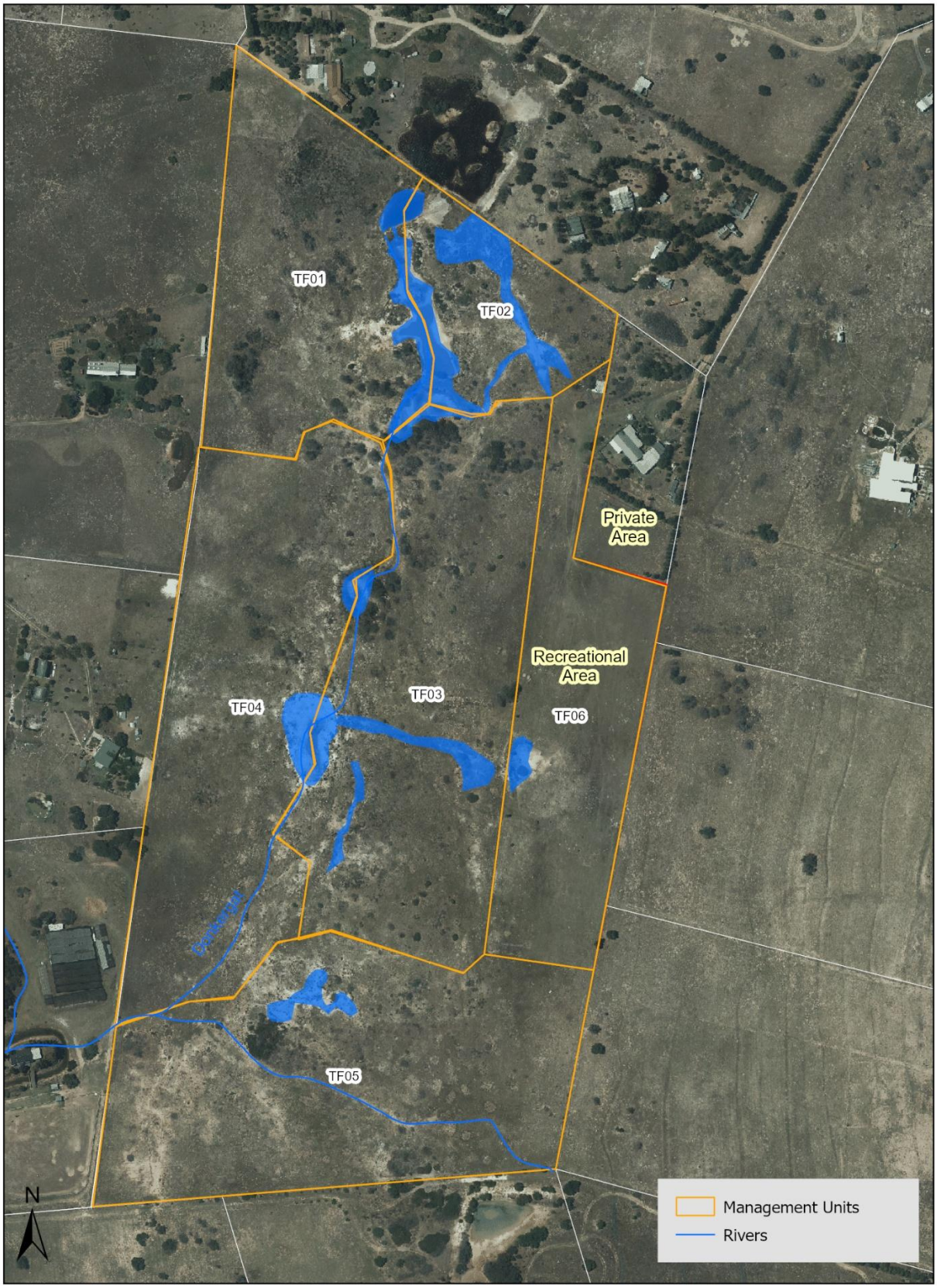
Man Unit	Dom Species	Density	Age	Sec Species	Density	Age	Other Species	Density	Age
FTF01	Rooikrans	5 %	Seedlings	Port Jackson	1 %	Seedlings			
FTF02	Port Jackson	10 %	Seedlings	Rooikrans	5 %	Seedlings			
FTF03	Port Jackson	5 %	Seedlings	Rooikrans	5 %	Seedlings	Bromus	30 %	Annuals
FTF04	Rooikrans	1 %	Seedlings	Port Jackson	1 %	Seedlings	Bromus	30 %	Annuals
FTF05	Rooikrans	1 %	Seedlings	Port Jackson	1 %	Seedlings	Bromus	30 %	Annuals
FTF06	Rooikrans	< 1 %	Seedlings	Port Jackson	< 1%	Seedlings			

Annual grasses like *Bromus spp.*, *Avena fatua*, Briza spp. & *Lolium multiflora* are challenging to control. Best practise at present requires a combination of herbiciding and mowing.

Mowing of annual grasses while the grasses are flowering and before the seed has set (around September) is fairly effective. Mowing before June or after September has little effect. Please note that the brushcutting of indigenous shrubland to remove annual grasses is not recommended.

Applying herbicide in dense patches is the most effective alien grass control method. Pre-emergent systemic herbicides, are generally the most effective while having the least collateral damage.

Secondary invasion of annual grasses and herbaceous weeds following the 2022 fire.



Management Units

Figure 2.6.1 Invasive alien vegetation map for Franco Three Fountains Nature Reserve

2.6.5 Species of conservation concern

Three Fountains NR falls on the fringes of the Darling-Dassenberg Centre of endemism, a narrow geographic area containing assemblages of unique species of flora that only occur within this specific area. Fynbos flora in general has a very high degree of endemism, some of the highest in the world when considering the diversity of species – around 69 % of Fynbos species occur nowhere else. Regional centres of endemism is even denser in narrow endemic species and when these ecosystems become threatened, the number of threatened species becomes catastrophically high. During the first botanical assessment of the property in 2012, 14 'Red Data species' were recorded. That number has since grown to 22 and includes;

2 x Critically Endangered
6 x Endangered
4 x Vulnerable
9 x Near Threatened
1 x Data Deficient (Taxonomically Problematic)

See **Appendix C** for comprehensive species list.

Marasmodes fasciculata (CR)

Hermannia procumbens (CR)

Gladiolus quadrangulus (EN)

Clertetum clavatus (EN)

Hypodiscus rugosus (EN)

Despite the relatively small size of the Nature Reserve, the wetlands habitat provides good habitat for a number of amphibians, mostly notably the two species of micro frogs Cape Caco (*Cacosternum capensis*) – Near Threatened, but also the Klipheuwel Caco (Cacosternum aggestum) – downlisted to LC.

Cacosternum capensis (NT)

Cacosternum aggestum (NT)

The wetland habitat also provides food and shelter for seasonal birds visiting the Nature Reserve including Black Harrier (Endangered), Blue Crane (Near Threatened) and Great White Pelicans (Vulnerable). None of these have been observed breeding on the reserve yet.

As active restoration efforts continue to improve the habitat, it is likely that these species will spend more time on the reserve and that Black Harrier is likely to start breeding here soon as the natural structure of the vegetation is nearly reinstated after the 2022 fire.

2.7 Cultural Heritage

Khoe pastoralists, alongside the hunter gatherer San, inhabited the south-western Cape prior to the arrival of the first Europeans in the 15th century and the establishment of the Dutch Cape Colony in 1652. Khoe pastoralists introduced cattle and sheep farming to the south-western Cape around 2000 years ago. The introduction of pastoralism introduced new material culture to the region such as pottery (ceramics) and more refined stone tools (scrapers) & increased usage of grindstones. The West Coast is rich in Middle & Late Stone Age (LSA) archaeology and the coastal rocky outcrops have a high frequency of precolonial burials and shell middens. Known LSA sites in the area include the dune area north of the Klein Vissershok Landfill site and the Diep River/Vissershok floodplains close to the Vissershok Historical Farm. Several well-preserved Cape Coastal potshards deposits of LSA ans well as knapped silcrete flakes have been found in the area

2.8 Regional and local planning context

2.8.1 The Protected Area Expansion Strategy and Implementation Plan

The Protected Area Expansion Strategy and Implementation Plan is a response to the National Protected Area Expansion Strategy (NPAES) (SANBI & DEAT, 2010) which calls on Provinces to develop implementation plans in support of the NPAES and in support of provincial conservation efforts and priorities. The NPAES, which provides a broad national framework for Protected Area expansion in South Africa, also identifies areas of importance to be targeted for Protected Area expansion in the country, and mechanisms to achieve this.

The Western Cape Protected Area Expansion Strategy addresses the formal declaration of priority natural habitats as protected areas to secure biodiversity and ecosystem services for future generations. This strategy is aligned with the concepts and goals of the NPAES.

2.8.2 The Strategic Development Framework and Integrated Development Plan

The City of Cape Town's 2022 – 2027 IDP strategic plan, comprises priorities and foundations that support the vision of creating a 'City of Hope'. The top programmes that will deliver on the City's priority outcomes in support of its vision are;

- Safety
- Economic Growth
- Basic Services
- Housing
- Transport
- Public Space, Environment & Amenities

The City's 16 objectives linked to its priorities and foundations include the following;

PUBLIC SPACE, ENVIRONMENT AND AMENITIES

- OBJ 9: Healthy and sustainable environment.
- OBJ 10: Clean and healthy waterways and beaches.
- OBJ 11: Quality and safe parks and recreational facilities supported by community partnerships.

Objective 9: Healthy and sustainable environment:

Cape Town's biodiversity and ecosystem services play an important part in the city's ecological, social and economic health. The city is committed to protecting, restoring and managing its natural areas to ensure their long term sustainability and efficacy and to improve Cape Town's resilience to climate change.

9.1 Environmental and biodiversity management programme.

The city will prioritise the protection of its ecosystem services and biodiversity sensitive areas to ensure their long-term sustainability and improve Cape Town's resilience to climate change. The city will work to expand land under conservation and manage biodiversity effectively which includes the removal of alien invasive species. The city recognises the importance of maintaining Cape Town's Protected Areas in a way that supports community access to nature as well as economic activities such as ecotourism. In this regard it will work with organisations and other spheres of government to continually improve the National Parks, Nature Reserves and biodiversity assets in Cape Town.

To this end, the City has developed a number of statutory, strategic and operational plans which includes;

Cape Town's Municipal Spatial Development Framework (MSDF):

The MSDF is required by law to translate the vision and strategy of the City's IDP into a desired spatial form for the municipality. The City's MSDF presents the long-term plan for the spatial development of Cape Town over a timeframe of 10 to 20 years. Importantly, it needs to provide practical policy guidance for decision makers to achieve the right spatial balance between different competing sectors and interests.

The MSDF includes a spatial vision, policy parameters and development priorities that will help Cape Town achieve a reconfigured and inclusive spatial form and structure. The spatial vision is supported by the following spatial strategies embedded in the MSDF and the district spatial development frameworks (DSDFs).

- Plan for employment and improve access to economic opportunities.
- Build an inclusive, integrated and vibrant city.
- Manage urban growth and create a balance between urban development and environmental protection.

Local Biodiversity Strategy and Action Plan (LBSAP).

- To be a City that leads by example in the protection and enhancement of biodiversity.
- To be a City within which biodiversity plays an important role, where present and future generations benefit from a healthy and vibrant biodiversity.
- To be a City that actively protects its biological wealth and prioritises long term responsibility over short-term gains.

