

# Shaw's Pass Nature Reserve

**Western Cape  
South Africa**



## **Management Plan**

Updated January 2024 by  
CapeNature, Shaw's Pass Nature  
&  
NCC Environmental Services (Pty) Ltd

## Authorisation

This Integrated Reserve Management Plan for the Shaw's Pass Nature Reserve was drafted and recommended by Marna Hugo (Management Authority).

*Supported by:*  
CapeNature

### ***Recommended and adopted by:***

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Name and Title	Signature and Date
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**Review Date: March 2034**

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## Abbreviations

CBA	Critical Biodiversity Area
CEO	Chief Executive Officer
DEA&DP	Department of Environmental Affairs and Development Planning
DEA	National Department of Environmental Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DWA	National Department of Water Affairs
EIA	Environmental Impact Assessment
FEPA	Freshwater Ecosystem Priority Area
FPA	Fire Protection Association in terms of the National Veld and Forest Fire Act (No.1 of 1998)
GOFPA	Greater Overberg Fire Protection Association
GIS	Geographical Information System
IDP	Municipal Integrated Development Plan
IUCN	International Union for the Conservation of Nature
MCM	National Department of Marine and Coastal Management
MEC	Member of the Executive Council
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Area
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
PA	Protected Area
SAHRA	South African Heritage Resources Agency
SOB	State of Biodiversity Report
SDF	Municipal Spatial Development Framework
SMP	Strategic Management Plan
SWOT	Strengths, weaknesses, opportunities and threats analysis

# 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:

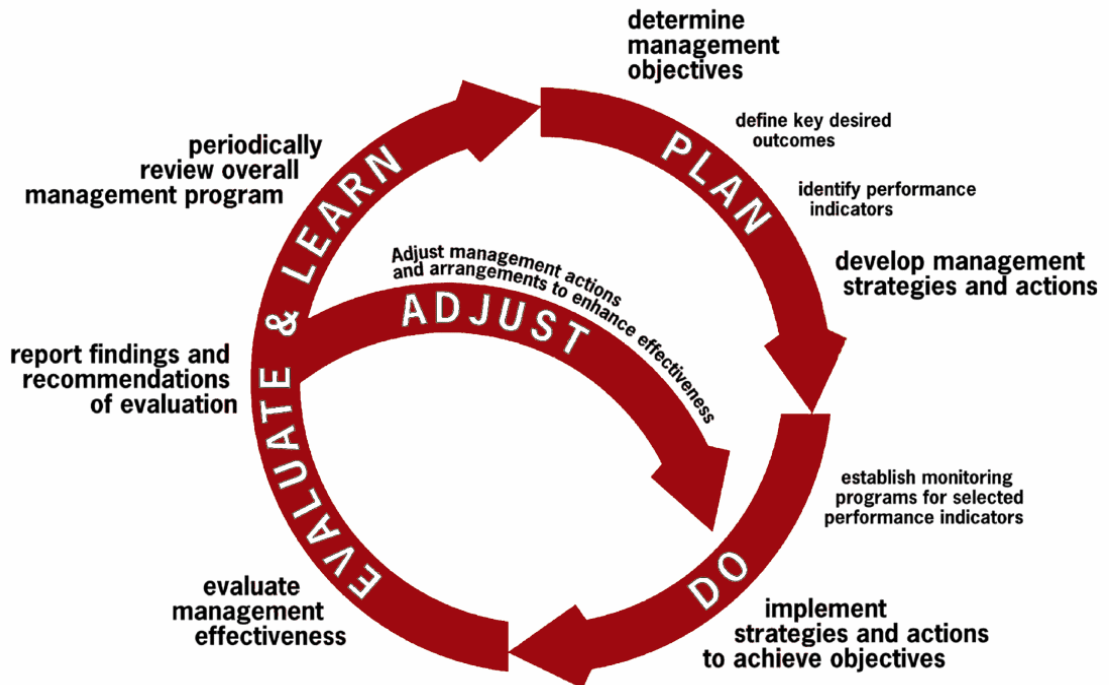
- Provide the primary strategic tool for management of Shaw's Pass Nature Reserve, informing the need for specific programmes and operational procedures.
- Provide for capacity building, future thinking and continuity of management.
- Enable the landowner to develop and manage Shaw's Pass Nature Reserve 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:	Provides an introduction and background to the management plan and Shaw's Pass Nature Reserve.
Section 2:	Sets out the vision and objectives for the biodiversity stewardship site.
Section 3:	Establishes the context of the biodiversity stewardship site, providing the basis for the operational management framework that follows.
Section 4:	Sets out the zonation of the biodiversity stewardship site, outlining the land uses in particular zones.
Section 5:	Describes the administrative structure that has been established for Shaw's Pass Nature Reserve.
Section 6:	Operational Management Framework - Sets out the management targets that must be achieved in managing the nature reserve.
Section 7:	Annual Plan of Operation and Review

### 1.3 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 (Management Strategy Evaluation, 2009)**

Adaptive management enables landowners and managers to:

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

## 1.4 INTRODUCTION

Shaw's Pass Nature Reserve (SPNR) is a 61 hectare site located in the Western Cape province of South Africa, just north of Shaw's Pass (R320), approximately 9 km south of Caledon in the Theewaterskloof Municipal Area, in the Overberg District Municipality. The site is about 120 km east of Cape Town and 280 km west of George. The site is part of a larger property called Muirton, which is 131 hectares in size and has been owned by the Hugo family since 1938.

SPNR was established as a biodiversity offset in 2005, as a result of the realignment and upgrading of the Shaw's Pass road to make it safer by removing two of the hairpin bends. The offset was a condition of the Environmental Authorisation for the road project, and required the applicant to set aside an area of at least 30 hectares for conservation purposes, in consultation with the owner and CapeNature. The applicant also made a payment of R7.5 million to a Management Fund, which is hosted by a financial institution and managed by CapeNature. The funds can only be used for the management and protection of the offset and surrounding land units.

SPNR plays a vital role in regional biodiversity conservation, as it conserves four Critical Endangered vegetation types, namely Overberg Sandstone Fynbos, Elim Ferricrete Fynbos, Western Ruens Shale Renosterveld and Ruens Silcrete Renosterveld. These vegetation types are endemic to the Western Cape and have been severely reduced and fragmented by agricultural and urban development. They support a high diversity of plant species, many of which are rare, threatened or endemic. SPNR is home to 28 Plant Species of Conservation Concern, such as the Shaw's Mountain Daisy (*Osteospermum shawii*), the Caledon Conebush (*Leucadendron muirii*) and the Elim Pincushion (*Leucospermum praemorsum*).

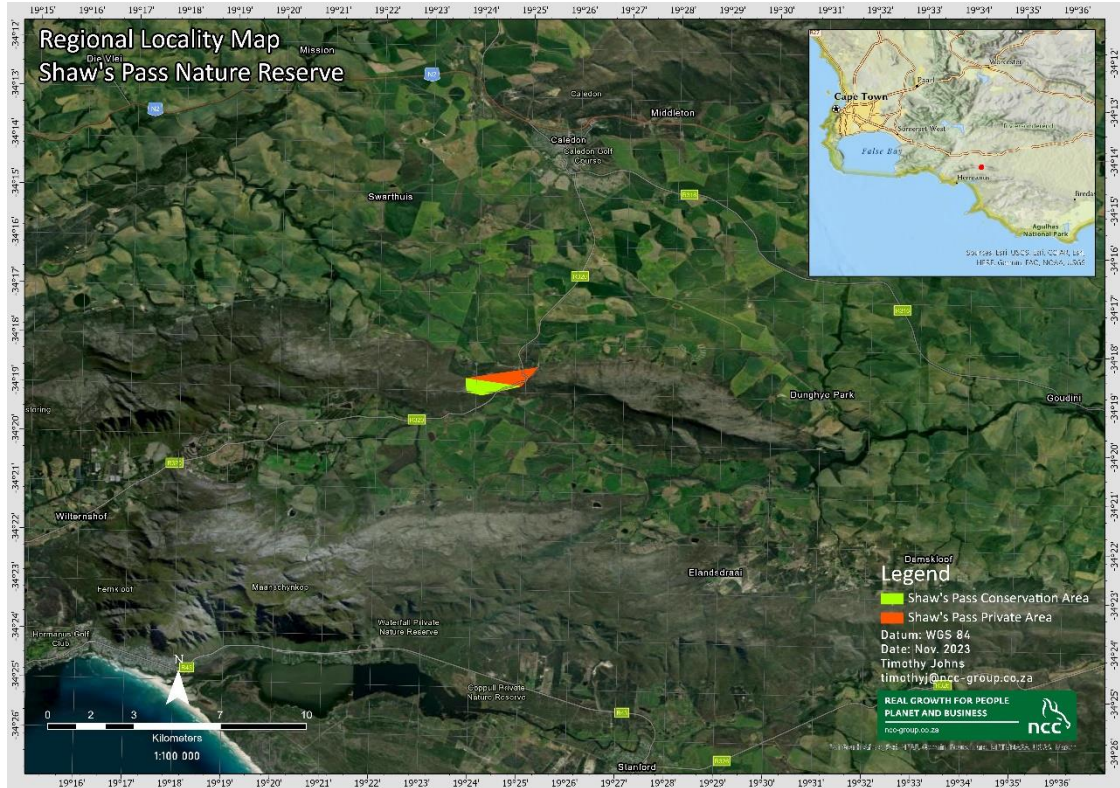
SPNR also provides habitat for a variety of wildlife, such as the Cape Leopard (*Panthera pardus*), the Cape Grysbok (*Raphicerus melanotis*), the Cape Sugarbird (*Promerops cafer*) and the Orange-breasted Sunbird (*Anthobaphes violacea*).

SPNR faces several threats and challenges to conservation, most notably invasive alien plants and uncontrolled wildfire. The management authority, Marna Hugo (owner and manager of the NR), is committed to addressing these issues and ensuring the long-term sustainability of the site. She also aims to use the site as a building block in creating a conservation corridor between the Steenboksberg complex and the Babilonstoring Nature Reserve, which are two important protected areas in the vicinity.

### Landowner details

Owner	Marna Hugo
Contact person	Marna Hugo
Contact details – Tel.	0842286623
Contact details – email	shawspass@gmail.com
Management Authority	Marna Hugo

Property descriptions	Remainder of the Farm No. 536, situated in the Theewaterskloof Municipality, Division Caledon, Western Cape Province
Total property area	119 1450 hectares



**Figure 1.2 Regional location of Shaw's Pass Nature Reserve**

## 1.5 THE VALUES OF SHAW'S PASS NATURE RESERVE

The values of a site are those remarkable attributes that led to it being identified as a priority for the Biodiversity Stewardship Programme. The values are important in planning and management, as they are the aspects of the place that must be protected. The values of Shaw's Pass Nature Reserve include:

<b>Natural values</b>	The PA contains the Endangered: Overberg Sandstone Fynbos B1 criteria due to high numbers of rare, endemic and threatened species. Only 6% of the vegetation type is formally protected of the remaining 86%. This NR will contribute 61 hectare to this target. The NR also contains a Terrestrial Critical Biodiversity Area.
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<b>Ecosystem service values</b>	<p>As a small protected area Shaw's Pass would contribute to the protection of the upper catchments and drainage lines of the Onrus Rivier. Ecosystem Services would primarily be related to the maintenance of water quality and provision to this catchment. The management and maintenance of a pristine system in the NR would contribute to erosion control and an ecologically functional hydrological system. The NR would serve as a refuge and provide habitats not only to the vegetation units present but to the vertebrate and invertebrate fauna associated with these vegetation units. Through this the NR would contribute to the conservation of the genetic diversity of these faunal and floral assemblages and the smaller site to local scale ecological services such as pollination and seed dispersal systems.</p>
<b>Eco-cultural tourism values</b>	<p>A mountain bike route exists on a small section of the NR and was used during past Cape Epic Mountain Bike Challenges. The NR has potential as a site to be explored for its botanical diversity and populations of botanical species of conservation importance.</p>
<b>Cultural and historic values</b>	<p>The Hemel and Aarde Valley is an ancient pastoralist route with the area being occupied by the Khoi as long as 2000 years ago. As the Khoi were displaced by the settlers this route remained in use as a wagon track known as Sannie Louw se Berg. In 1839 the pass was constructed over this wagon track and was named Shaw's Pass after Lieutenant Colonel William Shaw who was the owner of several farms of the Babylonstoring mountain slopes. In the 1950's the Divisional Council improved the road as an important link between Hermanus and Caledon.</p>
<b>Socio-Economic values</b>	<p>Contractors have been employed by CapeNature during alien invasive species clearing operations and the management authority intends to continue using contractors to assist in the implementation of this PAMP. The use of the tracks within the SPNR for the Cape Epic Mountain Bike race contribute further to the income generation from the protected area.</p>



## 1.6 SUMMARY OF MANAGEMENT CHALLENGES AND OPPORTUNITIES

The following key management challenges and opportunities are applicable for the SPNR and are described within Table 1.6.1 (See Table 1.6.1 – Management Challenges and opportunities).

**Table 1: 1.6.1 Management challenges and opportunities**

Key performance area	Challenges and Opportunities
Fire management	<p>Fire Management is always very complex in a small NR of this size due to the large boundary in boundary in relation to size. This translates into elevated edge effects resulting from more fires burning into the PA from adjacent properties. This means they are more exposed to edge effects, such as fires spreading from adjacent properties, invasive species, human disturbance, and habitat fragmentation . It is additionally difficult to institute management interventions (e.g. firebreaks) to prevent these uncontrolled fires. With the small size the use of fire in controlled burns to allow for a mosaic of veld ages is challenging.</p> <p>The landowner has certain regulatory responsibilities in terms of the provisions of the National Veld and Forest Act (Act 101 of 1998). As a member of the Greater Overberg FPA, the owner is provided with an ideal opportunity to become part of the greater collaborative management of the landscape through the implementation of an Integrated Fire Management approach.</p>
Invasive vegetation management	<p>Various alien invasive plant species occur on the property at various densities and age classes. The management of follow up operations is key. This to ensure that the correct control measures are implemented in response to accidental fires that are probable in future. These fires will activate the germination of fire adapted invasive alien species and will require control after each fire for many years to come. The integrated control of alien invasive species on the protected area will remain as a key cost.</p>
Wildlife management	<p>In this instance naturally occurring wildlife should not require management – it is</p>

	important though that care is taken with introductions and impacts caused by domestic animals and the re-introduction of other larger historically occurring wildlife.
Erosion prevention and control	Erosion management is not a major concern – however the access road and the mountain bike trail should be effectively maintained. Additionally, as denser areas of alien invasive plants are cleared erosion control measures should be implemented.  This will be particularly important for the stands of Eucalyptus on steeper slopes.
Monitoring and Baseline data collection	Various baseline studies are available from the EIA process conducted for the re-alignment of the road. These studies and reports must be used as the baseline to identify further studies and for use in monitoring programmes.
Biodiversity security	The landowner signed a MoU with CapeNature indicating commitment to declare 61 hectare of Farm RE/ 536 Caledon as a Contract Nature Reserve under the NEM:PAA
Development of tourism opportunities	No tourism development is planned – however the existing mountain bike trail will be used in a small section of the PA. Additionally a small area for holding wedding services will be located within the protected area. These however will have no permanent structures associated with them.
Legal compliance	The responsibility of legal compliance rests with the Management Authority (landowner) and the management challenge will be to ensure available capacity within their organisation to comply with the legislative requirements.
Management effectiveness	Management effectiveness will be audited annually. The audit should feed into the PAMP and its associated activities. The PAMP must be continually adapted based on the outcome of the audit process as and when required. These adaptations must be approved by CapeNature prior to commencing with implementation of those activities.
Infrastructure	Effective infrastructure maintenance programs are needed to keep the

	existing mountain bike trail, the fire break and road network operational and to avoid negative impacts such as erosion.
Archaeological, palaeontological and Cultural Heritage	Findings of the EIA indicate that the site of the road realignment is not located on an archaeologically sensitive area and that it would not impact on important Stone Age material. Information on the remainder of the protected area is not known and should be the focus of future management

## 2) 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 SPNR. It has been prepared collaboratively through a process involving the landowner (Management Authority), NCC Environmental Services (Pty) Ltd and CapeNature.

### 2.1 SHAW'S PASS NR VISION AND PURPOSE

#### The Vision

*"The vision for the SPNR is to manage and conserve the natural assets and aesthetic values in a sustainable way for the benefit of current and future generations".*

#### Purpose

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

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

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

SPNR serves in the protection of South Africa's threatened and rare species, provides protection to ecosystems and preserves ecological integrity. Benefits of appropriate nature based economic activities may be utilised to promote human, social, cultural and economic development while protecting ecosystems that are vulnerable and ecologically sensitive.

## 2.2 OBJECTIVES

The following objectives are identified to realise the management intention of the SPNR.

- *Preserve the ecological integrity of the area;*
- *Conserve the biodiversity of the area with special emphasis on Rare, Endangered and Endemic Species;*
- *Protect areas representative of all ecosystems, habitats and species;*
- *Assist in ensuring the sustained supply of environmental goods and services, and;*
- *Provide a conservation linkage between the Steenboksberg complex and the Babylonstoring Nature Reserve.*
- *Serve as the cornerstone on which to anchor the proposed biodiversity corridor linking Steenboksberg to the Babylonstoring Nature Reserve.*

The objectives were derived from the vision and purpose and are grouped into Key Performance Areas (KPA) which must be achieved to realise the management intention for the SPNR. The objectives are prioritised through the development of action plans which are set out in the Operational Management Framework.

Table 2.1 sets out the key performance areas, the objective for each key performance area and the key deliverables, required to realise these objectives.

**Table 2: 2.1 Objectives and Key Deliverables for SPNR**

Key Performance Area	Objective	Key Deliverable
<b>Biodiversity Management</b>		
Fire management	<p>To ensure conservation of species and processes by maintaining and improving ecosystem functioning.</p> <p>To allow for natural fire processes to occur without impacting on safety and infrastructure.</p> <p>To implement effective Integrated Catchment Management.</p>	<p>Membership of the Greater Overberg FPA</p> <p>Adherence to the rules of the FPA and the NVFF Act, Act 101 of 1998.</p> <p>Maintain Partnerships to improve fire management.</p> <p>Establish strategic fire breaks.</p> <p>Obtain firefighting equipment.</p> <p>Reduce wildfires resulting from human negligence and implement an ecological burn programme.</p> <p>Improve fire readiness</p>
Invasive vegetation management	<p>To enhance biodiversity protection and conservation.</p> <p>To ensure conservation of species and processes by maintaining and improving ecosystem functioning.</p>	<p>Implemented and scheduled integrated alien invasive control plan.</p> <p>Effectively Eradicate Alien and Invasive Species.</p> <p>Prevent further introduction of alien species.</p>
Wildlife management	<p>To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning.</p> <p>To enhance biodiversity protection and conservation.</p> <p>To promote biodiversity protection and conservation</p> <p>To prevent the disruption of ecosystem functioning</p>	<p>Prevent the introduction of alien fauna species.</p> <p>Control invasive alien fauna.</p> <p>Manage the introduction of fauna on the Reserve.</p> <p>Evaluate and monitor impact of fauna on the Reserve.</p> <p>Link with other research institutions and CapeNature scientific services to obtain more scientifically generated information.</p> <p>Prevent and minimise impacts on wildlife.</p> <p>Prevent access to waste through the provision of baboon-proof bins or the storage of bins in adequate wildlife-proof enclosures.</p>

		<p>Prevent baboon access to human-derived foods from venue and accommodation facilities through the installation of baboon-proof bars on windows at a spacing of no more than 7cm.</p> <p>Provide written and/or electronic educational information to residents and visitors on the restriction of feeding wildlife.</p>
Erosion prevention and control	<p>To ensure implementation of effective conservation management interventions.</p> <p>To enhance biodiversity protection and conservation.</p>	<p>Prevent and mitigate soil erosion.</p> <p>Map and evaluate all erosion sites.</p> <p>Implement erosion management activities.</p> <p>Monitor success of rehabilitation.</p>
Monitoring and Baseline data collection	<p>To manage biodiversity knowledge to ensure effective conservation management.</p> <p>To implement measures to ensure resilience and persistence of biodiversity in light of climate change.</p> <p>To ensure the implementation of effective conservation management interventions.</p> <p>To ensure conservation of species and processes by maintaining and improving ecosystem functioning.</p>	<p>Create a Biodiversity Resource Inventory.</p> <p>Implement Monitoring Programme.</p> <p>Implement Research Programme.</p> <p>Protection of Flora of Conservation Concern.</p> <p>Conservation of Threatened and Endemic Fauna.</p> <p>Manage consumptive utilisation of biological resources.</p> <p>Ensure that the outcomes of the Ecological Plan of Operation is incorporated in the CapeNature Conservation Services Ecological Matrix for the Area.</p> <p>Photographs of priority specimens should be submitted to CapeNature Scientific Services.</p>
Research	<p>Improve knowledge base of the NR.</p>	<p>Establish SPNR as a research site at tertiary academic institutions.</p>
Interpretation and awareness	<p>Improve awareness of the NR.</p> <p>Ensure that negative activities are minimised.</p>	<p>Maintain current signage at the public road and other visible strategic points</p>

Biodiversity security	To enhance biodiversity protection and conservation. To ensure conservation of species and processes by maintaining and improving ecosystem functioning.	Ensure that the property's Notarial Deed with surveyor diagram and title deed restrictions are registered with the Notary and Surveyor General.
Heritage resource management	To conserve the heritage resources and assets at the NR.	Map and evaluate resources and assets.
<b>Development</b>		
Development of tourism opportunities	To evaluate potential tourism opportunities. To implement effective management systems. To ensure legal compliance and implementation of authorised development plans.	Development of tourism opportunities that generate revenue for the Nature Reserve.
<b>Operational Management</b>		
Legal compliance	To ensure legal compliance to all relevant legislation and policies.	Ensure that all legal requirements are met.
Management effectiveness	To implement effective management systems.	Conduct annual audits. Auditing systems inform management and management plan revision.
Infrastructure	To ensure the implementation of effective conservation management interventions. To enhance biodiversity protection and conservation. To ensure conservation of species and processes by maintaining and improving ecosystem functioning.	All infrastructure on the Reserve is adequately maintained. Insulation of above-ground electricity lines (e.g. stay-poles, H-poles) to prevent wildlife injury and mortality.
Access control	Prevent negative activities caused by illegal activities.	Ensure that all fences and gates are well maintained.
Law enforcement	Prevent negative activities caused by illegal activities.	Ensure that adequate funding is available to implement law enforcement activities. Link with other institutions that is responsible for law enforcement. Implement regular law enforcement activities.



Development of the management authority	Improve the conservation management skills of the MA.	Determine current staffing capacity. Develop a training schedule for staff. Ensure funding is available to implement training schedule. Attend relevant training.
Obtain equipment that is needed for the protection and management of the PA.	Sufficient equipment is available to implement this PAMP.	Identify all equipment required to protect and manage the PA. Ensure funding is available to obtain required equipment.
Procurement	Effective management to improve biodiversity of the NR is directly linked to sufficient funding.	Develop an APO every year and submit it timeously to CN to ensure the allocation of the budget and enough time to spend the budget on management interventions.

### 3) Description OF SHAW'S PASS NATURE RESERVE and its context

#### 3.1 THE LEGISLATIVE BASIS FOR THE MANAGEMENT OF SPNR

There is a large body of legislation that is relevant to the management of SPNR, 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, 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.

##### 3.1.1 Proclamation status of Shaw’s Pass Nature Reserve

Shaw’s Pass Nature Reserve is proclaimed under Section 23(1) of the National Environmental Management: Protected Areas Act (Act 57 of 2003). Declaration Date: 04 December 2020, Government Gazette Notice: 8363 2024/12/04, REF NO. PN: 133/2020. See Appendix F.

##### 3.1.2 The National Environmental Management Act (NEMA) (Act 107 of 1998)

The Act provides for co-operative environmental governance by establishing principles for decision making on matters effecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state, and to provide for matters connected thereto.

The principles of NEMA oblige development to be “socially, environmentally and economically sustainable”. This obviously implies achieving a balance between these pillars of sustainability. There are a number of principles that are relevant to the owner of the SPNR that relate to (but not limited to) the following:

- *Avoid, minimise or remedy disturbance of ecosystems and loss of biodiversity;*
- *Avoid degradation of the environment;*
- *Avoid jeopardising ecosystem integrity;*
- *Pursue the best practicable environmental option by means of integrated environmental management;*
- *Promote the participation of interested and affected parties;*
- *Take into account the interests, needs and values of interested and affected parties;*
- *Protect the environment as the people’s common heritage;*
- *Control and minimize environmental damage; and*

- *Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems.*

Environmental Impact Assessment (EIA) Regulations under Section 24(5) and 44 of NEMA were promulgated in December 2014 (Government Notice No. R982, R 983, R984 and R985). Everyone wishing to undertake an activity identified in terms of Section 24(1)(a) of NEMA will need to obtain authorisation from the competent authority via the prescribed EIA process.

### **3.1.3 National Environmental Management: Biodiversity Act (Act No. 10 of 2004)**

The Act provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of South African National Biodiversity Institute; and for matters connected therewith.

In terms of Section 76 of the National Environmental Management: Biodiversity Act (No.10 of 2004), the management authority of a protected area must incorporate an invasive species control plan in the protected area management plan. This is addressed in Sections 6 and 8 below.

### **3.1.4 Invasive species control in terms of the Biodiversity Act**

The National Environmental Management: Biodiversity Act (NEMBA) regulates all invasive organisms in South Africa, including a wide range of fauna and flora. Chapter 5 of the Act relates to species and organisms posing a potential threat to biodiversity. The purpose of Chapter 5 is:

- a) *to prevent the unauthorized introduction and spread of alien species and invasive species to ecosystems and habitats where they do not naturally occur;*
- b) *to manage and control alien species and invasive species to prevent or minimize harm to the environment and to biodiversity in particular;*
- c) *to eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats;*

According to Section 65 of the Act, "**Restricted activities involving alien species**":

- 1) A person may not carry out a restricted activity involving a specimen of an alien species without a permit issued in terms of Chapter 7. Restricted activities include the following:
  - a) *Importing into the Republic, including introducing from the sea, any specimen of a listed invasive species;*
  - b) *Having in possession or exercising physical control over any specimen of a listed invasive species;*
  - c) *Growing, breeding or in any other way propagating any specimen of a listed invasive species, or causing it to multiply;*

- d) *Conveying, moving or otherwise translocating any specimen of a listed invasive species;*
- e) *Selling or otherwise trading in, buying, receiving, giving, donating or accepting as a gift, or in any other way acquiring or disposing of any specimen of a listed invasive species;*
- f) *Spreading or allowing the spread of any specimen of a listed invasive species;*
- g) *Releasing any specimen of a listed invasive species;*
- h) *Additional activities that apply to aquatic species.*

2) A permit referred to in subsection (1) may be issued only after a prescribed assessment of risks and potential impacts on biodiversity is carried out.

An "**alien species**" is defined in the Act as:

- a) *a species that is not an indigenous species; or*
- b) *an indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by means of migration or dispersal without human intervention.*

According to Section 71 of the Act, "**Restricted activities involving listed invasive species**":

- a) A person may not carry out a restricted activity involving a specimen of a listed invasive species without a permit issued in terms of Chapter 7.
- b) A permit referred to in subsection (1) may be issued only after a prescribed assessment of risks and potential impacts on biodiversity is carried out.

An "**invasive species**" is defined in the Act as any species whose establishment and spread outside of its natural distribution range:

- a) *threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species; and*
- b) *may result in economic or environmental harm or harm to human health.*

A "**listed invasive species**" is defined in the Act as any invasive species listed in terms of section 70(1).

According to Section 73 of the Act, "**Duty of care relating to listed invasive species**":

- a) *A person who is the owner of land on which a listed invasive species occurs must-*
  - a) *notify any relevant competent authority, in writing, of the listed invasive species occurring on that land;*
  - b) *take steps to control and eradicate the listed invasive species and to prevent it from spreading;*
  - and*
  - c) *take all the required steps to prevent or minimize harm to biodiversity.*

According to Section 75 of the Act, "**Control and eradication of listed invasive species**":

- (1) *Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.*
- (2) *Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.*

*(3) The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.*

It is important to note that alien species that are regulated in terms of the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) as weeds and invader plants are exempted from NEMBA. This implies that the provisions of the CARA in respect of listed weed and invader plants supersede those of NEMBA.

## **3.2 THE REGIONAL AND LOCAL PLANNING CONTEXT OF SHAW'S PASS NATURE RESERVE**

### **3.2.1 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 CapeNature Protected Area Expansion Strategy addresses the formal proclamation of priority natural habitats as protected areas to secure biodiversity and ecosystem services for future generations. This strategy is aligned to the concepts and goals of the 2008 NPAES, but does identify some different spatial priorities.

Overberg Sandstone Fynbos occupies the bulk of the property and is regionally regarded as a Critically Endangered vegetation type. The conservation target is 30% and only 6% are protected in a statutory Protected Area and 6% transformed by cultivation.

The entire site falls within a Critical Biodiversity Area (CBA). CBA's are those areas required to meet biodiversity thresholds. They are areas of land or aquatic features (or riparian buffer vegetation alongside CBA aquatic features) which must be safeguarded in their natural state if biodiversity is to persist and ecosystems are to continue functioning. These Critical Biodiversity Areas incorporate: i) areas that need to be safeguarded to meet national biodiversity pattern thresholds (target area), ii) areas required to ensure the continued existence and functioning of species and ecosystems (including the delivery of ecosystem services); and/or iii) important locations for biodiversity features or rare species. The CBA network represents the most land-efficient option to achieving all biodiversity targets (Maree and Vromans 2010).

