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# **CONSERVATION OPTIONS AND DEVELOPMENT PLAN FOR A PRIVATE CONSERVATION INITIATIVE ON THE WEST COAST**

**Prepared for: Coffeefontein, Jakkalsfontein,  
Grootwater, Tygerfontein, Uitkoms and  
Yzerfontein**

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**Submitted in partial fulfilment of the  
requirements for the Master of Philosophy  
degree in the Department of Environmental and  
Geographical Science, University of Cape Town**

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# ***EXECUTIVE SUMMARY***

University of Cape Town

## EXECUTIVE SUMMARY

### BACKGROUND TO THE STUDY

The Environmental Evaluation Unit (EEU) based at the University of Cape Town (UCT) was approached in late 2000 by a group of private landowners on the West Coast of the Western Cape, South Africa, for advice concerning the development of a conservation initiative. The landowners represent six properties located approximately 60 km north of Cape Town. Two of the properties have already been declared private nature reserves while the remaining four have limited agricultural potential. This factor, combined with the existing two private nature reserves has prompted the landowners to explore the possibility of establishing a joint conservation initiative incorporating all six properties.

The initiative also demonstrates the important role that private conservation plays in conserving South Africa's natural heritage, specifically given the states shortage of funds and lack of capacity. In terms of options, private landowners have twenty-one potential conservation options to choose from. Experience has shown that conservancies and Private Nature Reserves are the two most popular and common conservation options implemented by the private landowner.

Conservancies are essentially attempts to integrate conservation and commercial activities into viable and sustainable conservation partnerships. Conservancies develop primarily in rural areas and usually involve several landowners who are committed to both farming and conserving natural habitats. Tourism, or the potential thereof, is often the catalyst for stimulating the process of developing conservancies. The various sub-sectors of tourism, such as eco-tourism and adventure tourism in particular, are often included in conservancy partnerships.

Similarly, many private landowners within conservancies often take the next step and establish Private Nature Reserves. A Private Nature Reserve demonstrates a much stronger commitment on the part of the landowner to conservation, as it requires a formal application to the relevant nature conservation authorities and usually a re-zoning of the land.

The project explores potential conservation options for the private landowners, given the importance of the region specifically in terms of its vegetation and location in a government control water area. The area falls within the Cape Floristic Region with the Cape Floral Kingdom, which is widely recognised as being the most species rich of the world's six floral kingdoms and a biodiversity "hotspot" as a result of the threats to its existence. Potential activities and funding for the conservation initiatives are also considered, along with a preliminary biophysical review and the legal and institutional context.

Tony Barbour of the EEU has supervised the project and Barry Wiesner; a second year masters student from the Department of Environmental and Geographical Science at UCT has been the primary researcher for the project and author of this report.

### DESCRIPTION OF STUDY AREA

The study area is located approximately 80 km north of Cape Town adjacent to the West Coast road (R27) to Saldanha. It covers approximately 8000 hectares encompassing the farms Grootwater, Uitkoms, Jakkalsfontein (incorporating the farm Vyge Valley), Tygerfontein, Coffeefontein and Yzerfontein. The Atlantic Ocean forms the study areas western border and the R27 is its eastern boundary. The area also falls within the recently proclaimed West Coast

Biosphere Reserve. The Biosphere Reserve was proclaimed primarily on the basis of the areas vegetation, which is that of the Cape Floral Kingdom (CFK). The CFK is considered to be the most species-rich of the world's floral kingdoms and the most threatened, making it a biodiversity "hotspot" (DEAT, 2001) and of high conservation significance. The study area is furthermore part of the recently formed Rural West Coast Conservancy, with all but one of the study area landowners being members of the conservancy. A further conservation feature of the area is the West Coast National Park, of which the main gate is located approximately 20 km north of the area of study, with the national parks southern border less than 10 km away. These established conservation efforts highlight the value of the study area.

## **AIMS AND OBJECTIVES**

The primary aim of the project is to consider conservation options for the area. Furthermore, to provide a preliminary environmental overview of the area, based largely on existing data and make recommendations outlining the measures that would need to be considered and implemented for the establishment of a nature reserve in the area including financial models and potential sources of funding.

## **APPROACH TO STUDY AREA**

In order to consider the various conservation options, the project was divided into the divided into the following phases.

- Phase 1: Literature review and information gathering;
- Phase 2: Site visits, workshops, specialist input;
- Phase 3: Production of draft report; and
- Phase 4: Review of draft report, including a workshop, and preparation of final report.

### **Phase 1: Literature review and information gathering**

#### *Review of existing information*

Review of existing information pertaining to the area and the establishment of nature reserves was undertaken including:

- Literature review: local and international literature concerned with private nature conservation initiatives and existing reports about the area was reviewed;
- Legal and institutional requirements pertaining to the various conservation options; and
- West Coast Biosphere relevance and other relevant conservation initiatives.

### **Phase 2: Site visits, workshops, specialist input**

#### *Preliminary Biophysical Review*

In addition to the information gained from the review process, further biophysical data was obtained from site visits specifically with regards to the fauna, flora, ground and surface water.

#### *Developing a vision*

The aim of this component of the study was to develop a common vision amongst the

landowners for the establishment of the nature reserve. This vision was developed through a series of one-on-one meetings and workshops with the affected landowners and key specialists.

### *Formulate a conceptual development plan for the nature reserve*

Based on the information gained in the above objectives, a conceptual development plan for the establishment of the nature reserve was drawn up. This plan includes:

- An assessment of the ecological potential/carrying capacity of the area;
- The legal and institutional process required to establish a nature reserve; Identification of potential land-uses and activities within the area;
- Assessment of the financial implications associated with establishing and operating a nature reserve; and
- Implications of potential sources of funding for the establishment and operation of the nature reserve and related expenses.

### **Phase 3: Production of draft report**

Assimilation of the information gathered in phases 1 and 2 into and production of a draft report.

### **Phase 4: Review of draft report, including a workshop, and preparation of final report**

#### *Deliverables*

A final report containing:

- Executive summary;
- Vision statement;
- Preliminary biophysical review, based on literature review and specialist input;
- Summary of the legal and institutional requirements for the establishment of a conservancy;
- Conservation options for private landowners;
- Financial assessment of the potential costs associated with the establishment of the nature reserve, including the identification of funding options; and
- Recommendations for the conservation initiative.

## **ASSUMPTIONS AND LIMITATIONS**

As an individual student undertook this report with limited resources and time constraints, comprehensive and substantial research was not undertaken. Most data was collected from existing reports and personal communications with appropriate specialists where feasible. The report therefore provides a preliminary biophysical review of the area and outlines a potential way forward for the establishment of a private conservation initiative. Although potential models/options and activities for a nature reserve are presented and possible locations for the activities suggested, no detailed site investigation was carried out. Furthermore, the conservation initiative suggested in this report would require a thorough business plan by a specialist. The potential financial models suggested in this report should therefore be used as a preliminary guide.

## PRELIMINARY BIOPHYSICAL REVIEW

The preliminary biophysical review of the area of study is based largely on biophysical assessments prepared for the properties of Rondeberg Flats, Jakkalsfontein and Tygerfontein. Information has also been obtained from the Western Cape Nature Conservation Board, Department of Water Affairs and Forestry and relevant literature for the area. Furthermore, relevant information obtained from the various interviews conducted for this project, has also been included.

Based on the findings of the review, there are two significant biophysical attributes of the area:

Firstly the study area falls within the Yzerfontein Subterranean Government Water Control Area, and therefore overlays the Grootwater aquifer. The implication of falling within a Government water control area is that ground water abstraction is strictly controlled, with each property overlying the aquifer having a specific allocation obtained through acquiring a license from the Department of Water Affairs and Forestry. Apart from the aquifer, there are number of other hydrological features in the area of study worth noting. Three river courses and a number of important vleis and pans are scattered throughout the area.

Secondly, the coastal plain of the Western Cape falls within the Cape Floristic Region. The value of the Cape Floral Kingdom (CFK) is internationally recognised, as are the major threats to its existence. These threats include land transformation through urban and coastal development, agricultural and pastoral farming. Furthermore the spread of alien vegetation threatens the biodiversity of the CFK. Although the area of study has not been thoroughly researched in terms of species composition, based on studies that have been completed on three of the properties, it is clear that the level of species diversity is high. Furthermore, there are a significant number of Red Data species present. In terms of alien vegetation, woody alien vegetation is scattered throughout the area and is particularly dense on the properties Uitkoms, Grootwater and Vyge Valley. The dominant alien species are Port Jackson and Rooikrans. The coastal properties of the study area are generally free of aliens, although scattered clusters do occur. Port Jackson is found particularly along the river courses and Rooikrans among the coastal dunes. Manitoka, a less invasive woody alien plant and the Red Water fern are also found in the area.

## INSTITUTIONAL ARRANGEMENTS AND RELEVANT LEGISLATION FOR PRIVATE CONSERVATION INITIATIVES

There are a variety of legal and institutional arrangements, which are relevant to private conservation initiatives.