Strategic Objective 2: Secure formal conservation status, manage, maintain and restore identified and existing terrestrial and wetland priority sites.

2.1 Implementation of the BioNet by expanding the conservation estate:

Implement the BioNet by securing Core Biodiversity Areas for formal conservation management through stewardship, land acquisition and reactive mechanisms. By 2027, the expansion of Protected Areas and Conservation Areas will secure 65.8% of the 2009 BioNet (55 930 ha).

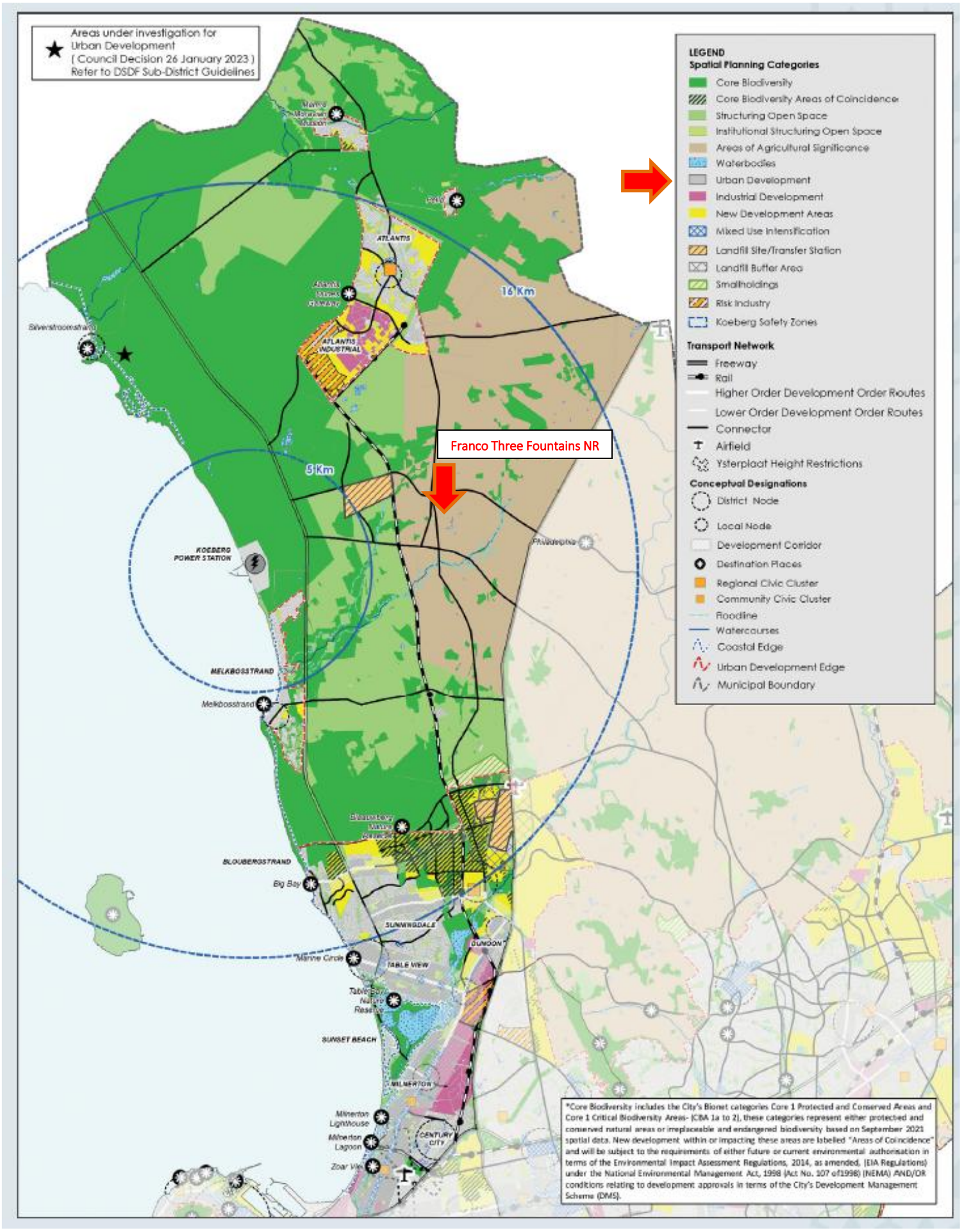


Figure 1.5.2 Blaauwberg District Spatial Development Framework map.

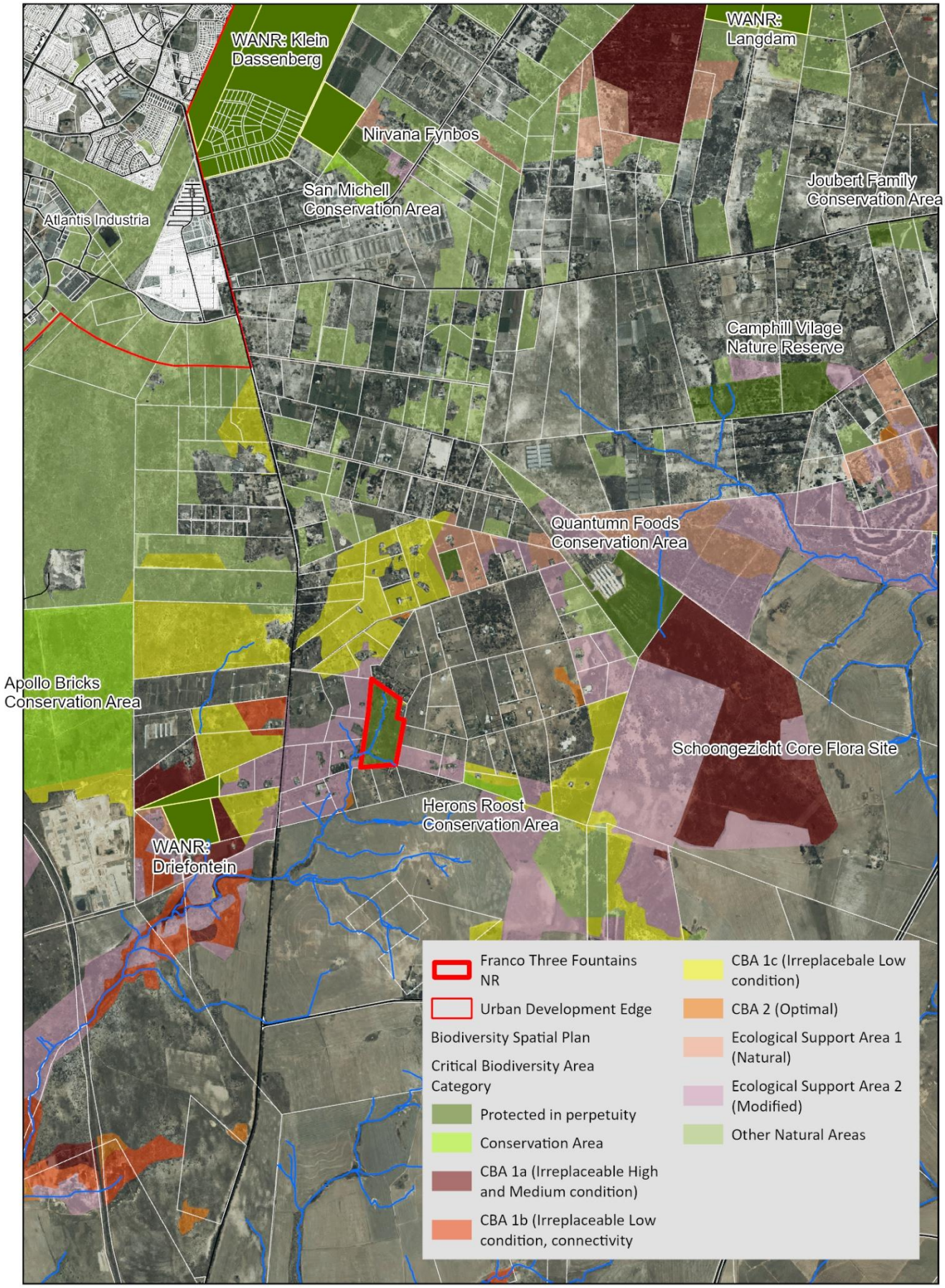


Figure 1.5.3 Critical Biodiversity Area map of Franco Three Fountains Nature Reserve.

Zonation plan

The purpose of the zonation of Franco Three Fountains Nature Reserve is to control the intensity and type of land use within the reserve in efforts to ensure the main goal of biodiversity conservation is met. On this basis, within some zones, the permissible intensity of use will be relatively higher than in others. Refer to the zonation map, Figure 3.4, below which illustrates the following:

- The site's boundaries.
- Infrastructure within the reserve.
- The different zones within the reserve.

The property contains a Private/ Commercial Use Area which is not part of the Nature Reserve and the Nature Reserve/Protected Area zone which is the proclaimed Nature Reserve.

The Nature Reserve itself contains two

Private/Commercial Use Area (not gazetted as part of the Nature Reserve)

This area is utilised for residential, usual business and intensive utilisation purposes and is excluded from the Protected Area. No management actions are required, except efforts to limit impacts on the adjacent Nature Reserve. The planting of potentially invasive species or developments in areas neighbouring the Protected Area is a potential threat and thus advice should be sought from the Biodiversity Management Branch of the City of Cape Town prior to implementation.

Nature Reserve / Protected Area.

This part of the property is subject to the provisions of the Protected Area Management Agreement and should be managed according to the prescriptions of the management plan as contained in the preamble to the title deed.

Zoning	Description	Management inputs	Permissible activities	Impermissible activities
Ecologically sensitive zone (17.7 ha)	• In this zone there is no or minimal development or consumptive utilisation and little or no evidence of human intervention other than conservation management activities.	• Remove all alien fauna and flora species. • Fire Management: Protect against unseasonal fires and fires within short succession of each other. • Active restoration of degraded areas. • Manage erosion from seasonal flooding. • Patrol area to identify negative impacts.	• Low-key ecotourism activities such as hiking, bird watching. • Environmental Education and Awareness.	• Further development. • Consumptive utilisation of natural resources. • Water abstraction from sources of surface water. • Mining or prospecting. • Dumping. • Hunting of small game. • No livestock grazing.

	• The minimum management inputs are required and natural processes can take place undisturbed.	• Proactively limit potentially negative impacts. • Preserve the aesthetic, spatial and spiritual value.		• Subdivision of the remnant into smaller parcels. • Introduction of extra-limital fauna and flora. • No new trails, other than those included in the EMP can be developed. • Vehicle access, in particular quad bike and 4x4 access is not allowed in the Conserved Area, except for on the perimeter firebreaks and existing internal roads when needed.
Recreational use zone (2.6 ha)	• A section, of previously cultivated land of low biodiversity value. Has old building foundations and a small artificial dam. • Is used for grazing of the two rescue horses • Is used to processing fire wood. • Is a buffer between private area and ecologically sensitive area.	• Remove all alien fauna and flora species. • Proactively limit potentially negative impacts. • Patrol area to identify negative impacts. • Potentially restore this area partially or wholly in the future if no longer required for grazing.	• Grazing for two horses. • Storing and processing of fire wood. • Picnics and other tourism-related activities. • Environmental Education. • Landscaping with locally indigenous species of flora. • Ecotourism including camping or over-nighting.	• Commercial cultivation or agricultural production. • Hard infrastructure developments. • Mining or prospecting. • Dumping. • Hunting of small game. • Subdivision of the remnant into smaller parcels. • Introduction of extralimital fauna and flora.