### 3.2.2 Regional planning

The Spatial Development Framework (2023) for the Overberg District Municipality (SDF ODM) is the spatial expression of the Overstrand District Municipality Integrated Development Plan (ODM-IDP). Consequently, the SDF is a policy document to be used by organs of state as a guideline in decision-making.

The SDF ODM acknowledges that The Western Cape Biodiversity Spatial Plan (WCBSP) is the product of a systematic biodiversity planning process that delineates biodiversity priority areas on a map to inform land use planning and decision-making.

The categories include Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) which require safeguarding to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services, across terrestrial and freshwater realms. These spatial priorities are used to inform sustainable development in the province.

Further to this the SDF also provides core ideas that are linked to the management objectives SPNR, including:

- *Unique agricultural, environmental and urban qualities must be maintained;*
- *Private conservation areas must continue to be promoted with careful consideration of appropriate development rights to mobilise the necessary resources for veld rehabilitation and management, and;*
- *Linking corridors in the Rûens should be encouraged.*

The Theewaterskloof SDF (2020) indicates that the WCG approach to Conservation is to formally protect priority conservation areas, establish ecological linkages across the rural landscape, and mainstream a conservation ethic into all rural activities. The management and long term conservation security of the SPNR is therefore aligned with the local authority SDF (Theewaterskloof Municipality 2020).

The objectives of the Theewaterskloof Municipality set out the SDF indicates that the municipality is committed to:

- Protect and conserve important habitats, as identified through a conservation planning process.
- Facilitate the formal protection of priority conservation areas (public and private), as well as implementing conservation management actions for CBAs and ESAs that are not formally proclaimed nature reserves.
- Establish ecological corridors to mitigate against the impacts of climate change.
- Protect the scenic qualities of the cultural and natural landscapes.
- Protect the rural 'sense of place' and structures of heritage and archaeological significance and ensure that new development respects cultural landscapes and sites.

### 3.2.3 Biodiversity plans

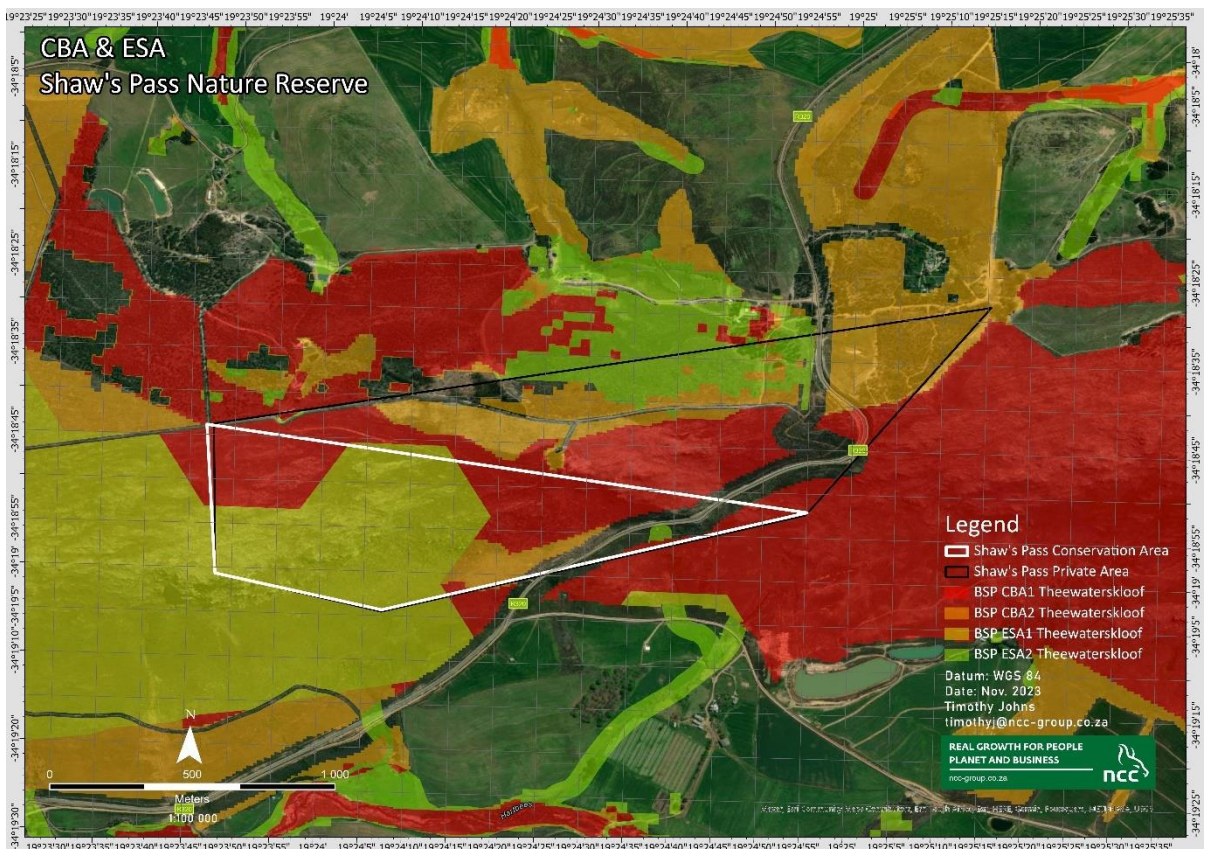
Biodiversity Sector Plans (BSP) provide a way forward in reconciling the conflict between exploitative resource use activities and the maintenance of natural systems. They provide the biodiversity information needed for land use planning and decision-making and other multi-sectorial planning processes in the form of;



- *Critical Biodiversity Areas Maps;*
- *A Biodiversity Sector Plan Handbook, which includes a Biodiversity Profile for these municipalities, and land and resource-use guidelines;*
- *GIS (Geographical Information Systems) shapefiles; and*
- *Technical reports.*

The BSP includes important spatial information in the following GIS shapefiles, Critical Biodiversity Areas (CBA) (terrestrial); Critical Biodiversity Areas (CBA) (aquatic) and their buffers, Ecological Support Areas (ESA) and Critical Ecological Support Areas (CESA) amongst others.

According to Cape Farm Mapper, SPNR falls within a Terrestrial Critical Biodiversity Area (CBA), indicating that the site is of high conservation value (Figure 3 : Shaw’s Pass Nature Reserve Critical Biodiversity Area).



**Figure 3.1: Critical Biodiversity Area map of Shaw’s Pass Nature Reserve**

### 3.3 THE HISTORY OF SHAW'S PASS NATURE RESERVE

It has been estimated that there were approximately 50 000 people in the South Western Cape when the Dutch East India Company arrived. Generally these groups ranged from small hunter gatherer families (Bushmen) to pastoralist clans (Khoi) of 100 or more people. Herds of stock followed a seasonal grazing pattern between the coasts and the hinterland along a network of trek paths that later became the basis for our road system (Nel 2011).

According to Nel 2011, the Hemel and Aarde Valley was one of these ancient routes. Visits to the coast were timed to exploit the spring and early summer grasses before the predominant summer south easterly wind dried out the grazing. At this time the pastoralists would move out across the Caledon Plain eastwards. The Hemel and Aarde Valley was the main route through a narrow gorge called the Attaqua's Kloof after a Chainouqua Khoi Chief.

By 1716 colonial farmers emerged in the Western Cape and were in direct competition with pastoralist and hunter gatherer societies. By 1770 more than two thirds of the pastoralists were freeburgher farmers. The early Overberg farmers were either established Cape farmers with stock farms in the interior or the younger sons of low ranking men of the Dutch East India Company who were attempting to establish themselves on stock farms outside the Cape (Nel 2011).

The Khoi were gradually displaced in the conflict over pasture, water and wealth in stock. The best pasture was taken over by the settlers in a low-level war with many of the Khoikhoi ending up in the service of the settlers as stock keepers (Nel 2011).

The first settlement in the Hermanus Area occurred towards the end of the 18<sup>th</sup> century when grazing rights were granted to the Dutch East India Company at Mossel Rivier east of the present town of Hermanus at the current day Onrusrivier. This grant was later passed on to Hendrik Cloete of Groot Constantia in 1787 (Nel 2011).

The route was also frequently used by settler farmers, illustrated by the presence of a wagon track, a 1-2m wide gully track, known as Sannie Louw se Berg. In 1839 a new pass was constructed and named Shaw's Pass after Lieutenant Colonel William Shaw who owned several farms on the slopes of the Babylonstoring Mountain.

In the 1830's an itinerant teacher, Hermanus Pieters, shepherd of the district of Caledon trekked down to the coast and set up a seasonal camp at a spring that is now the CBD of Hermanus. Other farmers also made the seasonal trek down to the coast and over time a small settlement resulted known as Hermanus Pietersfontein later shortened to the current Hermanus (Nel 2011).

In the 1950's the Divisional Council improved the road as it was an important link between Hermanus and Caledon. The Shaws Mountain Pass was tarred in 1972 and further upgraded in 2005 (Nel 2011).



### **3.4 ECOLOGICAL CONTEXT OF SHAW'S PASS NATURE RESERVE**

This section reflects the ecological conditions of SPNR.

#### **3.4.1 Climate and weather**

The SPNR falls broadly within the temperate climate envelope, Mediterranean-type climate characterized by warm dry summers and wet winters. The average rainfall for this portion of the Overberg is 450 mm per annum. Highest rainfall months are December, January and March through May with the lowest average rainfall recorded for February and June. Average wind speed peaks at approximately 2.7 m/s in December to January and is at its lowest ebb in May and June when it averages 1.5 – 2 m/s. Maximum temperatures are reached in the summer months of November to March where average temperatures are in the high 20°C. Winter maximums range between 15 – 20°C. Minimum summer temperatures fluctuate between 10-20°C with the winter months between May and Sept averaging between 5-10°C.

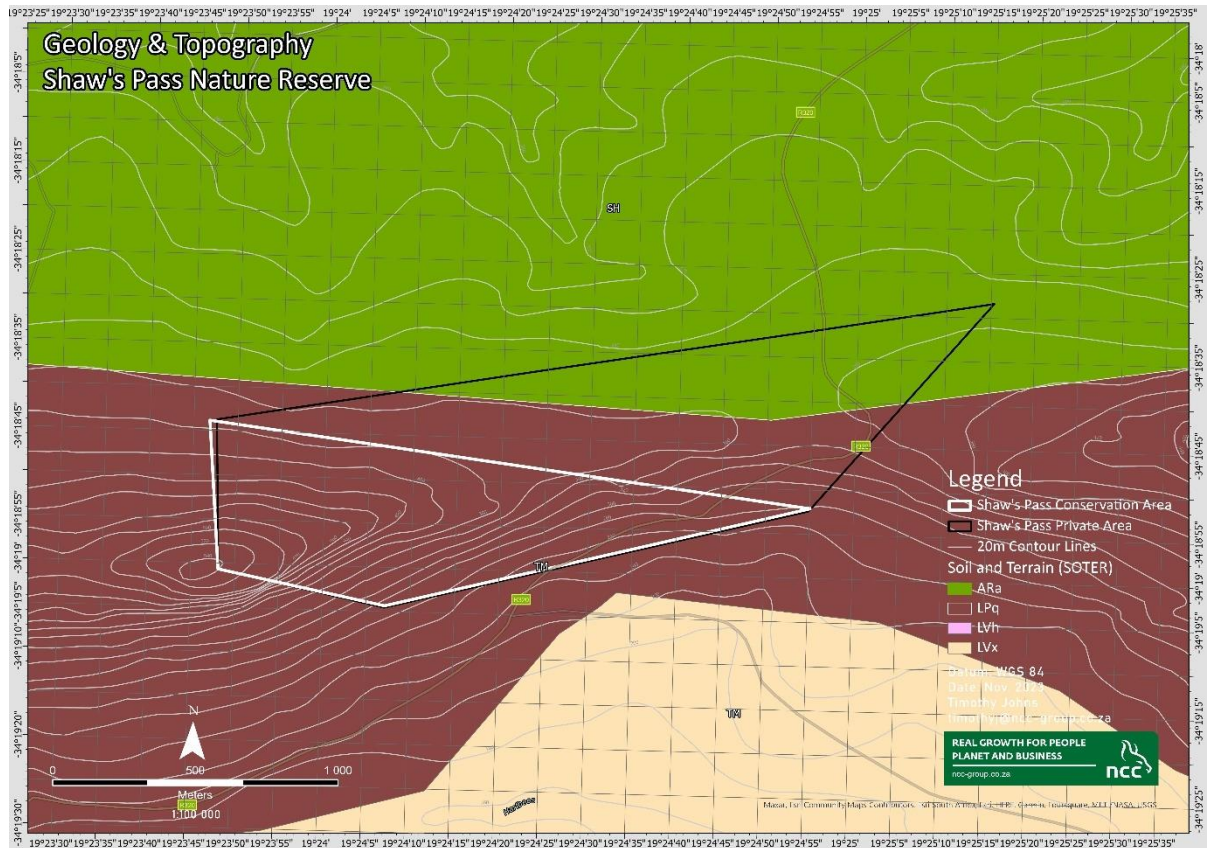
#### **3.4.2 Topography**

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.

The SPNR is characterised by the typical sandstone mountain landscapes of the Babylons Toren to the North-West and Kleinrivier Mountains to its North and North-East. This site has a maximum elevation of approximately 400 m.a.s.l. in the west and its lowest along the southern boundary at approx. 270 m.a.s.l.

#### **3.4.3 Geology and soils**

The Hemel-en-Aarde Valley, like the plateau from Shaw's Mountain Pass toward Caledon, is mainly composed of Bokkeveld Group arenaceous shales. A fault line at the foot of Shaw's Mountain Pass has uplifted the Table Mountain Group (TMG) sediments or conversely subtended the Bokkeveld Group deposits. The foot of the pass is made along the Cedarberg Formation shale band onto the Pakhuis Formation tillite (of the TMG), on the fault line, with the Peninsula Formation contact being covered by the Bokkeveld Group deposits here. Shaw's Mountain Pass itself is mainly cut through the Goudini Formation, possibly with some Skurweberg Formation forming the summit ridge. The plateau at the head of the pass has sandy in situ weathered Bokkeveld Group arenaceous shales, with patches of ferricrete deposits (Boucher 2010).



**Figure 3.2 Topography and Geology of Shaw's Pass Nature Reserve**

### 3.4.3.1 Soil interfaces

Where two soil types meet there is often a “tension zone”. Different soils support different vegetation types and the meeting point is known as an ecotone. The vegetation here is often a unique combination of both parent types. These ecotones are biologically important because they are often areas of active speciation. For this reason disturbance in this zone must be avoided and it is preferable to buffer it with at least 30m of vegetation on either side.

### 3.4.5 Hydrology

The SPNR in common with the surrounding moderate to high relief mountain landscape has several steep mountain drainage lines, the steepest of which drain to the south, with a more gentle slope to the north. These are however all ephemeral and will only flow at times of and for a moderate period after a rainfall event. Areas adjacent to the SPNR have dams constructed in these drainage lines and water is diverted to these dams via contour canals on the northern slopes below the northern boundary of the SPNR.

The drainage from these catchments is of a moderate nature with run-off taking a moderate amount of time to discharge from the catchment after a rainfall event. The SPNR has very little flat ground probably <1% of its surface area, the potential for erosion from these elevated and steep slopes is therefore high.

The larger southern portion of the SPNR is part of the Onrusrivier catchment (DWS Quaternary Catchment G40H). The northern slopes drain into the Hartebeesrivier which later joins the Kleinrivier (Quaternary Catchment G40J).

The hydrology of the site is further impacted by alien invasive plants which alter both water delivery and water quality provided from this catchment and have a negative synergistic

relationship with certain invasive alien species such as *Eucalyptus* sp. which if improperly cleared may result in further accelerated erosion.

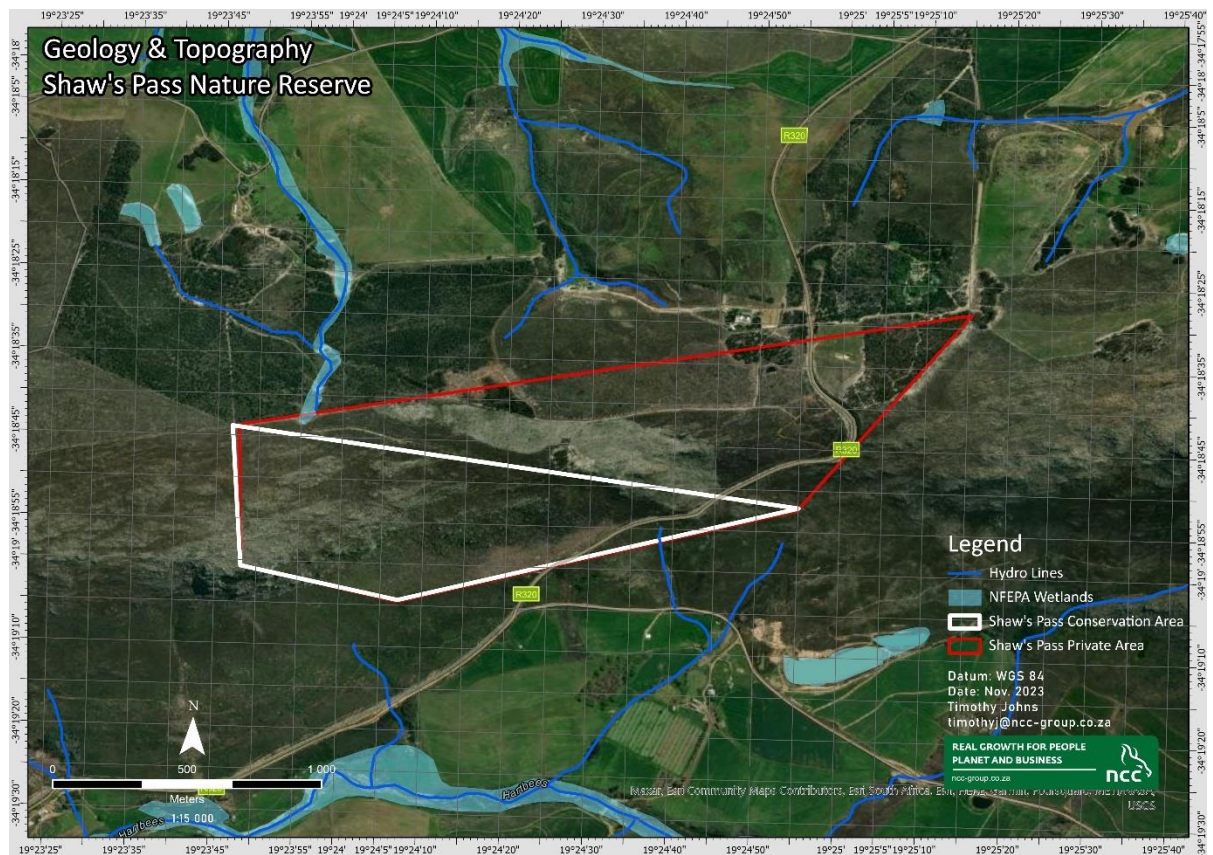


Figure 3.3 Hydrology of Shaw's Pass Nature Reserve

### 3.4.6 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 SPNR has a single vegetation type represented, Overberg Sandstone Fynbos which according to the 2022, National Gazette No. 47526, vegetation status is regarded as Endangered B1 criteria. This vegetation type occurs in the Western Cape Province and is spread irregularly from Bot River and Hawston in the north west to the Soetanysberg and Bredasdorp in the south east, including Caledon Swartberg, Babylons Toren, Kleinrivier and Bredasdorp Mountains. The vegetation unit is also present on the Agulhas Hills around Franskraal and the Buffeljaghtsberg. The vegetation type occurs at altitudes that vary between 20 – 1 167 m.a.s.l. with the highest altitude coinciding with the summit of Babylons Toren.

According to Mucina & Rutherford (2006) Overberg Sandstone Fynbos is spread irregularly from Bot Rivier and Hawston in the northwest to the Soetanysberg and Bredasdorp in the southeast, including the Caledon Swartberg, Babilonstoring, Kleinrivier, Bredasdorp Mountains and Agulhas Hills such as Franskraal se Berge and Buffeljaghtsberg. The altitude vary from 20-1167m at the summit of Babililongstoringberg.

Only 6% of this vegetation type is currently stator conserved in the Agulhas National Park, Fernkloof, Babilonstoring, Heuningberg, Maanschynkop and Salmonsdam and Caledon NR. About 6% is transformed and alien invasive plant species pose a huge risk.

Species lists is included as Appendix A.



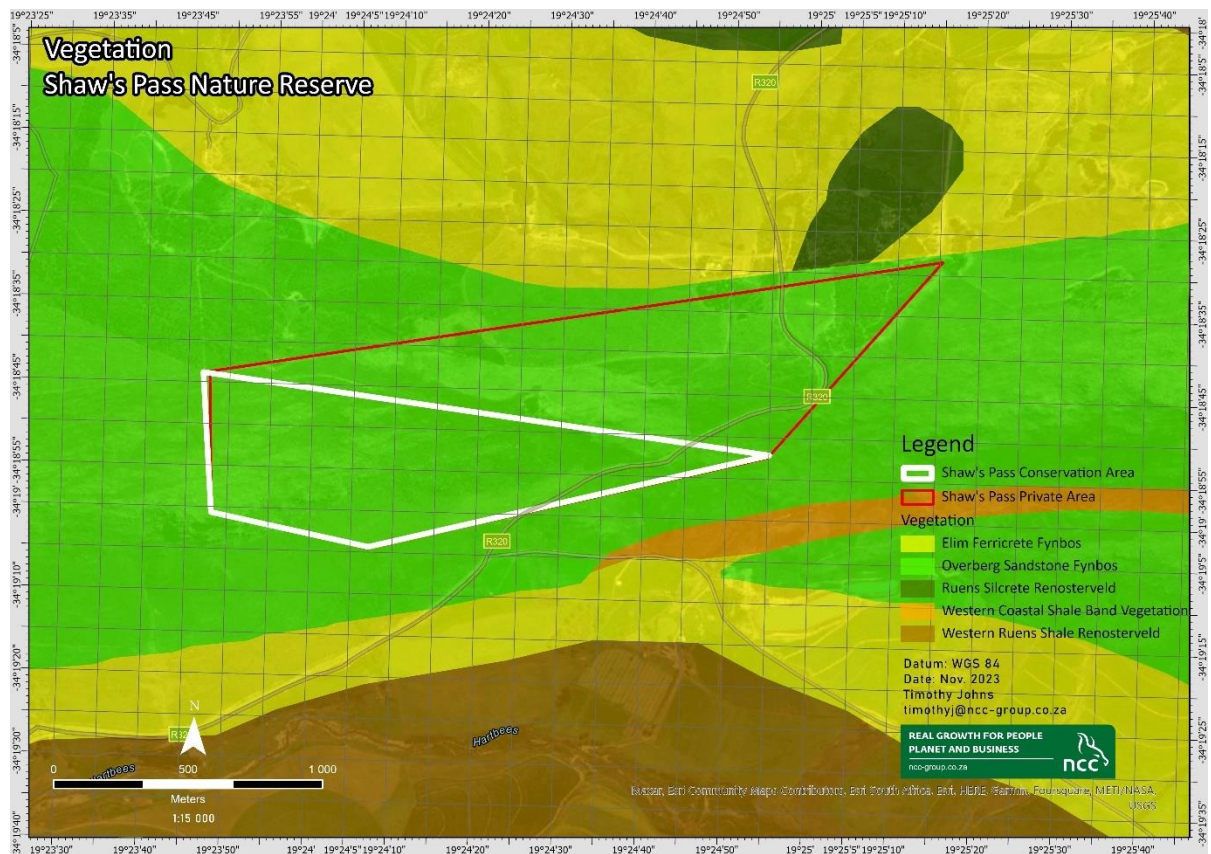


Figure 3.4 Vegetation types found on Shaw's Pass Nature Reserve

### 3.4.7 Fire regime

Fynbos is a fire driven ecosystem and requires fire to maintain its diversity, ecosystem processes and healthy plant and animal communities. Fynbos diversity is driven by fire frequency, - intensity, - season and the size of the fire (Cowling and Richardson 1995).

The influence of these factors can be described as:

**Fire frequency, this is the interval between subsequent fires.** Fynbos, which is frequently burnt, shows a marked reduction in structure from tall scrubland to a low herbaceous scrubland. Frequent fires will lead to the irreversible loss of species, annuals dominate and there is a loss of diversity. On the other hand, long periods between fires also leads to a reduction in diversity and loss of species, as woody vegetation dominates and there is a significant build-up of dead plant material, referred to as senescence (no regeneration take place in this phase).

**Fire Season, this refers to the season when a fire occurs.** The effect of season varies vastly amongst different species and plant communities. Fires that normally occur in the dry summer or autumn (November to April) are considered to be "natural" in the fynbos environment.

**Fire intensity, this is how hot the fire is burning.** Fire intensity plays a large role in the plant community composition, e.g. high fire intensity could decrease the survival rate of sprouting

species and could favour more fleshy larger seed species while lower intensity fires favouring graminoid and restoid herbs over woody elements. Above ground biomass varies from 10 tons/ha to 64 tons/ha in mature stands. Fires therefore generally have a high intensity.

**Fire size.** Regeneration of many fynbos species is dependent on the extent to which seeds are consumed by rodents, insects and other seed-eaters (granivores). Small burnt patches attract granivores, grazers and browsers from the surrounding unburnt veld, it is therefore important to ensure that burnt patches are of a reasonable size. The minimum size should be at least 25 ha to minimise the impacts of herbivores and granivores.

In developing a fire management strategy for the site, the following guiding principles have been adhered to:

- Burning should be undertaken in such a way that it maintains spatial and temporal heterogeneity within the landscape.
- A patch mosaic of burnt and un-burnt areas should be maintained.
- The burning of areas should be undertaken in such a way that promotes patchy burns (i.e. within the block being burnt, some patches will remain un-burnt rather than aiming for a complete burn).
- Burning must be undertaken with consideration of the biodiversity conservation requirements of the site and the need to protect rare and endangered species.
- Burning and fire management must be undertaken in a safe manner that is legally compliant with the National Veld and Forest Fire Act (No.101 of 1998).