The institutional arrangements at the National, Provincial and Local government level, encompass a broad range of departments, the extent to which the various departments are involved, in a particular conservation initiative, will depend on the nature and form of the proposed conservation initiative. The primary institutions for the study area are the Department of Environmental Affairs and Tourism, the Western Cape Nature Conservation Board, the West Coast District Council and the Yzerfontein Local Council.

There is a wide range of legislation that is relevant to conservation initiatives. The key legislation will depend on the conservation option chosen and the institutions involved. The most relevant will be that which the above-mentioned institutions administer. For the study area the most important legislation is the Environmental Conservation Act 73 of 1989 and the Cape Nature Conservation and Environmental Conservation Ordinance 19 of 1974. The regulation

amendments with regards to weeds and invader plants of the Agricultural Resources Act 43 of 1983 are also key for any conservation initiative within the study area.

## CONSERVATION ALTERNATIVES FOR PRIVATE LANDOWNERS

### International Classification of Protected Areas

At an international level, the International Union for the Conservation of Nature (IUCN) has several categories for protected areas, as listed in the *table 5-1* below. Also listed in the table are the South African equivalents.

**Table 5-1: IUCN Protected Area Categories**

(from the White Paper on the Conservation and Sustainable Use of South Africa's Biological diversity, 1997)

CATEGORY	NAME	MANAGEMENT	SOUTH AFRICAN LEGAL OR OBJECTIVE OTHER EQUIVALENT CATEGORY
Category Ia	Scientific Reserves	Managed mainly for scientific research and monitoring	Special nature reserves Wilderness areas
Category Ib	Wilderness area	Managed mainly for wilderness, protection, subsistence and recreation	Special nature reserves Wilderness areas
Category II	National Parks and Equivalent Reserves	Managed mainly for ecosystem protection and recreation	National Parks Provincial Parks and nature reserves Indigenous state forests
Category III	Natural Monuments and Areas of Cultural Significance	Managed mainly for the conservation of specific natural or cultural features	Natural monuments Monuments Botanical gardens Zoological gardens Natural heritage sites Sites of conservation significance
Category IV	Habitat and Wildlife Management Areas	Managed mainly for conservation through management intervention	Provincial, local and Private Nature Reserves Conservancies
Category V	Protected Land and Seascapes	Managed mainly for land and seascape conservation and recreation	Protected natural environments Natural resource areas Scenic landscapes Urban landscapes
Category VI	Managed Resource Protected Area	Managed mainly for the sustainable use of natural ecosystems	Mountain catchments

### South African Classification of Protected Areas

There are 21 types of protected areas in South Africa. In terms of the study area, the most relevant are listed in *table 5-2*, along with the applicable legislation and the responsible administrative agent.

**Table 5-2: The Management of Protected Areas in South Africa** (adapted from the White Paper on the Conservation and Sustainable Use of South Africa's Biological diversity, 1997)

TYPE OF PROTECTED AREA	LEGISLATION	ADMINISTRATION
National Park	National Parks Act 57 of 1976	South African National Parks
Protected Natural Environment	Environmental Conservation Act 73 of 1989	Assigned to provinces
Special Nature Reserve	Environmental Conservation Act 73 of 1989	Assigned to provinces
Limited Development Area	Environmental Conservation Act 73 of 1989	Delegated to local authority and government institution
Wilderness Area	Forest Act 122 of 1984	Department of Water affairs and Forestry delegated to the provinces
Provincial, local and Private Nature Reserves	Various provincial ordinances	Provincial administrations, local authorities and private landowners
Private conservancies	No legal status	Farmers
Biosphere reserves	No legal status	Conservation authority/neighbors
Sites of conservation significance	No legal status	Private landowners

Of all the conservation options for private land conservation presented in the report, two are regarded as suitable for the study area. The two preferred options are a Protected Natural Environment (PNE) for all the properties mentioned and a single Private Nature Reserve of those same properties. In the Western Cape, the provincial minister of the Department of Environment, Culture and Sport (DECAS) proclaims a PNE. Once proclaimed, the authority for the management of the PNE may be delegated to a local authority, in this case the West Coast District Council. The procedure for applying for a PNE would be through DECAS in the Western Cape. A PNE would have provincial statutory status with an advisory board and is likely to have easier access to funding. The advisory board would include representatives of the properties within the PNE and representation from key institutions such as the WCNCB and local authorities. A Private Nature Reserve is more easily established by applying to the WCNCB. The major disadvantage of a Private Nature Reserve is that it can be de-proclaimed within a month and if change of ownership occurs, the Private Nature Reserve has to be re-applied for. One of the ways of strengthening the Private Nature Reserve option is to ensure that it is zoned for Open Space III, which limits development. Change of ownership does not change the zoning status; a zoning change would have to be re-applied for.

## POTENTIAL NATURE RESERVE ACTIVITIES AND ENVIRONMENTAL MANAGEMENT PLAN

There is a wide range of potential activities for any conservation initiative. An Environmental Management Plan (EMP) should also be established for effective and sustainable environmental management of the reserve.

### Potential activities and projects for the nature reserve

Although there were many potential activities and projects identified by the landowners at the workshop, the following is a list of priority activities and projects considered fundamental to the establishment of a single, large Private Nature Reserve or a PNE being established in the area of study. These are activities are considered short-term projects, which should be undertaken within two years.

- Walking trails;
- Alien clearing with an appropriate eradication plan;
- Anti poaching system;
- Game fencing for the reserve;
- Bird watching and establishing bird viewing hides;
- Prepare a land use map for developing lodges, chalets and other potential activities and facilities;
- Wildlife and flower viewing; and

A further point worth noting is that local business initiatives should be supported as much as possible, rather than duplicating services, for example in the establishing of a nursery, craft shop or restaurant.

### **Environmental Management Plan**

Whatever conservation alternative is applied, it is essential that an Environmental Management Plan (EMP) be developed for the area. An EMP would ensure effective and sustainable management of the reserve. The EMP would also provide a system to ensure compliance with current legislation, which may be relevant to the reserve. If appropriate environmentally friendly and sustainable methods are used for the EMP components mentioned below, the reserve could sell itself as being eco-friendly and set a model example for similar initiatives elsewhere. An EMP should include aspects such as: fire management, vegetation management, faunal management, pollution and waste management, the management of water, energy, staff, infrastructure, residents and visitors. Furthermore, the EMP should also have an annual environmental audit to ensure compliance with the EMP.

### **FINANCIAL CONSIDERATIONS AND POTENTIAL SOURCES OF FUNDING**

The development of approximately 8000 hectares into a nature reserve, involving several landowners requires careful financial planning. Costs would need to be shared, as would income. To that end a comprehensive financial business plan would need to be drawn up by an appropriate specialist. Furthermore, an endeavour of this size would incur certain initial costs for which additional funding may be sought. Three potential financial models are given below and potential sources for funding.

A communal and private individual financial model should form the basis for a detailed business plan. Several initial activities for a reserve, such as fencing and the clearing of alien vegetation are very expensive and funding should be sought. The nature reserve is likely to boost the local economy through increased tourism and to a lesser extent job creation, although alien vegetation clearing could be quite labour intensive. These socio-economic advantages associated with a Private nature Reserve further enhance the reserve's potential for attracting finance.

Although there are several potential funding sources, the Working for Water Program of the Department of Water Affairs and Forestry is the most likely source of funds in the short term for the clearing of alien vegetation. The extent of the alien vegetation in the study area, together with its location above the Grootwater aquifer would be strong motivation points for the Working for Water Program to be involved. In terms of financial assistance for fencing, the West Coast Biosphere Reserve Management Committee would be a potential source for funds. The support of the Western Cape Nature Conservation Board would be a great advantage in seeking financial assistance.

## RECOMMENDATIONS

The following recommendations should be implemented in order to establish the desired conservation initiative and for all stake holders to achieve the vision proposed in this report

### **Conservation Model**

The formation of a single, large Private Nature Reserve is recommended, although a PNE is also a possibility. In the short term a Private Nature Reserve will be quicker to establish and it does not rule out the formation of a PNE at a later stage.

### **Environmental Management Plan**

An Environmental Management Plan for the effective and sustainable management of the reserve should be developed. An appropriate specialist should be consulted for the development of the plan. The WCNCB could also be consulted in establishing the EMP.

### **Potential Activities and Projects**

The prioritised potential activities and projects listed above should be initiated with the formal establishment of the Private Nature Reserve. These activities should be developed in conjunction with the EMP to ensure effective environmental management and compliance with relevant legislation.

### **Biophysical Studies**

Appropriate specialists prior to the reserve being established should carry out thorough biophysical studies of the full extent of the reserve.

### **Market Research**

Market research to establish accommodation demand in the area should be carried out by appropriate specialists.

### **Financial Model Recommendation**

The establishment of a nature reserve will require a thorough business plan to be developed by all stakeholders with an appropriate model for the division of costs and income. A communal and private individual financial model should form the basis of the detailed business plan. This model covers both the individual and communal financial needs. The business plan should also take into consideration partnerships with local industry and businesses.