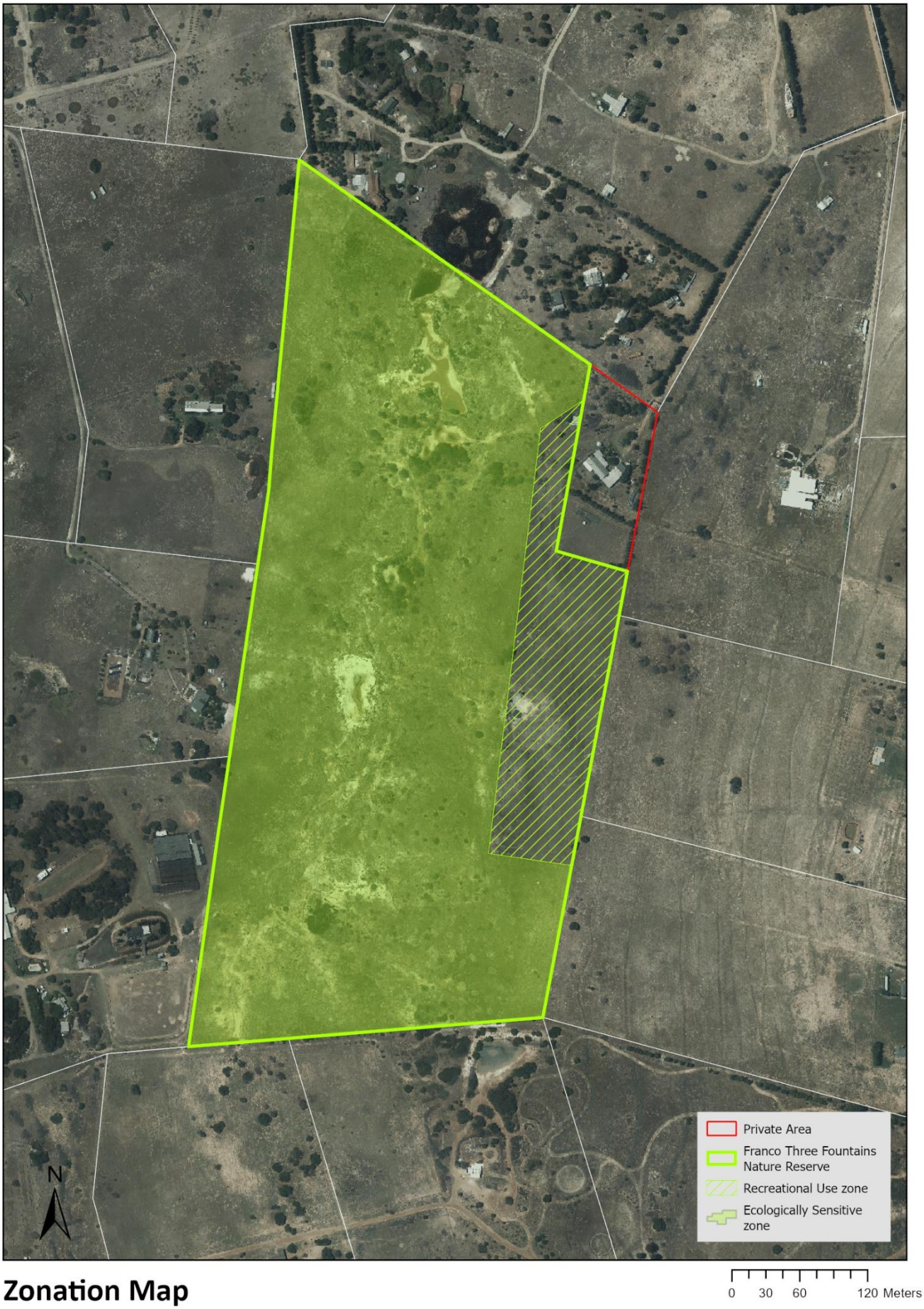


Figure 3.4 Zonation map of Franco Three Fountains Nature Reserve

2.8.3 Development Plans

None at present

2.8.4 Infrastructure and equipment

There is no built infrastructure on the Nature Reserve. There are some basic service infrastructure for electricity and bulk water feeding into the bigger estate, but none which crosses the NR. See Fig. 4.4.3 below.

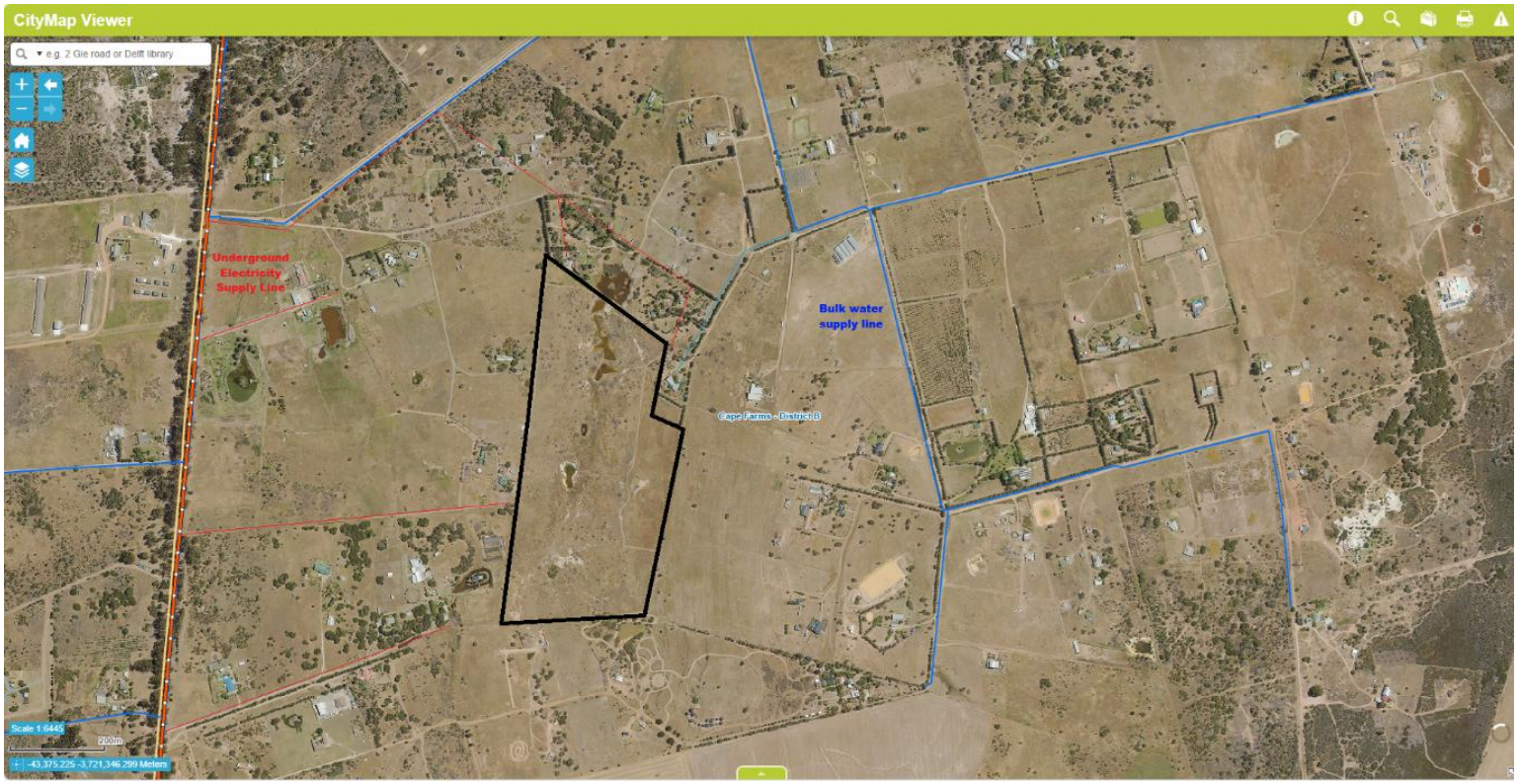


Figure 4.4.3 Service infrastructure near Franco Three Fountains Nature Reserve

2.9 Management Units

Three Fountains NR is divided into six Management Units

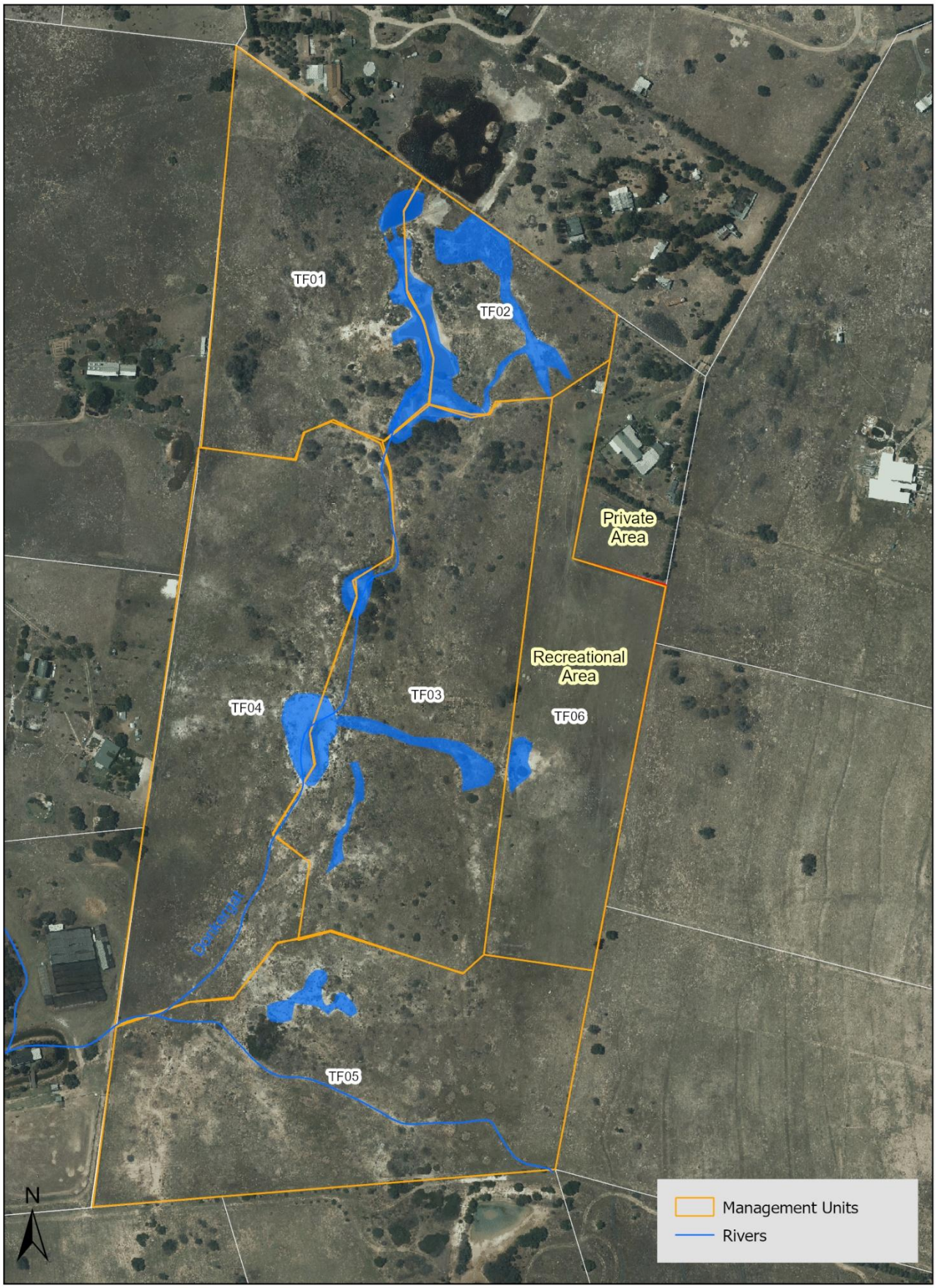
TF01 & TF02 Cape Inland Salt pans / Shale Renosterveld seasonal wetlands. The vegetation is naturally very sparse dominated by Salicornia, Limonium and Cynodon. As the soils are saturated with salt, creating a glimmering salty crust during summer, there is very little use for the land apart from light grazing which was likely the main activity historically. Some soil crust disturbance likely happened during the construction of the dams. There was also invasion by Port Jackson that was subsequently removed. The natural vegetation, albeit impacted, is recovering and contains populations of *Cleretum clavatus* (Endangered), *Leucadendron thymifolium* (Endangered), *Gladiolus quadrangulus* (Endangered), *Ixia maculata* (Near Threatened) and *Lachenalia contaminata* (Near Threatened).