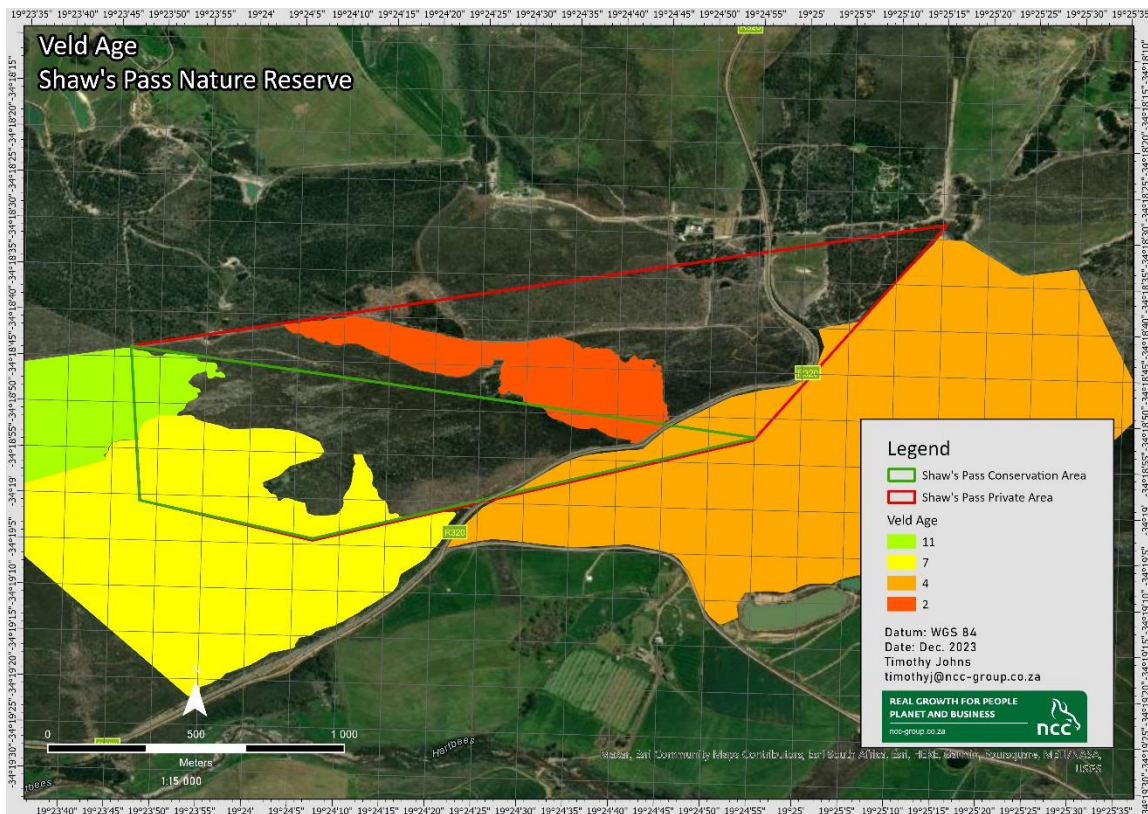


Figure 3.5 Veld Age map for Shaw's Pass Nature Reserve



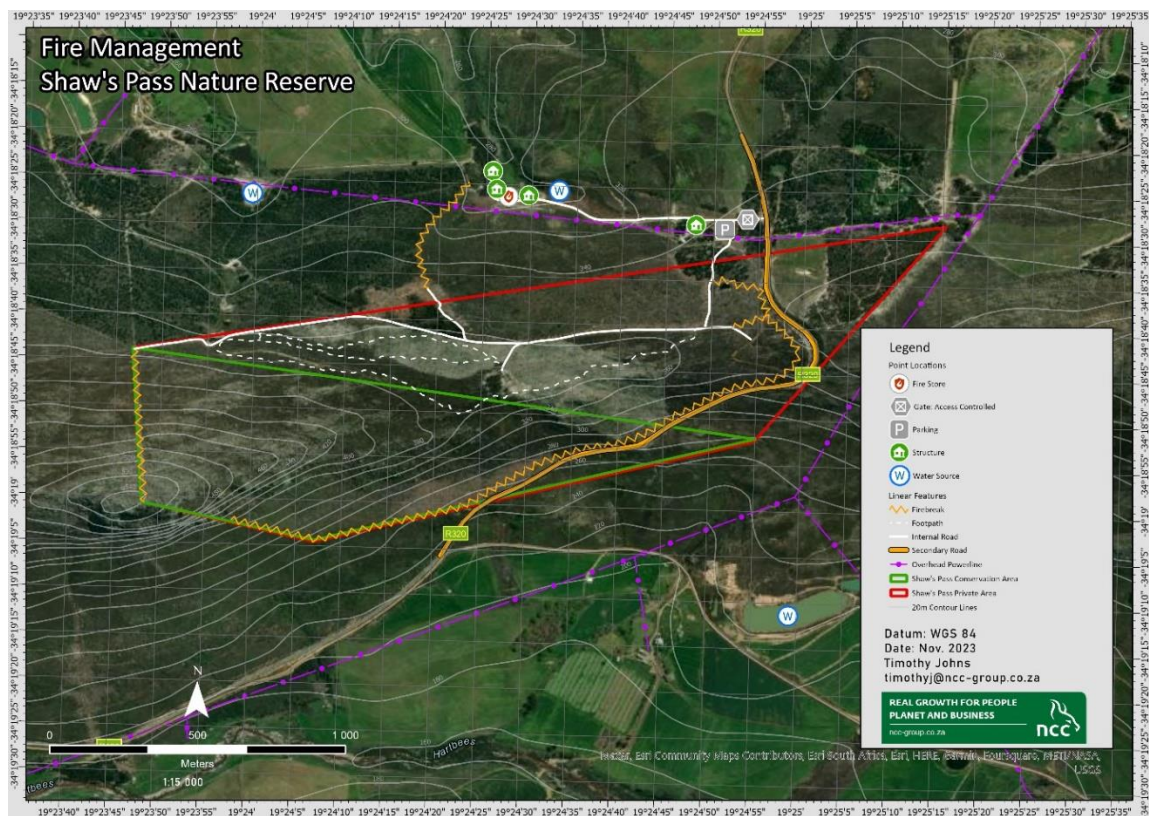


Figure 3.6 Fire management map for Shaw's Pass Nature Reserve

### 3.4.8 Invasive species

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 will be adhered to:

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

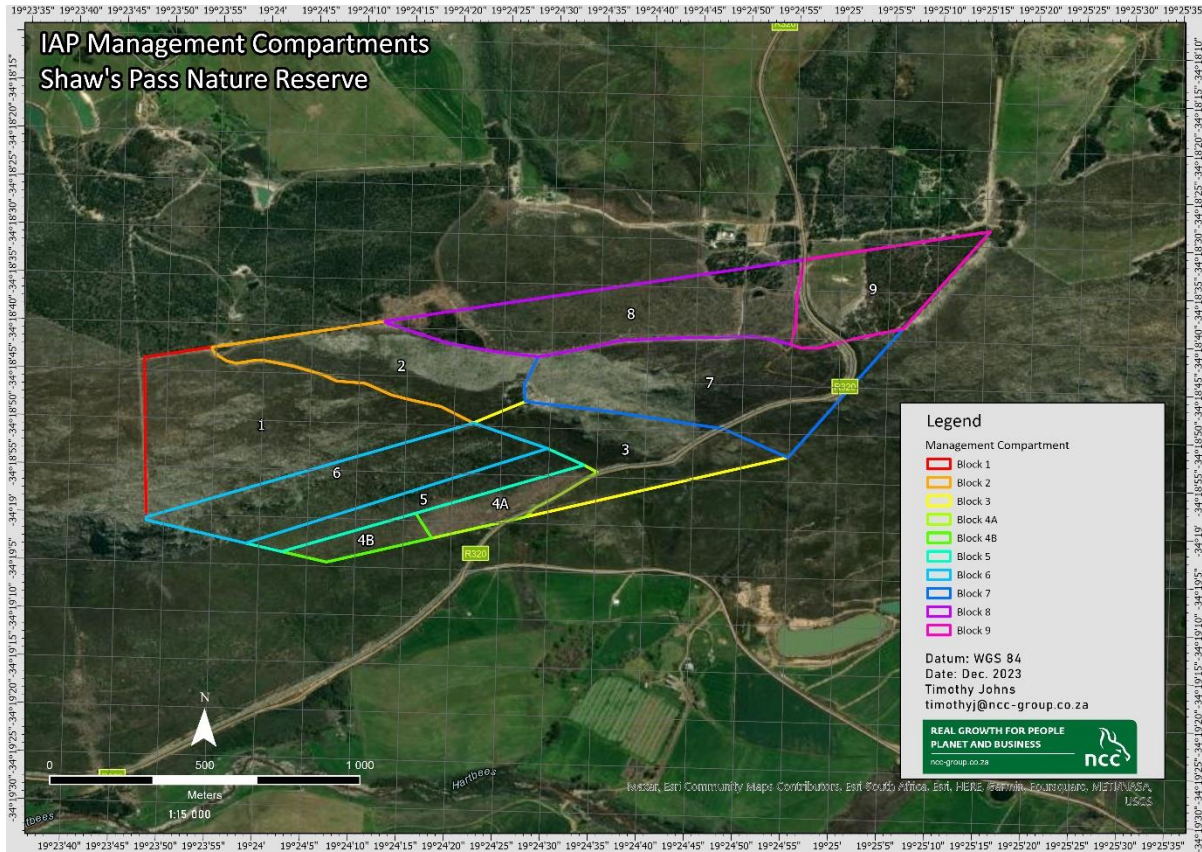
Various alien invasive species occur on the NR, some include:

Table 3.1: Alien Species and Age for Shaw's Pass Nature Reserve

Man Comp	Dom Sp.	Dom Den	Dom Age	Sec Sp.	Sec Den	Sec Age	Other Sp.	Other Den	Other Age
Block 1	Cluster Pine	5%	Young	Rock Hakea	2%	Young	Silky Hakea	1%	Young
							Longleaved Wattle	1%	Young
							Rock Hakea	1%	Young
							Radiata Pine	1%	Young

Block 2	Red River Gum	Adult/Mature	20%	Cluster Pine	5%	Young	Radiata Pine	1%	Young
							Silky Hakea	1%	Young
Block 3	Cluster Pine	Young	40%	Silky Hakea	10%	Young	Radiata Pine	1%	Young
							Rock Hakea	1%	Young
							Red River Gum	1%	Young
							Cluster Pine	1%	Young
Block 4 (a)	River Red Blue Gum	Young/ Adult	55%						
Block (b)	River Red Blue Gum	Young	40%	Rock Hakea	5%	Young			
Block 5	Cluster Pine	Young	50%	River Red Blue Gum	10%	Young			
Block 6	Cluster Pine	Young	50%	Rock Hakea	10%	Young	River Red Blue Gum	5%	Young
Block 7	Cluster Pine	Young	15%	Rock Hakea	10%	Young	Red River Gum	5%	Young
Block 8	Cluster Pine	Adult/Mature	10%	Red River Gum	10%	Adult/Mature			
Block 9	Red River Gum	Adult/Mature	75%	Cluster Pine	75%	Adult/Mature			





**Figure 6.2: Invasive vegetation map and management compartments Shaw's Pass Nature Reserve**

### 3.4.9 Mammalian fauna

Large mammals have largely been absent from fynbos for almost two centuries and we can only speculate as to their effects on the vegetation. Fynbos however has evolved with animals and is reliant on them for its fundamental processes such as pollination and dispersal.

To promote the conservation of indigenous fauna as an important component contributing to and maintaining ecosystem functioning.

Small antelope (Cape Grysbok, Common (Grey) Duiker, Steenbok and Vaal (Grey) Rhebok occur naturally in the area, and move freely between farms. Smaller predators include African Wild Cat (*Felis lybica*), Caracal (*Felis caracal*), Cape Fox (*Vulpes chama*) and Small Grey Mongoose (*Galerella pulverulenta*). The omnivorous Bat-eared Fox (*Otocyon megalotis*) is common throughout the area, particularly in agricultural lands. Historical records of Leopards (*Panthera pardus*) show that this species may also occur in the broader area.

There is currently no need to manage these populations. Due to the small size of the NR it is not feasible to re-introduce any mammalian species. Species lists to be included in Appendix A

### 3.4.10 Avifauna

Fynbos areas do not have a particularly high diversity of birds (Cowling & Richardson, 1995); however the six species that are endemic to fynbos are in the area namely the Cape Rockjumper (*Chaetops frenatus*), Cape Sugarbird (*Promerops cafer*), Cape Siskin (*Serinus tottus*), Orange-breasted Sunbird (*Nectarinia violacea*), Protea Canary (*Serinus leucopterus*) and Victorin's Warbler (*Bradypterus victorini*). Large striking birds include the Black Eagle (*Aquila verreauxii*), White-necked Raven (*Corvus albicollis*), Jackal Buzzard (*Buteo rufofuscus*) and the African Harrier (*Circus maurus*).

Other species typically encountered in this habitat include Malachite Sunbird (*Nectarinia famosa*), Lesser Double Collared Sunbird (*Nectarinia chalybea*), Cape Batis (*Batis capensis*), Cape Bunting (*Emberiza capensis*), Fiscal Flycatcher (*Sigelus silens*), Southern Boubou (*Laniarius ferrugineus*) and Cape Francolin (*Francolinus capensis*).

#### **3.4.11 Herpetofauna (reptiles and amphibians)**

No confirmed species lists are available for the site.

#### **3.4.12 Invertebrates**

No confirmed species lists are available for the site.

### **3.5 CULTURAL HERITAGE CONTEXT OF SHAW'S PASS NATURE RESERVE**

An EIA conducted during the realignment of the Shaw's Pass road found that the area was not particularly archaeologically sensitive. There were no significant deposits of stone age implements however there is an old wagon trail, but this was not considered particularly sensitive either and portions of it were transformed during the road realignment.

### **3.6 SOCIO-ECONOMIC CONTEXT**

The area is characterised by farms with a rural character and labour that would fall in the unskilled bracket. The farms vary from well-established to commercial enterprises to up and coming emerging farmers. As a small protected area the SPNR will not result in significant benefit to local communities other than the described job creation possible for the clearing of alien invasive species. Over time these activities could spill beyond the boundaries of the NR. The impact of the NR could then become a longer term and more significant contributor in terms of positive socio-economic impact. However first and foremost the SPNR must reach the maintenance phase for invasive alien control across its full extent, a project that will not be fully achieved in the time span of this PAMP. In consultation with the management authority it was noted that very few people visit the site or transgress on to the site. Pressures from the surrounding community would therefore appear to be negligible.

## 4) Zonation plan

The purpose of the zonation of Shaw's Pass Nature Reserve is to control the intensity and type of use within it, 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.

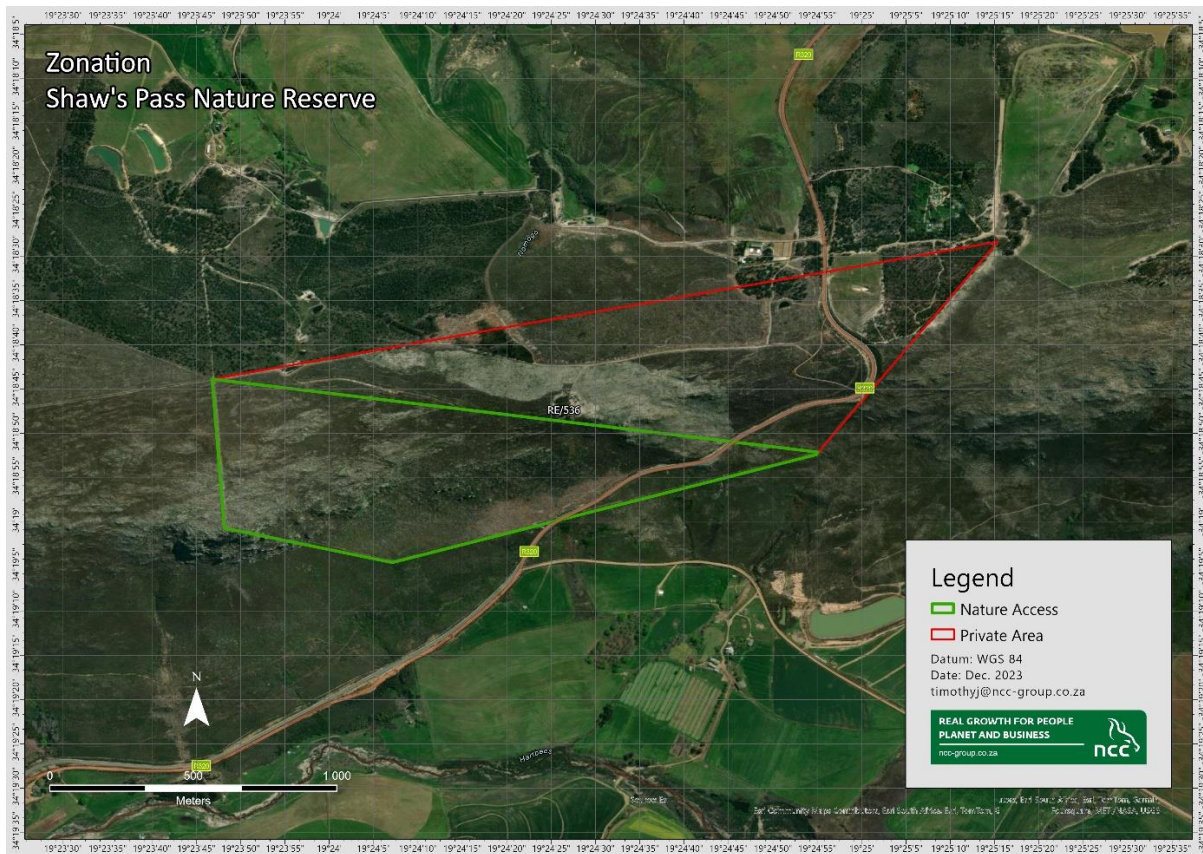


Figure 4.1 Zonation map of Shaw's Pass Nature Reserve



**Table 4.1: Conceptual development guidelines Shaw’s Pass Nature Reserve**

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

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development – Low Intensity	<p><b>Conservation:</b> To locate the zone and infrastructure to minimise impact on sensitive environments.</p> <p>To actively manage users and visitor impacts on adjacent sensitive areas.</p> <p><i>Provide additional protection to sensitive or threatened habitats, species or other features by Special Management Overlays</i></p> <p><b>Users:</b> To provide access to adjacent natural landscapes with little expectation of solitude.</p> <p>To provide primarily self-catering accommodation or camping.</p> <p>Can provide for Environmental Education accommodation and access into surrounding landscapes.</p>	<p>Areas with extensive degraded or transformed footprints.</p> <p>Natural or semi-natural habitats only when use of these areas is essential to minimise infrastructure/use impacts over whole reserve.</p> <p>Areas able to accommodate high numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity.</p> <p>Areas able to accommodate roads, trails and accommodation infrastructure without risk of erosion or degradation.</p> <p>Areas easily accessible from reserve management centre.</p> <p>Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment.</p> <p>Areas not visible from Primitive or Wilderness Zones.</p> <p>Areas where new infrastructure can be located with low visibility from the surrounding landscape.</p> <p>Areas with available potable water, and not sensitive to disposal of treated wastewater via soak away.</p>	<p>Picnicking.</p> <p>Walking or bicycle access into adjacent areas.</p> <p>Self-catering accommodation and camping.</p> <p>Meeting, workshops or mini-conference activities for no more than the number of people that can be accommodated overnight in the zone.</p> <p>Can provide for Environmental Education accommodation and access into surrounding landscapes, but this must be carefully planned not to conflict with visitor use.</p>	<p>Reception offices.</p> <p>Self-catering accommodation and camping for up to 100 guests in total at any time<sup>1</sup></p> <p>No more than 6-8 beds per unit.</p> <p>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.</p> <p>If possible roads should be narrow with separate incoming and outgoing routes, otherwise double vehicle width roads are strongly advisable for safety and usability.</p> <p>Roads in this zone should be surfaced wherever possible to reduce management cost and environmental impacts.</p> <p>Development and infrastructure may take up a significant proportion of the zone, but planning should ensure that area still provides relatively natural outdoor experience.</p>	<p>Motorised self-drive 2x4 sedan car access.</p> <p>Tour bus access</p> <p>Parking areas</p> <p>This zone should be used to provide parking and walk-in access for day visitors to adjacent Nature Access zone if possible.</p>	<p><b>Visitor Management:</b></p> <p>Use built and infrastructure solutions to such as railings, hard surfacing and boardwalks to manage undesirable visitor impacts.</p> <p>Accept some impact on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay.</p> <p>Frequent footpath and road maintenance must be scheduled for high impact routes.</p> <p>Visible impacts to adjacent Zones should be mitigated</p> <p><b>Conservation Management:</b></p> <p>Provide access and generate revenue.</p> <p>Management should aim to mitigate the impacts of the high number of visitors.</p> <p>L largely transformed habitats with lower management requirements. Usually fire exclusion areas.</p> <p>Prevent or restore visible trampling or any other visitor impact.</p> <p>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.</p> <p><b>Consumptive Use:</b></p> <p>Sustainable use may be appropriate subject to a formal assessment and application in accordance with CapeNature policies.</p>

<sup>1</sup> 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 - Management	<p>Location of infrastructure and facilities for Reserve Administration &amp; Conservation management facilities</p> <p>Not compatible with tourism</p>	<p>Areas with extensive degraded or transformed footprints.</p> <p>Natural or semi-natural habitats only when use of these areas is essential to minimise infrastructure/use impacts over whole reserve.</p> <p>Areas able to accommodate high disturbance, with no identified sensitive or regionally rare biodiversity.</p> <p>Areas not visible or audible from Development - Low / High Intensity zone, but in close proximity to any other Development Zones.</p> <p>Areas providing easy access to reserve and infrastructure.</p> <p>Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment.</p> <p>Areas not visible from Primitive or Wilderness Zones.</p> <p>Areas where new infrastructure can be located with low visibility from the surrounding landscape.</p> <p>Areas with available potable water, and not sensitive to disposal of treated wastewater via soak away.</p>	n/a	<p>Any reserve management infrastructure including offices, sheds, garages, stores, etc.</p> <p>Roads required to access these should be surfaced to reduce long-term maintenance costs and environmental impact.</p>	none	<p><b>Visitor Management:</b></p> <p>Accept some impact on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay.</p> <p>Frequent footpath and road maintenance must be scheduled for high impact routes.</p> <p>Visible impacts to adjacent Zones should be mitigated</p> <p><b>Conservation Management:</b></p> <p>Management should aim to contain all activities within the smallest possible footprint.</p> <p>L largely transformed habitats with lower management requirements. Usually fire exclusion areas.</p> <p>Prevent or restore trampling or any other management impact.</p> <p>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.</p> <p><b>Consumptive Use:</b></p> <p>Sustainable use unlikely to be possible in small zone.</p>
Development - Production	<p>Commercial or subsistence farming</p> <p>(only applicable to privately owned &amp; managed Contract Nature Reserves)</p>	<p>Areas identified for production farming</p> <p>Areas with extensive degraded or transformed footprints.</p> <p>Natural or semi-natural habitats only when use of these areas is supported by a bioregional plan and specialist site assessment.</p>	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.

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
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

Other zones which can overlap any of the above zones = Special Management overlays:

Special Management overlays	Objective of zone	Characteristics	Type of Activities	Facilities / Infrastructure	Type of Access	Management Guidelines
Natural Resource Access	Access to identified sustainable consumptive use resources as per a resource management plan	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

**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) Administrative structure

The landowner (Ms Marna Hugo) is appointed as the Management Authority (MA) for this Protected Area as agreed to in the Management Agreement concluded between CapeNature and herself and in keeping with the Environmental Authorisation.

Where applicable, management decisions are made collaboratively between the Management Authority and CapeNature.

The Management Authority will comply with all the terms and conditions contained in this PAMP and will ensure that oversight and auditing process are implemented as described in the PAMP. The annual management effectiveness audit must be outsourced to an independent practitioner or institution that has the required expertise and experience in using the METT methodology.

The role of the conservation agency – CapeNature - is to provide support and advice with the implementation of the management plan of the Nature Reserve as agreed upon.

## 6) Operational Management framework

This section translates the strategic framework described in Section 2 above into Key Deliverables and Management Activities, which will be used to inform annual plans of operation and the resources required to implement them. The management targets will form the basis for monitoring of performance in implementing the plan and are thus measurable and consist of the following:.

- *The Management Authority (MA) policy statement supporting the implementation of each programme;*
- *Identification of various programmes and projects;*
- *Explanation for the need and desirability of each project;*
- *Management recommendations and activities that should be implemented and*
- *Provision of monitoring and baseline data collection measures in some instances.*

### 6.1 BIODIVERSITY MANAGEMENT

***In the management and control of the SPNR, the MA undertakes to manage and conserve the indigenous and endemic biodiversity in such a way that the character, ecological pattern and processes of the SPNR are maintained and protected.***

6.1.1 PROGRAMME: INDIGENOUS VEGETATION MANAGEMENT		
6.1.1.1 Project: Plant species list		
<b>Explanation</b>	As the primary reason for the conservation designation a comprehensive plant species list is necessary to make informative management decisions at the SPNR.	
<b>Management Activities</b>		
A baseline study has been undertaken by Boucher (2011) and CREW and must be used as the baseline plant species inventory for the SPNR.	MA	Ongoing
Appoint a specialist to confirm the species list for SPNR.	MA	Once off
Compile an Ecological Plan of Operations and incorporate in the Conservation Services Ecological Matrix.	MA and CN	Ongoing
Use students, interested groups and volunteers, as opportunities arise, to build on the initial study and information.	MA	Ongoing
Submit new information to SANBI's Threatened Species Programme.	MA	Ongoing
Develop and maintain a GIS based plant species database. MA to provide photo's and GPS point for records.	MA, CREW and CN	Ongoing

<b>Baseline data</b>	Continuous updating of plant species list as more and more species are documented	MA	Ongoing
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<b>6.1.1.2 Project: Research and other scientific papers</b>			
<b>Explanation</b>	As more relevant scientific papers are published for the NR, or areas adjacent to the NR, the MA should source these papers to increase management capacity, the knowledge base and to implement new scientifically based management strategies.		
<b>Management Activities</b>			
Obtain relevant applicable scientific papers / reports for the PA, this should be co-ordinated with other stakeholders and interested parties wherever possible.	MA		Ongoing
Link the NR to research institutions and tertiary academic institutions to obtain new research papers. Ensure links with EIA review processes and information generation for the NR.	MA		Ongoing
Keep record of these papers/ reports at the office of the management authority.	MA		Ongoing

<b>6.1.2 PROGRAMME: RARE, ENDANGERED AND ENDEMIC PLANT SPECIES</b>			
<b>6.1.2.1 Project: Map distribution</b>			
<b>Explanation</b>	Information on the locality of Rare, Endangered and Endemic Plant species is necessary to ensure effective management and monitoring of these populations.		
<b>Management Activities</b>			
No baseline information on any Rare, Endangered and Endemic plant species exists for the NR.	MA		Initially
Appoint a specialist to confirm the species list for SPNR.	MA		Once off
Use students, interested groups and volunteers (CREW) to build on this initial identification and mapping.	MA		Ongoing
Expand to include other species of Conservation Concern.	MA		Ongoing
Maintain survey information on a GIS database for spatial reference. MA to provide photo's and GPS point of record.	MA, CREW and CN		Ongoing
Print distribution maps in order to prevent impacts on plants, to guide management interventions.	MA		Ongoing

### 6.1.3 PROGRAMME: ALIEN INVASIVE SPECIES MANAGEMENT

#### 6.1.3.1 Project: Map the distribution of alien invasive species

<b>Explanation</b>	The presence of alien invasive species in the Western Cape is an ever increasing threat and is posing one of the largest management challenges for Protected Areas. These species have a negative impact on indigenous species composition, changes in vegetation structure and changes the local fire regime and hydrology. Baseline data is therefore necessary to plan effective management interventions on the SPNR (See Figure 6.2 and Table 3.1). Special care should be taken to prevent the area being invaded from the neighbouring properties.		
<b>Management Activities</b>			
	Use information on See Figure 6.2 and Table 3.1 for the baseline data regarding , species, density and age classes for the NR.	MA	Once off
	Schedule and cost initial clearing operations	MA	Once off
	Annually undertake follow up operations of cleared areas.	MA	Annually
	Ensure that no alien invasive plants are given the chance to establish.	MA	Ongoing
	The planting of indigenous trees should be promoted. Use only locally indigenous species sourced from the adjacent properties.	MA	Ongoing
<b>Baseline data</b>	Comprehensive alien invasive management plan will be the baseline for alien invasive species.	MA	Ongoing

#### 6.1.3.2 Project: Schedule an integrated invasive control program

<b>Explanation</b>	Schedule an alien invasive control program that focuses on (i) areas where the risk to the environment is at the highest, (ii) species that pose the highest threat and (iii) the most cost effective areas.  (See Appendix B – Alien Invasive Plants Clearing Schedule and Guidelines)		
<b>Management Activities</b>			
	Include the recommendations from Appendix B – See Appendix B – Alien Invasive Plants Clearing Schedule and Guidelines.	MA	Once off
	Schedule and cost initial clearing operations.	MA	Annually



Annually update norms, standards and costs for alien invasive species clearing operations	MA	Once off
Implement best practice guidelines for alien clearing operations (See Appendix B – Alien Invasive Plants Clearing Guidelines).	MA	Once off
Regular follow-up operations are needed.	MA	Ongoing
No pets must be allowed on the NR.	MA	Ongoing
Stray dogs and cats on the NR should be managed with the assistance from the local SPCA.	MA	Ongoing

#### 6.1.4. PROGRAMME: FIRE MANAGEMENT

##### 6.1.4.1 Project: Membership of the Greater Overberg Fire Protection Association (GOFPA)

<b>Explanation</b>	The vegetation at the SPNR is fire prone and the fire frequencies vary from 12-20 years – however the optimal fire frequency is 15 years. Fires could start on adjacent properties, public road (Shaw's Pass) and within the NR. As a member of the GOFPA, the NR must adhere to the	
	rules of the FPA. However the Act also prescribes that all landowners should have firebreaks, have trained staff with PPC & PPE and have adequate equipment.	
<b>Management Activities</b>		
Ensure that the annual GOFPA membership fees is paid up.	MA	Once off
Adhere to the GOFPA rules and regulations	MA	Ongoing
Engage the GOFPA and request assistance from their teams with integrated fire management activities.	MA	Ongoing
Due to sensitivity of the NR it is recommended that various Strategic Fire Breaks are established and fire break agreements are in place with neighbouring properties.	MA	Ongoing
Ensure that the NR has appropriate fire fighting equipment.	MA	Ongoing

##### 6.1.4.2 Project: Firebreaks

To adhere to the National Veld and Forest Fire Act, Act 101 will require the clearing of firebreaks. This to avoid fires in the NR from areas outside and adjacent to the NR. Various fire breaks could be established.		
<b>Management Activities</b>		

Adopt the fire break plan as suggested in this management plan. (See Figure 3.5)	MA	Once off
Establish fire breaks	MA	Once off
Maintain fire breaks by manually brush cutting	MA	Annually

#### 6.1.4.3 Project: Fire prevention

<b>Explanation</b>	As this NR is alongside a popular public mountain pass special care should be taken to prevent wildfires from starting along the road verges and from there spreading to the NR. Fires should be prevented through the implementation of various activities that focus on awareness and mitigation.	
<b>Management Activities</b>		
The MA will ensure that they are aware of the FDI and make their staff and visitors to the SPNR aware of the daily FDI.	MA	Ongoing

#### 6.1.4.4 Project: Fire readiness

<b>Explanation</b>	As fires normally occur during the dry and warm months the NR should, at all times, be ready to engage in firefighting operations.	
<b>Management Activities</b>		
Obtain necessary firefighting equipment, in keeping with GOFPA standards.	MA	Once off
Ensure that firefighting equipment is operational and ready for use at all times.	MA	Ongoing
Ensure that a fire reaction plan is put in place and maintained annually	MA	Ongoing

### 6.1.5 PROGRAM: TERRESTRIAL FAUNA SPECIES

#### 6.1.5.1 Project: Species list

<b>Explanation</b>	A comprehensive terrestrial fauna species list is necessary to take informed management decisions at the SPNR – however no species specific management interventions are foreseen.	
<b>Management Activities</b>		
A baseline study is needed to confirm the appended species list	MA	Completed
Appoint a specialist to confirm the species list for SPNR.	MA	Once off

Use students, interested groups and volunteers, as opportunities arise, to build on this initial information.	MA	Ongoing
Develop and maintain a GIS based fauna species database. MA to provide photo's and/or GPS points for sightings.	MA and CN	Ongoing

<b>6.1.5.2 Project : Re-introduction of game species</b>		
<b>Explanation</b>	Due to the size of the Shaw's Pass Nature Reserve no re-introduction of game that historically occurred in the area will be done at this stage.	
<b>Management Activities</b>		
None		

<b>6.1.5.3 Project: Research and other scientific papers</b>		
<b>Explanation</b>	As more relevant scientific papers/reports are published for the NR, the MA should source these papers/ reports to increase management capacity, the knowledge base and to implement new scientifically based management strategies.	
<b>Management Activities</b>		
Obtain relevant papers/ reports.	MA	Ongoing
Link to research institutions and tertiary academics institutions to obtain relevant research papers.	MA	Ongoing
Keep record of all research papers and reports at the NR.	MA	Ongoing