### **Funding Source**

The Working for Water Program should be approached to secure funding specifically for alien vegetation clearing. The other major initial cost is fencing; the West Coast Biosphere Management Committee is a potential source for funding in this regard. This should be done in conjunction with the West Coast representatives of the Western Cape Nature Conservation Board (*see appendix 7 for contact details*).

### **Public participation**

In order to ensure the support of the local community, a thorough public participation programme should be carried out if the decision to establish a reserve is taken.

### **Socio-economic development**

The socio-economic needs of the area should be considered in establishing the reserve. Employment opportunities within the reserve are an important positive factor, together with support of local industries, which may also create further employment. The alien vegetation-

clearing program will at times be labour intensive. Furthermore, the likely boost in tourism a reserve of this nature will bring to the area is a positive socio-economic effect.

**Task Team**

A task team made up of representatives from all key stakeholders should be established to move this private conservation initiative forward.

University of Cape Town

# ***VISION STATEMENT***

University of Cape Town

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## VISION STATEMENT

***To establish a private nature reserve on the principles of sustainability and co-management, to conserve and protect the natural environment while enhancing the socio-economic potential of the area, specifically through eco-tourism and cooperation with each of the individual landowners and other interested and affected parties.***

University of

# **1 INTRODUCTION**

University of Cape Town

# 1 INTRODUCTION

## 1.1 BACKGROUND TO THE STUDY

The Environmental Evaluation Unit (EEU) based at the University of Cape Town (UCT) was approached in late 2000 by a group of private landowners on the West Coast of the Western Cape, South Africa, for advice concerning the development of a conservation initiative. The landowners represent six properties located approximately 60 km north of Cape Town. Two of the properties have already been declared private nature reserves while the remaining four have limited agricultural potential. This factor, combined with the existing two private nature reserves has prompted the landowners to explore the possibility of establishing a joint conservation initiative incorporating all six properties.

The initiative also demonstrates the important role that private conservation plays in conserving South Africa's natural heritage, specifically given the states shortage of funds and lack of capacity. In terms of options, private landowners have twenty-one potential conservation options to choose from. Experience has shown that conservancies and Private Nature Reserves are the two most popular and common conservation options implemented by the private landowner.

Conservancies are essentially attempts to integrate conservation and commercial activities into viable and sustainable conservation partnerships. Conservancies develop primarily in rural areas and usually involve several landowners who are committed to both farming and conserving natural habitats. Tourism, or the potential thereof, is often the catalyst for stimulating the process of developing conservancies. The various sub-sectors of tourism, such as eco-tourism and adventure tourism in particular, are often included in conservancy partnerships.

Similarly, many private landowners within conservancies often take the next step and establish Private Nature Reserves. A Private Nature Reserve demonstrates a much stronger commitment on the part of the landowner to conservation, as it requires a formal application to the relevant nature conservation authorities and usually a re-zoning of the land.

The project explores potential conservation options for the private landowners, given the importance of the region specifically in terms of its vegetation and location in a government control water area. The area falls within the Cape Floristic Region with the Cape Floral Kingdom, which is widely recognised as being the most species rich of the world's six floral kingdoms and a biodiversity "hotspot" as a result of the threats to its existence. Potential activities and funding for the conservation initiatives are also considered, along with a preliminary biophysical review and the legal and institutional context.

Tony Barbour of the EEU has supervised the project and Barry Wiesner; a second year masters student from the Department of Environmental and Geographical Science at UCT has been the primary researcher for the project and author of this report.

## 1.2 DESCRIPTION OF STUDY AREA

The study area is located approximately 80 km north of Cape Town adjacent to the West Coast road (R27) to Saldanha. It covers approximately 8000 hectares encompassing the farms Grootwater, Uitkoms, Jakkalsfontein (incorporating the farm Vyge Valley), Tygerfontein, Coffeefontein and Yzerfontein. The Atlantic Ocean forms the study areas western border and the R27 is its eastern boundary. The area also falls within the recently proclaimed West Coast

Biosphere Reserve. The Biosphere Reserve was proclaimed primarily on the basis of the areas vegetation, which is that of the Cape Floral Kingdom (CFK). The CFK is considered to be the most species-rich of the world's floral kingdoms and the most threatened, making it a biodiversity "hotspot" (DEAT, 2001) and of high conservation significance. The study area is furthermore part of the recently formed Rural West Coast Conservancy, with all but one of the study area landowners being members of the conservancy. A further conservation feature of the area is the West Coast National Park, of which the main gate is located approximately 20 km north of the area of study, with the national parks southern border less than 10 km away. These established conservation efforts highlight the value of the study area.

### 1.3 AIMS AND OBJECTIVES

The primary aim of the project is to consider conservation options for the area. Furthermore, to provide a preliminary environmental overview of the area, based largely on existing data and make recommendations outlining the measures that would need to be considered and implemented for the establishment of a nature reserve in the area including financial models and potential sources of funding.

### 1.4 APPROACH TO STUDY

In order to consider the various conservation options, the project was divided into the divided into the following phases.

- Phase 1: Literature review and information gathering;
- Phase 2: Site visits, workshops, specialist input;
- Phase 3: Production of draft report; and
- Phase 4: Review of draft report, including a workshop, and preparation of final report.

#### **Phase 1: Literature review and information gathering**

##### *Review of existing information*

Review of existing information pertaining to the area and the establishment of nature reserves was undertaken including:

- Literature review: local and international literature concerned with private nature conservation initiatives and existing reports about the area was reviewed;
- Legal and institutional requirements pertaining to the various conservation options; and
- West Coast Biosphere relevance and other relevant conservation initiatives.

#### **Phase 2: Site visits, workshops, specialist input**

##### *Preliminary Biophysical Review*

In addition to the information gained from the review process, further biophysical data was obtained from site visits specifically with regards to the fauna, flora, ground and surface water.

- Fauna – species currently and likely to occur in the area, species historically indigenous to the area. This assessment was largely based on existing data and interviews with relevant

specialists who are familiar with the area. The report provides preliminary comment on the potential carrying capacity of the area for medium-large mammal species.

- Flora – vegetation types, alien invasive plants and clearing mechanisms, potential Red Data species. This assessment was largely based on existing data and interviews with relevant specialists who are familiar with the area. The assessment includes preliminary comment on the restoration potential of the area.
- Ground and surface water – preliminary assessment of the ground and surface water potential of the area. This assessment was largely based on existing data and interviews with relevant specialists who are familiar with the area.

### *Developing a vision*

The aim of this component of the study was to develop a common vision amongst the landowners for the establishment of the nature reserve. This vision was developed through a series of one-on-one meetings and workshops with the affected landowners and key specialists.

### *Formulate a conceptual development plan for the nature reserve*

Based on the information gained in the above objectives, a conceptual development plan for the establishment of the nature reserve was drawn up. This plan includes:

- An assessment of the ecological potential/carrying capacity of the area;
- The legal and institutional process required to establish a nature reserve; Identification of potential land-uses and activities within the area;
- Assessment of the financial implications associated with establishing and operating a nature reserve; and
- Implications of potential sources of funding for the establishment and operation of the nature reserve and related expenses.

### **Phase 3: Production of draft report**

Assimilation of the information gathered in phases 1 and 2 into and production of a draft report.

### **Phase 4: Review of draft report, including a workshop, and preparation of final report**

#### *Deliverables*

A final report containing:

- Executive summary;
- Vision statement;
- Preliminary biophysical review, based on literature review and specialist input;
- Summary of the legal and institutional requirements for the establishment of a conservancy;
- Conservation options for private landowners;
- Financial assessment of the potential costs associated with the establishment of the nature reserve, including the identification of funding options; and
- Recommendations for the conservation initiative.

## 1.5 ASSUMPTIONS AND LIMITATIONS

As an individual student undertook this report with limited resources and time constraints, comprehensive and substantial research was not undertaken. Most data was collected from existing reports and personal communications with appropriate specialists where feasible. The report therefore provides a preliminary biophysical review of the area and outlines a potential way forward for the establishment of a private conservation initiative. Although potential models/options and activities for a nature reserve are presented and possible locations for the activities suggested, no detailed site investigation was carried out. Furthermore, the conservation initiative suggested in this report would require a thorough business plan by a specialist. The potential financial models suggested in this report should therefore be used as a preliminary guide.