TF03 & TF04 Vernal pools and seasonal wetland: The vegetation represents the series of wetlands, streams and pools through the centre of the Nature Reserve. These areas have seen a long history of invasive by Rooikans. Remnants of terrestrial vegetation is scattered throughout which suggests it might recover eventually after alien clearing. The remnant contains a population of *Hermannia procumbens* (Critically Endangered), *Aponogeton angustifolius* (Near Threatened), *Babiana angustifolia* (Near Threatened), *Sparaxis grandiflora* (Near Threatened). Significant effort has gone into restoring the restio component which was severely lacking after alien clearing.
The edges on the western side of TF04 and eastern side TF03 contains deeper, sandier soils that would historically have supported Fynbos vegetation, but was lost to historic cultivation. These areas are not being actively restored gradually.

TF05: Elevated thicket vegetation: These natural islands of elevated thicket is surrounded by ferricrete wetlands that prevents the spread of the thicket plant communities, always remaining isolated. The patch is the nearest to natural condition for any remnants on the Nature Reserve, but still lacks some structural elements. Threatened species include *Muraltia mitior* (Endangered) and *Limonium capense* (Near Threatened) and in the lower-lying areas contains a healthy population of *Marasmodes fasciculata* (Critically Endangered).

TF06: Recreation Use Area: TF06 represents the 'Horse Camp' and a section of previously cultivated area immediately adjacent. This area was historically deeply ploughed and cultivated (deeper sandier soil). The soils have not been disturbed for many years but there has been little to no recovery of indigenous shrub species. The area is completely dominated by *Cynodon* grass and herbaceous annual weeds such as *Echium* which is kept under control by grazing. During spring the vegetation transforms into dense carpets of annual daisies (*Dimorphotheca pluvialis & Arctotheca calendula*) and hardy geophytes such as Chinkerenchees (*Ornithogalum thyrsoides*) and Froetangs (*Romulea* spp.)

This area is earmarked for potentially more intensive recreational activities such as picnics and other tourism-related activities, Environmental Education with large groups, Landscaping with locally indigenous species of flora and/or ecotourism including camping or over-nighting.



Management Units

Figure 4.4.4 Management Units on Franco Three Fountains Nature Reserve

Strategic Management Framework

The strategic management framework is aimed at providing the basis for the protection, development and operation of the protected area over a ten-year period. It consists of the vision, purpose and objectives of [Nature Reserve's name]. It has been prepared collaboratively through a process involving the landowner (Management Authority), site manager and CapeNature.

2.10 Purpose

The purpose is the foundation on which all future actions are based and is in line with the key ecological attributes reserve and the overall management philosophy of the management authority.

Purpose

The Franco Three Fountains Nature Reserve strives for the protection, rehabilitation and restoration of threatened ecosystems; and allows for nature based tourism and Environmental Education. Three Fountains Nature Reserve serves in the protection of South Africa's most threatened plant species, provides protection to rare aquatic ecosystems and preserves and restores their ecological integrity. Benefits of nature based tourism will be utilised to promote human, social, cultural, and economic development while protecting ecosystems that are vulnerable and ecologically sensitive.

2.11 Vision

The vision statement below describes the desired long-term, over-arching outcome that is a result of the effective management of the reserve.

Vision

Franco Three Fountains Nature Reserve will manage, rehabilitate and conserve the natural assets and aesthetic values in a sustainable way for the benefit of current and future generations and should be financially, ecologically and socially sustainable in the long term.

2.12 Management Objectives under Key Performance Areas

The objectives that follow are intended to provide the basis for the achievement of the vision. The objectives are derived from the Vision and Purpose and are grouped under Key Performance Areas (KPAs). Tables 3.1–4 below set out the key performance areas, the objective for each key performance area and the key deliverables of each objective.

In the Annual Plan of Operations (APO), the objectives below are prioritised in terms of importance and urgency and detailed management activities are described that will deliver the desired outcomes under each objective.

Table 3.3.1 Biodiversity and ecological components objectives and deliverables

KPA: Biodiversity and ecological Components		
OBJECTIVE	**OBJECTIVE STATEMENT**	**KEY DELIVERABLES**
Integrated Wildfire and Invasive Alien Plants	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 as well as the risks to human safety and infrastructure from wildfire.	Wildfire: • Allow natural fire processes to take place. • Reduced risk of uncontrolled wildfire. • Staff trained and equipped to manage wildfires. • Monitor extent of wildfires and establish thresholds of concern. Invasive Aliens: • Eradicate invasive alien species using mechanical and biological control methods. • Reduce combustible material to reduce intensity and spread of wildfires. • Effective monitoring to prevent further introductions of invasive aliens.
Aquatic and riparian systems	To conserve the biodiversity and ecosystem function of aquatic and riparian systems on the reserve.	• Health of aquatic ecosystems is determined. Threats are identified. • Management action are identified and implemented to safeguard and improve aquatic health. • Monitoring programme in place to identify changes in ecosystem health. • Effectively functioning seeps, wetlands, streams, rivers and riparian areas in the reserve.
Rehabilitation and restoration	To identify areas of degraded ecosystems and/or habitat in the reserve, understand the causes of degradation and implement restoration/rehabilitation measures.	• Limit the loss of biodiversity and disruption to ecological processes due to degraded habitat. • Extent and cause of degradation determined, and restoration/rehabilitation measures planned. • Soil erosion effectively prevented and eroded sites restored/rehabilitated. • Long-term monitoring of degraded sites and restoration/rehabilitation effectiveness.
Species of special concern	To ensure the optimal long-term population health and ecological function of any plants and animals of special concern.	• Monitoring of populations of species of special concern. • Identify and implement specific management requirements.
Wildlife	To ensure effective conservation of faunal species, populations and inter-relationships in order to enhance biodiversity and maintain and improve ecosystem functioning.	• Manage the introduction and offtakes of wildlife on the Reserve. • Monitor and evaluate the heath of faunal populations. • Monitor and evaluate the impact of fauna on the ecosystem.

Table 3.3.2 Sustainable utilisation of natural resources objectives and deliverables

KPA: Sustainable utilisation of Natural Resources		
OBJECTIVE	**OBJECTIVE STATEMENT**	**KEY DELIVERABLES**
Grazing and browsing of livestock and game	Game and livestock 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. • A Grazing Plan is compiled which takes into consideration veld condition, stock numbers, stock breeds, herd size, camp sizes and grazing frequency per camp. • Game and livestock numbers are managed to ecological carrying capacity.
Recreation and tourism	To generate income from a tourism business that makes a sustainable contribution towards the conservation management costs of the reserve.	• Viable tourism business model to guide tourism development and operations. • A range of appropriate eco-tourism products and services are offered. • Tourism infrastructure and operations do not have a negative impact on any of the conservation objectives of the reserve. • Tourism infrastructure design and construction complies with development planning requirements. • Profits from tourism operations make a meaningful contribution towards conservation management costs.
Sustainable harvesting	To ensure the sustainable use of natural plant resources in a manner that ensures the conservation of biodiversity and minimal ecological disturbance in the areas where harvesting operations occur.	• Harvesting Plan with well managed harvesting activities. • Possession of all necessary harvesting permits. • Accurate and up-to-date records of all harvesting operations maintained. • Monitor and evaluate long-term impacts of harvesting operations.

Table 3.3.3 Socio-economic and heritage objectives and deliverables

KPA: Socio-economic and heritage		
OBJECTIVE	**OBJECTIVE STATEMENT**	**KEY DELIVERABLES**
Environmental Awareness and Education	Stakeholders receive an increased awareness and understanding of the importance and value of functioning ecosystems and an introduction to careers in eco-tourism, hospitality and nature conservation.	• Increase awareness about the value of functioning ecosystems and conservation land use. • Address specific management issues such as security, poaching, etc. • Informal training and/or holiday camps provided to school groups. • Formal career development training provided to potential employees.

Socio-economic development initiatives	To work with relevant stakeholders to make a meaningful contribution towards the socio-economic development needs of local communities.	• Eco-tourism guides, hospitality staff and conservators are sourced from local community • Community receives tangible value from the reserve. • Positive relationships with key community role players and groups.
Heritage features	To locate, document, and conserve archaeological, paleontological and cultural heritage features on the reserve.	• Systematically map and document all archaeological, paleontological and cultural features with input from experts. • To support the study of on-reserve features by experts and to share knowledge and insights gained. • To conserve the integrity of all archaeological and heritage features on the reserve.

Table 3.3.4 Management authority effectiveness and sustainability objectives and deliverables

KPA: **Management Authority effectiveness and sustainability**		
OBJECTIVE	OBJECTIVE STATEMENT	KEY DELIVERABLES
Governance and institutional arrangements		•
Legal Compliance	To ensure all reserve declaration documentation is in order and that all activities are compliant with relevant legislation and policies.	• Fully compliant with the Protected Area legislation.
Employee skills development	Managers and staff are supported in the implementation of the management plan by ensuring they have the necessary knowledge and skills to perform their management responsibilities.	• Training needs are identified. • Informal and/or formal training is provided. • Management support and mentorship is provided.
Management infrastructure and equipment	The reserve has the necessary infrastructure and equipment to enable the cost-effective achievement of the management objectives.	• Infrastructure needed to support personnel in implementing the management plan is in place. • Personnel have the necessary vehicles and equipment to carry out management activities. • Infrastructure is adequately maintained, and equipment serviced and kept in safe working order.
Signage, access control and security	Signage, access control and security measures are put in place that effectively address related threats.	• The perimeter boundary of the reserve is clearly marked with fencing and signage. • Access onto the property in remote areas is restricted with locked gates and controlled through a limited number of managed entry points. • Security measures are put in place to address specific threats.
Research and management knowledge	Knowledge on how to achieve management objectives is gathered, documented and shared with the team to increase management effectiveness.	• Address knowledge gaps through desk-top research, scientific research and getting advice from experts. • Use increased knowledge and research findings to improve management effectiveness.