<b>6.1.5.4 Project: Prevent impacts on wildlife</b>		
<b>Explanation</b>	Due to the size of the NR and the adjacency of Shaw's Pass possible impacts may occur on wildlife.	
<b>Management Activities</b>		
Don't allow any domestic animals in the NR.	MA	Ongoing
Engage with other stakeholders (e.g. the SPNR) to control stray domestic animals found in the NR.	MA	Ongoing
Monitor and report the presence of any domestic and stray animals (dogs and cats) on the NR.	MA	Ongoing
Report illegal activities such as hunting and the use of snares.	MA	Ongoing
Investigate the opportunity to develop a GIS system to build a spatial picture of high risk zones to provide a means to allocate available law enforcement resources to those areas.	PAAC, and MA CN	Ongoing

### 6.1.6 PROGRAM: RESTORATION ECOLOGY

#### 6.1.6.1 Project: Map all disturbed areas

<b>Explanation</b>	Only a small section of the mountain bike trail runs on the NR – however a gully erosion site is in the process of getting deeper to the north of the NR. This will in time cause impacts on the integrity of SPNR if no interventions are implemented.	
<b>Management Activities</b>		
Identify, map and evaluate all impacted areas.	MA	Annually
Develop and cost a plan to undertake the rehabilitation of these sites.	MA	Annually
Establish fixed point monitoring sites at each site.	MA	Once off
Ensure that all degraded areas are rehabilitated.	MA	Ongoing
Undertake annual monitoring of the site.	MA	Yearly and directly after heavy rain events

#### 6.1.6.2 Project : Rehabilitation

<b>Explanation</b>	The erosion gully must be stabilised to prevent the worsening of the current degraded state. Disturbed areas can only be rehabilitated once the cause of the degradation is halted.	
<b>Management Activities</b>		
Mitigate impacts that are causing the gully expansion. These would include reducing the amount of water flowing into the gully head.	MA	Ongoing.
Close all unnecessary access roads and or pathways.	MA	Once off
Ensure that erosion control measures (e.g. geotextile, gabions, cut vegetation as applicable) are in place to facilitate rehabilitation.	MA	Once off
Monitor the rehabilitation success with fixed point photography.	MA	Twice yearly and directly
		after each heavy rain event

## 6.2 CULTURAL HISTORICAL, ARCHAEOLOGICAL AND PALEONTOLOGICAL HERITAGE MANAGEMENT

***Policy statement:***

***In the management and control of the Shaw's Pass Nature Reserve, the MA undertakes to manage and conserve the cultural historical, archaeological and paleontological heritage assets for future generations.***

### 6.2. PROGRAM: CULTURAL HISTORICAL, ARCHAEOLOGICAL AND PALAEOLOGICAL HERITAGE

#### 6.2.1 Project: Map and evaluate assets

<b>Explanation</b>	No information is known on the heritage assets for the NR. Results of the assessment for the re-alignment of the road indicates that this portion of the NR has a low cultural heritage signature.		
<b>Management Activities</b>			
Appoint a heritage specialist to undertake a heritage screener for the NR.	MA		Once off
Implement special management recommendations from the specialist.	MA		Once off
Make the NR available for research and baseline studies for students in this field of expertise if applicable.	MA		Ongoing
Provide applicable data to institutions like Heritage Western Cape (HWC).	MA		Ongoing
Enforce rules and regulations of the NR related to heritage.	MA		Ongoing
<b>Baseline Data</b>	Appoint a heritage specialist to provide the baseline data and specific recommendations.	MA	Ongoing

## 6.3. BASELINE DATA MANAGEMENT, MONITORING AND RESEARCH

***Policy statement:***

***In the management and control of the Shaw's Pass Nature Reserve, the MA undertakes to generate baseline data to ensure that a robust knowledge base is available to guide and focus management decision making.***

### 6.3.1 PROGRAM: BASELINE DATA COLLECTION

#### 6.3.1.1 Project : Develop and implement a baseline data collection plan

<b>Explanation</b>	Baseline data is important to inform management decisions. Guidelines on what information should be collected, the techniques to be used, and the frequency of such activities must be sourced from CapeNature. This will inform management on the type of data to be collected and how to undertake the collection of this data.		
<b>Management Activities</b>			
As applicable source the relevant information from CapeNature.	MA		Once off
Compile baseline data collection plan for the SPNR (See Appendix C : Forms that can be used during Baseline data Collection and monitoring).	MA		Once off
Implement the plan according to the timeframes and techniques recommended.	MA		Ongoing

### 6.3.2 PROGRAM: MONITORING

#### 6.3.2.1 Project : Develop and implement a monitoring plan

<b>Explanation</b>	A monitoring plan is important to provide guidelines on what information should be collected, the techniques to be used and the frequency of such activities. This will inform management on the type of data to be collected, to determine success of management activities and to identify change as soon as possible.		
<b>Management Activities</b>			
Compile a monitoring plan for the SPNR (See Appendix C : Forms that can be used during Baseline data Collection and monitoring).	MA and CN		Once off
Implement the plan according to the timeframes and techniques recommended.	MA		Ongoing

### 6.3.3 PROGRAM: RESEARCH

#### 6.3.3.1 Project: Promote research opportunities

<b>Explanation</b>	The MA should promote the availability of the SPNR as a research area; this will ensure that scientific understanding of the NR will continually improve over time.		
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<b>Management Activities</b>		
Identify possible research projects.	MA and CN	Ongoing
Communicate and market the availability of the SPNR as a research area to tertiary education institutions.	MA and CN	Ongoing
Compile or provide input into research protocols developed for the NR.	MA and CN	Ongoing
Ensure that MA accompanies researchers on field trips and receives all the published scientific papers and / or research findings.	MA	Ongoing
File these publications for audit purposes and incorporate findings into management plan as applicable.	MA	Ongoing

#### 6.4. ENVIRONMENTAL INTERPRETATION AND AWARENESS

***Policy statement:***  
***In the management and control of the Shaw's Pass Nature Reserve, the MA undertakes to improve awareness levels to prevent illegal activities.***

<b>6.4.1 PROGRAM: INTERPRETATION AND AWARENESS</b>		
<b>6.4.1.1 Project : NR signage</b>		
<b>Explanation</b>	Signage in the portion of the NR alongside Shaw's Pass should provide information on the rules & regulations and additionally inform the public about the importance of and threats to the NR.	
<b>Management activities</b>		
Maintain signage and replace when needed.	MA	When needed

#### 6.5. INFRASTRUCTURE MAINTENANCE

***Policy statement:***  
***In the management and control of the Shaw's Pass Nature Reserve, the MA undertakes to maintain existing infrastructure to environmental degradation.***

<b>6.5.1 PROGRAM: ROADS, MOUNTAIN BIKE TRAIL AND FENCES</b>			
<b>6.5.1.1. Project: Road Maintenance</b>			
<b>Explanation</b>	One access road and a section of the mountain bike trail runs through a section of the NR. This road and trail are both susceptible to erosion if not properly maintained.		
<b>Management activities</b>			
Maintain road infrastructure on an annual basis and ensure that drainage channels are open and functional thus ensuring controlled run-off away from these roads.	MA		Ongoing
<b>Baseline data</b>	Map of all roads and water control measures.	MA	NA

<b>6.5.2. PROGRAM: FENCING AND SECURITY</b>			
<b>6.5.2.1 Project: Maintain current state of fence</b>			
<b>Explanation</b>	Adequate fencing is needed to control illegal activities.		
<b>Management Activities</b>			
Determine and map the current state of all the external fences	MA		Once off
Replace fences where needed with fences that will still allow the movement of smaller species like Grysbok and tortoises under the fence line.	MA		Once off
Conduct regular patrols / monitoring of the condition of fence and repair fence when needed.	MA		Ongoing
Participate in collaborative law enforcement activities when needed.	MA, Law Enforcement Organisations.		Ongoing

## 6.6. LAW ENFORCEMENT

**Policy statement:**  
*In the management and control of the SPNR, the MA will undertake access control and law enforcement activities to prevent degradation of the NR.*

6.6 PROGRAM: ACCESS CONTROL AND LAW ENFORCEMENT		
<b>6.6.1. Project: Access control</b>		
<b>Explanation</b>	Access control is important to prevent environmental impacts that are associated with the over utilisation of resources and/or impacts associated with illegal activities that may fundamentally undermine the conservation values of the Nature Reserve.	
<b>Management Activity</b>		
Ensure that access to the NR is achieved by ensuring that the fences are maintained where these exist.	MA	Annually
Maintain the signage and other documentation communicating conditions of use for the NR.	MA	Ongoing

<b>6.6.2 Project: Law enforcement</b>		
<b>Explanation</b>	Law enforcement is an important component of effective NR management especially where the NR is small. Without any effective and efficient law enforcement activities environmental impacts and degradation will accelerate over time.	
<b>Management Activity</b>		
Ensure that sufficient funds in the MA budget exist to participate in law enforcement activities.	MA & CN	Annually
Engage with the institutions / civil society organisations that are responsible for law enforcement activities in the area e.g. SAPS / Policing Forums / Farm Watch to assist.	MA	Annually
Regularly participate in applicable law enforcement activities and collaborate with other law enforcement partners.	MA	Ongoing

Investigate the feasibility of a database (GPS Locality and description) of where illegal activities and transgressions have occurred. These can then be digitised in a GIS to determine high risk areas and to serve as a means of management prioritisation. This to ensure that available law enforcement can be focussed on these priority areas.	MA	Ongoing
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## 6.7. ADMINISTRATION

***Policy statement:***  
***CapeNature will provide an effective administration and supporting services system, where possible, to the MA to ensure effective management and control of the Shaw's Pass Nature Reserve.***

<b>6.7.1 PROGRAM: DEVELOPMENT OF MANAGEMENT AUTHORITY</b>		
<b>6.7.1.1 Project : Development of conservation management skills</b>		
<b>Explanation</b>	The responsibility of implementing this PAMP will require the development of conservation management skills of the NR Manager (Management Authority).	
<b>Management</b>		
Determine skills shortages related to management interventions such as alien clearing, firefighting, monitoring and baseline data collection and management and law enforcement.	MA	Once off
Make contact with training institutions and undertake the relevant practical training.	MA	Once off
Ensure that funds are available from the Trust for formal training and to attend formal courses.	MA	Annually
Attend these training programmes and apply the learning to the PA.	MA	Once off

<b>6.7.1.2 Project : Secure equipment to fulfil duties</b>		
Some basic equipment and resources are needed to successfully implement this PAMP. E.g. of such equipment includes a GPS, Binoculars, Computer, GIS and Windows Software, Field Guides and Biodiversity Management Reference Books.		
<b>Management</b>		
Compile an equipment resources needs list and obtain quotations to purchase these items.	MA and CN	Once off

Receive funds from Trust to purchase these resources, as per annual budget.	MA	Annually
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<b>6.7.2 PROGRAM: PROCUREMENT</b>		
<b>6.7.2.1 Project: Financial procurement process</b>		
<b>Explanation</b>	Financial procurement processes regarding the receipt of funds from the Trust hosted as it is within CapeNature may delay effective management of the NR. Proper planning and support is needed to ensure that all due procurement processes are followed without delaying management interventions and targeted outcomes in this PAMP.	
<b>Management</b>		
The manager needs to identify and develop a budgeted APO for the NR.	MA	Ongoing
Ensure that APO is submitted by the end of January for approval to release funds from the Trust for the following financial year.	MA	Ongoing
Where applicable appoint service providers and ensure that the TOR's for specific projects are met.	MA	Ongoing

<b>6.7.3 PROGRAM: STAKEHOLDER ENGAGEMENT</b>		
<b>6.7.3.1 Project: Establish Protected Area Advisory Committee (PAAC)</b>		
<b>Explanation</b>	<p>A PAAC is necessary to provide support and advice to the Management Authority (MA) to strengthen capacity, improve the conservation knowledge base and ensure political support and buy in at strategic levels within the broader community.</p> <p>The PAAC could be comprised of representatives from the MA, Theewaterskloof Municipality, CapeNature, neighbours and the environmental auditors.</p>	
<b>Management Activities</b>		
Develop Terms of Reference (TOR) (See Appendix D: Proposed Terms of Reference for the PAAC).	MA	Once off
Facilitate a founding meeting with a clear agenda, draft TOR and constitution for approval by members.	MA	Once off
Approve the TOR, the constitution and elect office bearers (chairperson and secretary).	MA	Once off

<b>6.7.3.2 Project: Effectively participation of the Protected Area Advisory Committee (PAAC)</b>		
<b>Explanation</b>	Once the PAAC has been established the committee must actively engage and participate in the management and with solving management challenges in the SPNR.	
<b>Management Activities</b>		
Ensure that the PAAC meets bi-annually, that an engaging agenda is developed for these meetings, that the meetings have approved minutes with actions identified and assigned to members.	MA	Twice Yearly
Develop an annual action list for the PAAC.	MA	Annually
Monitor the success of implementation of these planned activities and the APO.	MA	Annually
Adapt and change activities as and when needed.	MA	Annually

## 6.8. COSTING PLAN

***Policy statement:***  
***In the management and control of the SPNR the MA will plan, budget and audit implementation of this plan on an annual basis.***

<b>6.8.1 PROGRAM: PLANNING, BUDGET AND FUNDING</b>		
<b>6.8.1.1 Project: Annual Plan of Operations and Budget</b>		
<b>Explanation</b>	An Annual Plan of Operation (APO) is necessary for the MA to decide which programmes and management activities will be implemented in recognition that not all planned activities can be implemented simultaneously.	
<b>Management</b>		
A draft APO based on this plan is attached.	MA	Annually
Populate the APO for each financial year with the assistance and inputs of the PAAC.	MA	Annually



Compile a budget aligned to the APO and submit to CN for approval.	MA	Annually
Integrate the management and cost of the SPNR in the IDP Process.	MA	Annually
Sign off and approve the budget.	MA	Annually
Ensure that available budget is spent within the timeframe allocated to each project.	MA	Annually

Management objectives	2025	2026	2027	2028	2029
1. Fire Management	R 60 000		R70 000	R200 000	R750 000
2. Invasive vegetation management	R300 000	R400 000	R400 000	R100 000	
3. Baseline Data Management, Monitoring and Research	R 20 000		R20 000		
4. Infrastructure maintenance	R 50 000	R 20 000	R 25 000	R60 000	R25 000
<b>Estimated Annual Management Cost:</b>	<b>R430 000</b>	<b>R420 000</b>	<b>R515 000</b>	<b>R 360 000</b>	<b>R 775 000</b>

\* Average annual budget of R500 000 over five years.

## 6.9. MONITORING AND AUDITING

**Policy statement:**  
*In the management and control of the Shaw's Pass Nature Reserve, the MA commits itself to monitoring and auditing management effectiveness.*

<b>6.9.1 PROGRAM : MANAGEMENT EFFECTIVENESS</b>		
<b>6.9.1.1 Project : METT Assessments</b>		
<b>Explanation</b>	A METT Assessment is needed to determine management effectiveness every two years	
<b>Management</b>		
Ensure that the budget makes provision for external independent monitoring teams (financial and ecological) function annually.	MA	Ongoing

Outsource the monitoring and audit functions to a independent service providers (financial and ecological) to ensure an objective assessment of management effectiveness.	MA	Ongoing
Receive the report from the service providers and ensure that it is built into the reporting system of the NR and for use as a supporting documents in the assessment of responsible MA work performance.	MA	Ongoing
Communicate the outcomes of the monitoring and audit reports to the PAAC & CapeNature.	MA	Ongoing
Identify strategies to address management shortcomings and adapt the plan were needed.	MA	Ongoing

## **7 APO and Review**

Monitoring and reporting enables the effective assessment of management interventions. If necessary it can be used to direct modifications of management in an effort to achieve the outcomes required.

### **7.1 ANNUAL PLAN OF OPERATION**

The Annual Plan of Operation (APO) gives life to the Operational Management Framework on an annual basis and allows for progress to be tracked.

### **7.2 MANAGEMENT PLAN REVIEW**

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

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

The annual audit will form the basis of the management plan review. This should include records of recommendations for update/changes to the annual revision of the management schedules as well as the five-year plan. The Annual Plan of Operation (APO) is in a similar format to the Annual Audit See Appendix D below, allowing for a seamless transition of information from Audit to new APO.

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# Appendix A - SPECIES LIST FOR SHAW'S PASS NATURE RESERVE

## 1. PLANTS

### Flora of Conservation Concern

The current pass surround is home to at least the following 28 plant species that are listed as Species of

Conservation Concern (SoCC), which are listed below (their SoCC status is indicated) (Boucher 2011).

1. *Aristea biflora* - Endangered
2. *Aulax umbellata* - Least Concern
3. *Centella dolichocarpa* - Rare
4. *Centella rupestris* – Vulnerable
5. *Ceretandra venosa* - Near Threatened
6. *Disa brachyceras* – Endangered
7. *Disa spathulata* subsp. *tripartita* - Endangered
8. *Erica paucifolia* subsp. *ciliata* - Endangered
9. *Erica viscaria* subsp. *pendula* - Vulnerable
10. *Erica xeranthemifolia* - Critically Endangered
11. *Euchaetis schlechteri* – Vulnerable
12. *Hesperantha fibrosa* - Vulnerable
13. *Leucadendron tinctum* - Near Threatened
14. *Leucospermum cordifolium* - Near Threatened
15. *Leucospermum truncatulum* - Near Threatened
16. *Merciera brevifolia* – Endangered
17. *Moraea barnardii* - Critically Endangered
18. *Muraltia hirsuta* - Endangered
19. *Paranomus bolusii* - Vulnerable
20. *Protea aspera* - Vulnerable
21. *Protea longifolia* - Vulnerable
22. *Selago pinea* - Endangered
23. *Serruria elongata* - Near Threatened
24. *Serruria fasciflora* - Near Threatened
25. *Serruria inconspicua* - Vulnerable
26. *Stoebe schultzii* - Vulnerable
27. *Tetraria brachyphylla* - Near Threatened
28. *Tritoniopsis caledonensis* - Vulnerable

## 2. FAUNA

1. Cape grysbok (*Raphicerus melanotis*),
2. Duiker *Sylvicapra grimmia*,
3. Steenbok (*Raphicerus campestris*),
4. Grey rheebeek (*Pelea capreolus*),
5. Africa wild cat (*Felis lybica*),
6. Caracal (*Felis caracal*),
7. Cape fox (*Vulpes chama*),
8. Small grey mongoose (*Galerella pulverulenta*),
9. Bat-eared Fox (*Otocyon megalotis*).
10. Chacma baboons (*P. ursinus*)



### 3. Avifauna

Endemic species:

1. Cape rockjumper (*Chaetops frenatus*),
2. Cape sugarbird (*Promerops cafer*),
3. Cape siskin (*Serinus tottus*),
4. Orange-breasted sunbird (*Nectarinia violacea*),
5. Protea canary (*Serinus leucopterus*)
6. Victorin's warbler (*Bradypterus victorini*).
7. Black eagle (*Aquila verreauxii*),
8. White-necked raven (*Corvus albicollis*),
9. Jackal buzzard (*Buteo rufofuscus*)
10. African harrier (*Circus maurus*).

Other species typically encountered in this habitat:

1. Malachite sunbird (*Nectarinia famosa*),
2. Lesser double collared sunbird (*Nectarinia chalybea*),
3. Cape batis (*Batis capensis*),
4. Cape bunting (*Emberiza capensis*),
5. Fiscal flycatcher (*Sigelus silens*),
6. Southern boubou (*Laniarius ferrugineus*)
7. Cape francolin (*Francolinus capensis*).

### 4. Herpetofauna (reptiles and amphibians)

No confirmed species lists are available for the site.

### 5. Invertebrates

No confirmed species lists are available for the site.

## Appendix B - Invasive Alien Vegetation Clearing and Rehabilitation Methodology

### B. TREATMENT METHODS

#### Felling

When trees are felled (adult plants and saplings), the stems must be cut as close to the ground, as horizontally across the stem and to the ground surface as possible (i.e. there must be no sharp protruding points). Where saplings are relatively sparse and the soil suitably soft, eliminate by hand pulling, ensuring that the roots are removed.

Adult trees should be cut and felled and stacked in heaps or removed from the site. As a general rule, cut material with a stem diameter greater than 75 mm must be stacked separately from material with thinner stems. In the case of larger trees, they should, where possible, be felled to fall uphill in order to reduce breakage and minimize the danger to workers. Felled material should not be allowed to block or impede watercourses and must be removed from all watercourses by  $\pm 20\text{m}$ . Where possible, felled material should be moved to a different location where it can be stacked as required and burnt safely.

#### Ring barking

When ring barking is performed, ensure that all the bark (including the inner bark or phloem) is removed. Cut two grooves around the tree about 30 or 40 cm apart. Then with the blunt end of the chopper loosen and remove all the bark in between. Immediately spray herbicide upon the remaining bark below the removed area.

In the case of smaller trees and saplings with soft, thin skinned bark (especially *Acacia* and *Hakea* spp.) the stem should be beaten with the back of a hatchet and the bark peeled off.

#### Frilling

This is a method of control where a line of overlapping downward cuts are made with an axe or machete at a height of approximately 500 mm and at an angle into the sapwood, around the circumference of the trunk. The “reservoir” formed by the frill is then filled with herbicide.

#### Hand pulling

Hand pulling should be used in the following instances:

- Where seedlings are relatively sparse;
- Less than 10 cm high and suitably soft soil;
- Where seedlings are growing in sensitive areas;
- Where chemicals cannot be used due to the risk of contamination or effect on adjacent plant populations;
- Hand pulled plants should be left hanging on other vegetation or deposited in a pile to reduce the possibility of re-growth.
- Tree poppers can be used for trees up to 10cm in diameter.

**Note:** Tree poppers are not recommended for dense stands as this may cause erosion.

#### Foliar spraying

Where a foliar spray is recommended, apply the herbicide to the canopy leaves only. The application should not be done when the leaves are wet. Apply the herbicide using a backpack applicator with either a solid cone nozzle or a twin jet nozzle as these nozzle types achieve the best coverage of the foliage ensuring best possible efficacy result for the herbicide.

#### Cut stump treatment

When stumps are to be treated with herbicide ensure that it is applied as soon as possible after the stump has been cut but not later than 30 minutes after felling, stripping or frilling. In the case of felled stumps, brush all sawdust off the cut surface prior to applying the herbicide. Generally, a narrow angle, solid cone nozzle should be used at a pressure at 100 kpa. Pay specific attention to achieving an even and thorough coverage of the stump's outer rim i.e. the bark and inner bark and phloem.

Use either a backpack applicator or smaller atomiser spraying equipment to suit the density of the block that you are treating. For very dense stands, use a hand applicator, such as a 2 – 5 l bottle with a spouted nozzle is very effective in these situations.

#### Basal bark application

When recommended herbicide should be applied directly to the basal bark of trees. The herbicide should be applied all around the basal stem or trunk as a coarse,

lowpressure spray, using a narrow angle solid cone nozzle. The application should begin at the ground to a specified height on the trunk. Any exposed roots should receive the same treatment. The area to be treated should be thoroughly wetted by the herbicide. Ensure that adequate attention is given to the volume of application to suite the condition and age of the bark. In the case of multi-stemmed plants, treat each stem independently.

### C. TOOLS

The following basic tools are required for felling and cutting:

Stem size diameter	Tool
0-1 cm	Hand pull or a lopper
2-3 cm	Lopper slasher (Kapmes) or tree popper
3-8 cm	Hand saw or a slasher or tree popper
8 cm upwards	Chainsaw

### D. WISE USE OF HERBICIDES

*Note: Adapted from the Working for Water Herbicide Policy*

#### *Environmental considerations*

Protection of the environment is of prime importance. Riparian areas, where most alien vegetation infestations occur, require a particularly careful approach. Only herbicides that are approved for use in riparian areas should be used. Washing of equipment or disposal of waste spray mixture or washings is prohibited in or near watercourses where contamination of water can occur.

#### Desirable vegetation

Where desirable vegetation is present, *e.g.* grass cover in pastures or the margins of forests, methods of control must be selected that will cause minimum damage to the desirable vegetation. Alternative methods to foliar spraying should be adopted where there is a danger of damage to adjacent desirable plants occurring. Alternatively, selective herbicides or mixes that will not damage the grass or other desirable

vegetation cover should be applied. Fan nozzles and pressure regulators should be fitted to sprayers.

#### Coppicing

Many species coppice from cut stumps and/or roots. Cut stumps must be thoroughly treated within 15 minutes of cutting according to label recommendations to minimise re-growth. Coppicing stumps should be treated before coppice reaches head height.

#### Seedling control

Germination of *Acacia* species takes place rapidly after a fire and seedlings must be sprayed as soon as they are about 10 cm high to minimise the quantity of herbicide used and the cost of application.

#### Handling of herbicides

- The handling of herbicide concentrates requires strict precautions and personnel handling product concentrates must be fully aware of precautions to be observed.
- Suitable protective clothing must be available and use thereof, even if private contractors are used, must be compulsory.
- Chemical resistant plastic aprons, gloves and eye protection must be worn when handling concentrates.
- Adequate hygiene aids such as plentiful water, soap, towels and eyewash must be readily available.
- Suitable absorbent material such as fine dry soil and cleaning equipment must be available to handle accidental spillage.
- In the case of spillage, the spill must be contained immediately and cleaned up with absorbent material such as fine dry soil. The contaminated material should then be disposed of by burying in a safe place.
- Concentrates should if possible be decanted in a safe, suitable place and not in the field. Such a handling and mixing area should have a hard impermeable floor, be bunded and have an adequate sump to accommodate run-off from washing, flooding or fire containment. A 1m<sup>3</sup>sump /10m<sup>2</sup>floor space is recommended.
- Concentrates and mixtures should never be decanted into or be mixed in drinking bottles or other food containers.
- All containers into which herbicides or adjuvants are decanted must be clearly marked and a copy of the original label secured to the container.
- Suitable equipment must be available to prepare spray mixtures. These include plastic measuring cylinders and beakers, mixing containers (buckets) and funnels.

In the field the following must be observed:

- Spray mixtures must be kept in leak-proof, non-spill containers. The containers should be kept away from personal belongings, foodstuff, drinking water and eating and living areas.
- Containers should stand on suitable absorbent material, e.g. a large piece of thick sack that will absorb minor drips, out of direct sunlight in a cool place.

- Containers must be kept at least 20m away from water bodies.
- Filling sites should be selected to prevent damage to desirable vegetation and to enable spillage to be cleaned up and disposed of.
- Spray mixture containers must be clearly labelled and only reused for the specific herbicide.
- Application equipment and containers should not be cleaned on site but at a suitable designated area at the store.
- Suitable protective clothing, overalls, rubber boots, gloves and if necessary, eye protection must be worn by operators when handling and applying herbicides.

#### Transportation

- Herbicides and application equipment must be carried on a separate vehicle or in a part of the vehicle isolated from people, food and clothing.
- Vehicles should carry absorbent material to absorb any spillage.
- Herbicides and equipment must be secured to prevent spillage and damage.
- Product, spray mixtures and equipment must not be left unattended where there is a danger of theft or abuse.
- Product should not be left uncovered in the sun.

#### Disposal

- A designated person should be responsible to ensure that herbicide containers are correctly and safely disposed of.
- Empty containers must be destroyed after use and not be used for any other purpose. Under no circumstances may containers be taken home for personal use.
- Empty containers should be returned to the store for safekeeping and disposal.
- Where arrangements have been made containers should be returned to the supplier.
- Containers that have to be destroyed should be triple rinsed, punctured, flattened and, if suitable, burned.
- Only sufficient spray mixture that can be used in a day should be prepared. Leftover material should be returned to the depot for safe storage and re-use. Spray mixture should only be disposed of in a suitable site.
- Certain spray mixtures should not be left standing overnight and should be safely disposed of. Consult the product label. If mixtures can be left overnight with no adverse effects, they should be kept to reduce costs and pollution from herbicide and wash water.

#### Environmental Safety

Most alien vegetation control operations are carried out in riparian situations that are regarded as environmentally sensitive. In order to minimise the impact of the operation on the natural environment the following must be observed:



- Area contamination must be minimised by careful accurate application with a minimum amount of herbicide to achieve good control.
- All care must be taken to prevent contamination of any water bodies. This includes due care in storage, application, cleaning equipment and disposal of containers, product and spray mixtures.
- Equipment should be washed where there is no danger of contaminating water sources and washings carefully disposed of in a suitable site.
- To avoid damage to indigenous or other desirable vegetation product should be selected that will have the least effect on non-target vegetation.
- Coarse droplet nozzles should be fitted to avoid drift onto neighbouring vegetation, e.g. TG-1 or equivalent.

## Application of herbicides

### Equipment

- Equipment should be inspected regularly between and during applications and necessary repairs carried out.
- Leaking sprayers or sprayer not applying correctly should be withdrawn until repairs have been carried out. Spare applicators and parts should always be available so as not to impede operations.
- Ensure that correct nozzles are fitted and pressure settings are checked regularly.
- Where possible use low water volumes to keep turn around (refilling) time down to a minimum. Caution must be observed to limit drift when using minimum output nozzles.
- Always ensure that knapsacks are filled to the maximum.
- Equipment must be emptied and cleaned thoroughly after spraying ceases. Spray mixture must not be left in the apparatus overnight.
- Apparatus should be stored under lock and key when not in use.

### Rates of Application

- Products should be mixed and applied at rates recommended on the label.
- Applications should be checked regularly to ensure that they comply with recommendations.