## 1.6 REPORT STRUCTURE

The report is broken into the following seven sections:

- Section 1: Introduction, including Description of Study Area, Aims and Objectives, Approach to Study, Assumptions and Limitations, and the Report Structure.
- Section 2: Location and Description of the Study Area.  
The general location of the area of study is given, followed by a detailed description of each farm.
- Section 3: PRELIMINARY BIOPHYSICAL REVIEW.  
The topography, climate, geology and soils are briefly described. A slightly more detailed description of the geohydrology and hydrology is given, including water allocations from the Grootwater aquifer. The fauna, flora and vegetation are then described with a comment on alien vegetation.
- Section 4: Institutional Arrangements and Relevant Legislation for Private Conservation Initiatives.  
The national, provincial and local authority institutional arrangements relevant to private conservation initiatives are described. This is followed by a brief discussion of the most relevant legislation to private conservation.
- Section 5: Conservation Alternatives for Private Landowners  
The international classification of protected areas is given with a description of the South African equivalents most relevant to the area of study.
- Section 6: Potential Nature Reserve Activities and Environmental Management Plan  
This includes a discussion of the Potential Projects and Activities for a Nature Reserve and the key features of an Environmental Management Plan for the reserve.
- Section 7: Financial Considerations and Potential Sources for Funding  
Three potential financial models for the conservation initiative are briefly presented. This is followed by a description of potential sources for funding.
- Section 8: Summary of Findings and Recommendations  
A list of recommendations is given with a fairly detailed discussion of potential activities for the conservation initiative.

Each section has a brief introduction before dealing with the detail of the section heading.

## ***2 LOCATION AND DESCRIPTION OF FARMS***

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## 2 LOCATION AND DESCRIPTION OF FARMS

### 2.1 INTRODUCTION

The geographical location of the participating farms is approximately 80 km north of Cape Town along the West Coast of South Africa. The farms are situated immediately south of Yzerfontein and between the West Coast Road (R27 – refer to Figure 2.1) and the coast. The study area encompasses the farms, Uitkoms, Jakkalsfontein (incorporating Vyge Valley), Tygerfontein, Coffeefontein, Yzerfontein, and a portion of the farm Grootwater. The property Rondeberg Flats has also been considered as part of the proposed conservation area as it already is a Private Nature Reserve, although not an official participant in this project.



Figure 2-1: General location of study area  
(Adapted from Cape Town, Western Cape, 2001)

The area also falls within the proposed West Coast Biosphere Reserve area and most landowners are members of the Cape West Coast Rural Conservancy (*see section 5.2.7*).

## 2.2 DESCRIPTION OF FARMS

The administrative details and a brief description of each farm are given below (*see figure 2.2 for location of each individual farm*).

### 2.2.1 Jakkalsfontein

<b>Name of Farm:</b>	Jakkalsfontein No. 572
<b>Area of Farm:</b>	1053 ha (Vyge Valley 808 ha)
<b>Current Zoning:</b>	Resort Zone II and Open Space III
<b>Current Activity on the Farm:</b>	Residential and Private Nature Reserve

Jakkalsfontein is a Coastal Estate and Private Nature Reserve situated south of the farm of Yzerfontein on the West Coast. The Atlantic Ocean forms its western boundary; to the north is the farm of Tygerfontein, and Vyge Valley is on the eastern boundary with Rondeberg bordering the south. Access to the property is through Vyge Valley (no. 570), which currently is included in the Private Nature Reserve, but is not owned as common property by the Jakkalsfontein Homeowners Association.

The farm has not been subject to intense agricultural activity. Historically there has been low intensity grazing and some wheat farming. Following the purchase of the farm in 1989, all farming activity ceased and a comprehensive study and development plan was undertaken to establish the present Coastal Estate incorporating 150 cluster housing units, resort facilities and a Private Nature Reserve. Currently approximately 99 units have been sold with 20 permanent residents, a further 66 units have been built. Apart from these residents, 9 family units work and live on the property.

As an established Private Nature Reserve, Jakkalsfontein has a full time warden on site with a small staff team to run the reserve. There are already several established activities such as walking trails within the reserve. A draft environmental management plan (EMP) has been drawn up and is in the process of being implemented. Fairly extensive fauna and flora surveys have also been conducted on the property. Alien eradication is being carried out and there is a burning regime for the veld. There are two archaeological sites on the property.

Two important points with regards to Jakkalsfontein that affect the proposed establishment of a larger nature reserve relate to:

- The privacy of existing and future residents needs to be ensured in any planned extension, which may incorporate eco-tourism.
- The farm Vyge Valley is not officially part of the current proposal to be included in a larger conservation initiative.

### 2.2.2 Tygerfontein

<b>Name of Farm:</b>	Tygerfontein No. 564
<b>Area of Farm:</b>	921 ha
<b>Current Zoning:</b>	Resort Zone II and Open Space III

**Current Activity on the Farm:** None

The farm is situated on the West Coast south of the town of Yzerfontein. It is bordered by the ocean on its western boundary, the farms Jakkalsfontein is to the south, Coffeefontein, Uitkoms and Vyge Valley bound its east side, while the farm Yzerfontein is to its north.

Historically it has been used as “veerplaas” (stock farm) for cattle and sheep. Since 1994 a partnership between Mr. Loffler and Mr. Bosch has had ownership and farming activity has stopped. The farm has in fact been re-zoned to Resort Zone II and Open Space III to allow for the establishment of three cluster housing developments along the coast and the establishing of a Private Nature Reserve. The cluster housing development will consist of thirty units.

Currently nobody lives on the property and the only activity is that of the construction of Mr. Loffler’s private home. Future residential accommodation is related to the cluster housing development. As with Jakkalsfontein, any future plans for incorporation into a larger Private Nature Reserve with eco-tourism activities must ensure that the privacy of permanent residents is acknowledged and protected.

Generally the farm is clear of alien vegetation. There are no significant streams or rivers running through the property, except for a small periodic estuary in the southern corner of the property. There is also a further well point which is not in use. Apart from Tygerfontein’s dune belt and valuable flora, there are no known significant environmental features on the property. Thorough biophysical studies have been carried out on the farm (Low, 1996).

### 2.2.3 Yzerfontein

**Name of Farm:** Yzerfontein section 4 of no. 560  
**Area of Farm:** 776 ha  
**Current Zoning:** Agriculture  
**Current Activity on the Farm:** Sheep farming

Yzerfontein, section 4 of no. 560 is situated immediately south east of the town of Yzerfontein. On its southeastern boundary are the farms Tygerfontein and Coffeefontein.

The farm is part of a family trust that has had ownership since 1945. It has historically been used for grazing and rye cultivation, although it has not been ploughed for 10 years. Currently there are three families resident on the property and three male employees.

There are five boreholes on the farm and one pan. A small dry river course traverses the eastern corner of the property. No fauna and flora studies have been conducted. Generally the bird life is good (Rauch W, pers. comm., 2001). Important features include Fleurkop and the mountainous western section of the property. A further point to note is that Yzerfontein farm is very close to the town of Yzerfontein. Any expansion of the town in a southeasterly direction would have to include the farm. The formation of a Private Nature Reserve with a re-zoning to Open Space III would provide some measure of environmental protection against further development in the area.

### 2.2.4 Coffeefontein

**Name of Farm:** Coffeefontein no. 563

<b>Area of Farm:</b>	1280 ha
<b>Current Zoning:</b>	Agriculture
<b>Current Activity on the Farm:</b>	Sheep farming

Yzerfontein borders Coffeefontein on the northwest, Tygerfontein is to its southwest and Uitkoms bounds the southeastern border. Access to the farm is through the farm Yzerfontein or the northeast corner of Coffeefontein.

Nobody is currently living on the property, although sheep are grazed there.

The farm has five well points and a stream (periodic) runs through the northern section of the property. Two pans are located on the farm. There have been no official or unofficial fauna and flora studies done on the farm. Generally the farm is clear of alien vegetation, although there are areas of infestation. There are also portions of the property that have been used for cultivation and show signs of grazing.

### 2.2.5 Uitkoms

<b>Name of Farm:</b>	Uitkoms no. 569.1
<b>Area of Farm:</b>	695 ha
<b>Current Zoning:</b>	Agriculture
<b>Current Activity on the Farm:</b>	Livestock farming – cattle and sheep

Uitkoms is situated west of the R27, which forms part of its eastern boundary most of which is bordered by a portion of Grootwater farm. Coffeefontein is to the northwest and Tygerfontein is on the southwestern boundary. Vyge Valley farm bounds Uitkoms southern border.

Uitkoms has been used for grazing over the past thirty years; currently cattle and sheep are grazed on the property. Currently the owner, Mr Frikkie Bester and one labourer live and work on the property.

There is a small pan on the farm and three permanent springs from the aquifer. There have been no official flora and fauna studies done on the property. Duiker and steenbok have been seen and there are many flowers in spring (Bester F, pers. comm., 2001). There are graves on the farm, which may be of archaeological or historical significance. The property is heavily infested with alien vegetation.