3 Best Practice Guidelines

This section describes the best practice guidelines for each of the objectives under the key performance areas. The specific management actions for each objective can be viewed in the Annual Plan of Operations (APO).

3.1 Biodiversity and ecological components

3.1.1 Integrated Wildfire and Invasive Alien Plants

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: reduction in fuel load to prevent unmanageable wildfires, the control of invasive alien plants, increase in water yield from catchments, or improving grazing. In developing a fire management strategy for the site, the following guiding principles should be adhered to:

- Burning should be undertaken in such a way that it maintains spatial and temporal heterogeneity within the landscape.
- A patch mosaic of burnt and un-burnt areas should be maintained - this follows the precautionary principle, which suggests that a variety of burn practices and veld ages is the best way to maintain species diversity.
- The burning of areas should be undertaken in such a way that promotes patchy burns (i.e. within the block being burnt, some patches will remain un-burnt rather than aiming for a complete burn).
- 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.
- 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 (i.e. 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.

- 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 (i.e. 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.
- Burning must be undertaken with consideration of the biodiversity conservation requirements of the site and the need to protect rare and endangered species.
- 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.
- 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).

Management actions:
See Annual Plan of Operation.

3.1.1.1 Invasive Alien Plants

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. In undertaking invasive plant control, the following guiding principles should be adhered to:

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

Management actions:
See Annual Plan of Operation.

3.1.2 Rehabilitation and restoration

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:

- Prioritize areas requiring post-alien clearance restoration actions, as resources are usually limited, as well as those continuing to degrade.
- Aim to conserve what remains, i.e. minimise the loss of indigenous seed banks and soil, and in this way restoration costs may be kept to a minimum.
- Areas impacted by soil erosion should be stabilised and re-vegetated with indigenous plant species to prevent the spread of listed invasive plant species.
- Areas susceptible to soil erosion or showing early signs of soil erosion such as loss of vegetation cover, must be managed to prevent soil erosion.
- Keep records of all invaded sites being restored. Records should include alien vegetation clearance methods and dates, restoration actions, and results of alien and indigenous vegetation monitoring.

Management actions:
See Annual Plan of Operation.

3.1.3 Aquatic and riparian systems

Essentially, 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, as well as pollution and eutrophication, have significant negative impacts on wetlands and river systems. For this reason, 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:

- Where possible, manage the aquatic system together with landowners both up- and down-stream.
- Prevent excessive water abstraction from rivers, in order to maintain seasonal flow differences.
- Prevent nutrient enrichment of the water / river / wetland system (these systems are naturally acidic and have characteristically low nutrient levels).
- Maintain a buffer area adjacent to the river and wetland habitats, clear of alien plants or impacts.
- Clear all alien plants from riparian areas, and rehabilitate where required (mainly bank stabilisation).
- Manage access points into these areas, include roadways and livestock access.
- Establish permanent water monitoring points to highlight potential impacts and management interventions.

Management actions:
See Annual Plan of Operation.

3.1.4 Species of special concern

There are a number of species of special concern in the Franco Three Fountains Nature Reserve (see **Appendix C** for species lists).

Species of special concern should be recorded and monitored, and any threats to the species reduced or managed. If the species has a biodiversity management plan, this should be adhered to.

Management actions:
See Annual Plan of Operation.

3.1.5 Wildlife

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.

Please see **Appendix C** for species lists of Franco Three Fountains Nature Reserve.

Management actions:
See Annual Plan of Operation.

3.2 Sustainable utilisation of Natural Resources

3.2.1 Grazing and browsing of livestock and game

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:
Stocking rates Ha/SU (Hectares per (small/large) Stock Unit)
Grazing camp size
Duration that stock is held in the camp
Camp rest interval

Long-term veld condition monitoring is essential to ensure that grazing and browsing activities have the desired outcome.

Management actions:
See Annual Plan of Operation.

3.2.2 Recreation

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 recreation within the protected area, the following guiding principles should be adhered to:

- Recreational developments and infrastructure must be appropriate to the site's values and must not threaten its biodiversity or ecological function.
- In developing recreational infrastructure / opportunities, requirements for environmental authorisation must be considered and adhered to.
- Recreation products should be designed to capitalise on the unique beauty and biodiversity features of the site.
- Recreation opportunities within the site should be carefully assessed to determine their viability.

Management actions:
See Annual Plan of Operation.

3.2.3 Sustainable Harvesting

Sustainable harvesting is about satisfying today's demands without threatening the supply for future generations. In order to prevent the degradation of the system on which you rely, in it important to understand the autecology of the species and the ecological requirements of the vegetation type. It is important, therefore, to make certain that species are harvested in a manner that minimizes harvesting impact on individual populations. These standards are as follows:

- Ensure the broader vegetation type is correctly managed.
- Ensure that harvesting occurs at the right time of the year.
- Protect the seed bank of the species, allowing continually regeneration.
- Do not introduce extra-limital species and cultivars or hybrids into natural vegetation. We should not create genetic instability and jeopardise the evolutionary outcome of existing species.
- A cautionary approach must be followed whereby an amount not exceeding 50 % of the flower heads produced on a yearly basis by a plant shall be removed.
- No harvesting may occur one year prior to a burn, or seeding plants between one and five years after a burn.
- Correct harvesting equipment that is in good working condition must be used at all times.
- No breaking or uprooting of plants is allowed.
- Binding twine must be transported in a closed container and it is the responsibility of pickers to remove binding twine from their harvesting location.
- No litter must be left in the harvesting location.
- Maintain an exclusion block representative of all harvestable species utilized, to ensure population persistence

Management actions:
See Annual Plan of Operation.

3.3 Socio-economic and heritage

3.3.1 Environmental Awareness and Education

The protected area provides the ideal practical learning space to teach people about the value of nature and conservation. Whilst a degree of awareness and knowledge is likely to flow outwards from the reserve through the engagement of employees with the broader community, a dedicated environmental awareness and education programme is far more effective. Such programmes can achieve specific educational goals and therefore help to address key threats relating to human behaviour.

Management actions:
See Annual Plan of Operation.

3.3.2 Socio-economic development initiatives

Poverty and the associated social issues are prevalent in most rural communities in South Africa and the protected area offers a location that can serve as a development node within the rural landscape. It is recommended that the Management Authority partner with other organisations and community groups to identify socio-economic development needs and then decide in which area to play a role. Expanding the reach of the *biodiversity economy* to achieve positive socio-economic impacts in the communities closest to the reserve should be a primary goal.

Management actions:
See Annual Plan of Operation.

3.3.3 Heritage features

The Management Authority is not only a custodian of the reserve in space, but also in time. The landscape in which the reserve 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.

Management actions:
See Annual Plan of Operation.

3.4 Management Authority effectiveness 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.

3.4.1 Legal Compliance

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 management authority of Grotto Bay Nature Reserve will adhere to the following guiding principles:

- The management authority will comply with its legal and reporting commitments, according to the NEM:PAA.
- The management authority will adhere to legislative requirements and permitting for all development, water management and biodiversity management activities.

Management actions:
See Annual Plan of Operation.

3.4.2 Employee skills development

The addition of specialised protected area management activities to the existing operations of the Management Authority often requires the acquisition of new knowledge and skills by the existing employees and management team on the property. It is the responsibility of the Management Authority to assess the knowledge and skills of their human resources relative to the new/additional roles and responsibilities they are assigned and to identify and address knowledge and skills gaps.

Management actions:
See Annual Plan of Operation.

3.4.3 Infrastructure and equipment

In order for the reserve 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:

- Infrastructure must be provided to ensure the effective management and operation of the nature reserve.

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

Management actions:
See Annual Plan of Operation.

3.4.4 Signage, access control and security

Access to the Nature Reserve needs to be controlled and conditions of entry for visitors into the Nature Reserve 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 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.

Management actions:
See Annual Plan of Operation.

3.4.5 Research and management knowledge

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 reserve 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.

Management actions:
See Annual Plan of Operation.

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5 Appendices

5.1 APPENDIX A - List of statutes to which the Nature Reserve is subject

Biodiversity and Cultural Resource Management and Development:

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

5.2 APPENDIX B - Copy of Franco Three Fountains Nature Reserve declaration

PROVINCIAL NOTICE

The following Provincial Notice is published for general information.

DR HC MALILA,
DIRECTOR-GENERAL

Provincial Legislature Building,
Wale Street,
Cape Town.

PROVINSIALE KENNISGEWING

Die volgende Provinsiale Kennisgewing word vir algemene inligting gepubliseer.

DR HC MALILA,
DIREKTEUR-GENERAAL

Provinsiale Wetgewer-gebou,
Waalstraat,
Kaapstad.

ISAZISO SEPHONDO

Esi Saziso sePhondo silandelayo sipapashelwa ukunika ulwazi ngokubanzi.

uGQIR HC MALILA,
MLAWULI-JIKELELE

ISakhiwo sePhondo,
Wale Street,
eKapa.

PROVINCIAL NOTICE

P.N. 37/2025 **11 April 2025**

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003 (ACT 57 OF 2003)

DECLARATION OF FRANCO THREE FOUNTAINS NATURE RESERVE

I, Anton Wilhelm Bredell, Provincial Minister of Local Government, Environmental Affairs and Development Planning in the Western Cape, under section 23(1)*(a)*(i) of the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (the Act), declare a nature reserve on—

Portion 63 (a portion of Portion 15) of the Farm Driefonteinen No. 29, situated in the City of Cape Town Municipality, Division Cape, Western Cape Province; in extent: 21, 4250 (Twenty-One comma Four Two Five Zero) hectares; held by Deed of Transfer No. T67407/2008.

Under section 23(1)*(b)* of the Act, I assign the name "Franco Three Fountains Nature Reserve" to the nature reserve, the boundaries of which are reflected on Surveyor-General Diagram No. 2802/2013, and indicated on the map, as set out in the Schedule. The Surveyor-General diagram may also be viewed at https://www.capenature.co.za/protected-areas-and-stewardship.

Signed at Cape Town on this 27th day of March 2025.

AW BREDELL
PROVINCIAL MINISTER OF LOCAL GOVERNMENT, ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

PROVINSIALE KENNISGEWING

P.K. 37/2025 **11 April 2025**

DEPARTEMENT VAN OMGEWINGSAKE EN ONTWIKKELINGSBEPLANNING

***NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003* (WET 57 VAN 2003)**

VERKLARING VAN FRANCO THREE FOUNTAINS NATUURRESERVAAT

Ek, Anton Wilhelm Bredell, Provinsiale Minister van Plaaslike Regering, Omgewingsake en Ontwikkelingsbeplanning in die Wes-Kaap, kragtens artikel 23(1)*(a)*(i) van die *National Environmental Management: Protected Areas Act, 2003* (Wet 57 van 2003) (die Wet), verklaar 'n natuurreservaat op—

Gedeelte 63 ('n gedeelte van Gedeelte 15) van die Plaas Driefonteinen Nr. 29, geleë in die Stad Kaapstad-munisipaliteit, Afdeling Kaap, Provinsie Wes-Kaap; groot: 21, 4250 (Een-en-Twintig komma Vier Twee Vyf Nul) hektaar; gehou kragtens Transportakte Nr. T67407/2008.