### Precautions

- Appropriate protective clothing must be changed and washed regularly and should be removed immediately if grossly contaminated.
- Spillage must be attended to immediately and appropriately disposed of.
- Application teams must be trained to avoid damage to non-target species.
- Contamination of all water bodies must be strictly avoided.
- Hygiene aids - clean water, soap, towels and eyewash must always be available to spray operators.

## Adjuvants

- Where recommended wetting and spreading agents should be added to spray mixtures. Wetters should always be mixed in accordance with label recommendations.
- Dye must be added to all applications where the product has no built in dye to ensure that no target species are missed and plants are correctly treated.

## Water Sources

- Only clean water may be used for spray mixtures.
- Where particulate matter occurs in water, e.g. water drawn from rivers, the water must be filtered to avoid nozzle blockages.
- Funnels with filters should be used for filling or filters should be fitted in the application equipment.
- Where large volumes of water are transported, tankers or tanks should be fitted with buffer plates particularly where operating in rough terrain.
- The product label should be consulted regarding the quality of water suitable for the specific herbicide.

## Weather conditions

- Applications should not be carried out under unfavourable weather conditions that could affect the control obtained or endanger nearby desirable vegetation, water bodies or personnel.
- Label recommendations regarding suitable application conditions must be followed.

## Conditions of target plants

Poor results may result if target plants are not in a suitable condition for treatment. The following conditions may result in poor control.

- Water stressed plants.
- Water logged plants.

## Mixing of herbicides

- Mixing must take place according to label instructions.
- Suitable protective clothing must be worn when handling concentrates.
- Liquid concentrates should be added to the half full tank that is then topped up.
- Adjuvants should be added to the tank as per the label instruction prior to the addition of the herbicide when buffering and afterwards for wetters and dyes.
- Do not mix concentrates together before adding them to the tank. Consult product labels.
- Proper mixing in knapsacks and hand held applicators is difficult and spray mixtures should be mixed in bulk containers or if necessary (e.g. wettable powders) buckets before pouring into the knapsacks or hand held applicators.

- Spray mixtures should be agitated continuously if recommended. This is essential after they have been standing for a while.

#### Calibration

- Application equipment must be correctly calibrated to obtain optimum results and prevent wastage through over-application.
- Calibration should be carried out in the area to be treated.
- Calibration should be checked frequently during application. The following should be checked:
  - Correct spray pressure.
  - Correct nozzle size and spray pattern.
  - Correct nozzle output.
  - Volume of application over a specific area.

## Wise use of herbicides

#### Environmental considerations

Protection of the environment is of prime importance. Riparian areas, where most infestation of alien vegetation occurs, require a particularly careful approach.

- Area of contamination must be minimised by careful accurate application of herbicides with the minimum volume of herbicide to achieve effective control.
- Take particular care to prevent contamination of any water bodies. This includes due care in storage, application, water used to clean equipment and the disposal of containers, product and spray mixtures.
- Equipment should be washed where there is no danger of contaminating water sources and washings carefully disposed of in a suitable site.
- To avoid damage to indigenous or other desirable vegetation, select a product that will have the least effect on non-target vegetation.
- Wherever feasible use coarse droplet nozzles to minimise drift onto neighbouring vegetation, e.g. TG-1 or equivalent.
- 

## E. GUIDELINES WHEN USING CONTRACTORS

The following are general protocols that should be applied when using contractors to control invasive alien plants.

- No tree or shrub other than those targeted must be damaged.
- Under no circumstances must any animals be handled, removed, killed or interfered with.
- All equipment, machinery and vehicles (skidders, chainsaws, brush-cutters etc) must be in good operating condition, adequately silenced in accordance with the manufacturer's original specification, free of oil and fuel leaks and must not produce smoke in excess of the normal extent. They must be fitted with approved safety devices, which must be in a sound operating order.
- No contamination due to oil, fuel spillage or leakage must be allowed. Any item of equipment with oil or fuel leakage must be removed from the site. Any spillage or other incidents of contamination must be reported to the landowner.  
Special precautions must be taken against pollution of water bodies.
- Herbicide must be mixed only in areas that have been specially demarcated for this purpose and no closer than 20 m from the stream bank.
- Herbicides must include a dye to facilitate the identification of treated plants.
- Herbicide must not be sprayed in strong winds. Any damage caused due to drift must be for the contractor's account.
- The Contractor must not perform any activity on the landowner's property, other than the control operation as defined in the individual contracts. The contractor must confine the movements of his employees to the contract area.

**F. HERBICIDE APPLICATION GUIDE**

Species	Size Class	Treatment	Herbicide	Dosage	Density	Estimated product/Ha
Blackwood	Seedling	Foliar Spray	Starane	125ml/100l water (0.125%)	Closed/Dense	0.5 L / Ha
Blackwood	Adult	Frill/Stem	Garlon	2l/100l Diesel (2%)	Closed/Dense	1.5 L / Ha
Bramble	All	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Bugweed	Seedling < 1 m	Hand Pull	None			
Bugweed	Seedling 0.5 - 1m	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Bugweed	Regrowth < 0.5 m	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Bugweed	Mature	Cut Stump/Frill	Timbrel	3% & 0.5% Actipron & Dye in Water	Closed/Dense	2.25 L / Ha
Bugweed	Mature	Cut Stump/Frill	Chopper	2% in Water	Closed/Dense	1.5 L / Ha
Chromalena	Seedlings	Hand Pull	None			
Chromalena	Seedlings	Foliar Spray	Garlon	0.4% & 0.5% Actipron & Dye in Water	Closed/Dense	1.5 L / Ha
Chromalena	Mature/Adult	Cut Stump	Chopper	2% in Water	Closed/Dense	1.5 L / Ha
Eucalyptus	Seedlings	Cut Stump	Chopper	10% in Water	Closed/Dense	4 L / Ha
Eucalyptus	Adult	Frill/Cut Stump	Chopper	12.5% in Water	Closed/Dense	6 L / Ha
Guava	All	Cut Stump	Chopper	12.5 % in Water	Closed/Dense	6 L / Ha

Hakea	Seedling	Hand Pull	None			
Hakea	Mature/Adult	Fell	None			

Lantana	All	Foliar Spray	Mamba	3% + Dye in Water	Closed/Dense	12 L / Ha
Lantana	All	Cut Stump	Chopper	2% in Water	Closed/Dense	1.5 L / Ha

Pine	All	Fell	None			
Pine	All	Ringbark	None			
Pine	All	Frill	Mamba	15% in Winter	Closed/Dense	6 L / Ha

Port Jackson	Seedlings	Hand Pull	None			
Port Jackson	Seedlings/Young	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Port Jackson	Mature/Adult	Frill/Cut Stump	Timbrel	3% & 0.5% Actipron & Dye in Water	Closed/Dense	2.25 L / Ha

Prosopis	All	Cut Stump	Garlon	4% in Diesel + Sudan Red Dye	Closed/Dense	3 L / Ha
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Rooikrans	Seedlings	Hand Pull	None			
Rooikrans	Young	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Rooikrans	Mature/Adult	Fell	None			
<b>Species</b>	<b>Size Class</b>	<b>Treatment</b>	<b>Herbicide</b>	<b>Dosage</b>	<b>Density</b>	<b>Estimated product/Ha</b>

Stinkbean	Seedlings	Hand Pull	None			
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Stinkbean	Young	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Stinkbean	YoungAdult	Frill/Cut Stump	Timbrel	3% & 0.5% Actipron & Dye in Water	Closed/Dense	2.25 L / Ha
Wattle	Seedlings	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Wattle	Coppice	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Wattle	Adult	Ring/Bark Strip/Fell	None			
Wattle	Adult	Frill/Cut Stump	Timbrel	3% & 0.5% Actipron & Dye in Water	Closed/Dense	2.25 L / Ha
Wattle	Adult	Frill/Cut Stump	Mamba	20 % + Dye in Water	Closed/Dense	6 L / Ha
Caster Oil	All	Cut Stump	Chopper	3 % in Water	Closed/Dense	1.5 L / Ha
Pereskia	All	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Syringa	Seedlings	Hand Pull				
Syringa	Adult	Frill/Cut Stump	Chopper	3 % in Water	Closed/Dense	2 L / Ha
Jacaranda	All	Frill/Cut Stump	Chopper	10% in Water		5 L / ha
Poplar	Seedlings/Suckers	Foliar Spray	Garlon	1.5% & 0.5% Actipron + Dye in Water	Closed/Dense	5.25 L / Ha

Poplar	Seedlings/Suckers	Cut Stump	Chopper	5 % in Water	Closed/Dense	3 L / Ha
Poplar	Adult	Frill/Cut Stump	Chopper	5 % in Water	Closed/Dense	3 L / Ha
Turpentine Tree	All	Frill/Cut Stump	Chopper	7.5 % in Water	Closed/Dense	3.75 L / ha
Sesbania	Seedlings/Young	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	2 L / Ha
Sesbania	Adult	Frill/Cut Stump	Chopper	2% in Water	Closed/Dense	1.5 L / Ha

Mauritius Thorn	All	Foliar Spray	Garlon	0.5% & 0.5% Actipron & Dye in Water	Closed/Dense	1.5 L / Ha
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Ink Berry	Young	Foliar Spray	Garlon	0.75% & 0.5% Actipron + Dye in Water	Closed/Dense	2 L / Ha
Ink Berry	All	Cut Stump	Chopper	2% in Water	Closed/Dense	1.5 L / Ha
Prickly Pear	All	Direct Inject	Mamba	1 L / 2L Water (50% in Water)	Closed/Dense	10 L / Ha
Prickly Pear	All	Direct Inject	MSMA	1L / 1L Water	Closed/Dense	10 L / Ha

Peanut Butter Tree	All	Cut Stump	Chopper	5% in Water	Closed/Dense	3 L / Ha
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Casuarina	All	Frill	Chopper	10% in Water	Closed/Dense	5 L / Ha
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## **G. ECO FRIENDLY CLEARING**

The following principles are essential to ensure that the clearing operations

- Vehicles may not leave existing roads under any circumstance.
- No new roads may be created to remove plant material.
- Heavy machinery may not be used to move material and material must be moved by hand.
- Avoid making of permanent footpaths on site.
- Litter must be managed.
- As little as possible soil disturbance should be allowed.

## APPENDIX C – TERMS OF REFERENCE FOR THE PAAC

The management authority will establish a PAAC in terms of the draft Regulations for the Proper Administration for Nature Reserves (2009). The Shaw's Pass PAAC will be established to represent the interest of registered stakeholders.

### **Procedure**

The management authority will invite community organisations, NGO's, residents of and neighbouring community.

### **Minimum requirements and other criteria**

Any membership of the PAAC must be based on a real interest demonstrated by the member in respect of Shaw's Pass.

### **Composition**

The management authority will appoint members in writing to the PAAC.

The advisory committee should reflect the interest of the following groups:

- Theewaterskloof Municipality
- CapeNature
- Neighbours
- Owner
- The environmental auditors
- Any other affected/interested party

### **Term of office**

- Each member is expected to serve for a fixed two year period;
- Membership is voluntary and no remuneration will be provided to PAAC members.

### **Terms of Reference for PAACs**

The committee will be expected to:

1. Provide input into management decisions relating to the nature reserve;
2. Act as a forum to provide advice on reserve issues;
3. Play a role in educating the community and various interest groups about the importance of preservation, protection and management of natural resources and the objectives of the reserve management plan that are intended to pursue these goals;
4. Monitor and evaluate progress on implementation of programmes in the reserve management plan;
5. Make recommendations on how the management authority can improve programmes and policies;
6. Promote involvement in decision-making around the management of natural and cultural heritage resources within the scope of the reserve management plan;
7. Promote the integration of conservation activities within the nature reserve with those of surrounding areas;
8. Establish and maintain links between the management authority and other stakeholders.

### **Functioning of the Advisory Committee**

The committee will meet a minimum of once a year. At the first meeting a Chairperson and a secretary who will be required to take minutes of all matters discussed, will be elected. The committee will be expected to submit a copy of the minutes for each meeting and a full report, to the management authority and this should be kept on file.

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## **APPENDIX D – AUDITING**

**SHAW'S PASS NATURE RESERVE AUDIT PLAN**

ACTIVITIES	RESPONSIBILITY	SCHEDULE	PLANNED	COMPLETED	COMMENTS FROM	PLANNED	COMPLETED	COMMENTS FROM	PLANNED	COMPLETED	COMMENTS FROM	PLANNED	COMPLETED	COMMENTS FROM
			2018/2019	2018/2019	AUDITOR	2019/2020	2019/2020	AUDITOR	2020/2021	2020/2021	FROM AUDITOR	2021/2022	2022/2023	AUDITOR
A baseline study has been undertaken by Boucher (2011) and CREW and must be used as the baseline plant species inventory for the SPNR.	MA	Ongoing												
Complete an Ecological Plan of Operations and incorporate in the Conservation Services Ecological Matrix.	MA and CN	Ongoing												
Use students, interested groups and volunteers, as opportunities arise, to build on the initial study and information.	MA	Ongoing												
Submit new information to SANBI's Threatened Species Programme.	MA	Ongoing												
Develop and maintain a GIS based plant species database. MA to provide photo's and GPS point for records.	MA, CREW and CN	Ongoing												
Obtain relevant applicable scientific papers / reports for the RN, this should be co-ordinated with other stakeholders and interested parties whenever possible.	MA	Ongoing												
Link the RN to research institutions and tertiary academic institutions to obtain new research papers. Ensure links with ER review processes and information generation for the RN.	MA	Ongoing												
Keep record of these papers/ reports at the office of the management authority.	MA	Ongoing												
No baseline information on any Rare, Endangered and Endemic plant species exists for the RN.	MA	Initially												
Use students, interested groups and volunteers (CREW) to build on this initial identification and mapping.	MA	Ongoing												
Expand to include other species of Conservation Concern.	MA	Ongoing												
Maintain survey information on a GIS database for spatial reference. MA to provide photo's and GPS point of record.	MA, CREW and CN	Ongoing												
Print distribution maps in order to prevent impacts on plants, to guide management interventions.	MA	Ongoing												
Use information on See Figure 6.2 and Table 3.1 for the baseline data regarding: species, density and age classes for the RN.	MA	Once off												
Schedule and cost initial clearing operations (See Appendix B – Alien Invasive Species Management Plan).	MA	Once off												
Annually undertake follow up operations of cleared areas.	MA	Annually												
Ensure that no alien invasive plants are given the chance to establish.	MA	Ongoing												
The planting of indigenous trees should be promoted. Use only locally indigenous species sourced from the adjacent properties.	MA	Ongoing												
Include the recommendations from Appendix B – Alien Invasive Species Clearing Schedule and Guidelines.	MA	Once off												
Schedule and cost initial clearing operations.	MA	Annually												
Annually update norms, standards and COEs for alien invasive species clearing operations (See Appendix B – Alien Invasive Plants Clearing Schedule and Guidelines).	MA	Once off												
Implement best practice guidelines for alien clearing operations (See Appendix B – Alien Invasive Plants Clearing Schedule and Guidelines).	MA	Once off												
Regular follow-up operations are needed.	MA	Ongoing												
No pets must be allowed on the RN.	MA	Ongoing												
Stray dogs and cats on the RN should be managed with the assistance from the local SPCA.	MA	Ongoing												
Ensure that the annual GDFPA membership fees is paid up.	MA	Once off												
Adhere to the GDFPA rules and regulations.	MA	Ongoing												
Engage the GDFPA and request assistance from their teams with integrated fire management activities.	MA	Ongoing												
Due to sensitivity of the RN, it is recommended that various strategic fire breaks are established and fire break agreements are in place with neighbouring properties.	MA	Ongoing												
Ensure that the RN has appropriate fire fighting equipment.	MA	Ongoing												
Adopt the fire break plan as suggested in this management plan. (See Figure 3.5)	MA	Once off												
Establish fire breaks.	MA	Once off												
Maintain fire breaks by manually brush cutting.	MA	Annually												
The MA will ensure that they are aware of the FDI and make their staff and visitors to the SPNR aware of the duty FDI.	MA	Ongoing												
Obtain necessary firefighting equipment, in keeping with GDFPA standards.	MA	Once off												
Ensure that firefighting equipment is operational and ready for use at all times.	MA	Ongoing												
Ensure that a fire reaction plan is put in place and maintained annually.	MA	Ongoing												
Baseline study (nested bioclimatic) appended species list (See Appendix C-Guideline on Baseline Data collection and Monitoring)	MA	Completed												
Use students, interested groups and volunteers, as opportunities arise, to build on this initial information.	MA	Ongoing												
Develop and maintain a GIS based fauna species database. MA to provide photo's and/or GPS points for sightings.	MA and CN	Ongoing												
Obtain relevant papers/ reports.	MA	Ongoing												
Link to research institutions and tertiary academic institutions to obtain relevant research papers.	MA	Ongoing												
Keep record of all research papers and reports at the RN.	MA	Ongoing												
Don't allow any domestic animals in the RN.	MA	Ongoing												
Engage with other stakeholders (e.g. the SPCA) to control stray domestic animals found in the RN.	MA	Ongoing												
Monitor and report the presence of any domestic and stray animals (dogs and cats) on the RN.	MA	Ongoing												
Report illegal activities such as hunting and the use of snares.	MA	Ongoing												
Investigate the opportunity to develop GIS systems build a spatial picture of high risk areas to provide a means to indicate available law enforcement resources to those areas.	PMAC, MA and CN	Ongoing												





Sign off and approve the budget.	MA	Annually																		
Ensure that available budget is spent within the timeframe allocated to each project.	MA	Annually																		
Ensure that the budget makes provision for an external independent monitoring function annually.	MA	Ongoing																		
Outsource the monitoring and audit function to an independent service provider to ensure an objective assessment of management effectiveness.	MA	Ongoing																		
Receive the report from the service provider and ensure that it is built into the reporting system of the IR and for use as a supporting document in the assessment of responsible MA work performance.	MA	Ongoing																		
Communicate the outcomes of the monitoring and audit to the IRAC & CapEx/OpEx.	MA	Ongoing																		
Identify strategies to address management shortcomings.	MA	Ongoing																		

**APPENDIX E - ENVIRONMENTAL AUTHORISATION SHAW'S PASS  
REALIGNMENT**



**Western Cape  
Government**  
Environmental Affairs and  
Development Planning

**DIRECTORATE: LAND MANAGEMENT  
REGION 2**

**AMENDMENT REFERENCE:** E12/2/4/6-E2/14-2026/11  
**ORIGINAL EIA REFERENCE:** E12/2/3/2-E2/15-0330/08  
**ENQUIRIES:** Wendy Gaisford/Tammy Christie  
**DATE OF ISSUE:** 2012 -03- 0 8

The Head of Department  
Department of Transport and Public Works  
Provincial Road Network Management  
Road and Transport Management Branch  
P.O. Box 2603  
**CAPE TOWN**  
8000

**Attention: Mr Schalk Carstens**

Tel.: (021) 483 2174  
Fax: (021) 483 2205

Dear Sir

**AMENDMENT OF THE CONDITIONS OF AN ENVIRONMENTAL AUTHORISATION FOR THE  
PROPOSED UPGRADE OF MAIN ROAD 269 (HEMEL AND AARDE ROAD), HERMANUS**

With reference to your application, find below the amended environmental authorisation in respect of this application.

**AMENDED ENVIRONMENTAL AUTHORISATION**

**FILE**

With reference to the above-mentioned application, the Department, in terms of the powers vested in it by Regulation 45 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") Environmental Impact Assessment ("EIA") Regulations of 18 June 2010, has decided to

10th Floor, 1 Dorp Street, Cape Town, 8001  
tel: +27 21 483 8327/3185 fax: +27 21 483 4372

Private Bag X9086, Cape Town, 8000  
[www.westerncape.gov.za/eadp](http://www.westerncape.gov.za/eadp)

amend the conditions of the existing environmental authorisation issued on 15 September 2011 (Reference No.: E12/2/3/2-E2/15-0330/08) as follows –

**Section G of the environmental authorisation:**

**G. CONDITIONS OF AUTHORISATION**

**Condition No. 3**

*"One week's notice, in writing, must be given to the Directorate: Land Management (Region 2), (hereinafter referred to as "this Directorate"), before commencement of construction activities.*

- 3.1 *Such notice shall make clear reference to the site location details and reference number given above.*
- 3.2 *The said notice must also include proof of compliance with the following conditions described herein:  
Conditions: 1, 2, 6, 11.5.9, 12, 17, 19 and 21."*

must be substituted with:

*"Notice, in writing, must be given to the Directorate: Land Management (Region 2) (hereinafter referred to as "this Directorate"), before commencement of construction activities.*

- 3.1 *Such notice shall make clear reference to the site location details and reference number given above.*
- 3.2 *Within 30 days of submitting the said notice, the applicant must also include proof of compliance with the following conditions described herein:  
Conditions: 1, 2, 6, 11.5.9, 12, 17, 19 and 21."*

**Condition No. 6.1**

*"The biodiversity offset portion must be subdivided off the larger portion of land."*

must be substituted with:

*"The biodiversity offset area must be surveyed, registered and rezoned for conservation purposes."*

**Condition No. 6.4.2**

*"The applicant must transfer the full amount as recommended and stated in the Final EIA Report (dated 4 August 2011) to the Theewaterskloof Municipality, who must then transfer the full amount*

directly to CapeNature. CapeNature will establish a Management Fund and place the full amount into this Fund."

must be substituted with:

"The applicant must transfer the full amount as recommended and stated in the Final EIA Report (dated 4 August 2011) to CapeNature who will establish a Management Fund and place the full amount into this fund."

**Condition No. 6.5**

"Construction may only commence once the biodiversity offset has been secured and the Management Fund payment has been made by the applicant and has been transferred into the Management Fund."

must be substituted with:

"Construction may only commence once an agreement with CapeNature for the transfer of the funds for the biodiversity offset is in place."

**Condition No. 8.3**

"The roadside vegetation must be kept free of alien vegetation before, after and during construction. This must include the clearing of alien vegetation from the fynbos for 500m on either side of the road to mitigate the loss of fynbos from the road construction."

must be substituted with:

"The roadside vegetation must be kept free of alien vegetation before, after and during construction. This must include the clearing of alien vegetation from the fynbos within the entire road reserve."

**Condition No. 9.10**

"Salts eroding from Malmesbury Group shale rock used in tar inhibits the growth of Sandstone Fynbos and benefits the survival of unwanted European and other exotic weeds. Therefore, sandstone or granite stone chips must be used in tar applied to road surfaces or wherever open stone chips are to be used for finished surfaces."

is to be removed.

**Condition No. 12.1**

*"A detailed plan for the upgrading of the entire route of the MR269 must be prepared by a landscape architect and submitted to HWC before construction commences."*

must be substituted with:

*"A detailed plan for the upgrading of MR 269 from km 9.3 to km 25.4 must be prepared by a landscape architect and submitted to HWC before construction commences."*

**Reasons for the decision to amend the environmental authorisation:**

- (a) Condition No. 6.1: After a meeting on site with CapeNature, the landowner, the botanist and the Environmental Assessment Practitioner ("EAP"), and as agreed at a meeting with the applicant on 12 December 2011, it was decided that it would be unnecessary to subdivide the offset area from the mother farm, but rather the offset area should be surveyed and rezoned (spot zoning) for conservation purposes.
- (b) Condition No. 6.4.2: Subsequent to the Environmental Impact Assessment Process, CapeNature is now able to receive the funds directly, once a foundation fund is established. During the meeting held at the Department on 29 February 2012, CapeNature confirmed that the funds could be accepted directly.
- (c) Condition No. 6.5: The management/foundation fund, required in order for CapeNature to receive the money, is still in the process of being established. In addition, the Department of Transport and Public Works ("DTPW") was unable to pay the funds in January as a result of cut-off dates. Payment from the DTPW to CapeNature will only be possible after 1 April 2012, and this will be after the desired date of the commencement of construction.
- (d) Condition No. 8.3: The DTPW does not have jurisdiction outside the road reserve and therefore cannot be held responsible for the clearing of alien vegetation on another landowner's property. Once established, the offset funds and the offset management plan will ensure the clearing of alien vegetation in the Shaw's Pass area, outside the road reserve.
- (e) Condition No. 9.10: Sandstone will not give the required quality for the road surface, and granite stone must be obtained from quarries in the Cape Town area, making it financially unfeasible. The risk of salts arising from eroding shale rock will be reduced by the use of sandstone for either the base and/or sub-base layers of the road.
- (f) Condition No. 12.1: The areas where road works will be carried out will be landscaped and rehabilitated according to a landscape plan, but a landscape plan cannot be prepared for areas where no construction will be undertaken and that will not be disturbed.

- (g) The environment and the rights and interests of other parties are not likely to be adversely affected by this decision to amend the environmental authorisation.
- (h) There are no proposed changes to the activity description.
- (i) The remainder of the conditions of the existing environmental authorisation issued on 15 September 2011 (Reference No.: E12/2/3/2-E2/15-0330/08) will remain unchanged.

Your attention is drawn to Chapter 7 of the Regulations which regulates appeal procedures. If the applicant should decide to appeal, the applicant must, in terms of, Regulation 60(1), lodge a Notice of Intention to Appeal with the Minister, within 20 (twenty) days after the date of the decision, and must within 10 (ten) days of having submitted the notice contemplated in Regulation 60(1), provide each person and organ of State (registered as an interested and affected party in respect of the application) with a copy of the Notice of Intention to Appeal; a notice indicating where and for what period the appeal submission will be made available for inspection by such person or organ of State on the day of lodging it with the Minister, and indicate that a responding statement may be made on the appeal within 30 (thirty) days from the date the appeal submission was lodged with the Minister.

A person, organ of State or applicant who submits a responding statement in terms of Regulation 63(1) must within 10 (ten) days of having submitted the responding statement, serve a copy of the responding statement on the appellant.

If the applicant should decide to appeal, the applicant must submit the appeal within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in Regulation 60(1), for the lodging of the notice of intention to appeal.

Should any other person, or an interested and affected party, decide to appeal, they must, in terms of, Regulation 60(1), lodge a notice of intention to appeal with the Minister, within 20 (twenty) days after the date of the decision. An appeal must be submitted within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in Regulation 60(1).

The appellant must provide the applicant, within 10 days of having lodged the notice contemplated in Regulation 60(1), with a copy of the notice referred to in Regulation 60(1), and a notice indicating where and for what period the appeal submission will be available for inspection by the applicant. A responding statement may be made on the appeal within 30 (thirty) days from the date the appeal submission was lodged with the Minister.

The prescribed Notice of Intention to Appeal; and Appeal forms are obtainable from the Minister's office, as well as assistance regarding the appeal processes, at telephone numbers (021) 483 3721, email [Jaap.deVilliers@pgwc.gov.za](mailto:Jaap.deVilliers@pgwc.gov.za) or via the URL <http://www.westerncape.gov.za/eadp>.




All Notice of Intention to Appeal; and Appeal forms must be submitted by means of one of the following methods:

- By post: Western Cape Ministry of Local Government, Environmental Affairs and Development Planning  
Private Bag X9186  
CAPE TOWN  
8000
- By facsimile: (021) 483 4174; or
- By hand: Attention: Mr. Jaap de Villiers  
Tel: (021) 483 3721  
Room 305A  
3<sup>rd</sup> Floor Leeusig Building (entrance Utilifas Building)  
I Dorp Street  
CAPE TOWN  
8001
- Email: [Jaap.deVilliers@pgwc.gov.za](mailto:Jaap.deVilliers@pgwc.gov.za)

Your interest in the future of our environment is greatly appreciated.

Yours faithfully



**ZAAHIR TOEFY**

**DIRECTOR: LAND MANAGEMENT (REGION 2)**

DATE OF DECISION: 08/03/2012

CC:

- |                   |                                  |
|-------------------|----------------------------------|
| (1) Mr Nel        | (EAP)                            |
| (2) Mr van Vuuren | (Overberg District Municipality) |
| (3) Mr Visagie    | (Theewaterskloof Municipality)   |
| (4) Mr Kuchar     | (Overstrand Municipality)        |
| (5) Ms Ralston    | (CapeNature)                     |
| (6) Ms Lavin      | (Heritage Western Cape)          |

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DEPARTMENT of  
ENVIRONMENTAL AFFAIRS  
& DEVELOPMENT PLANNING

Provincial Government of the Western Cape

DIRECTORATE: LAND MANAGEMENT  
REGION 2

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**REFERENCE:** E12/2/3/2-E2/15-0330/08  
**ENQUIRIES:** Ms T. Christie  
**DATE OF ISSUE:** 2011-09-15

The Head of Department  
Department of Transport and Public Works  
Provincial Road Network Management  
Roads & Transport Management Branch  
P O Box 2603  
Cape Town  
8000

**Attention: Mr Schalk Carstens**

Tel.: (021) 483 2174

Fax: (021) 483 2205

Dear Sir

**APPLICATION: THE PROPOSED UPGRADE OF MAIN ROAD 269 (HEMEL-EN-AARDE ROAD), HERMANUS**

With reference to your application, find below the environmental authorisation in respect of this application.

**ENVIRONMENTAL AUTHORISATION**

**A. DESCRIPTION OF ACTIVITY:**

The proposed activity involves the upgrade of the existing Main Road ("MR") 269 (R320) which starts at the R43 near Sandbaai (Hermanus) and ends at the R316 in Caledon. The existing road is approximately 35km in length of which approximately 21km has been upgraded to a hardened surface, leaving a section of approximately 14.4km as a gravel/unsealed road. The existing road alignment also includes Shaw's Mountain Pass which was surfaced in 1973 and has a poor standard alignment. The proposed project therefore entails the upgrading of the existing 14.4km gravel section

of MR 269 from gravel to surfaced standard, as well as the re-alignment of the road section over Shaw's Mountain Pass due to safety reasons. Besides Shaw's Mountain Pass, the realignment of certain sections of the existing road is required in order to comply with minimum design and safety standards.