### 2.2.6 Grootwater

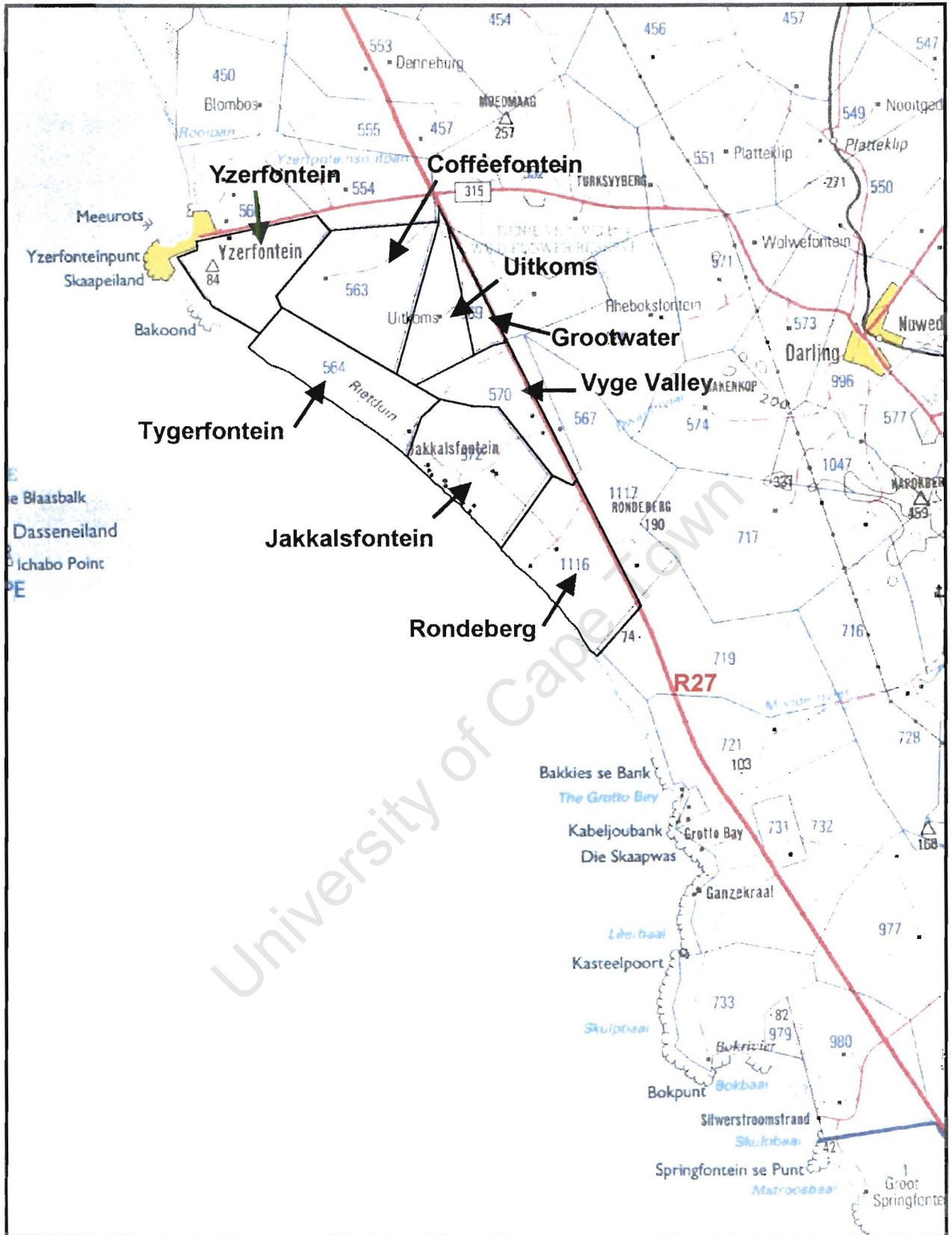
<b>Name of Farm:</b>	Grootwater no. 569
<b>Area of Farm:</b>	856 ha, approximately 250 ha below R27
<b>Current Zoning:</b>	Agriculture (currently being rezoned)
<b>Current Activity on the Farm:</b>	No farming, restoration ecology in progress and the development of the San Cultural Centre

The majority of the farm is east of the R27, however, the portion of primary concern for this study comprises of approximately 250 hectares west of the R27. This portion of Grootwater is roughly triangular in shape with the R27 forming its eastern boundary, Uitkoms its western border and Vyge Valley to the south.

Historically, strip wheat farming occurred on the property and it was used as a holding pen for livestock. Currently no farming activity is taking place and nobody lives or works on the portion of the property below the R27. The portion above the R27 is being developed as a San Cultural Centre. The San Cultural Centre is aimed at skills training, particularly with regards to eco-tourism, for the San community.

A well point is located on the property below the R27 and there is a periodic vlei, being wet in winter. No official fauna and flora studies have been undertaken. Unofficial bird lists for summer and winter have been compiled for the whole property. The portion of land below the R27 is heavily infested with alien vegetation.

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**Figure 2-2: Location of farms**

(adapted from 1:250 000 topographical map, Surveys and Mapping, 2000)

# ***3 PRELIMINARY BIOPHYSICAL ASSESSMENT***

University of Cape Town

## 3 PRELIMINARY BIOPHYSICAL REVIEW

### 3.1 INTRODUCTION

The aim of this section is to provide a preliminary biophysical review of the study area. Most information has been obtained from biophysical reports for the properties of Rondeberg Flats, Jakkalsfontein and Tygerfontein. Information has also been obtained from the Western Cape Nature Conservation Board, Department of Water Affairs and Forestry and any relevant literature covering the West Coast area. Furthermore, relevant information obtained from the various interviews conducted for this project, has also been included.

It should be noted that most reports focus on the coastal properties of Rondeberg, Jakkalsfontein and Tygerfontein, no substantial biophysical assessment has been carried out on the properties adjacent the R27 West Coast road or on the properties Yzerfontein and Coffeefontein. While the biophysical environment of all the properties is very similar, except for the marine and beach components of the coastal properties, there are likely differences and therefore the following information is very much a preliminary overview.

### 3.2 TOPOGRAPHY

The topography of the area is predominantly that of the West Coast coastal plain. Primary features include undulating dunes, pans, vleis and three noteworthy river courses.

The coastal plain is generally flat although there are several rounded hills (Van Wieringen, 1989). The western portion of Yzerfontein farm is particularly hilly. The coastline of approximately 15 km is considered to be dynamically stable, with a fairly uniform, moderately steep beach profile made up of medium grained sand (CSIR, 1989). A ridge of sand dunes separates the beach from the coastal plain. The dunes may be categorized as embryo dunes (at or near the high water mark); foredunes (inland of the embryo dunes) – both are relatively unstable – and stable dunes (inland of the embryo and foredunes) (Low, 1996).

### 3.3 CLIMATE

The climate of the area is typically Mediterranean with hot dry summers and cool moist winters. The average annual maximum temperature (degrees Celsius) is in the low twenties and the minimum temperature the low teens. The average rainfall is fairly low, being estimated at 253 mm per annum (Low, 1990, 1996). The prevailing winds are southerly to south, southeasterly from October through to the end of April. Thereafter the north wind dominates from May through until the end of July and is usually associated with the passage of cold fronts. Autumn to early winter (May until June) experience the calmest days (South African Weather Bureau, 2001). The weather is generally considered conducive to outdoor activities Derek Chittenden and Associates, 1991).

### 3.4 GEOLOGY AND SOILS

Cenozoic era sediments dominate the coastal plain of the west coast. These sediments are of marine, aeolian (wind blown) and fluvial (river) origin from the Quaternary age and cover

disconnected Neogene age sediments. These sediments overlay Malmesbury Shale and Cape Granite, which form the bedrock of the area (Theron J et al, 1992).

The following table lists the Cenozoic formations in the Western Cape.

**Table 3-1: Cenozoic formations of the Western Cape**

(modified from Theron J et al, 1992, pg 37)

		LITHOLOGY	FORMATION		
QUATERNARY	HOLOCENE	Aeolian, calcareous, quartzose sand	<i>Witzand</i>	GROUP	
	PLEISTOCENE	Aeolian, calcrete-capped calcareous sandstone  Aeolian quartzose with intermittent peaty layers	<i>Langebaan+</i>  <i>Springfontyn*</i>		
NEOGENE	PLEIOCENE	Quartzose and muddy sand, and shelly gravel	<i>Varswater</i>	SANDVELD	
	MIOCENE	LATE	Conglomeratic sandy phosphorite		<i>Saldanha</i>
		MIDDLE	Angular quartzose gravelly sand and peaty clays		<i>Elandsfontyn*</i>

\* Not yet approved by South African Committee for Stratigraphy

+ Formation rank not yet approved by South African Committee for Stratigraphy

The significance of these formations is the nature of the sands they represent, which combined with the leaching process and wind blown deposition, gives rise to a widely varied range of soils and associated vegetation cover (Derek Chittenden and Associates, 1991). The Springfontyn formation dominates the area. This is a well-sorted fine to medium grained quartz sand. The Langebaan formation in the northwest, particularly on the property Tygerfontein, is characterized by leached quartzose sand often with a calcretised cap. This formation was originally known as the Langebaan limestone, it varies from being very coarse or gritty to extremely fine-grained. The coast is dominated by the Witzand formation indicated by the light coloured calcareous coastal dune sand (Theron J et al, 1992). Although other Quaternary formations exist, they are not specifically found in the area of study.

The Neogene sediments underlie the Quaternary formations mentioned above. The Varswater formation is of particular significance with regards to the Grootwater aquifer (*see section 3.5*).