Kragtens artikel 23(1)*(b)* van die Wet, ken ek die naam "Franco Three Fountains Natuurreservaat" toe aan die natuurreservaat, waarvan die grense weergegee word op die Landmeter-generaaldiagram Nr. 2802/2013, en op die kaart aangedui, soos uiteengesit in die Bylae. Die Landmetergeneraaldiagram kan ook by https://www.capenature.co.za/protected-areas-and-stewardship gevind word.

Geteken te Kaapstad op hierdie 27ste dag van Maart 2025.

AW BREDELL
PROVINSIALE MINISTER VAN PLAASLIKE REGERING, OMGEWINGSAKE EN ONTWIKKELINGSBEPLANNING

ISAZISO SEPHONDO

I.S. 37/2025 **11 kuTshazimpuzi 2025**

ISEBE LEMICIMBI YOKUSINGQONGILEYO NOCWANGCISO LOPHUHLISO

UMTHETHO WOKULONDOLOZWA KWENDALO YESIZWE: UMTHETHO WEENDOWO ZOLONDOLOZO EZIKHUSELWEYO, 2003 (UMTHETHO 57 KA-2003)

ISIBHENGEZO SENDAWO YOLONDOLOZONDALO IFRANCO THREE FOUNTAINS

Mna, Anton Wilhelm Bredell, uMphathiswa wePhondo wooRhulumente beNgingqi, iMicimbi yokuSingqongileyo noCwangciso loPhuhliso eNtshona Koloni, ngaphantsi kwecandelo 23(1)*(a)*(i) loMthetho wokuLondolozwa kweNdalo yeSizwe: UMthetho weeNdawo zoLondolozo eziKhuselweyo, 2003 (uMthetho 57 ka-2003) (uMthetho), ndibhengeza ulondolozondalo kwi—

Nxenye 63 (inxenye yeNxenye 15) yeFama iDriefonteinen enguNombolo 29, emi kuMasipala weSixeko seKapa, iCandelo leKapa, kwiPhondo leNtshona Koloni; kubungakanani: 21, 4250 (AmaShumi amaBini anaNye khoma isiNe isiBini isiHlanu Akukho nto) beehektare; ephantsi kweSiqinisekiso soNikezelo loMhlaba esinguNombolo T67407/2008.

Phantsi kwecandelo 23(1)*(b)* loMthetho, ndinika igama elithi "INdawo yoLondolozondalo iFranco Three Fountains" kwindawo yolondolozondalo, leyo imida yayo iboniswe kuMzobo kaNocanda-Jikelele ongunombolo 2802/2013, kwaye kuboniswe kwimephu, njengoko kumisiwe kwiShedyuli. Imizobo kaNocanda-Jikelele inokubonwa kananjalo ku-https://www.capenature.co.za/protected-areas-and-stewardship.

Sityikitywe eKapa ngalo mhla wama27 kweyoKwindla 2025.

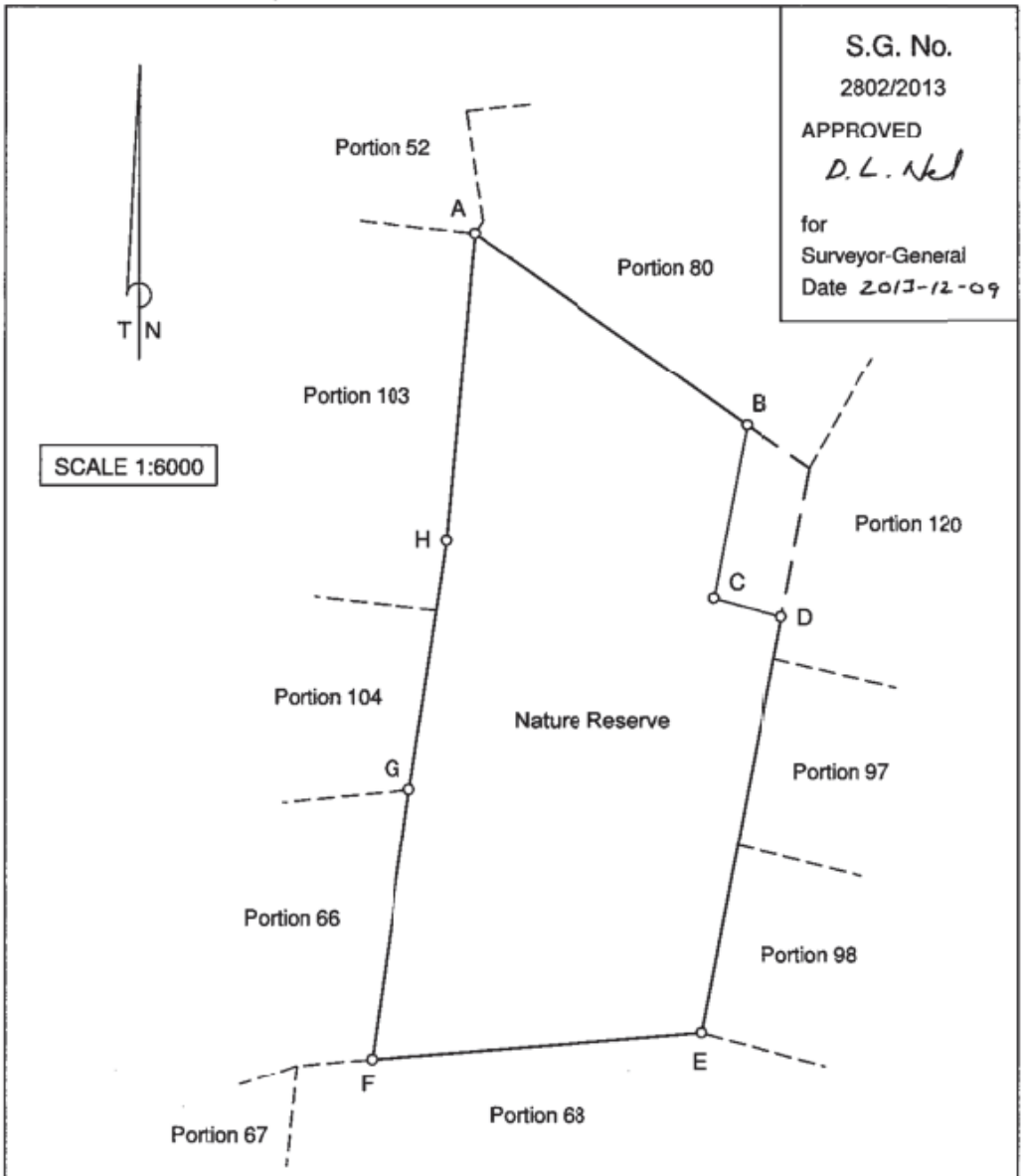
AW BREDELL
UMPHATHISWA WEPHONDO WOORHULUMENTE BENGINGQI, IMICIMBI YOKUSINGQONGILEYO NOCWANGCISO LOPHUHLISO

SCHEDULE/BYLAE/ISHEDYULI

PART A/DEEL A/ISIGABA A

SURVEYOR-GENERAL DIAGRAM 2802/2013/LANDMETER-GENERAALDIAGRAM 2802/2013/UMZOBO KANOCANDA-JIKELELE 2802/2013

Diagram Framed for Proclamation Purposes
STEPHEN OLD - Land Surveyors



The figure A B C D E F G H represents approximately 20,4074 hectares of land, being
A NATURE RESERVE OVER PORTION 63 OF THE FARM DRIEFONTEINEN NO. 29
Situate in the City of Cape Town
Administrative District of Cape
Province of Western Cape

Framed for the purposes of declaring a Nature Reserve in terms of Section 23 (1) of the National Environment Management Protected Areas Act No. 57 of 2003 in November 2013, by me

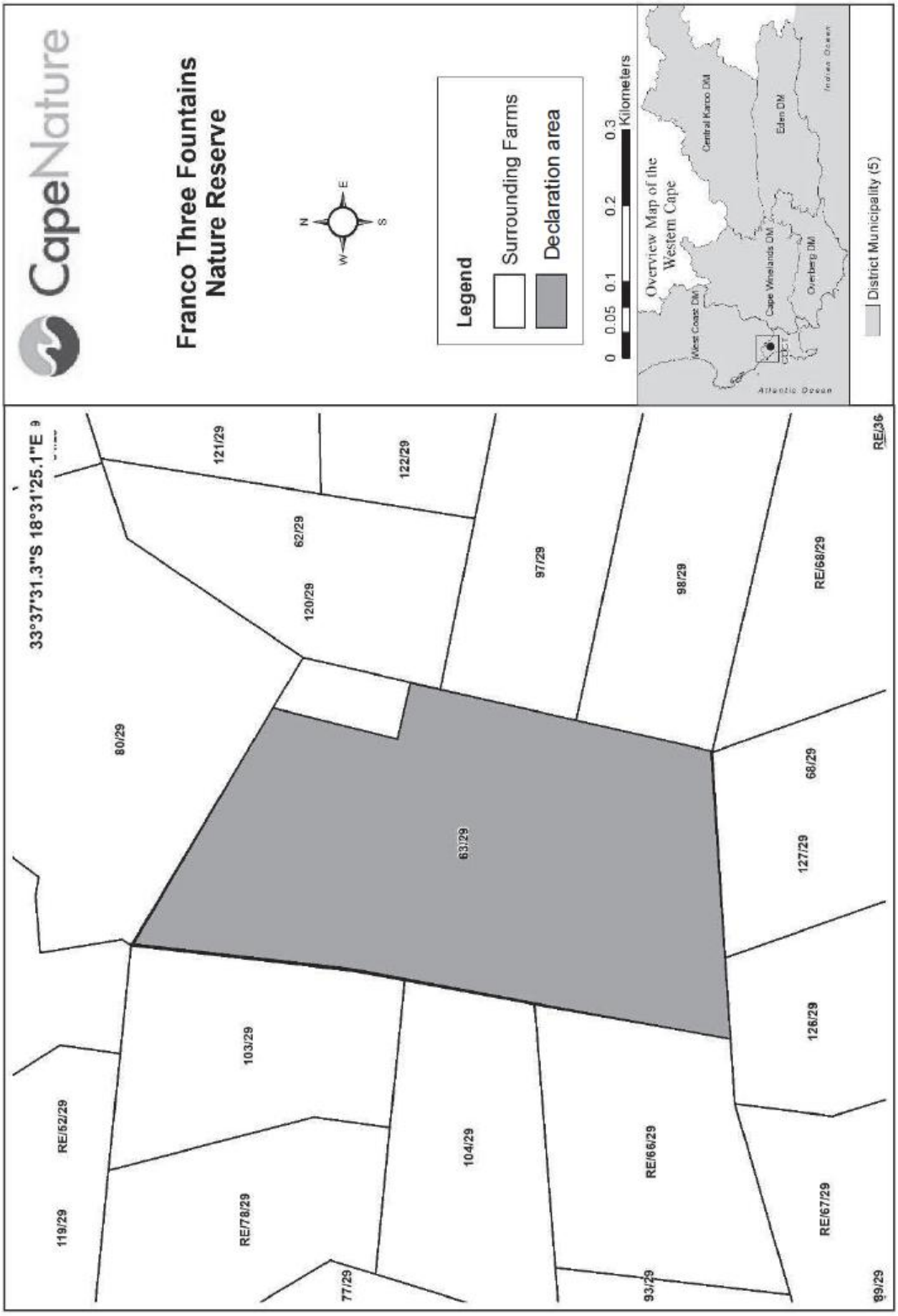
S.R. OLD (PLS 0984)
Professional Land Surveyor

This diagram is annexed to Deed of Number dated i.f.o. Registrar of Deeds	The original diagram is S.G. No. 10840 / 1970 annexed to Deed of Transfer No. 1991- -55385	SG File : Cape 29 Vol 3 SR No. 1320/2013 Comp: BH-6AC (3713) BH-6CA (3722) LPI C0160000

PROCLAMATION DIAGRAM 2802/2013

PART B/DEEL B/ISIGABA B

MAP/KAART/IMEPHU



5.3 APPENDIX C - Species lists

Available species lists for the site should be included in this appendix. These should include:

- Plant species lists.
- General fauna lists (e.g. mammals, herpetofauna, invertebrates).
- Bird lists.
- Specific lists of listed threatened species.