The applicant investigated alternatives with respect to the upgrade of the 14.4km section of gravel road, the realignment options for Shaw's Mountain Pass and alternative sites for borrow pits and spoil sites. The description which follows details only the authorised alternatives in all these respects.

#### **The 14.4km Section of Gravel Road**

The final geometric alignment will be a combination of constructing the upgraded road on the existing road alignment and constructing the upgraded road directly adjacent to the existing road alignment. This is the result of adaptations made to accommodate physical limitations, requests from affected land owners and to comply with design standards. The horizontal alignment will thus comprise 4km of the route being directly on the foot print of the existing road, 7 km of the route being half-way on the existing route (traffic will have to be controlled by Stop/Go controls during construction) and 5,4km off and adjacent to the existing road. In the latter case, 4,6km of this 5,4km will be directly adjacent to the existing road and 0,8km (part of Shaw's Mountain Pass) will follow a new alignment that is not adjacent to the existing road.

The position of the changes in alignment along the length of the road will be as follows (with 0km being the start of the road at the R43 and 34km being the end of the road at the R316):

- From 9,3km to 12,2km: The upgraded road will follow the existing road alignment.
- From 12,2km to 18,0km: The upgraded road will run on the right hand side and directly adjacent to the existing road.
- From 18,0km to 19,0km: The upgraded road will follow the existing road alignment.
- From 19,0km to 21,0km: The upgraded road will run on the right hand side and directly adjacent to the existing road.
- From 21,0km to 24,8km: The upgraded road will run on the left hand side and directly adjacent to the existing road.

- From 24,8 km to 25,4km: The upgraded road will diverge 200m away from the existing alignment to follow a new alignment through Shaw's Mountain Pass.

The construction activities that will be required for the upgrade of the gravel section of the road will include the following:

- Re-construction of the road sub-base, generally immediately adjacent to the existing alignment of the road;
- Hardened surfacing of the new roadway and the shoulders of the road;
- Installation of a number of culverts (cross-drains) under the road;
- Installation of side-drains along certain sections of the road; and
- Installation of subsurface drains alongside certain sections of the road, to ensure that the pavement layers remain dry.

#### **The Re-alignment of Shaw's Mountain Pass**

The authorised alternative alignment (Alternative 4) is the preferred option from a technical perspective (please refer to Appendix A). Although the vertical alignment is on the steep side in geometrical terms, the warrant for auxiliary lanes is regarded as a border line case and it was decided to omit auxiliary and crawling lanes for this option. Only two lanes will therefore be required for this alternative. According to geotechnical investigations side slopes of the cutting can be stable at  $\pm 45^\circ$ . Alternative 4 has a minimal impact on the historical wagon trail identified in the heritage report and the horizontal and vertical alignment is the most acceptable from a geometric design standards perspective.

According to the botanical specialist, all proposed alignments over Shaw's Mountain Pass (except the "no-go" alternative) would have a high negative impact on the highly sensitive and critically endangered vegetation type, Overberg Sandstone Fynbos. When ranking the alternative alignments from highest to lowest impact, the botanist identified Alternative 4 as the third best out of five re-alignments. It is the only alternative (except the "no-go" alternative) that does not require auxiliary lanes i.e. it is the only alternative with two lanes as opposed to four lanes. As a result, the physical width of the road is narrower.

Alternative 4 is authorised by this Department with the understanding that the conditions put forward by the botanical specialist and the biodiversity offset committed to by the applicant (see Section G below) will be implemented.

### **The Borrow Pits**

Nine borrow pit sites were originally assessed. Seven of these were deemed feasible from a technical perspective and were assessed further. After the seven alternatives were assessed from an ecological perspective, only three were considered feasible from both a technical and ecological perspective. These are thus the only borrow pit sites authorised by this Department:

MR.269/13.5/R/380 HA3 Hemelrand (the Hemelrand Borrow Pit)

MR.269/25.4/R/100 HA1 Nuirton 536 (HA1) (the Km 25/R Borrow Pit)

MR.269/12.2/R/380 HA5 Karwyderskraal (the Karwyderskraal Borrow Pit)

These borrow pit sites will be rehabilitated after use as per the conditions of this authorisation. No roads will be constructed to obtain the material from the borrow pits. Existing gravel roads on the farms will be used as haul roads during mining activities. No new road will therefore be required for hauling purposes.

### **The Spoil Sites**

Five spoil sites were proposed for the upgrading of MR269. Spoil Sites A to D are located relatively close to one another and near to MR269, between km 11 and km 13. Spoil Site E is located somewhat further to the east, along the Tesselarsdal Road (Divisional Road 1257), approximately 3 km from the intersection with MR269 between km 23.5 and km 24.0. All five proposed spoil site locations are on privately owned land. Spoil sites B, C and D were found to be unacceptable from a botanical and freshwater perspective and are thus not authorised by the competent authority. Only Spoil sites A and E are authorised. These sites will be rehabilitated after use as per the conditions of this authorisation.

These are activities identified in:

Government Notice No. R. 386 of 21 April 2006, being:

- Item 1(m)                    *"The construction of facilities or infrastructure, including associated structures or infrastructure, for any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including -*
- (i) canals;*
  - (ii) channels;*
  - (iii) bridges;*

*(iv) dams; and  
(v) weirs"*

Item 4 *"The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland."*

Item 15 *"The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long."*

Government Notice No. R. 387 of 21 April 2006, being:

Item 5 *"The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before the publication of this notice and which has not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 made under Section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, where–*

- (a) it is a national road as defined in Section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);*
- (b) it is a road administered by a provincial authority;*
- (c) the road reserve is wider than 30 metres; or*
- (d) the road will cater for more than one lane of traffic in both directions."*

Government Notice No. R. 544 of 18 June 2010, being:

Item 11 *"The construction of:*

- (i) canals;*
- (ii) channels;*
- (iii) bridges;*
- (iv) dams;*
- (v) weirs;*

- (vi) bulk storm water outlet structures;
- (vii) marinas;
- (viii) jetties exceeding 50 square metres in size;
- (ix) slipways exceeding 50 square metres in size;
- (x) buildings exceeding 50 square metres in size; or
- (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line."

Item 18

"The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:

- (i) a watercourse;
- (ii) the sea;
- (iii) the seashore;
- (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater- but excluding where such infilling, depositing, dredging, excavation, removal or moving;
- (a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or
- (b) occurs behind the development setback line."

Item 22

"The construction of a road, outside urban areas,

- (i) with a reserve wider than 13,5 meters or,
- (ii) where no reserve exists where the road is wider than 8 metres, or
- (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010."

Item 39

"The expansion of

- (i) canals;
- (ii) channels;



- (iii) bridges;
- (iv) weirs;
- (v) bulk storm water outlet structures;
- (vi) marinas;

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line."

Government Notice No. R. 545 of 18 June 2010, being:

- Item 18                    *"The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before 03 July 2006 and which have not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 or 2009, made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006,—*
- (i)        *it is a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);*
  - (ii)       *it is a road administered by a provincial authority;*
  - (iii)      *the road reserve is wider than 30 metres; or*
  - (iv)      *the road will cater for more than one lane of traffic in both directions."*

Government Notice No. R. 546 of 18 June 2010, being:

- Item 4                    *"The construction of a road wider than 4 metres with a reserve less than 13,5 metres.*
- In Western Cape:***
- i.        *In an estuary;*
  - ii.       *All areas outside urban areas;*
  - iii.      *In urban areas:*
  - (aa)     *Areas zoned for use as public open space within urban areas; and*

*(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose."*

Item 12

*"The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.*

*(a) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;*

*(b) Within critical biodiversity areas identified in bioregional plans;*

*(c) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line or even in urban areas."*

Item 13

*"The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:*

*(1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list.*

*(2) the undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No. 544 of 2010.*

***In Western Cape:***

*i. In an estuary;*

*ii. Outside urban areas, the following:*

*(aa) A protected area identified in terms of NEMPAA, excluding conservancies;*

*(bb) National Protected Area Expansion Strategy Focus areas;*

- (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
- (dd) Sites or areas identified in terms of an International Convention;
- (ee) Core areas in biosphere reserves;
- (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;
- (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
- iii. In urban areas, the following:
  - (aa) Areas zoned for use as public open space;
  - (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;
  - (cc) Areas seawards of the development setback line;
  - (dd) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined."

Item 16

"The construction of:

- (i) jetties exceeding 10 square metres in size;
- (ii) slipways exceeding 10 square metres in size;
- (iii) buildings with a footprint exceeding 10 square metres in size; or
- (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

**In Western Cape:**

- i. In an estuary;
- ii. Outside urban areas, in:

- (aa) A protected area identified in terms of NEMPAA, excluding conservancies;
- (bb) National Protected Area Expansion Strategy Focus areas;
- (cc) World Heritage Sites;
- (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
- (ee) Sites or areas identified in terms of an International Convention;
- (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
- (gg) Core areas in biosphere reserves;
- (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;
- (ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
  - [iv] iii. Inside urban areas:
    - (aa) Areas zoned for use as public open space;
    - (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;
    - (cc) Areas seawards of the development setback line or within 100 metres of the high water mark where no setback line."

Item 19

"The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.

**In Western Cape:**

- i. In an estuary;
- ii. All areas outside urban areas;
- iii. In urban areas:
  - (aa) Areas zoned for use as public open space within urban areas;

*(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose, within urban areas."*

Item 24

*"The expansion of*

*(a) jetties where the jetty will be expanded by 10 square metres in size or more;*

*(b) slipways where the slipway will be expanded by 10 square metres or more;*

*(c) buildings where the buildings will be expanded by 10 square metres or more in size; or*

*(d) infrastructure where the infrastructure will be expanded by 10 square metres or more*

*where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.*

***In Western Cape:***

*i. In an estuary;*

*ii. Outside urban areas, in:*

*(aa) A protected area identified in terms of NEMPAA, excluding conservancies;*

*(bb) National Protected Area Expansion Strategy Focus areas;*

*(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;*

*(dd) Sites or areas identified in terms of an international Convention;*

*(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;*

*(ff) Core areas in biosphere reserves;*

*(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;*

(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

iii. Inside urban areas:

(aa) Areas zoned for use as public open space;

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose."

hereinafter referred to as "the activity".

**B. LOCATION:**

The proposed upgrade of Main Road 269 (R320) will start at the intersection with the R43 near sandbaai (Hermanus) and will end at the R316 in Caledon. The road is situated in the Hemel en Aarde Valley between the Kleinriver Mountains and Shaw's Mountain in the Overberg Region in the Western Cape.

The proposed activity is linear in nature and thus involves a large number of properties. The SG21 codes for the affected properties are:

SG 21 DIGIT CODE	FARM PARCEL (PORTION & FARM NO.)
C0130000000058700000	RE/587
C0130000000058700000	RE/587
C0130000000058700002	2/587
C0130000000058700003	3/587
C0130000000058700007	7/587
C0130000000058700008	8/587
C0130000000058700011	11/587
C0130000000058700014	14/587
C0130000000058700015	15/587
C0130000000058700016	16/587
C0130000000058700017	17/587
C0130000000058700045	45/587
C0130000000058700049	49/587
C0130000000058700050	50/587
C0130000000058700062	62/587
C0130000000058700065	65/587



**C. APPLICANT:**

The Head of Department  
Department of Transport and Public Works  
P O Box 2603  
Cape Town  
8000  
Tel.: (021) 483 2174  
Fax: (021)483 2205

**D. ENVIRONMENTAL ASSESSMENT PRACTITIONERS:**

Scoping and Draft EIA Report Stages:

EnviroDinamik  
c/o Ms Bianca Gilfillan  
PO Box 2470  
DURBANVILLE  
7551  
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Final EIA Report Stage:

Guillaume Nel Environmental Consultants  
c/o Mr Guillaume Nel  
PO Box 2632  
PAARL  
7620  
Tel.: (021) 870 1874  
Fax: (021) 870 1873

**E. SITE VISIT(S):**

Date: 6 October 2010

Persons Present: Mr Zaahir Toefy and Ms Tammy Christie of the Department of Environmental Affairs & Development Planning ("DEA&DP"), Mr Schaik Carstens of the Department of Transport and Public Works, Mr Francis Stoffberg and Mr Herman Wolff of Worley Parsons and Ms Bianca Gilfillan (EnviroDinamik), who was the Environmental Assessment Practitioner at that time.



**F. DECISION:**

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this environmental authorisation that the applicant should be authorised to undertake the activities described above.

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations (18 June 2010) the Department hereby authorises the preferred alternative activity, i.e. the activity described in Section A above.

The granting of this environmental authorisation is subject to the conditions set out below.

**G. CONDITIONS OF AUTHORISATION:**

1. The activity, including site preparation, may not commence within 20 (twenty) days after having received this environmental authorisation. In the event that an appeal notice and subsequent appeal is lodged with the Competent Authority, the effect of this environmental authorisation will be suspended until such time as the appeal is decided.
2. The applicant, must, in writing, within 20 days of the issue of this authorisation, confirm acceptance of the conditions of this authorisation, failing which the Environmental Authorisation may be suspended until such time that these conditions of authorisation are accepted.
3. One week's notice, in writing, must be given to the Directorate: Land Management (Region 2), (hereinafter referred to as "this Directorate"), before commencement of construction activities.
  - 3.1 Such notice shall make clear reference to the site location details and reference number given above.
  - 3.2 The said notice must also include proof of compliance with the following conditions described herein:  
Conditions: 1, 2, 6, 11.5.9, 12, 17, 19 and 21.
4. An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste that cannot be recycled or re-used shall be disposed of at a waste disposal facility licensed in terms of Section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or that carries

the correct waste management licence in terms of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008). The Department's "Waste Minimization Guideline Document for Environmental Impact Assessment Reviews" (May 2003, available on request from the Department) must be taken into account.

5. No surface or groundwater may be polluted due to any activity on the property/site. The relevant requirements of the National Water Act, 1998 (Act No. 36 of 1998) and the Water Services Act, 1997 (Act No. 108 of 1997) must be complied with at all times.
  - 5.1 The conditions stipulated by the Breede-Overberg Catchment Management Agency ("BOCMA"), in their comment dated 25 July 2011, must be adopted and implemented.
  - 5.2 In accordance with the comment from the Department of Water Affairs dated 29 July 2009, any stream or river crossing structure put in place must be constructed to accompany the 1:10 year flood occurrences at minimum.
6. As committed to by the applicant, in consultation with the competent authority, CapeNature and the affected land owner, a biodiversity offset must be secured for the proposed development. The motivation behind the offset is detailed in Section H below. A portion of the Remainder of Farm Muirton No. 536, Caledon, with a minimum size of 30-hectares, must be secured as a biodiversity offset. The specific location of the 30-hectare biodiversity offset portion must be decided in consultation with CapeNature and the landowner.
  - 6.1 The biodiversity offset portion must be subdivided off the larger portion of land.
  - 6.2 Title deed restrictions must be placed on the agreed biodiversity offset portion so that no development or clearing may take place on this portion.
  - 6.3 The biodiversity offset portion must be managed by the landowner in collaboration with CapeNature and the Theewaterskloof Municipality in a Stewardship Programme.
  - 6.4 The applicant must make a once-off payment of the recommended calculated amount as stated in the Final EIA Report dated 4 August 2011 to fund the future management of the site.
    - 6.4.1 The full payment must be transferred into a Management Fund that will be set up to provide for the ongoing management of the biodiversity offset portion.

- 6.4.2 The applicant must transfer the full amount as recommended and stated in the Final EIA Report (dated 4 August 2011) to the Theewaterskloof Municipality, who must then transfer the full amount directly to CapeNature. CapeNature will establish a Management Fund and place the full amount into this Fund.
  - 6.4.3 The funds must be invested in a well-known and secure financial institution in order to secure the funds and ensure proper growth of the fund.
  - 6.4.4 The funds to be made available for management and maintenance of the site must be generated from a percentage of the annual growth.
  - 6.4.5 Out of the yearly income, the owner of the biodiversity offset portion must receive a financial contribution to be used solely for the management and/or protection of the biodiversity offset portion (management fee included, which may not be more than 30% of the yearly financial grant after investment expenses).
  - 6.4.6 Funds are only available for the management, alien clearing, fire protection and conservation of this mentioned biodiversity offset site and the surrounding land units (in order to protect the offset area from fire, development, alien vegetation infestation and other human related impacts) and may not be made available for day to day farming activities.
  - 6.4.7 Accurate record and book-keeping must be done by the offset area manager, who must be identified before construction commences.
- 6.5 Construction may only commence once the biodiversity offset has been secured and the Management Fund payment has been made by the applicant and has been transferred into the Management Fund.
7. In accordance with the recommendations of the Botanical Specialist with respect to the gravel section of the road (D. McDonald, 6 May 2009) and the borrow pits (D. McDonald, 11 February 2008), the following measures must be implemented:
- 7.1 The three borrow pit sites that are authorised for use (HA1, HA3 and HA5) must be rehabilitated after the extraction of material is completed to facilitate the recovery of indigenous vegetation. The sites must be graded and covered with a mulch of fynbos (from areas disturbed by the road upgrade) from which some fynbos plants may re-establish.
  - 7.2 During road-building the identified viable patches of fynbos vegetation must be cordoned off as "no-go" areas and treated with care so as

to conserve them. No machinery and vehicles must be permitted close to this vegetation.

- 7.3 The alien invasive plants in the road reserve must be removed simultaneous with the road-building activities.
8. In accordance with the recommendations of the Botanical Specialist with respect to the spoil sites and the roadside vegetation along Shaw's Pass (D. Euston-Brown, 28 July 2010), the following measures must be implemented:
  - 8.1 The spoil sites must be rehabilitated after the spoiling of material is completed to facilitate the recovery of indigenous vegetation.
  - 8.2 Widening of the section of road leading up to Shaw's Mountain Pass (i.e. below the proposed re-alignment) must be minimized and where unavoidable, the widening must be undertaken on the upper edge of the road. If widening of the lower edge is necessary then gabions must be constructed to prevent rock and gravel spilling down the slope and damaging the fynbos below.
  - 8.3 The roadside vegetation must be kept free of alien vegetation before, after and during construction. This must include the clearing of alien vegetation from the fynbos for 500m on either side of the road to mitigate the loss of fynbos from the road construction.
9. In accordance with the recommendations of the Botanical Specialist with respect to the re-alignment of the route over Shaw's Mountain Pass (C. Boucher, 28 January 2011), the following measures must be implemented:
  - 9.1 The lateral footprint area of the re-aligned route must be reduced as much as technically feasible to reduce the areas of rare vegetation affected. If found to be technically feasible, stone-clad walls and gabions should be used to reduce the sideways spread through the cuttings and contain rock falls. Stone-lined cut-off drains should be used along the cutting edges to limit lateral erosion, allowing steeper slopes.
  - 9.2 Gabions must be filled with sandstone from the cuttings.
  - 9.3 Any exposed cut-slopes must be finished so that numerous lateral ledges are created in which soil and seed can accumulate (or be introduced) to accelerate the establishment of vegetation therein.
  - 9.4 Seed from selected feature plants found alongside the current Shaw's Pass must be collected for dispersal with the top-material spread over road cuttings. Seed must also be provided to the Millennium Seedbank at Kirstenbosch National Botanical Garden. Cuttings of rare or useful plants should be made for re-establishment in appropriate habitats. Kirstenbosch

National Botanical Garden is to be consulted, in consultation with a botanical specialist and/or CapeNature, in this regard.

- 9.5 The remaining sections of the old (existing) Pass road must be reinstated to Overberg Sandstone Fynbos by removing all surface material from the road and using top-materials/topsoil gleaned from the excavations for the proposed road. The old road must be seeded and the re-establishment of the plants must be facilitated with the guidance of a botanical specialist.
- 9.6 The restoration of vegetation on the old Shaw's Pass road and any other areas disturbed by construction must be done as follows:
  - 9.6.1 Seed of specific feature plants (e.g. long-lived plants and geophytes) and rare species must be collected over at least a full year.
  - 9.6.2 Seed is to be used to rehabilitate specific areas. Seed material not required for restoration is also to be stored in the Millennium Seedbank, through Kirstenbosch National Botanical Garden, for safe-guarding for future generations.
  - 9.6.3 Cuttings can be taken from specific fynbos plants (as identified by the botanical specialist) and rooted under specialised horticultural conditions. Kirstenbosch National Botanical Garden has the required expertise and must be consulted.
  - 9.6.4 Selected geophytes (bulbous plants) must be collected from the areas to be disturbed by building activities. Store these for later use in rehabilitation. Transplanting geophytes must be done by taking measures (as dictated by the botanical specialist) to protect them from predation on their return to the wild. Such collection and transplanting may only take place within clearly demarcated areas by suitably qualified and experienced individuals. Private individuals, clubs or amateur groups must not be allowed to undertake this function.
  - 9.6.5 Restionaceae plant species must be transplanted by pulling clumps of the plant from the wild under wet and rainy conditions and placing them directly into the area to be rehabilitated (a minimum storage period is necessary), this allows the introduction of seed caught up in the soil in the restio clumps and provides the necessary natural fungal associations required for establishment.

- 9.6.6 Top-material that is likely to be free of aliens is to be collected from the proposed road route, with the vegetation cover included. The material from the different habitats is to be kept separate and unambiguous accurate records of stockpile locations must be kept.
- 9.6.7 All of the rock generated during excavation will be an important tool in rehabilitation. Weathered surface layers of rock are preferred for specific highly visible areas. The stockpile height and treatment specifications must be provided by the botanical specialist.
- 9.6.8 All mechanical disturbances are to be completed before top-materials are returned to that section of road. This includes the restoration of any redundant parts of the current pass.
- 9.6.9 With rehabilitation, any exposed fill-slopes along road verges must be covered with rock and top-material gleaned on site and stored.
- 9.6.10 Specific material is to be replaced in specific sites. The weathered sandstone rock must be kept separate to use for final placement.
- 9.6.11 Exposed areas must not be covered with raw vegetation, woodchips or mulch as this suppresses regrowth of fynbos. Chopped indigenous vegetation, mulch or wood chips can be used to increase top-material bulk but may only be used if it is mixed into the topsoil. No vegetation material is to be left as a cover over the finished surface.
- 9.6.12 After the return of the top-material and physical lateral disturbance of road verges is completed, a spray mixture must be hydro-sprayed onto the exposed bare surfaces. The spray mixture is to contain a binding material, indigenous seed and smoke solution and must be sprayed onto the slopes in Autumn.
- 9.6.13 Fertilizers must only be used as directed by the botanical specialist. Fynbos areas require very specific fertilizers as the plants are adapted to nutrient poor environments. These will be specified by the botanist for use by the party(ies) appointed to undertake the rehabilitation.
- 9.7 A coarse, "leaky", road base must be used to prevent the concentration of subsurface flow into specific channels such as culverts.
- 9.8 The borrow pit material must be used in already invaded areas. On-going activities post road building will require keeping the road verges clear of

invasive species. This activity will have to take place at six-monthly intervals to ensure that no regenerating alien vegetation reaches reproductive maturity. The quarry areas will have to be covered with any surplus spoil over-burden, particularly of top-material to encourage regeneration of fynbos. Materials must first be collected from the quarry sites at the head of the pass and then this material must be stock-piled. Spoil material must be stored from the sandstone road cuttings in the established quarry to fill and cover the same.

- 9.9 The applicant must simulate and provide on-going funding and assessment of controls over the clearing of alien vegetation over a 1 km wide area on either side of the pass.
  - 9.10 Salts eroding from Malmesbury Group shale rock used in tar inhibits the growth of Sandstone Fynbos and benefits the survival of unwanted European and other exotic weeds. Therefore, sandstone or granite stone chips must be used in tar applied to road surfaces or wherever open stone chips are to be used for finished surfaces.
  - 9.11 Stopping points, view sites or picnic sites must not be provided directly on the pass as these are prime areas for littering starting destructive wildfires. If deemed necessary, these facilities can be established in the quarried area where appropriate structures can be constructed.
10. In accordance with the final comment from CapeNature dated 29 June 2011, the following must be adhered to:
- 10.1 No material that has been "search and rescued" should be replanted in pristine habitat, as this will cause unnecessary disturbance. Rather, rescued material should be used to help rehabilitate only habitat that has been already disturbed.
  - 10.2 A map detailing the sensitive areas and mitigation measures required for those specific areas, should be included in the Environmental Management Plan ("EMP") (dated 4 August 2011).
  - 10.3 The EMP must stipulate that the areas within the road reserve must be kept free of invasive alien plants and that management interventions such as brush-cutting should be limited and where possible, timed so as to avoid the peak late winter/early spring flowering season.
11. In accordance with the mitigation measures recommended by the freshwater specialist (D. Ollis, December 2009), the following must be adopted and implemented:
- 11.1 Where the route crosses through wetlands (i.e. "unnamed wetlands #2, #3 and #5"- as numbered in the abovementioned specialist report), the new

road must be constructed along the same alignment as the existing road, as far as possible, and a temporary bypass road created along the side of the road that does not contain wetland or contains the portion of wetland that is of lesser conservation importance. The project engineers confirmed that the temporary bypass road that passes through "unnamed wetland #3" will be positioned to the north of the road, where the wetland is more degraded, instead of the south.

- 11.2 Adequate subsurface drainage must be installed beneath the road to allow for the free movement of subsurface water through the wetlands that the road crosses over – this is particularly important in the case of "unnamed wetland #3", which is a hillslope seep that is bisected by the road. Subsurface drainage or a drainage layer must be installed under the road where the road crosses "unnamed wetland #2" and, more importantly, "unnamed wetland #3", in order to allow the movement of subsurface water from the topographical higher to lower side of the road prism.
- 11.3 The following measures must be implemented, during the design and planning stage of the proposed project, to minimise the hydrological impacts associated with the alignment of the proposed road:
  - 11.3.1 The inlets and outlets of all culverts must be positioned at a level as close as possible to the channel bed of any rivers that the road crosses over, and the natural ground level of any wetlands that the road crosses over or immediately adjacent to.
  - 11.3.2 In addition to the culvert design measures already proposed to address downstream erosion (see Section 4 of the Freshwater Ecology Report dated December 2009), the bed and banks of streams must be stabilized downstream of the outlet structures (using, for example, gabion baskets and/or "Terraforce" blocks), and culverts that do not discharge into river courses must be directed towards vegetated areas to minimise the risk of erosion.
  - 11.3.3 If certain culverts will unavoidably discharge into unvegetated or erosion-sensitive areas, these areas must be vegetated with appropriate plants (under the guidance of a botanist and/or landscape architect).
  - 11.3.4 Appropriate wetland vegetation must be planted (under the guidance of a wetland ecologist/botanist) in the degraded portions of "unnamed wetlands #2 and #3", downstream of the road, to prevent further erosion of these wetlands.



- 11.3.5 Where possible, earth side drains must be used instead of concrete side drains, particularly between approximately km 10.8 and km 12.8, as these will facilitate the infiltration and slowing down of runoff water (and, at the same time, encourage the settling out of pollutants).
- 11.3.6 The outlets of side drains must be located such that they are unlikely to result in erosion of hill slopes or downstream wetland areas, and should preferably discharge into robustly vegetated areas or directly into major streams. If and where this is not possible, sufficient erosion protection measures must be implemented.
- 11.3.7 If some of the side-drain outlets will unavoidably discharge into unvegetated or erosion sensitive areas, these areas must be vegetated with appropriate plants (under the guidance of a botanist and/or landscape architect).
- 11.4 The channels flowing through "unnamed wetland #2" must be reshaped (so that they are flatter and wider), stabilised and re-vegetated so that the hydrological connectivity between these channels and the adjacent valley-bottom wetland areas that was lost through the construction of the existing road can be restored. This work must be undertaken with the input of a freshwater ecologist and will probably require the reconsideration of the position, number and size of the culverts that pass under the road at this point.
- 11.5 The following mitigation measures, which must be included in the Environmental Management Plan ("EMP") for the project, are required to reduce the severity of the construction-phase impacts:
  - 11.5.1 The construction camp/s must be located at least 200 m from any rivers or wetlands.
  - 11.5.2 All wetlands, rivers and riparian areas outside of the road reserve must be treated as "no-go" areas and appropriately demarcated as such. No vehicles, machinery, personnel, construction material, fuel, oil, bitumen or waste may be allowed into these areas, without the express permission of, and supervision by, the Environmental Control Officer ("ECO").
  - 11.5.3 No fuel storage, re-fuelling, vehicle maintenance or vehicle depots may be allowed within 200 m of any rivers or wetlands.
  - 11.5.4 Re-fuelling and fuel storage areas must be located on impervious bases and must have bunds around them. Bunds must be

- sufficiently high to ensure that all the fuel kept in the area will be captured in the event of a major spillage.
- 11.5.6 Bitumen storage areas must also be located on impervious bases and have sufficiently high bunds around them.
  - 11.5.7 No construction or spoil materials may be stockpiled or stored within 100 m of any rivers or wetlands.
  - 11.5.8 There must be as little disturbance to surrounding vegetation as possible when construction activities are undertaken, as intact vegetation adjacent to the road will assist in the control of sediment dispersal from exposed areas.
  - 11.5.9 Sediment trapping measures (e.g. silt curtains and/or cut-off trenches) must be placed downslope of areas that are cleared, to minimise sediment runoff into freshwater ecosystems. The use of sediment-trapping measures is particularly important for construction activities undertaken during the wet season (i.e. May – October). A Method Statement must be drawn up before construction begins, setting out the exact measures that are proposed to be used. This Method Statement must be subject to the approval of the ECO and must be implemented under the guidance of the ECO.
  - 11.5.10 Freshwater ecosystems located along the road must be inspected on a regular basis (but especially after rainfall) by the ECO for signs of disturbance, sedimentation and pollution – these inspections must form part of every site inspection carried out by the ECO. If signs of disturbance, sedimentation or pollution are noted, immediate action must be taken to remedy the situation and, if necessary, the freshwater ecologist must be consulted for advice on the most suitable remediation measures.
  - 11.5.11 Currently eroded and sparsely vegetated wetland areas (i.e. the portions of "unnamed wetlands #2 and #3" on the northern side of the road) and erosion prone areas must be re-vegetated, to aid in the trapping of sediments generated during (and after) construction.
  - 11.5.12 The ripping up and re-vegetation of the area along which the existing road currently runs, after the construction of the new road has been completed and the old road is no longer needed as a bypass road, must be conducted under the guidance of a terrestrial vegetation rehabilitation specialist. This is because the

rapid establishment of vegetation in this area is of critical importance in reducing the risk of erosion and the subsequent sedimentation of freshwater ecosystems.