Underlying the Cenozoic sediments are Malmesbury Shales and in parts intrusive Cape Granite, which is evident in several surface outcrops. The depth at which bedrock is found varies from 20 m below sea level up to 20 m or more above sea level in the study area (Reid D L, Rogers J and Minter W E L, 1999).

### 3.5 GEOHYDROLOGY AND HYDROLOGY

The area of study falls within the Yzerfontein Subterranean Government Water Control Area, as it overlays the Grootwater aquifer. The town of Yzerfontein is the northwest boundary of the aquifer, which extends southeast to the Modder River. The coastline bounds it in the west and granite hills in the east.

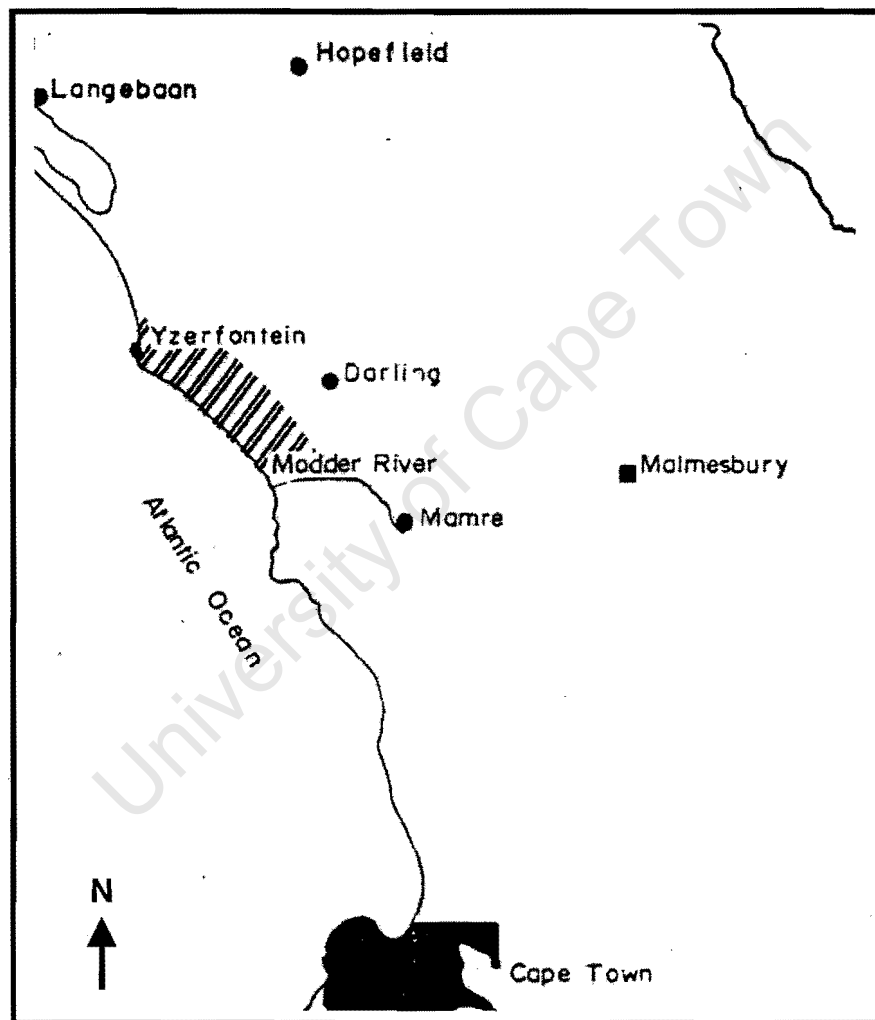


Figure 3-1: General location of the Grootwater aquifer

#### 3.5.1 The Grootwater Primary Aquifer

The Grootwater primary aquifer basically consists of two production zones. The upper layer consists primarily of the decalcified, quartzitic permeable sands of the Springfontyn formation. This layer is unconfined and approximately 10-20 m thick. It is expected that this portion of the aquifer may become further unconfined in the event of dewatering through large-scale abstraction. The deeper portion of the aquifer is considered to be semi-confined and consists mainly of the clays, peats and quartzose sands of the Varswater formation (Baron J H, 1990).

The estimated storage capacity for both layers has been calculated as  $237.5 \times 10^6 \text{ m}^3$  water in storage (Baron J H, 1990). A conservative estimate of recharge from rainfall has been given as 10% of rainfall. Recharge is also possible in the form of runoff from the Darling Hills in the east and to a lesser extent through any artificial recharge system that a landowner may implement. It should be possible to extract water from the Grootwater aquifer from all properties in the study area as they all overlay it. The best development of the aquifer is in a sub-basin located on the properties Grootwater, Coffeefontein and Vyge Valley. Rondeberg and the neighbouring farm Kransduinen also overlie a sub-basin (Baron J H, 1990).

The implication of being in a Government Water Control Area is that ground water abstraction is strictly controlled, with each property overlying the aquifer having a specific water allocation. In terms of the National Water Act no. 36 of 1998 (Chapter 4), before groundwater abstraction can occur, a license must be obtained from the Department of Water Affairs and Forestry.

Water allocations for abstraction of water from the aquifer are based on the percentage of the aquifer covered by the particular property. The current water allocations for the properties overlying the aquifer within the study area for which data is available are given in *Table 3-2* below. These figures are based on the official technical report for the Grootwater aquifer (Baron, 1990). A new study of the aquifer and monitoring of the water is expected to start by mid 2001 (Van Kleef, pers. comm., 2001). Therefore it is possible that these allocations may change.

**Table 3-2: Annual abstraction quotas from the Grootwater Aquifer**

Cadastral Farm	Farm Area (ha)	Aquifer Area (ha)	% Aquifer on farm	Annual abstraction at recharge rate ( $\text{m}^3/\text{a}$ ) of:	
				15%	10%
Coffeefontein	1280.52	1280.52	12.99	653400	436460
Tygerfontein	920.77	920.77	9.34	469800	313820
Grootwater	856.55	354.55	3.6	181080	120960
Uitkoms	685.23	685.23	6.95	349590	233520
Jakkalsfontein	1053.35	1053.35	10.69	537700	359180
Vyge Valley	807.71	807.71	8.2	412460	275520
Rondeberg	1415.73	1415.73	14.37	722810	482830

Yzerfontein is excluded from this allocation table as it does not significantly overlie the aquifer and as such has no abstraction allocation. Abstraction allocations should be sufficient for the limited development that the reserve may establish, which would require water. Abstraction of ground water from the aquifer is prohibited within 2.5 km (Crowther Campbell and Associates, 2000) of the coast. This is to prevent the possible intrusion of saltwater into the aquifer through passive encroachment from seawater (Baron, 1990).

### 3.5.2 Rivers, Vleis and Pans

Apart from the aquifer, there are number of other hydrological features in the area of study worth noting. The general flow of ground water is east to west (towards the sea); the three rivers within the area of study follow this pattern. In the south, the Dwars River bisects the Rondeberg property. Slightly further north, another version of the Dwars River flows across Vyge Valley and through the northern sector of Jakkalsfontein before entering the sea in the southern corner of Tygerfontein. Both these rivers are periodic and usually flow in winter. They are important feeders to several vleis that occur along their courses. A small third stream is located traversing the northern sector of Coffeefontein before veering northwest and crossing a small section of the

Yzerfontein property. This is also a periodic stream but appears to flow less frequently than the two Dwars Rivers to the south, seldom flowing in winter and not at all in summer.

There are several vleis and pans located in the area of study. Most are ephemeral (seasonal) and rely on the rise in the water table to recharge them during the winter rains. Some are however permanently watered through natural springs releasing water from the aquifer. Uitkoms has three such natural springs.

### 3.6 FAUNA

The faunal composition of the area of study may be divided into three categories, namely:

- Marine fauna
- Terrestrial fauna
- Avifauna

#### 3.6.1 Marine Fauna

As there are no rocky shores or reefs, the rich diversity in marine fauna associated with such coastlines is not present. There is little protection for inshore fish (Chittenden, 1991) and therefore they are not abundant. However, Southern Right whales have been seen along the coast and seals have been seen on the beach.

The coastline is predominantly sandy beach and although no formal studies of the micro-fauna have been carried out, it is likely to reflect typical micro-fauna associated with sandy beach environments of the west coast. Sandy beaches appear to have very few invertebrate animals. The reason is that most sandy beach micro-fauna are nocturnal (only active at night) and bury themselves in the sand during the day. On the west coast, between the low and high water marks, the micro-fauna includes migratory filter feeders such as the White Mussel (*Donax serra*); migratory carnivores like the Plough Snail (*Bullia digitalis*); and high shore scavengers such as the Giant Isopod (*Tylos granulatus*) and the Sea Hopper (*Talorchestia capensis*) (Branch M and Branch G, 1981)

#### 3.6.2 Terrestrial Fauna

The following table lists the historical terrestrial fauna of the area. This is taken from the Operational Environmental Management Plan for Rondeberg Flats, prepared by Crowther Campbell and Associates (2000, pgs 12 and 13). The same list is presented here as Rondeberg Farm is the southern most property in this area of study and the list would be equally applicable to the properties within its immediate vicinity and of a similar environment.