The species lists should be sourced from the CapeNature biodiversity database and any other reliable source to ensure that the information presented is the most current and accurate, both in terms of the species present or absent at the site and their threatened status.

5.4 APPENDIX D – Zonation and special management overlay categories

5.4.1 Zonation categories

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Wilderness / Wilderness (declared)	Conservation: To limit visitor numbers and use to minimise impact. Minimal management intervention for visitor or biodiversity management. Include sensitive or threatened habitats & species in this low use zone when contiguous sites meet the criteria for wilderness Users: To provide an experience of solitude in pristine landscapes with minimal evidence of human presence or use.	Completely wild and rugged landscapes (or being restored to this). Areas where users have little chance of encountering any other human presence or group. Sight or sound of human activities outside zone barely discernable and at far distance; Preferably no human impact or infrastructure inside the zone other than trails. Natural burning regimes, with no active fire management and road/firebreak infrastructure. Areas with minimal Invasive Alien Plant infestations, where IAP control can be done without vehicle access. Area must meet the definition and requirements of the National Environmental Management: Protected Areas Act 57 of 2003. If formally declared in terms of the act, zone = "Wilderness (declared)"; if not = "Wilderness".	"Leave-no-trace" activities: Overnight hiking, without any sleeping facilities, formal campsites, or with only basic, unserviced shelters. "Carry in, Carry out" principle for all food and waste. Guided or unguided nature observation. No fires	No infrastructure of any type if possible. No roads or vehicle tracks. No structures except small existing buildings of cultural, historic or aesthetic value. These can be used as unserviced sleeping shelters for hikers & provided with composting toilets. Narrow permanent walking trails. No signage except small, unobtrusive markers for closed routes, or at trail junctions. NB – in the mountainous, slow-growing fynbos of the Western Cape, the traditional wilderness concept of access without defined trails is unsafe and rapidly results in undesirable user-created trails and erosion.	Unguided visitor access only on foot. Visitors have freedom to use various trails. Use of donkeys, horses or other animals with an official guide only on designated historical routes and trails, or existing roads, and only where this will not cause trampling, erosion or any degradation. Limits on visitor numbers and/or control of routes and access so that zone objectives are met. Use of non-motorised canoe or flotation device on rivers can be acceptable where entry is by foot or by river from outside the zone. No fires No vehicle access No access without zone permit	Visitor Management: Manage to conserve natural and cultural resources, ecological processes and wilderness integrity. Leave no trace ethic Restrict numbers of visitors and allow for no-use rest periods if required. Limited management interventions. Management measures may be carried out in extreme conditions, but tread lightly principles must apply. Since visitor use cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species. Trail layout, design and construction must reduce maintenance requirements. Conservation Management: Habitats with minimal management requirements, typically natural burning zones. Prevent or restore visible trampling or any other impact. Rehabilitate non-essential roads to natural vegetation. Re-zone essential roads out of Wilderness Zoning. Consumptive Use: Not compatible

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Primitive	***Conservation:*** To limit visitor use, numbers and infrastructure to minimise impact in sensitive environments. To reduce need for management of users and visitor impacts. Allows for minimal or more intensive biodivesrity management intervention. Include extensive areas of sensitive or threatened habitats & species in this low use zone when sites do not meet the criteria for wilderness ***Users:*** To provide an experience of solitude in natural landscapes with little nearby evidence of human presence. Can provide access to and buffer Wilderness Zones	Intrinsically wild appearance & 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. Areas remote from management centres, or otherwise difficult or expensive to access for management. Areas that might not meet the criteria for Wilderness but can serve as undeveloped visual buffers for Wilderness. Areas that may have natural burning regimes, with no active fire management and road/firebreak infrastructure OR areas that require active fire management to stay within thresholds of concern.	Guided or unguided nature observation Primarily intended for hiking or walking access. Only allows for 4x4 routes and if specifically considered and noted. Only allows for non-hiking accommodation node if specifically considered and noted.	Deviation from the natural and/or pristine state to be minimised[1] No visible infrastructure in Wilderness viewsheds. May provide isolated, small, unobtrusive accomodation 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 vistor use may only be existing roads or new routes that also allow access for essential management needs. All roads, tracks or trails should be located and constructed to reduce maintenance, visibility and erosion. Where unsurfaced tracks will result in erosion, use double concrete strip or interlocking pavers to stablise. Re-route unstable or erosion-prone road sections if this will lower long-term visual and environmental impact. Avoid full width tarred or surfaced roads or roads and tracks wider than required for a single vehicle.[2]	Visitor access only by permit. Control of visitor numbers, frequency and group sizes to meet zone objectives. Only users of facilities/activities will access to this zone. Defined or non-defined hiking and day trail routes On foot always, or by bicycle, 2x4 or 4x4 vehicle on designated routes. No access without zone permit	Visitor Management: Manage to conserve natural and cultural resources, ecological processes and wild appearance & character. Restrict numbers of visitors and allow for no-use rest periods if required. All facilities will be small, very basic, self-catering and distributed to avoid contact between users There should be limited if any interaction between groups Since visitor use usually cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species. Trail layout, design and construction must reduce maintenance requirements. Visible & audible human impacts from adjacent zones should be mitigated Conservation Management: Habitats with lower or higher management requirements. May be natural burning zones. Prevent or restore visible trampling or any other visitor impact. Rehabilitate non-useful roads to natural vegetation. Consumptive Use: Sustainable use can be appropriate under controlled circumstances subject to a formal assessment and applicatoin in accordance with CapeNature policies.

[1] CapeNature should embark on a work shopping exercise to determine more explicit thresholds for development, including road infrastructure in this and other zones. Until this time, take a precautionary approach to maintain the zone objective and characteristics.

2 But do consider the safety requirements for access of more than one vehicle at a time for fire-fighting or rescue operations. Where a dedicated escape route might be required for tourism infrastructure, consider whether the additional road impact now or in the future is warranted.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Nature Access	***Conservation:*** To manage and direct visitor use, and plan infrastructure to minimise impact on sensitive environments. To actively manage users and visitor impacts. Allows for minimal or more intensive biodivesrity management intervention. Provide additional protection to sensitive or threatened habitats, species or other features by Special Management Overlays ***Users:*** To provide easy access to natural landscapes with low expectation of solitude at all times. Can buffer wilderness or Primitive Zone.	Areas with extensive lower senstivity habitats: Areas able to accommodate higher numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity. Extensive areas able to accommodate roads, trails and tracks without high risk of erosion and degradation. Areas accessible for regular management of roads and trails Areas where roads and trail infrastructure can be located with low visibility from the surrounding landscape, particularly from adjacent Primitive or Wilderness Zones. Usually areas that require active fire management with firebreaks to stay within thresholds of concern, but may also include natural burning regimes.	Guided or unguided nature observation. Day hiking trails and/or short trails. Bird hides, canoeing, mountain biking & rock-climbing where appropriate. Other activities if specifically considered and approved as part of specific reserve zoning scheme. Motorised 2x4 self-drive access on designated routes. No accommodation or camping. Frequent interaction with other users.	Some deviation from natural/pristine state allowed particularly on less sensitive or already disturbed/transformed sites. No accommodation; but ablution facilities may be provided. May have defined or beaconed hiking routes, tourism and management access roads, and management tracks and firebreaks. Infrastructure should be designed to reduce impacts of higher visitor numbers. Roads open to the public should be accessible by 2x4 sedan. Full width tarred or surfaced roads or roads and tracks to accommodate two vehicles are appropriate. Unsurfaced roads may be surfaced if a road planning exercise has confirmed that the location is suitable.	No special access control or permits required for this zone. Will cater for larger number of visitors than primitive zone Vehicle access on dedicated routes, with pedestrian access from parking areas or adjacent Development Zones. On water – only non-motorised crafts allowed	Visitor Management: More frequent monitoring of these areas are necessary to prevent damage or degradation. More frequent footpath maintenance must be scheduled for busy routes, with particular attention paid to use of railings or other access control to prevent damage to sensitive areas. Unless visitor access can definitely be intensively guided and managed, re-route trails away from any sensitive local habitats or plant and animal species. Trail layout, design and construction must be specified to reduce maintenance requirements under higher use. Visible & audible human impacts to adjacent Primitive or Wilderness Zones should be mitigated Conservation Management: Habitats with lower or higher management requirements. May be natural burning zones. Prevent or restore visible trampling or any other visitor impact. Rehabilitate non-useful roads to natural vegetation. Consumptive Use: Sustainable use may be appropriate subject to a formal assessment and applicatoin in accordance with CapeNature policies.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development – Low Intensity	***Conservation:*** To locate the zone and infrastructure to minimise impact on sensitive environments. To actively manage users and visitor impacts on adjacent sensitive areas. Provide additional protection to sensitive or threatened habitats, species or other features by Special Management Overlays ***Users:*** To provide access to adjacent natural landscapes with little expectation of solitude. To provide primarily self-catering accommodation or camping. Can provide for Environmental Education accommodation and access into surrounding landscapes.	Areas with extensive degraded or transformed footprints. Natural or semi-natural habitats only when use of these areas is essential to minimise infrastructure/use impacts over whole reserve. Areas able to accommodate high numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity. Areas able to accommodate roads, trails and accommodation infrastructure without risk of erosion or degradation. Areas easily accessible from reserve management centre. Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment. Areas not visible from Primitive or Wilderness Zones. Areas where new infrastructure can be located with low visibility from the surrounding landscape. Areas with available potable water, and not sensitive to disposal of treated wastewater via soak away.	Picnicking. Walking or bicycle access into adjacent areas. Self-catering accommodation and camping. Meeting, workshops or mini-conference activities for no more than the number of people that can be accommodated overnight in the zone. Can provide for Environmental Education accommodation and access into surrounding landscapes, but this must be carefully planned not to conflict with visitor use.	Reception offices. Self-catering accommodation and camping for up to 100 guests in total at any time[3] No more than 6-8 beds per unit. Single small lodges for up to 30 guests are permissible if all facilities are contained in a compact footprint, this represents the total accommodation for the zone, and any restaurant or catering facilities are for overnight guests only. If possible roads should be narrow with separate incoming and outgoing routes, otherwise double vehicle width roads are strongly advisable for safety and usability. Roads in this zone should be surfaced wherever possible to reduce management cost and environmental impacts. Development and infrastructure may take up a significant proportion of the zone, but planning should ensure that area still provides relatively natural outdoor experience.	Motorised self-drive 2x4 sedan car access. Tour bus access Parking areas This zone should be used to provide parking and walk-in access for day visitors to adjacent Nature Access zone if possible.	Visitor Management: Use built and infrastructure solutions to such as railings, hard surfacing and boardwalks to manage undesirable visitor impacts. Accept some impact on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay. Frequent footpath and road maintenance must be scheduled for high impact routes. Visible impacts to adjacent Zones should be mitigated Conservation Management: Provide access and generate revenue. Management should aim to mitigate the impacts of the high number of visitors. L largely transformed habitats with lower management requirements. Usually fire exclusion areas. Prevent or restore visible trampling or any other visitor impact. Plan for a compact overall development footprint, avoiding dispersed infrastructure that will increase fire risk and/or environmental footprint. This is most critical in fire-prone environments. Consumptive Use: Sustainable use may be appropriate subject to a formal assessment and applicatoin in accordance with CapeNature policies.