- 11.6 In order to specifically address the anticipated impacts associated with the proposed temporary bypass road, the following additional mitigation measures are required:
  - 11.6.1 Where the road crosses "unnamed wetland #3", the temporary bypass road must be placed to the north (instead of south) of the road, to avoid the loss/damage of a portion of good condition wetland of high importance.
  - 11.6.2 Adequate drainage must be placed under the temporary bypass road where it crosses "unnamed wetlands #2 and #3", to minimise the impact of the road on the hydrological functioning of these wetlands that are bisected by the road – this could be in the form of subsurface drainage on both sides of the road connected by multiple pipes or culverts, or alternatively by installing a drainage layer underneath the pavement structure of the road.
  - 11.6.3 When the temporary bypass road is no longer needed, the rehabilitation and re-vegetation of the sections passing through "unnamed wetlands #2 and #3" must be conducted under the guidance of a wetland ecologist.
- 11.7 The following mitigation measures, which must be included in the EMP for the project, are required to reduce the severity of the operational-phase impacts:
  - 11.7.1 The disturbance and erosion of riparian, stream channel and wetland areas must be minimised as far as possible during the upgrading of MR 269 because this will provide less opportunity for alien plants to establish themselves in these areas and it will improve the assimilative capacity for pollutants in runoff water.
  - 11.7.2 It is particularly important that appropriate wetland vegetation should be planted (under the guidance of a wetland ecologist/botanist) in the degraded portions of "unnamed wetland #3", downstream of the road, as this will facilitate the settling out and uptake of pollutants in runoff water flowing towards Belsvlei wetland.
  - 11.7.3 Where possible, earth side drains must be used in favour of concrete side drains (especially between approximately km 10.8 and km 12.8), as these will facilitate the infiltration and slowing

down of runoff water which will, in turn, aid with the settling out of pollutants and alien plant seeds.

- 11.7.4 All the side-drain and culvert outlets discharging to the side of the road between approximately km 11.3 and km 13.0 must have outlet structures that facilitate the establishment of hardy wetland vegetation (such as stone-filled stilling basins, instead of concrete stilling basins), partly because of the proximity of Belsvlei wetland to the road along this section – this wetland of high conservation importance, with the upper portions in near-natural condition, was rated to be highly sensitive to flow-related changes and moderately sensitive to water quality impacts. In addition, this portion of the road goes straight through "unnamed wetland #3", which was rated to be highly sensitive to water quality impacts and the encroachment of invasive alien vegetation. Side-drains outlets between approximately km 23.0 and km 23.5, and km 24.2 and km 25.0 should also have outlet structures that facilitate the establishment of hardy wetland vegetation because of the proximity of the tributaries of the Hartbees River that were rated to be highly sensitive to water quality impacts in their upper reaches.
- 11.7.5 Where the road alignment is in close proximity to freshwater ecosystems that are highly sensitive to water quality impacts (i.e. mainly between km 10.8 and km 12.8), consideration must be given to the installation of sediment traps and oil separators along the side drains of the road or at outlet points. This will further reduce the risk of water quality impacts associated with runoff from the road.

12. In accordance with the comment from Heritage Western Cape ("HWC") dated 22 June 2011, and the recommendations of the heritage specialist (Aikman Associates, April 2011), the following must be adhered to:

12.1 A detailed plan for the upgrading of the entire route of the MR269 must be prepared by a landscape architect and submitted to HWC before construction commences.

12.1.1 The terms of reference for the landscape architect must be that the rural character of the route is to be retained (i.e. simple earth side drains and natural stone must be used rather than concrete wherever possible and there must be extensive tree planting together with the rehabilitation and re-vegetation of the cut-and-fill slopes).

- 12.1.2 The plan must include the provision and design of viewing points along the route (taking cognizance of the botanist's recommendations, see Condition 9.11).
  - 12.1.3 A Conservation Management Plan for the historic wagon track, "Sannie Louw se Pad", and the rehabilitation of the decommissioned Shaw's pass road must be included.
  - 12.1.4 The site of "Sannie Louw se Pad" must be memorialized with suitable interpretive material. The detailed design and interpretation must be approved by HWC.
13. In accordance with the recommendations of the archaeological specialist study (J. Kaplan, November 2010), the integrity of the historic wagon trail on Shaw's Mountain Pass, which is protected in terms of the National Heritage Resources Act, 1999 (Act No. 29 of 1999), must be maintained at all times. Measures must be put in place to protect the feature from any direct or indirect impacts associated with the proposed new road, such as blasting or cutting. There is the danger of rocks and debris being dislodged caused by destabilisation of the slopes during construction activities, which may impact on this important feature. The engineers working on the road must ensure that the site is protected from all road related construction work.
14. As recommended by the heritage specialist who studied the proposed borrow pit sites (J. Orton, 1 February 2008), any temporary infrastructure required during mining of the borrow pits should be set up in areas screened from the road by trees as far as possible (but not on areas of indigenous vegetation).
15. As agreed to by the project team and the landowner of an adjacent property on the route of the MR269, Mr James Davison, an earth berm must be constructed and landscaped with indigenous vegetation to reduce the noise impact of the upgraded road on his chicken farming operations. The positioning and appearance of the berm must be finalised in consultation with the fresh water specialist, the botanical specialist and Heritage Western Cape so that no watercourses, indigenous vegetation or aesthetic viewsheds are affected by the proposed berm.
16. The recommended conditions stated by the Environmental Assessment Practitioner, Guillaumne Nel Environmental Consultants, on Page 190 (Section M) of the Final EIA Report dated 4 August 2011, must be implemented.
17. The Environmental Management Plan ("EMP") dated 4 August 2011 (and submitted as Section N of the Final EIA Report) is approved with the following amendments, and must be adopted and implemented:

- 17.1 An Environmental Awareness Training Programme for the construction personnel must be undertaken before construction commences.
  - 17.2 A section specifying fines and penalties for breaches of the EMP provisions must be included. A record of all fines issued by the ECO must be kept.
  - 17.3 A record of all complaints received from the public during construction and/or operation must be recorded.
  - 17.4 Add the following statement: Should the EMP be further amended in the future, the amended draft must be submitted to this Department for approval.
  - 17.5 Declaration pages, signed by all those with responsibilities in terms of implementing the measures outlined in the EMP, are required to be attached to the EMP. A signed copy of the declarations must be submitted to this Department before construction commences.
  - 17.6 The EMP must include all of the conditions specified in this authorization that refer to inclusions into the EMP, i.e. Conditions 10.2, 11 and the rehabilitation procedures in Condition 9.
18. The Waste, Water and Electricity Consumption Minimisation Plan (included in Section N of the Final EIA Report dated 4 August 2011) must be adopted and implemented.
  19. The holder of this authorisation must appoint a suitably qualified and experienced Environmental Site Manager/ ECO for the construction phase of the development, before commencement of any land clearing or construction activities, to ensure that the mitigation/rehabilitation measures and recommendations referred to in this authorisation are implemented and to ensure compliance with the provisions of the EMP. When applicable, the ECO must liaise with the relevant botanical specialists and freshwater specialist when the construction phase enters Shaw's Pass or watercourses, respectively.
  20. Should any heritage remains be exposed during excavations, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)). Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.
    - 20.1 If any archaeological remains (including, but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, marine shell heaps, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to

Heritage Western Cape and must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.

20.2 If any graves or unmarked human burials are discovered, they must be treated with respect and the South African Heritage Resources Agency ("SAHRA") must be notified immediately and the burials must not be disturbed further until the necessary approval has been obtained from SAHRA. An archaeologist must be contracted to remove the remains at the expense of the developer.

21. The applicant must in writing, within **12 (twelve)** calendar days of the date of the decision on the application –

21.1 notify all registered interested and affected parties of –

21.1.1 the outcome of the application;

21.1.2 the reasons for the decision; and

21.1.3 the date of the decision;

21.2 Inform all registered interested and affected parties of the appeal procedure provided for in Chapter 7 of the Regulations.

21.3 Inform all registered interested and affected parties of the manner in which they can access the decision;

21.4 Advise all registered interested and affected parties that, should they wish to appeal, they must lodge a notice of intention to appeal with the Minister within 20 (twenty) days of date of the Department's decision and must submit their appeal within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in regulation 60(1), for the lodging of the notice of intention to appeal.

21.5 Inform all registered interested and affected parties that the prescribed Notice of Intention to Appeal- and Appeal forms are obtainable from the Minister's office at telephone number (021) 483 3721, email [jaap.devilliers@pgwc.gov.za](mailto:jaap.devilliers@pgwc.gov.za) or via the URL <http://www.capegateway.gov.za/eadp>.

21.6 Inform all registered interested and affected parties that should they wish to appeal, the appellant must serve on the applicant, within 10 (ten) days of having submitted the Notice of Intent to Appeal with the Minister, a copy of the Notice of Intention to Appeal form as well as a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.

21.7 If the applicant should decide to appeal the decision, the applicant must -

- 21.7.1. lodge a notice of intention to appeal with the Minister, within 20 (twenty) days after the date of the decision.
- 21.7.2 submit the appeal within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in regulation 60(1), for the lodging of the notice of intention to appeal.
- 21.7.3. within 10 (ten) days of having lodged the Notice of Intention to Appeal, provide each person and organ of State registered as an interested and affected party in respect of the application, with –
  - 21.7.3.1 a copy of the Notice of Intention to Appeal form;
  - 21.7.3.2 a notice indicating where and for what period the appeal submission will be made available for inspection by such person or organ of State, on the day of lodging it with the Minister, and that a responding statement may be made on the appeal within 30 (thirty) days from the date the appeal submission was lodged with the Minister. A person, organ of State or applicant who submits a responding statement in terms of regulation 63(1) must within 10 (ten) days of having submitted the responding statement, serve a copy of the statement on the appellant.
- 22. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his behalf, including but not limited to, an agent, sub-contractor, employee or any person rendering a service to the holder of the authorisation.
- 23. Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.
- 24. The holder of the authorisation must notify this Directorate and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhered to.
- 25. A copy of this authorisation must be kept at the property where the activity(ies) will be undertaken. The authorisation must be produced to any authorised official



of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property. After construction is completed, a copy of the authorisation must be kept at the Municipal offices closest to the site.

26. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
27. Non-compliance with a condition of this authorisation may result in the withdrawal of the authorisation and may render the holder liable for criminal prosecution.
28. This Department must be notified, within 30 days thereof, of any change of ownership and/or project developer. A request for the transfer of the rights and obligations contained in this environmental authorisation must be submitted in the following way:
  - (i) The current holder of the environmental authorisation must submit an original signed letter to the Department stating that he/she wish the rights and obligations contained in this environmental authorisation to be transferred, provide the Department with (a) confirmation that the environmental authorisation is still in force (i.e. validity period have not yet expired or the activity(ies) was lawfully commenced with), (b) the contact details of the person to whom the rights and obligations are to be transferred, and (c) the reasons for the requested transfer.
  - (ii) The person to whom the rights and obligations are to be transferred must also submit an original signed letter to the Department (a) accepting the rights and obligations contained in this environmental authorisation and (b) must indicate that he/she has the ability to implement the mitigation measures and to comply with the conditions of authorisation.If the transfer is found to be appropriate by the Department, it will issue a letter confirming the transfer of the rights and obligations contained in this environmental authorisation.
29. Departmental officials shall be given access to the property referred to in B above for the purpose of assessing and/or monitoring compliance with the conditions contained in this environmental authorisation, at all reasonable times.
30. The activities which are authorised may only be carried out at the property indicated above.

31. Notwithstanding this authorisation, the holder of the authorisation must still comply with any other statutory requirements that may be applicable to the undertaking of the activity.
32. These activities must commence within a period of **five (5) years** from the date of issue of this authorisation. If commencement of the activities does not occur within this period, this authorisation lapses and a new application for environmental authorisation must be made in order for the activities to be undertaken, unless the holder of this environmental authorisation has lodged a valid application for the amendment of the duration of expiry of this authorisation before the expiry of this authorisation, in which case, the validity of this environmental authorisation is automatically extended from the day before this environmental authorisation would otherwise have expired until the amendment application for extension is decided ("the period of automatic extension"). The activities, including site preparation, may not commence during the period of automatic extension.

#### **H. REASONS FOR THE DECISION:**

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) The information contained in the Application Form dated 5 February 2008;
- b) The information contained in the Final Scoping Report dated 7 August 2008;
- c) The information contained in the Final Environmental Impact Assessment ("EIA") Report dated 26 March 2010;
- d) The information contained in the correspondence from D. Euston-Brown dated 10 August 2010, the response from EnviroDinamik dated 20 August 2010 and the subsequent correspondence from D. Euston-Brown dated 25 August 2010;
- e) The information contained in the Additional Information Submission dated 12 August 2010;
- f) The information contained in the Amended Final EIA Report dated June 2010 (received on 12 August 2010);
- g) The information contained in the re-submitted Application Form dated 17 August 2010;
- h) The information contained in the Amended Final EIA Report dated 9 November 2010 (subsequently retracted by applicant);
- i) The information contained in the new Draft Final EIA Report dated 27 May 2011 (received on 1 June 2011);
- j) The information contained in the new Final EIA Report dated 4 August 2011 (received on 10 August 2011);

- k) The comments received from interested and affected parties throughout the process and the responses given by the applicant and/or Environmental Assessment Practitioner, as submitted with the Scoping and EIA Reports;
- l) The comments received from CapeNature (dated 22 July 2008, 22 July 2009, 19 March 2010, 5 November 2010 and 29 June 2011), Heritage Western Cape (dated 22 June 2011), the Department of Agriculture (dated 28 July 2008, 27 July 2009, 15 March 2010, 12 April 2010 and 18 July 2011), the Department of Agriculture, Forestry and Fisheries (28 May 2010), the Department of Water Affairs (dated 29 July 2009), the Breede-Overberg Catchment Management Agency (dated 25 July 2011), Overstrand Municipality (dated 21 July 2009) and Theewaterskloof Municipality (dated 11 March 2011).
- m) Relevant information contained in the Departmental information base including - the Guidelines on Public Participation, Alternatives and Exemptions (dated August 2010); and -
- n) The objectives and requirements of relevant legislation, policies and guidelines, including Section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were the most significant, is set out below.

#### **Freshwater Ecosystem Sensitivity**

A number of negative impacts were identified that relate to the alignment of the proposed road upgrade, particularly between approximately km 11.0 and km 12.2, where the road crosses through two unnamed wetlands. A number of mitigation measures would need to be implemented to minimise the alteration of the hydrology of freshwater ecosystems that is predicted as a result of the alignment of the proposed road. These mitigation measures would reduce the residual impacts to low significance. The unavoidable loss of some riparian and/or wetland habitat in the road reserves and adjacent areas, which would occur during the construction-phase of the road upgrade, would be of low to medium significance with the implementation of the recommended mitigation measures. The potentially negative operational-phase impacts associated the road upgrade all relate to the increased conveyance of contaminants and alien plant seeds along the side drains of the road. One of the major positive operational-phase impacts that would be associated with the proposed road upgrade would be the reduction of sediment inputs into freshwater ecosystems, which currently occurs as a result of runoff from the gravel

road surface. This positive impact was assessed to be of high significance. The competent authority has made the recommended mitigation measures of the freshwater specialist conditional in this decision.

### **Botanical Sensitivity**

#### *The Borrow Pits: Specialist: D. McDonald (11 February 2008)*

The severity of alien invasive plant impacts at sites HA1 (Nuirton 1), HA3 (Hemelrand) and HA5 (Karwyderskraal), resulted in the botanical specialist's conclusion that no reason can be found to prohibit the establishment of borrow pits at these sites. These are the only three borrow pit sites approved by the competent authority. Site HA2 (Nuirton 2) has a large number of invading alien plants of a number of different species but the fynbos plant community has not lost its integrity and therefore should not be disturbed any further and no borrow pit should be established there. Site HA4 (Spookfontein) is the site where the fynbos is in good condition, where alien invasive species have been controlled and where establishment of a borrow pit would introduce unacceptable disturbance hence establishment of a borrow pit at this location is strongly discouraged. The competent authority excluded these sites from the authorisation. The competent authority has furthermore included a condition related to the rehabilitation of the three authorised borrow pit sites after construction of the road is complete.

#### *The Spoil Sites: Specialist: D. Euston-Brown (28 July 2010)*

Spoil Sites B and C were found to be unsuitable from a botanical perspective and should not be permitted. Spoil Site D is partly under cultivation so only a portion was said to be acceptable from a botanical perspective, however, Site D was dismissed entirely as the freshwater specialist did not support it. Spoil Sites A and E are more suitable and are permitted, provided that an Ecological Management Plan is in place. The competent authority approved only sites A and E and the rehabilitation of the spoil sites is included in the Environmental Management Plan (dated 4 August 2011) that has been made conditional to this authorization.

#### *The 14.4km Section of Gravel Road: Specialist: D. McDonald (6 May 2009)*

The botanical specialist who assessed the vegetation alongside the gravel section of the road concluded that, in general, there is very little undisturbed fynbos along the 14.4km section of unfarred road. Where fynbos does occur it is either impacted by invasive alien plant species to a greater or lesser extent or the growth is extremely inhibited by the dust. The fine dust from the gravel road was found to cover the roadside plants for the whole distance of the sampled section of road and has a

marked effect on the growth and vigour of the plants. A reasonably large stretch of Overberg Sandstone Fynbos was found near Hemelrand but it is in poor condition due to the dust. If that impact were removed, it would recover and be an important roadside remnant. The fynbos investigated along the tarred section of road at the beginning of Shaw's Mountain Pass is in remarkably better condition than the patches found on the untarred section of road. It is therefore concluded that the sealing of the road will not only be positive for motorists but will have a positive effect on the roadside vegetation because there will no longer be fine dust coating the plants. It is predicted that a positive spin-off from the hardened surfacing of the road will be the enhancement of the natural fynbos vegetation and encouragement of its growth.

Shaw's Mountain Pass: Specialists: D. Euston-Brown (28 July 2010) and C. Boucher (28 January 2011)

Both botanical specialists who studied the Shaw's Mountain Pass re-alignment stated that the impact on botanical diversity would be very high and the "no-go" option was preferred. The C. Boucher report studied five different route alternatives and ranked them from lowest to highest botanical impact, i.e. Options 1, 2, 4, 3 and 5 (see the paragraph entitled Alternatives below). CapeNature stated (in their comment dated 29 June 2011) that it will be impossible to reduce the impacts on biodiversity to anything less than high negative significance, at a regional scale, regardless of which realignment or what mitigation measures are implemented. However, they stated that should the realignment of the road at Shaw's Pass be considered for approval, that Alternative 4, with only two lanes, be the only alternative that is considered. They requested that all the mitigation measures, as recommend by the botanical and freshwater specialists, be included in the conditions of authorisation. Alternative Option 4 is the route alternative authorised in this decision (see Appendix A) and all the mitigation measures proposed by the specialists have been made conditional in the decision.

Shaw's Mountain Pass houses a unique assemblage of plant species, with an exceptionally high number of rare, endemic and threatened species. There are at least twelve threatened species within the footprint of the authorised route for the proposed re-alignment. Importantly, these species include the critically endangered *Erica xeranthemifolius* whose total known population is restricted to within a few kilometres of this site. A species listed as critically endangered is understood to be facing a high risk of extinction and no further loss of habitat should be permitted as the conservation of all remaining sub-populations is thought necessary if the species is

to survive in the long term. Two other species of major concern found within the proposed footprint are *Centella dolichocarpa*, only known from two other sites and listed as rare in the Red List of South African Plants and *Erica paucifolia subsp cilliata*, listed as endangered, also known only from two locations and limited to an area of around 50km<sup>2</sup>. The indigenous vegetation types found in the Shaw's Mountain Pass area are Overberg Sandstone Fynbos (Critically Endangered), Elim Ferricrete Fynbos (Endangered), Western Rûens Shale Renosterveld (Critically Endangered), Rûens Silcrete Renosterveld (Critically Endangered) and Western Coastal Shale Band Vegetation (Least Threatened).

The sensitivity and high conservation value of the Shaw's Mountain Pass area was the greatest concern when evaluating the application for authorisation. As a result, the competent authority insisted upon the rigorous investigation of alternatives as well as a biodiversity offset. Further detail in this regard follows in the paragraphs below.

#### **Motivation for the Proposed Upgrade and the Re-alignment at Shaw's Mountain Pass**

In terms of the Road Infrastructure Strategic Framework for South Africa ("RISFSA") classification, the MR269 (R320) is a Class 3 distributor road and the road forms an important link between the N2 at Caledon and the R43 to Hermanus. It also serves communities at Solitaire and Tesselaarsdal. Traffic volumes have increased to such an extent that the gravel road section cannot be maintained adequately which leads to complaints by road users. Dust is a major problem during the dry season. Loose gravel and dust may have contributed to many vehicle accidents on the gravel section. Other accidents may be due to the sub-standard and inconsistent road geometry. Over the recent years a large number of vineyards and orchards have been established along the Hemel-en-Aarde Road. The establishment of wine estates along the route is also increasing steadily, attracting more and more tourists to the scenic Hemel-en-Aarde Valley. The increase in tourist traffic and the transport of the respective produce to the market place have led to the rapid deterioration of the road condition. The more the traffic load, the more the situation deteriorates. The aim of the Department of Transport and Public Works' Road Infrastructure Branch is to upgrade the current gravel road to surfaced standard in order to improve maintenance, mobility and safety as the current gravel road cannot be adequately maintained as a gravel road due to the high traffic volumes. Normal gravel roads are constructed for no more than 300 vehicles per day. In 2008, approximately 700 vehicles used MR 269 per day and the current estimate is around 1000 vehicles per day.

It is expected that traffic loads will increase when the remaining 14 km of gravel road is upgraded to a surfaced standard, mainly as a result of the increase in tourist traffic and change in agriculture. It is therefore expected that more drivers that are foreign to the road and longer vehicles (e.g. agricultural trucks and delivery trucks) will use the road, which impacts on the appropriate design standards for Shaw's Mountain Pass and the rest of MR 269. The Department of Transport and Public Works, as responsible road authority, is initiating the current work from a road maintenance and safety perspective as it is required to ensure that appropriate road design standards are applied whenever roads are upgraded. In terms of the Constitution the road user has a right to a safe environment and the National Road Traffic Act, 1996 (Act No. 93 of 1996) and various road safety and geometric design manuals lay down road design standards that road authorities must apply. These standards are based on international best practice and aim to provide a predictable and reliable interaction between the road user, the vehicle, the road surface and the road environment and to eliminate unexpected low standards that may lead to accidents. It is the ethical and moral duty of the road authority to provide safe roads and deviation from these standards may be used in court cases to determine if a road authority was negligent.

According to the Engineers, the geometric design standards for MR269 varies from 100 km/h along the section from Caledon to Shaw's Mountain Pass and 70 km/h for the rest of the road to Sandbaai – except for the two passes. The existing sharp horizontal curves (hairpin bends) on Shaw's Mountain Pass require traffic to slow down to approximately 20 km/h, and longer vehicles have to cross over the center line in order to turn around the bend. This increases the risk of "side swipe opposing direction" type collisions. This means that although speed may be reduced on the bend, large trucks may be in the way of oncoming traffic at the sharp hairpin turns which is a large safety risk. It is acceptable to lower the design speed over the Pass sections, but there are lower limits where unexpected low standards become a safety hazard. With a 100 km/h design speed on the Caledon side and a 70 km/h design speed on the downhill side of the Shaw's Mountain Pass, a 60 km/h design speed for Shaw's Mountain Pass could be fitted on the proposed alignment. This difference in standards can be adequately signed with road signs, but lower standards (i.e. a more radical reduction in speed through the bends) would not be expected on this type of road and could lead to more accidents.

The Department is required to take a holistic approach when considering the environmental impacts of a proposed development, i.e. social, economic and

biophysical impacts must be assessed and considered. The proposed re-alignment of the MR 269 at Shaw's Mountain Pass involves two main opposing impacts: the significantly positive social impact of improving the road quality and safety of the Pass, and the significant negative biophysical impact of disturbing an area of endemic and critically endangered vegetation in the area where the Pass is to be re-aligned.

The Department insisted on the exhaustive investigation of all possible alternatives to the route re-alignment over Shaw's Mountain Pass in order to preferably avoid, and thereafter minimise, the anticipated impact on biodiversity. The applicant investigated a number of alternative routes, including the option of keeping the existing alignment (see the Alternatives paragraphs below). The alternatives were also presented to the botanical specialist and CapeNature for their input. It was determined that all of the alternatives would have a high negative impact on the biodiversity on the Pass. However, the botanical specialist ranked the alternatives from lowest to highest impact, with the "no-go" option being the most preferred. Due to technical feasibility and safety standards, the two lowest impact alternatives from a biophysical point of view were not supported by the applicant. As a result, the third lowest impact alternative from a biophysical perspective (Alternative 4 as authorised by the competent authority) was selected as the applicant's preferred option. Even with mitigation, the proposed re-alignment of Shaw's Mountain Pass would result in a residual negative biophysical impact. As a result, detailed discussions between the competent authority, CapeNature, the botanical specialist and the applicant followed and it was decided that a biodiversity offset (as per the Department's Draft Guideline on Biodiversity Offsets, 2006) must be investigated.

### **The Biodiversity Offset**

The Department's Draft Guideline on Biodiversity Offsets (2006) describes offsets as conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity. Biodiversity offsets are only considered as a mechanism to compensate for residual biodiversity impacts, after a developer has proven that reasonable and responsible actions have been taken to avoid, minimise and mitigate biodiversity impacts resulting from a proposed development. It needs to be interpreted as a last resort in biodiversity impact mitigation options. A precautionary approach requires that offsets have to be "like-for better" and thus a ratio of land area lost to a development versus land area to be gained for conservation must exceed 1:1. The ratio would tend to be higher when the significance of the residual



impacts is higher. Ratios need to be set on a case-by-case basis. The ratio agreed upon for the residual impact of the loss of critically endangered vegetation as a result of re-aligning Shaw's Mountain Pass, was 1:30. This meant that, for the 1.02 hectares of natural vegetation lost, at least 30 hectares of land of the same vegetation type would be required to be secured for conservation.

As the vegetation in the Shaw's Mountain Pass area is critically endangered, and only occurs on a few hectares in this area and nowhere else on the planet, offsets in other areas would not be appropriate. The Remainder of Farm Muirton No. 536, Caledon, which includes part of Shaw's Pass, was identified as an appropriate area in which to set-aside a 30-hectare portion of land for the biodiversity offset. The biodiversity offset portion will be subdivided off the larger portion of land. Title deed restrictions would be placed on the agreed biodiversity offset portion so that no development or clearing may take place on the land. The biodiversity offset portion will be managed by the landowner in collaboration with CapeNature and Theewaterskloof Municipality in a Stewardship Programme. The applicant will make a once-off payment to fund the future management of the site. The payment will be transferred into a Management Fund that will be set up to provide for the ongoing management of the biodiversity offset portion. The applicant will transfer the amount to the Theewaterskloof Municipality who will then transfer the amount to CapeNature. CapeNature will establish the Management Fund and transfer the amount directly into the Fund. The funds will be invested in a well-known and secure financial institution in order to secure the funds and ensure proper growth of the fund. Funds to be made available for management and maintenance of the site will be generated from a percentage of the annual growth. Out of the yearly income, the owner of this land will receive a financial contribution to be used solely for the management and/or protection of this section of land (management fee included which may not be more than 30% of the yearly financial grant after investment expenses). Funds are only available for the management, alien clearing, fire protection and conservation of this mentioned biodiversity offset site and the surrounding land units (in order to protect the offset area from fire, development, alien infestation and other human related impacts) and will not be made available for day to day farming activities. Accurate records and book-keeping will be required from the offset area manager. Based upon the growth scenarios included in the Final EIA Report, a recommended amount of no less than R7.5 million has been calculated and specified in the Final EIA Report (dated 4 August 2011) and must be made available by the applicant for transfer into the Management Fund.

Besides the biodiversity offset, all the recommended mitigation measures from the specialist assessments have been made conditional to this authorisation.

The competent authority has decided that, with the implementation of the above biodiversity offset and the mitigation measures with regard to the biophysical environment (as included in Section G of this authorisation), the proposed development can be authorised.

#### **Agricultural Potential of the Land**

Following a topographical analysis and assessment of the available irrigation water, land suitable for cultivation is currently used for this purpose. The land currently lying uncultivated is either within the road reserve, in or near a wetland, botanically sensitive or on steep slopes making cultivation difficult.

The existing gravel road currently generates high levels of dust. The dust coats the agricultural plants on either side of the road and has an effect on the growth and vigour of the plants. Irrigation along sections of the gravel road, where orchards and vineyards exist, has been installed by the farmers in an attempt to keep road dust off the crops. One of the farmers upgraded a section of the road at his own cost in order to reduce the dust from the road. The upgrading and surfacing of the road is expected to improve the productivity of the crops located closest to the road due to reduced dust.