**Table 3-3: Historical indigenous mammals**

COMMON NAME	SCIENTIFIC NAME
African Wild Cat	<i>Felis lybica</i>
Bat-eared Fox	<i>Otocyon megalotis</i>
Black-backed Jackal	<i>Canis mesomelas</i>
Black rhinoceros	<i>Diceros bicornis</i>
Black Wildebeest	<i>Connochaetes gnou</i>
Bontebok	<i>Damaliscus dorcas</i>
Brown hyena	<i>Hyaena brunnea</i>

Burchell's zebra	<i>Tragelaphus scriptus sylvaticus</i>
Bushpig	<i>Potamochoerus porcus</i>
Cape (African) buffalo	<i>Ynerus caffer</i>
Cape fox	<i>Vulpes chama</i>
Caracal/Lynx	<i>Felis caracal</i>
Common/Grey duiker	<i>Sylvicapra grimmia</i>
Eland	<i>Taurotragus oryx</i>
Gemsbok	<i>Oryx gazella</i>
Grysbok	<i>Raphicerus melanotis</i>
Hippopotamus	<i>Hippopotamus amphibious</i>
Kudu	<i>Tragelaphus serepsiceros</i>
Leopard	<i>Panthera pardus</i>
Lion	<i>Panthera leo</i>
Mountain zebra	<i>Equus zebra</i>
Porcupine	<i>Hystrix africaeautralis</i>
Quagga	<i>Equus quagga</i>
Red hartebees	<i>Alceiaphus buselaphus</i>
Spotted hyena	<i>Hyaena crocuta crocuta</i>
Springbok	<i>Ntidorcus marsupialis</i>
Small spotted genet	<i>Genetta genetta</i>
Steenbok	<i>Raphicerus campestris</i>
Warthog	<i>Phacochoerus ethiopicus</i>
White rhinoceros	<i>Ceratotherium simum</i>
Wild dog	<i>Lycaon pictus</i>

It is important to note that although these species may have historically occurred within the area, significant land transformation has taken place over the years. Therefore the environment is no longer necessarily an appropriate habitat for many of these species. A thorough study would need to be conducted in order to determine which species could be returned to the area and at what capacity. The sustainability of certain species would also need to be considered. Some species may be able to be reintroduced to the area, but may be unable to maintain a viable and sustainable population of their own accord. In such cases, an option such as regular translocation between different reserves is a potential solution.

Table 3-4 represents current terrestrial fauna, which has been observed in the area.

**Table 3-4: Current Terrestrial Mammals**

COMMON NAME	SCIENTIFIC NAME
African Wild Cat	<i>Felis lybica</i>
Bat-eared Fox	<i>Otocyon megalotis</i>
Black-backed Jackal	<i>Canis mesomelas</i>
Cape fox	<i>Vulpes chama</i>
Cape grey mongoose	<i>Galerella pulverulenta</i>
Cape hare	<i>Lepus capensis</i>
Caracal/Lynx	<i>Felis caracal</i>
Dune mole rat	<i>Bathyergus suillus</i>
Grey duiker	<i>Sylvicapra grimmia</i>
Grysbok	<i>Raphicerus melanotis</i>
Porcupine	<i>Hystrix africaeautralis</i>
Small spotted genet	<i>Genetta genetta</i>
Steenbok	<i>Raphicerus campestris</i>
Striped field mouse	<i>Rhabdomus pumilio</i>

Snakes observed in the area include the Boomslang, Cape cobra, Mole snake and Skaapsteeker.

### 3.6.3 Avifauna

The area of study is rich in bird life. There are three bird life habitats, the terrestrial habitat, the fresh water wetland habitat and the coastal habitat (Chittenden, 1991).

The Terrestrial habitat comprises predominantly the West Coast Dune Thicket and Lowland Sand Plain Fynbos. The fresh water wetlands are made up of the pans, vleis, seeps and the Dwars River although periodic in flow. The coastal habitat comprises the approximately 15 km of sandy beach with embryonic and fore-dunes.

Although no comprehensive bird lists have been drawn up for the study area, more than 155 species, with 26 Northern Hemisphere migrants, are thought to occur on the farm Jakkalsfontein alone. Threatened and species of conservation significance include the White Pelican (*Pelecanus onocrotalus*), the Caspian Tern (*Hydroprogne caspia*), the House Martin (*Delichon urbica*), the Black Harrier (*Circus maurus*) and the endangered Black Oyster Catcher (*Haematopus moquini*) (Chittenden, 1991).

## 3.7 FLORA AND VEGETATION

The coastal plain of the Western Cape falls within the Cape Floristic Region. The value of the Cape Floral Kingdom (CFK) is widely recognized, being the most species rich of the world's six floral kingdoms and considered a biodiversity "hotspot" as a result of the threats to its existence. (DEAT, 2001) These threats include land transformation through urban and coastal development, agricultural and pastoral farming. Furthermore the spread of alien vegetation threatens the biodiversity of the CFK (Heijnis et al, 1999).

Owing to these threats, most conservation initiatives to protect this threatened plant kingdom receive wide support. Private conservation initiatives are growing, particularly as a result of the potential income from eco-tourism related activities and the CFK. Although it is difficult to determine the true economic value of the CFK, the number of tourists it attracts suggests its value is quite significant. This is especially evident along the West Coast during the spring flower season. Apart from its economic value, it has tremendous scientific and educational value having a high degree of biodiversity and endemism. More than 8000 species exist within the fynbos biome (the dominant biome) alone.

Three broad vegetation categories occur within the area of study. These are Dune Thicket, Sand Plain Fynbos (West Coast) and West Coast Renosterveld (Heijnis et al 1999). The underlying geology plays an important role in determining the nature of the vegetation, which covers it. Dune thicket occurs predominantly on the calcareous dune sands, calcrete and limestone of the Witzand and Langebaan formations. The Sand Plain Fynbos prefers the fine-grained acidic soils of the Springfontein formation. West Coast Renosterveld grows on the finely textured soils resulting from Malmesbury Shales and Cape Granite, hence very little occurs in the study area. With regards to the Dwars River on the Rondeberg Flats, there is very little riparian vegetation (Low, 1990). The vegetation in the other riverine habitats is not mentioned in any current reports, except for the alien infestation on Tygerfontein (Low, 1996)

These broad vegetation categories are sub-divided into the following vegetation types, as illustrated in *Figure 3-2* below:

DF	Dune Fields (mobile sand)
DF-LF	Dune Fields-Lowland Fynbos Transitional Veld
DT	West Coast Dune Thicket (Strandveld)
DTS	West Coast Dune Thicket (Strandveld) on mobile to semi-mobile sand or South Coast Dune Strandveld.
LSPF	Lowland Sand Plain Fynbos
PLSPF	Proteoid Lowland Sand Plain Fynbos
WCR	West Coast Renosterveld