[3] Although this sounds high this is still in line with many CapeNature sites that would fall within this zone definition and E.g. configured as 10 x 4-sleeper self-catering units and 15 campsites this seems completely reasonable.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development – High Intensity	***Conservation:*** To locate the zone and infrastructure to minimise impact on sensitive environments. To actively manage users and visitor impacts on adjacent sensitive areas. Provide additional protection to sensitive or threatened habitats, species or other features by Special Management Overlays ***Users:*** To provide access to adjacent natural landscapes with no expectation of solitude. To provide low and/or higher density accommodation.	Areas with extensive degraded or transformed footprints. Natural or semi-natural habitats only when use of these areas is essential to minimise infrastructure/use impacts over whole reserve. Areas able to accommodate very high numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity. Areas able to accommodate roads, trails and accommodation infrastructure without risk of erosion or degradation. Areas easily accessible from reserve management centre. Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment. Areas not visible from Primitive or Wilderness Zones. Areas where new infrastructure can be located with low visibility from the surrounding landscape. Areas with available potable water, and not sensitive to disposal of larger amounts of treated wastewater.	Restaurants and small shops Picnicking. Walking or bicycle access into adjacent areas. Accommodation in small hotels, lodges and higher density self-catering accommodation and/or camping. Meetings, workshop or mini-conference activities for no more than the number of people that can be accommodated overnight in the zone.	High density tourist development nodes Modern amenities incl restaurants & shops Self-catering accommodation and camping for over 100 guests in total at any time Lodges or small hotels. Roads in this zone should be surfaced wherever possible to reduce management cost and environmental impacts. Development and infrastructure may take up a significant proportion of the zone, but planning should ensure that area still provides relatively natural outdoor experience.	Tour bus access Motorised self-drive sedan car access Parking areas Air access only permitted if considered and approved as part of zoning scheme and no possibility of faunal disturbance.	Visitor Management: Management action will focus mostly on maintenance of facilities & providing high quality experiences. Use built and infrastructure solutions to such as railings, hard surfacing and boardwalks to manage undesirable visitor impacts. Accept substantial impact on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay. Frequent footpath and road maintenance must be scheduled for high impact routes. Visible impacts to adjacent Zones should be mitigated Conservation Management: Provide access and generate maximum revenue. Management should aim to mitigate the biodiversity impacts of the high number of visitors only in sensitive areas (if any) identified by Special Management Overlay. These are highly transformed habitats with lower management requirements. Usually fire exclusion areas. Prevent or restore visible trampling or any other visitor impact. Plan for a compact overall development footprint, avoiding dispersed infrastructure that will increase fire risk and/or environmental footprint. This is most critical in fire-prone environments. Consumptive Use: Sustainable use unlikely to be compatible.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development - Management	Location of infrastructure and facilities for Reserve Administration & Conservation management facilities Not compatible with tourism	Areas with extensive degraded or transformed footprints. Natural or semi-natural habitats only when use of these areas is essential to minimise infrastructure/use impacts over whole reserve. Areas able to accommodate high disturbance, with no identified sensitive or regionally rare biodiversity. Areas not visible or audible from Development - Low / High Intensity zone, but in close proximity to any other Development Zones. Areas providing easy access to reserve and infrastructure. Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment. Areas not visible from Primitive or Wilderness Zones. Areas where new infrastructure can be located with low visibility from the surrounding landscape. Areas with available potable water, and not sensitive to disposal of treated wastewater via soak away.	n/a	Any reserve management infrastructure including offices, sheds, garages, stores, etc. Roads required to access these should be surfaced to reduce long-term maintenance costs and environmental impact.	none	Visitor Management: Accept some impact on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay. Frequent footpath and road maintenance must be scheduled for high impact routes. Visible impacts to adjacent Zones should be mitigated Conservation Management: Management should aim to contain all activities within the smallest possible footprint. L largely transformed habitats with lower management requirements. Usually fire exclusion areas. Prevent or restore trampling or any other management impact. Plan for a compact overall development footprint, avoiding dispersed infrastructure that will increase fire risk and/or environmental footprint. This is most critical in fire-prone environments. Consumptive Use: Sustainable use unlikely to be possible in small zone.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development - Production	Commercial or subsistence farming (only applicable to privately owned & managed Contract Nature Reserves)	Areas identified for production farming Areas with extensive degraded or transformed footprints. Natural or semi-natural habitats only when use of these areas is supported by a bioregional plan and specialist site assessment.	May allow agri-tourism	Any agricultural infrastructure.	May allow agri-tourism	Agricultural best practise to support surrounding natural areas, particularly with regard to river and wetland buffer areas.
Development – Private Areas	Private dwelling and surrounds (only applicable to privately owned & managed Contract Nature Reserves)	Private homestead Areas with existing degraded or transformed footprints. Natural or semi-natural habitats only when use of these areas is supported by a bioregional plan and specialist site assessment.	n/a	Dwellings and private accommodation areas. Roads to access these.	No access to the public without permission from landowner	Should have no negative impacts on the surrounding conservation area

5.4.2 Special Management Overlays

Additional forms of zonation that can overlap any of the above zones.

Special Management overlays	Objective of zone	Characteristics	Type of Activities	Facilities / Infrastructure	Type of Access	Management Guidelines
Cultural Feature protection	Protection of localised identified important Cultural Feature	Could overlap any other zone, Permanent, temporary or temporal zone to manage important cultural or heritage features	Specific activities dependent on ability to manage activity and feature in question.	Usually none, but specific infrastructure dependent on feature in question.	Specific access dependent on ability to manage access and feature in question.	Feature specific – as required
Species/Habitat protection	Protection of localised identified important Biodiversity Feature	Could overlap any other zone, Permanent, temporary or temporal zone to manage important cultural or heritage features	Specific activities dependent on ability to manage activity and feature in question.	Usually none, but specific infrastructure dependent on feature in question.	Specific access dependent on ability to manage access and feature in question.	Feature specific – as required
Visual protection	Protection of localised sensitive viewsheds and particularly for Wilderness Zone viewsheds	. Sensitive viewsheds and particularly for areas within Wilderness Zone viewsheds	Specific activities dependent on ability to manage activity and feature in question.	No roads, firebreaks or buildings. No visible infrastructure Trails may be appropriate	Walking access likely to be appropriate	Feature specific – as required
Natural Resource Access	Access to identified sustainable consumptive use resources as per a resource management plant	Areas with identified natural resources formally assessed as not sensitive to harvesting and provided with a sustainable harvesting plan.	Harvesting of identified resources	None	Specific access dependent on feature in question.	Feature specific – as required
Rehabilitation		This should fall under specific management objectives for any zone				

Research is permissible in all zones, except Species/Habitat protection or Cultural Protection where it may be considered on a case by case basis. Research that requires extensive destructive harvesting, or manipulation of more than a few square meters of habitat should not be considered in any of the Protection overlays, except where research outputs are considered essential for management of that ecosystem research cannot be done at an equivalent site elsewhere, and research results are certain to contribute substantially to management objective.

5.5 APPENDIX E – Annual Plan of Operation

Annual Plan of Operation

Franco Three Fountains Nature Reserve

2026

Resp. Person	Prior...	Annual...
Jodie	High	Completed
JvdM	Low	On Track
tenants	Medium	Planned
(blank)	(blank)	(blank)

KPA	Objective	Objective Statement	This Years Plan	Budget		Management Activities	Evidence	Resp. Person	Priority	Annual Status	Q1 Jan-Mar			Q2 Apr-Jun			Q3 Jul-Sep			Q4 Oct-Dec			Notes
											J	F	M	A	M	J	J	A	S	O	N	D	
BIODIVERSITY & ECOLOGICAL COMPONENTS	Integrated Wildfire Control	To manage the risks associated with uncontrolled wildfire in an integrated way to limit negative impacts on biodiversity and ecosystem function as well as the risks to human safety and infrastructure from wildfire.	To prevent the occrrance and spread of wild fires in the reserve	R57 200	R5 400	Cutting of fire breaks	Series of breaks cut around the perimeter of the nature reserve.	JvdM	High	Planned													Planned for late October to early November, 2 days of work
	Integrated Invasive Alien Species Control	To control (or eradicate where possible) invasive alien species using appropriate methods, and to reduce combustible material to reduce intensity and spread of wildfires, as well as the effective monitoring to prevent further introductions			R27 000	Follow-up clearing across Nbals (TFNR01 - TFNR05)	Nature Reserve free of woody, invasive species	JvdM	High	Planned													Planned for late October to early November, 10 days of work
	Aquatic and Riparian Systems	To conserve the biodiversity and ecosystem function of aquatic and riparian systems on the reserve.			R0	Monitor water quality and potential issues with erosion around vernal pools	Photos	JvdM	Medium	Planned													Planned for spring walk day
	Rehabilitation and Restoration	To identify areas of degraded ecosystems and/or habitat in the reserve, understand the causes of degradation and implement restoration/rehabilitation measures.			R22 400	Plant out 400 additional Search & Rescue plants into the wetlands and Sand Fynbos patches of the reserve	400 plants established	JvdM	High	Planned													Species will depent on what is available, but should be planted when the teams start working again in July. Should include Elegia tectorum which has worked quite well to date. 1 day of work
					R24 800	R2 400	Collect seed for propagation of species appropriate to introduce into the NR.	Seed collected and stored at Westlake Restoration Favility Seed room	JvdM	Medium	Planned													Structural species that are drought tolerant such as Eriocephalus africana, Lampranthus explanatus, Phylica plumosa, Plylica pubescens, Stoebe plumosa. Try Protea repens and P. scolymocephala, perhaps L. salignum again. Try a restoration circle.
	Species of Special Concern	To ensure the optimal long-term population health and ecological function of any plants and animals of special concern.			R0	Invite CREW for follow-up assessment	Updated CREW species list	Jodie	Medium	Planned													
					R0	Annually monitor populations of Critically Endangered Marasmodes fasciculata	iNat records	JvdM	High	Completed													https://www.inaturalist.org/observations/283632842
					R0	Annually monitor populations of Critically Endangered Hermannia procumbens	iNat records	JvdM	High	Planned													Planned for Sept. 2025. 1 day
	Wildlife	To ensure effective conservation of faunal species, populations and inter-relationships in order			R0	Set up camera traps to record movement of wildlife	iNat records	JvdM	Low	Planned													Done on day of planting out in July.