#### **Visual and Aesthetic**

The Hemel-en-Aarde Valley is of aesthetic significance and is representative of the rural landscapes of the Overstrand comprising a growing emphasis on viticulture and a traditional mix of horticulture and livestock farming. It comprises a combination of dramatic high mountains and a lush valley bottom. The MR269 possesses historical-scenic and linkage qualities as the main route through the valley. From Shaw's Mountain Pass, and elevated areas in other parts of the valley, vistas are possible over large areas of the valley and in some instances over the sea (Sandbaai). The area has high tourism potential and economic growth potential. There are a number of well-established farms already existing within the valley. The MR269 itself is therefore of aesthetic significance being a scenic route and, despite its current poor condition, is of growing tourist importance.

### **Cultural, Historic and Heritage Factors**

The Hemel-en-Aarde Valley has a complex history that was detailed in the Heritage Impact Assessment. In summary, the Hemel-en-Aarde Valley was one of the ancient routes used for the movement of great herds of livestock following seasonal grazing patterns between the interior and the coast. The route was later used by farmers of the interior and the remains of a historic wagon track were located by the archaeologist Jonathan Kaplan in his 2010 survey. The trail is recognised as a 1-2 m wide gully/track and is overgrown with fynbos. It is known as "Sannie Louw se Berg". In 1839 a new pass was constructed and was named Shaw's Mountain Pass after Lieutenant Colonel William Shaw (1790-1869) who owned several farms on the northern slopes of the Babylons Toren. The Divisional Council improved the road in the 1950s and it became an important link between Caledon and the coast, serving farms along the fertile valley. Shaw's Mountain Pass, the 8km section of the route to Caledon and the 9km section from the R43 were tarred in 1972 and upgraded in 2005.

No archaeological heritage remains were documented during the study of the proposed upgrading of the MR269. Indications are that the proposed new alignment is not a sensitive archaeological landscape. The proposed new alignment (Alternative 4) over Shaw's Mountain Pass will not impact on any important Stone Age material, but one Middle Stone Age flake was found at the top of the pass at the entrance to a large blue gum plantation. The barely visible remains of the historic wagon track on Shaw's Mountain Pass, "Sannie Louw se Berg", were documented and mapped in the areas closest to the existing tarred road. The authorised alternative over Shaw's Mountain Pass (Alternative 4) will have a minimal impact on the wagon track.

### **Social and Economic Context**

The project is located in the Overberg District Municipal area. The road falls within the jurisdiction of two local municipalities, namely the Overstrand Municipality and the Theewaterskloof Municipality. The socio-economic factors indicate that there is a great need for investment, work opportunities and development in the area. The average unemployment rate in the Overstrand and Theewaterskloof Municipal areas is 20.2%, and 81.3 % of the population lives on a monthly income of less than R1600,00. The opening up of previously inaccessible, or marginally accessible, territory to in-migration and large-scale resource harvesting could have definite socio-economic impacts on the local community. The area is characterised by farms and a rural character. The farms vary from well-established wine and produce farms to upcoming and growing farms. The farms situated next to the tarred section of road

within the first 9 km of the MR 269 (from Sandbaai) have advantages over the farms situated next to the gravel road. The farms next to the gravel road have huge dust problems and the road users have complained about the road condition which has led to damage of vehicles and subsequent higher road user costs. Tourists visiting the area from Hermanus/Sandbaai side (R43) tend to only visit farms situated next to the tarred section of the road, lowering the exposure of the farms next to the gravel road. The cost of selling produce is also much higher for farms/industries situated below the Shaw's Mountain Pass. The farm produce needs to be transported down to the R43 (Sandbaai) and around the mountains to Caledon and Cape Town area. Although this area is only about 10km from Caledon, large trucks cannot use the Shaw's Mountain Pass with its current alignment and the transport of produce needs to be routed via the R43. Due to the poor quality of the road, tourists tend to drive from Caledon towards Botrivier, and then towards Hermanus, rather than making use of the MR 269 which is a much shorter route. This has an impact on the economic feasibility of some of the farms and businesses along the MR 269.

### **Alternatives**

The applicant investigated alternatives with respect to the upgrade of the 14.4km section of gravel road, the realignment options for Shaw's Mountain Pass and alternative sites for borrow pits and spoil sites. The alternatives presented in each of the above respects are summarised below:

#### The 14.4km Gravel Road Section Alternatives

##### Option 1: Re-surface the footprint of the existing road

This option would entail the surfacing of the existing gravel road without any deviations from the existing alignment. This option was not found to be the preferred option for the following reasons:

- The horizontal alignment was sub-standard for a design speed of 70km/h at several curves in the road.
- The vertical alignment was even worse as there were quite a number of vertical curves with inadequate sight and stopping sight distances.
- The material in the existing road prism was of a very poor quality.
- Provision would have to be made for a separate deviation or bypass road for traffic during construction, which would require the importation of additional construction material.

Option 2: The construction of a surfaced road directly adjacent to the existing gravel road

This option would involve the construction of a new surfaced road directly adjacent to the existing gravel road section. This option would require less construction material than Option 1 and traffic accommodation during the construction period would be much easier and less expensive as the existing road could be used as the bypass road throughout construction. However, the sub-standard horizontal and vertical alignment of the existing road did not allow for the adjacent new road to follow the same alignment for the entire length. The preferred option was thus to combine Options 1 and 2 (see below).

Option 3: Combination of Options 1 and 2 (preferred and authorised option)

This option comprises a geometric alignment that is a combination of the existing gravel road alignment and an alignment that runs adjacent to the existing road. This is the result of adaptations made to accommodate physical limitations, requests from affected landowners and to comply with design standards. This alternative is the preferred option as it will comply with safety and design standards and is not significantly more costly. There will be a shorter construction period and thus less inconvenience to motorists.

Option 4: The "No-go" option

This option would entail the re-gravelling of the un-surfaced section of the road as no surfacing or upgrade would be taking place. The "no-go" option will not result in a reasonable road for the public to use as it will be unlikely to remain intact for the next twenty years. The dust from the existing gravel road is also having a negative impact on the growth of fynbos and agricultural produce along the road. The existing gravel road is also contributing to high sediment loads in freshwater ecosystems along the road route. These impacts will remain if the gravel section of the road is not upgraded to a surfaced standard.

*The Re-alignment of the road section over Shaw's Mountain Pass*

Option 1

This alternative results in a very steep road gradient, up to 20,8% on the Hermanus side of the mountain. The reason for this is that the route is shorter but the difference in height is relatively large which will mean that auxiliary lanes in the form of crawling lanes for slow travelling vehicles, will be required both in the uphill and downhill directions. These steep gradients are not acceptable for this class of road. This means a four-lane road, resulting in a large foot print for alternative alignment Option 1, will result in more of the area currently being occupied by endangered vegetation being claimed. Construction and operating costs will also be very high. Whilst the botanical

specialist stated that all proposed alternatives (except the "no-go" alternative) would have a high negative impact on the vegetation, Option 1 was stated as having the lowest of the five impact scores.

#### Option 2

The maximum gradient on the Hermanus side of the mountain for alternative alignment Option 2 is 15,1%, which is still very steep and will also mean that auxiliary lanes in the form of crawling lanes for slow travelling vehicles, will be required both in the uphill and downhill directions. This alternative thus also requires four lanes. These steep gradients are generally not acceptable for this class of road. This alternative route will also have a larger impact on the identified historical wagon trail than some of the other alternatives. The botanical specialist stated that Option 2 had the second lowest of the five impact scores.

#### Option 3

Alternative alignment Option 3 is similar to alternative alignment Option 2, but is located slightly more to the east with a maximum gradient of 16,1%. The limitations and negative effects of this option correspond to that of Option 2. This option has an even bigger effect on the historical wagon trail and will also require four lanes. The botanical specialist stated that Option 3 had the fourth lowest of the five impact scores.

#### Option 4 (the preferred and authorised option)

The alternative alignment Option 4 is the preferred option from a technical perspective. Although the vertical alignment is still on the steep side in geometrical terms, the warrants for auxiliary lanes are regarded as a border line case and it was decided to omit auxiliary and crawling lanes for this option. Only two lanes will therefore be required for this option. According to geotechnical investigations side slopes of the cutting can be stable at  $\pm 45^\circ$ . Option 4 has a minimal impact on the historical wagon trail identified in the heritage report and the horizontal and vertical alignment is the most acceptable from a geometric design standards perspective. The botanical specialist stated that Option 4 had the third lowest of the five impact scores.

#### Option 5

The alternative of retaining the existing alignment and upgrading the road to four lanes was not preferred as both the two existing sharp horizontal curves and a section where the vertical alignment are too steep, are sub-standard and pose a danger to motorists. Trucks and busses will not be able to turn in their specific lane at these sharp curves and can negotiate the steep gradients only at crawl speeds. The danger of trucks losing their loads and overturning also exists. This alternative will have the

highest biophysical impact from a botanical and ecological perspective. The botanical specialist stated that Option 5 had the highest of the five impact scores.

#### Option 6 (the "No-go" option)

The alternative of not re-aligning Shaw's Mountain Pass was not preferred as both the two existing sharp horizontal curves and a section where the vertical alignment are too steep, are sub-standard and pose a danger to motorists, especially if the upgrading of the gravel road is completed as this will result in motorists travelling at higher speed. Furthermore, trucks and busses will not be able to turn in their specific lane at these sharp curves and can negotiate the steep gradients only at crawl speeds. This can therefore result in vehicles driving into the side of oncoming trucks as these trucks will not be able to negotiate the turns within their own lanes. The danger of trucks losing their loads and overturning also exists. The lowest design speed for curves on this class of road is approximately 60km/h, with the inclusion of New Jersey barriers, rumble strips and sufficient road signage. The safe speed at which the current alignment can be negotiated is 10 to 20 km/h. Even at these speeds heavy vehicles will still not be able to stay within their demarcated lane widths, posing a serious risk to oncoming traffic. It follows that the existing curves are sub-standard to such a degree that retaining them will lead to an increase in fatal accidents and subsequently higher road user costs.

#### The Borrow Pits

Nine borrow pit sites were originally assessed. Seven of these were deemed feasible from a technical perspective and were assessed further. After the seven alternatives were assessed from an ecological perspective, only three were considered feasible from both a technical and ecological perspective.

The borrow pit alternatives that are not authorised by the Department are:

MR269/12.2/R/380 HA4 Spookfontein (HA4) (the Spookfontein Borrow Pit)

MR.269/25.3/L/50 HA2 Nuirton 536 (HA2) (the Km 25/L Borrow Pit)

Karwyderskraal 584/1 NA Karwyderskraal 584/1 (the FJP Lotter Trust Pit)

Farm 587/34 NA Farm 587/34 (Northall Citrus Farm (Pty) Ltd)

The borrow pit sites that are authorised by the Department are:

MR.269/13.5/R/380 HA3 Hemelrand (the Hemelrand Borrow Pit)

MR.269/25.4/R/100 HA1 Nuirton 536 (HA1) (the Km 25/R Borrow Pit)

MR.269/12.2/R/380 HA5 Karwyderskraal (the Karwyderskraal Borrow Pit)

### The Spoil Sites

Five spoil sites were proposed for the upgrading of MR269. Spoil Sites A to D are located relatively close to one another and near to MR269, between km 11 and km 13. Spoil Site E is located somewhat further to the east, along the Tesselaarsdal Road (Divisional Road 1257), approximately 3 km from the intersection with MR269 between km 23.5 and km 24.0. All five proposed spoil site locations are on privately owned land.

#### Spoil Site A (Authorised)

The proposed location for Spoil Site A is a disturbed area dominated largely by Kikuyu grass, which is currently used for grazing cattle. The botanical assessment by Euston-Brown (2010) confirmed that the site is degraded and has little conservation value. Spoil Site A is not located in a wetland, but is within 20 to 25 m of the Belsvlei wetland system and the Unnamed Wetland #2. Spoil site A is considered to be acceptable from a freshwater as well as a botanical perspective.

#### Spoil Sites B and C (Not authorised)

Spoil Sites B and C would be located adjacent to one another in areas that, from a botanical perspective, were found to be similar in terms of their species composition and habitat type – both sites were previously covered with dense stands of alien gum trees, pine trees and wattle, which were cleared by Working for Water teams a few years ago. Subsequent to the alien clearing, both sites have been burnt. The recovery of the natural Overberg Sandstone Fynbos, following the alien clearing and the fire, has been good. Spoil Sites B and C are considered to have significant conservation value from a botanical perspective. The presence of wetland conditions was confirmed by the freshwater specialist, with the soils and vegetation over large parts of the areas proposed for Spoil Sites B and C being indicative of wetlands. These sites are thus not acceptable from a botanical and freshwater perspective.

#### Spoil Site D (Not authorised)

A vineyard has been cultivated over part of proposed spoil site D. The other section is degraded Overberg Sandstone Fynbos. The fynbos is recovering on lands that have been ploughed. The fynbos has had alien vegetation cleared from it recently. The upper section of the spoil site includes a sensitive seepage area that should be avoided. The south-eastern edge of the proposed spoil site encroaches into a relatively intact hillslope seep area with *Berzelia lanuginosa* that forms part of the less impacted portion of Unnamed Wetland #3 to the south of MR269. Spoil site D is not acceptable from a botanical and freshwater perspective.

#### Spoil Site E (Authorised)

The impact of the loss of habitat from Spoil Site E is regarded as medium to low because it is situated on an old ploughed land and because the habitat was



critically endangered Elim Ferricrete Fynbos that is in the process of recovering on the site. However, none of the species found on the site were threatened. Restoration of the soil site is unlikely to be successful because the spoil will raise the ground above the seepages, and the altered soil will not support the original vegetation. Thus, Spoil site E will be used as a spoil site for the proposed upgrading as it is acceptable from a botanical and freshwater perspective, as it is not located within a wetland area.

### **Public Participation**

Two Environmental Assessment Practitioners ("EAPs") were involved with this application, EnviroDinamik (during the Scoping and Draft EIA stages) and Guillaume Nel Environmental Consultants ("GNEC") (during the Final EIA stage). Both conducted a Public Participation Process ("PPP") at different stages of the application. The PPP is summarised below:

#### EnviroDinamik:

EnviroDinamik conducted an initial PPP in 2008 that comprised the following:

- Notice boards were placed on site and at the Municipality on 17 February 2008;
- Registered letters were distributed to all surrounding landowners within 100m of the boundary of MR269;
- A registered letter was sent to the ward councilor;
- A 30-day comment period was given for interested and affected parties ("I&APs") to submit their issues and concerns;
- Newspaper advertisements were placed in English and Afrikaans in the Overberg Media, "Die Burger" and the "Cape Argus" on 17 April 2008;
- All notices contained information regarding the proposed development, the DEA&DP reference number and relevant contact details for submission of comments. The notices stated that a public meeting would be held on 24 April 2008;
- Interested and Affected Parties registered by completing registration forms and forwarding comments by email, fax and telephone. The I&APs comments were captured on a database, acknowledged and forwarded to the relevant specialists for their consideration.

The Draft Scoping Report was made available to registered I&APs for a 30-day Public Review Period on 23 June 2008. Issues raised during this process were

included in the Final Scoping Report which was submitted to the competent authority on 7 August 2008.

The Draft Environmental Impact Assessment ("EIA") Report was made available for public comment for a period of 30 days on 26 June 2009. Based on the comments received, amendments were made to the report and an Amended EIA Report was circulated again for comment on 26 February 2010. Comments on the draft and amended reports were incorporated into the Final EIA Report which was submitted to the competent authority on 26 March 2010. Following a request for an amendment of the EIA Report from the competent authority, an Amended Final EIA was prepared and circulated to I&APs for comment on 28 June 2010. The Final Report was submitted to the competent authority on 12 August 2010.

The competent authority requested additional information to address outstanding concerns on 1 October 2010 and, as a result, a further amended version of the Final EIA Report was drafted and submitted on 9 November 2010. Due to outstanding information, this report was, however, retracted by the applicant in order to prepare a new Amended Final EIA Report that satisfied the competent authority's requests detailed in the letter dated 1 October 2010.

#### GNEC:

An additional advertisement, notifying the public that GNEC has been appointed to complete the EIA process, further notifying them of the EIA process and requesting I&APs to register with and submit their comments to GNEC, was placed in the regional Afrikaans newspaper, the Overberg Venster, on Friday 3 June 2011. Additional site notices were erected at 5 new locations next to the road. Direct notifications (registered Letters) were also sent to key stakeholders, notifying them that GNEC has been appointed to take over the EIA process and further notifying them of the additional EIA PPP process. The letters further requested I&APs to submit any new comments to GNEC. These registered letters were sent on 30 May 2011 and I&APs were given until 4 July 2011 to send possible issues and/or concerns. I&APs who received these letters comprised of the following: provincial authorities, local authorities, ward councilors, non-governmental organisations, directly adjacent landowners; and other I&APs. Furthermore, new Background Information Documents were dropped at the farms along the gravel section of the road. I&APs registered by completing registration forms and forwarding comments by email, fax and telephone. The I&APs comments were captured on a database, acknowledged and forwarded to the relevant specialists for their consideration.

A new EIA report was compiled by GNEC. This 2nd Draft Final EIA Report was made available from 30 May 2011 to 4 July 2011. All comments received were included in the report. Changes were made to the Draft Final EIA Report based on comments received and the preferred layout was slightly amended as a result. All comments were taken into consideration and were responded to in the Issues and Response sections. The Final EIA Report was submitted to the competent authority on 10 August 2011.

Several meetings with the competent authority, Cape Nature, Heritage Western Cape and the applicant were held in 2011. Meetings were held with the Badenhorst family in order to secure the offset area and a meeting was also held with James Davidson (owner of chicken broilers next to the existing road) to address his concerns.

The Department took into account all I&AP comments as well as the responses to these comments from the applicant and/or the EAPs. The Department is of the opinion that the concerns of the I&APs have been adequately addressed in the Final EIA Report and the measures included as conditions of this authorisation, together with the biodiversity offset, will ensure that these concerns are accommodated in the decision.

This Department is satisfied with the PPP that was undertaken for the proposed development.

In view of the above motivation, this Directorate is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and that detrimental environmental impacts resulting from the proposed activity have been mitigated as far as possible, with the inclusion of the biodiversity offset. The application is accordingly granted.

## **I. APPEAL**

Appeals must comply with the provisions as outlined in Chapter 7 of the Regulations.

If the applicant should decide to appeal, the applicant must, in terms of, regulation 60(1), lodge a Notice of Intention to Appeal with the Minister, within 20 (twenty) days

after the date of the decision, and must within 10 (ten) days of having submitted the notice contemplated in Regulation 60(1), provide each person and organ of State registered as an interested and affected party in respect of the application with a copy of the Notice of Intention to Appeal; a notice indicating where and for what period the appeal submission will be made available for inspection by such person or organ of State on the day of lodging it with the Minister, and indicate that a responding statement may be made on the appeal within 30 (thirty) days from the date the appeal submission was lodged with the Minister.

A person, organ of State or applicant who submits a responding statement in terms of regulation 63(1) must within 10 (ten) days of having submitted the responding statement, serve a copy of the statement on the appellant.

If the applicant should decide to appeal, the applicant must submit the appeal within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in regulation 60(1), for the lodging of the Notice of Intention to Appeal.

Should any other person, or an interested and affected party, decide to appeal, they must, in terms of, Regulation 60(1), lodge a Notice of Intention to Appeal with the Minister, within 20 (twenty) days after the date of the decision. An appeal must be submitted within 30 (thirty) days after the lapsing of the 20 (twenty) days contemplated in Regulation 60(1).

The appellant must provide the applicant, within 10 days of having lodged the notice contemplated in Regulation 60(1), with a copy of the notice referred to in Regulation 60(1), and a notice indicating where and for what period the appeal submission will be available for inspection by the applicant. A responding statement may be made on the appeal within 30 (thirty) days from the date the appeal submission was lodged with the Minister.

The prescribed Notice of Intention to Appeal- and Appeal forms are obtainable from the Minister's office, as well as assistance regarding the appeal processes, at telephone number (021) 483 3721, email [jaap.devilliers@pgwc.gov.za](mailto:jaap.devilliers@pgwc.gov.za) or via the URL <http://www.capegateway.gov.za/eadp>. All Notice of Intention to Appeal and Appeal forms must be submitted by means of one of the following methods:

By post: Western Cape Minister of Local Government, Environmental Affairs  
and Development Planning  
Private Bag X9186  
CAPE TOWN  
8000

By facsimile: (021) 483 4174; or  
By hand: Attention: Mr. Jaap de Villiers  
3rd floor Leeusig Building  
1 Dorp Street  
CAPE TOWN  
8001

Provincial Government, Local Authority or committees appointed in terms of the conditions of the application or any other public authority or organisation shall not be held responsible for any damages or losses suffered by the developer or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the developer with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Your interest in the future of our environment is greatly appreciated.

Yours faithfully



**ZAAHIR TOEFY**

**DIRECTOR: LAND MANAGEMENT (REGION 2)**

DATE OF DECISION: 15/09/2011

CC: (1) Mr Nel	(Guillaume Nel Environmental Consultants)	Fax: 021 870 1873
(2) Mr van Vuuren	(Overberg District Municipality)	Fax: 028 312 1894
(3) Mr Visagie	(Theewaterskloof Municipality)	Fax: 028 214 1289
(4) Mr Kuchar	(Overstrand Municipality)	Fax: 028 313 2093
(5) Ms Ralston	(CapeNature)	Fax: 021 866 1523
(6) Ms Lavin	(Heritage Western Cape)	Fax: 021 483 9842

## APPENDIX A



## APPENDIX F - Proclamation





Western Cape Government • Wes-Kaapse Regering

PROVINCE OF WESTERN CAPE

PROVINSIE WES-KAAP

Provincial Gazette

Provinsiale Koerant

8363

8363

Friday, 4 December 2020

Vrydag, 4 Desember 2020

Registered at the Post Office as a Newspaper

As 'n Nuusblad by die Poskantoor Geregistreer

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INHOUD

(\*Reprints are obtainable at Room M12, Provincial Legislature Building, 7 Wale Street, Cape Town 8001.)

(\*Herdrukke is verkrygbaar by Kamer M12, Provinsiale Wetgewing-gebou, Wualstraat 7, Kaapstad 8001.)

Table with 2 columns: No. and Page. Sections include Provincial Notices, Tenders, and Local Authorities.

Table with 2 columns: Nr. and Bladsy. Sections include Provinsiale Kennisgewings, Tenders, and Plaaslike Owerhede.

**PROVINCIAL NOTICE**

P.N. 133/2020

4 Desember 2020

**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING  
NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003 (ACT 57 OF 2003)**

**DECLARATION OF SHAW'S PASS 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), declare a nature reserve on:

- Remainder of the Farm No. 536, situated in the Theewaterskloof Municipality, Division Caledon, Western Cape Province;  
In Extent: 119, 1450 (One Hundred and Nineteen comma One Four Five Zero) hectares;  
Held by Deed of Transfer No. T46487/1980.

I assign the name "Shaw's Pass Nature Reserve" to the reserve, of which the boundaries are reflected on the Surveyor-General Diagram No. 96/2018 as set out in the Schedule. The Surveyor-General Diagram may also be viewed at <https://www.capenature.co.za/care-for-nature/stewardship/>.

Signed at Cape Town on this 29th day of October 2020.

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

P.K. 133/2020

4 Desember 2020

**DEPARTEMENT VAN OMGEWINGSAKE EN ONTWIKKELINGSBEPLANNING  
"NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003" (WET 57 VAN 2003)**

**VERKLARING VAN SHAW'S PASS 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), verklaar 'n natuureservaat op:

- Restant van die Plaas Nr. 536, geleë in die Theewaterskloof Munisipaliteit, Afdeling Caledon, Provinsie Wes-Kaap;  
Groot: 119, 1450 (Een Honderd en Negentien komma Een Vier Vyf Nul) hektaar;  
Gehou kragtens Transportakte Nr. T46487/1980.

Ek ken die naam "Shaw's Pass Natuureservaat" toe aan die reservaat, waarvan die grense weergegee word op die Landmeter-generaaldigram Nr. 96/2018 soos uiteengesit in die Bylae. Die Landmeter-generaaldigram kan ook gevind word by <https://www.capenature.co.za/care-for-nature/stewardship/>.

Geteken te Kaapstad op hede die 29ste dag van Oktober 2020.

**AW BREDELL****PROVINSIALE MINISTER VAN PLAASLIKE REGERING, OMGEWINGSAKE EN ONTWIKKELINGSBEPLANNING****ISAZISO SEPHONDO**

I.S. 133/2020

4 kweyeMnga 2020

**ISEBE LEMICIMBI YOKUSINGQONGILEYO NOCWANGCISO LOPHUHLISO**

**UKULONDOLOZWA KWENDALO YESIZWE: UMTHETHO WEENDAWO ZOLONDOLOZO EZIKHUSELWEYO, 2003  
(UMTHETHO 57 KA-2003)**

**ISIBHENGEZO SENDAWO YOLONDOLOZO NDALO ISHAW'S PASS**

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

- Ntsalela yeFama engunombolo. 536, emi kuMasipala waseTheewaterskloof, iCandelo leCaledon, kwiPhondo leNtshona Koloni;  
Ubungakanani: 119, 1450 (IKhulu neShumi eLineThoba khoma isiNye isiNe isiHlana iQanda) beebektare;  
Ephantsi kweSiqinisekiso soNikezelo loMhlaba esinguNombolo T46487/1980.

Ndinika igama elithi "INdawo yoLondolozo Ndalo iShaw's Pass" kwindawo yolondolozo ndalo, emida yayo iboniswe kuMzobo kaNocanda-Jikelele ongunombolo 96/2018 njengoko kuchaziwe kwiShedyuli. Lo Mzobo kaNocanda-Jikelele unokubonwa kananjalo kwiwebhusayithi engu-<https://www.capenature.co.za/care-for-nature/stewardship/>.

Sityikitywe eKapa ngalo mhla wama-29 kweyeDwarha 2020.

**AW BREDELL****UMPHATHISWA WEPHONDO WOORHULUMENTE BEENGINGQI, IMICIMBI YOKUSINGQONGILEYO NOCWANGCISO LOPHUHLISO**

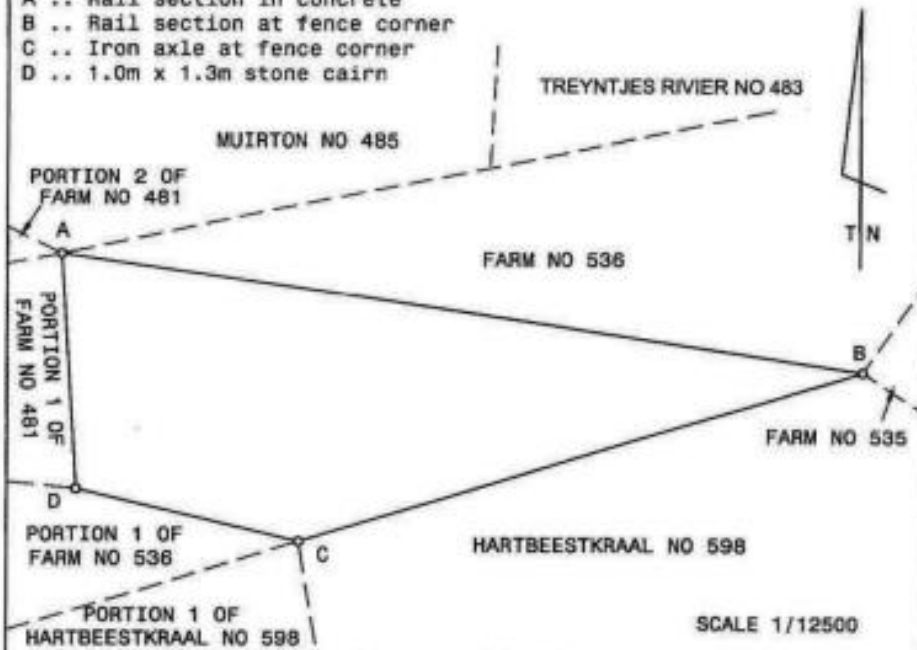
SCHEDULE/BYLAE/ISHEDYULI

Geomatics Cape File CLDN 536 Proclamation Diagram

SIDES Metres	ANGLES OF DIRECTION	CO-ORDINATES System WG 19			S.G. No.  96/2018	
		Y	X			
	Constants	±	0,00	+3700000,00	Approved <i>NH Stone</i> for Surveyor-General 25.01.2018	
AB	1764,08	278.30.00	A	- 36480,45		+ 98361,84
BC	1282,55	73.08.40	B	- 38225,15		+ 98622,60
CD	498,56	103.22.30	C	- 36997,91		+ 98995,18
DA	519,03	176.25.00	D	- 36512,88		+ 98879,88
3419/78 HARTEBEESTKRAAL		Δ	- 36457,50	+ 98889,50		
3419/81 KLEIN ZWARTRIV		Δ	- 34898,22	+ 94028,58		

BEACON DESCRIPTIONS:

- A .. Rail section in concrete
- B .. Rail section at fence corner
- C .. Iron axle at fence corner
- D .. 1.0m x 1.3m stone cairn



The figure A B C D represents 60,8794 Hectares of land, being A NATURE RESERVE OVER THE REMAINDER OF FARM NO 536

situate in the Theewaterskloof Municipality  
Administrative District Caledon Province Western Cape  
Surveyed for the purposes of declaring a Nature Reserve in terms of Section 23 (1) of the National Environmental Management Protected Areas Act, 57 of 2003 in December 2017 by me,

*R Lorton*  
R LORTON  
Professional Land Surveyor No 0931

This diagram is annexed to No. dated i.f.o Registrar of Deeds	The original diagram is No.722/1872 annexed to Transfer	File No. Cldn.536 S.R. No 42/2018 Comp. AI-388C (3358) AI-380A (3364)
	No.	LPI C0130000

Proclamation Diagram 96/2018