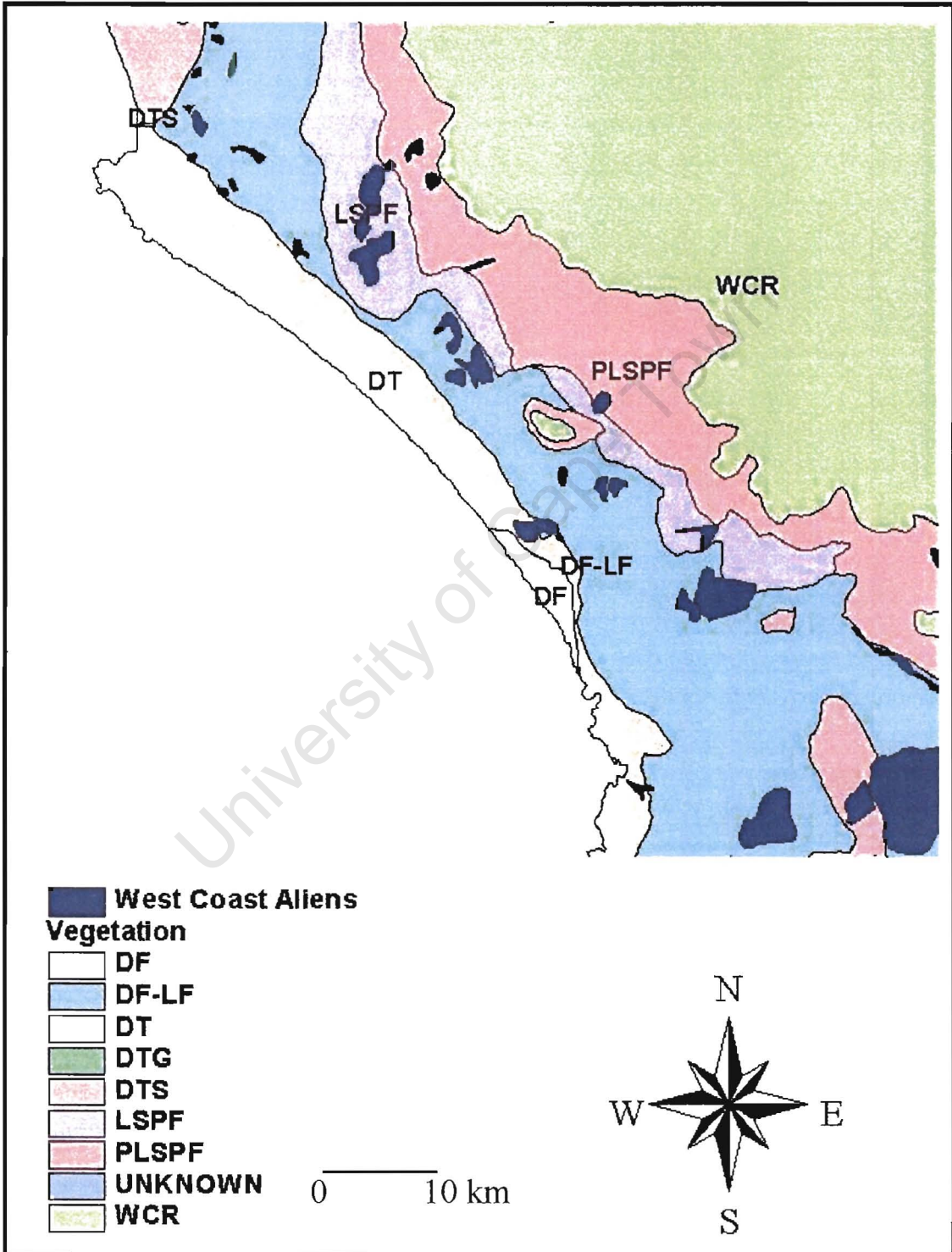


Figure 3-2: Vegetation and Extent of Alien Vegetation

Cape Nature Conservation, 2000

The dune thicket occurs primarily on the embryo and fore-dunes of the area (Low, 1990). These dunes are the most environmentally sensitive and unstable areas. Vegetation associated with wetlands is also regarded as a sensitive environment. These include the pans, vleis, seeps and to a lesser extent the riverine vegetation (including the Dwars River estuaries). The pans are generally some distance inland from the coast and consist of salty mudflats with perimeter vegetation. The vleis also consist of mudflats and other vlei vegetation. The significance of the vleis is that they have a high species diversity count, many of which are endemic (unique to) the particular vlei habitat. The seeps areas are not large enough to be considered true vleis. It is likely that many of the vleis and pans are dependent on water from the Grootwater aquifer. Any abstraction in close proximity of vleis and pans, could lead to the degradation of the vleis and pans (Low, 1990).

Although the study area has not been thoroughly researched in terms of species, based on studies that have been completed on three of the properties, it is clear that the level of species diversity in the area is high. Furthermore, there are a significant number of Red Data species present. The numbers of Red Data species for the farms that have been surveyed are listed in *Table 3-5* below. These include: duineteebossie (*Helichrysum cochlearriforme*), strandroos (*Limonium purpuratum*), a stem succulent (*Euphorbia marlothiana*), a pin-cushion (*Leucospermum tomentosum*) and a member of the pea family (*Otholobium venustum*) (Low B, 1996).

**Table 3-5: Plant species number**

(after Low, 2000, pg 10)

PROPERTY	PROPERTY AREA	TOTAL SPECIES	RED DATA SPECIES
Rondeberg	1416	532	27
Tygerfontein	921	240	8
Jakkalsfontein	1053	517	16

A flora study carried out at Jakkalsfontein showed a number of threatened, endemic and new species for the region (Low B, 1990). A comprehensive study for the entire area is therefore likely to reveal even more species in these categories.

While there are several plant and flora species that could be listed here, a more comprehensive analysis of the study area would be the appropriate reporting mechanism for such a list. A further point worth noting is that there are important traditional medicinal plants in the area, 52 species have medicinal value on Rondeberg Flats alone (Low, 2000).

## Aliens

In terms of alien vegetation, woody alien vegetation is scattered throughout the area and is particularly dense on the properties Uitkoms, Grootwater and Vyge Valley. The dominant species are Port Jackson (*Acacia saligna*) and Rooikrans (*Acacia Cyclops*). The coastal properties of the study area are generally free of aliens, although scattered clusters do occur. Port Jackson is found particularly along the river courses and Rooikrans among the dunes.

Manitoka (*Myoporum serratum*), a less invasive woody alien plant and the Red Water fern (*Azolla filiculoides*) are also found in the area, having been recorded on Rondeberg Flats (Crowther Campbell and Associates, 2000).

The 1999 amendments to the Agricultural Resources Act 43 of 1983 specifically with regards to weeds and invader plants (alien vegetation) will have significant consequences for the area of study, no matter which alternative conservation approach is adopted (*section 4.2.3* deals with this

in more detail).

*Figure 3-2* gives a simplified distribution for alien vegetation in the area of study. There are several areas that are heavily infested with aliens that are not clearly reflected on the scale of the map. As alien vegetation is cleared, a comprehensive restoration ecology plan should be implemented. This should be part of the Environmental Management Plan (*see section 6.3*). The area has the potential to be restored, but it would be a long-term project.

University of Cape Town

**4 INSTITUTIONAL  
ARRANGEMENTS AND  
RELEVANT LEGISLATION FOR  
PRIVATE CONSERVATION  
INITIATIVES**

University of  
Cape Town

## 4 INSTITUTIONAL ARRANGEMENTS AND RELEVANT LEGISLATION FOR PRIVATE CONSERVATION INITIATIVES

### 4.1 INTRODUCTION

There are a variety of legal and institutional arrangements, which are relevant to any private conservation initiative. As there are several alternatives for private conservation initiatives (*see section 5*), the institutional and legal requirements vary accordingly. The following section provides a basic outline of the primary institutional role players in private conservation initiatives and the most important and relevant legislation with regards to such initiatives.

### 4.2 INSTITUTIONAL ARRANGEMENTS FOR CONSERVATION INITIATIVES

The institutional arrangements at the national, provincial and local government level encompasses a broad range of departments. The extent, to which the various departments are involved in a particular conservation initiative, will depend on the nature and form of the conservation initiative. A wide range of conservation options are available in South Africa, these are elaborated on in *section 5*.

#### 4.2.1 National Institutional Arrangements

At a national level, key government departments which are involved in environmental management include: Environmental Affairs and Tourism; Mineral and Energy Affairs; Agriculture, Transport, Constitutional Development and Planning, Science and Technology and others. The primary institutional organisations at the national level are the South African National Parks (SANP), the National Botanical Institute (NBI) and the Department of Environmental Affairs and Tourism (DEAT). The National Parks Act, World Heritage Sites, Special Nature Reserves, Protected Natural Environments and Limited Development Areas are administered by DEAT. The Chief Directorate of Marine and Coastal Management administers Marine Reserves and Marine Protected Areas. (Glazewski, 2000) Although other institutions exist, such as the South African Heritage Resources Agency, these are the most relevant for the area of study. A further important national authority is the Department of Water Affairs and Forestry.

#### 4.2.2 Provincial Institutional Arrangements

At a provincial level, the environmental structure is complicated even further by the fact that environmental directorates under DEAT are located in different provincial environmental and nature conservation departments. These include: nature conservation departments, heritage and cultural resource departments, agricultural departments and others. In the Western Cape, the environmental directorate is located in the Department of Environment, Culture and Sport (DECAS). Furthermore, the Western Cape, as is the case with Kwazulu Natal, now has an independent statutory conservation board in the form of the Western Cape Nature Conservation Board (WCNCB). This board was established in 1999. The WCNCB manages and administers the various provincial reserves and is also responsible for the authorisation of Private Nature Reserves and conservancies.

#### 4.2.3 Local Authority Institutional Arrangements

Local authorities are responsible for a variety of protected areas, largely through their planning

departments. Protected areas, which they establish and administer, include green or open space, such as parks and local authority reserves. Apart from these protected areas, local authorities are responsible for zoning schemes and various by-laws, which may be relevant to conservation initiatives (Glazewski J, 2000).

The West Coast District Council, based in Moorreesburg and the Yzerfontein Local Municipal council are the relevant local authority institutions for the area of study.

### 4.3 RELEVANT LEGISLATION

With increasing environmental awareness in South Africa in recent years, many private individuals are seeing the potential economic benefits associated with the conservation of natural resources. There has also been a growth in the legislation relevant to such conservation-orientated endeavours. The net result is that there is a wide range of legislation that is relevant to conservation areas. A brief overview of the key legislation is presented below.

#### 4.3.1 Biodiversity

The Western Cape area with the CFK has been designated a biodiversity “hotspot” having a high species richness, high level of endemism and being an area which experiences high rates of land modification or loss (Myers in Glazewski, 2000, pg 300).

The Convention of Biological Diversity 1992 to which South Africa is a signatory, aims at the conservation and sustainable use of biological diversity and the fair and equitable benefits of the sharing of the benefits arising out of genetic resources. The convention promotes “in situ” and “ex situ” conservation measures for protected areas. In situ refers to the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings. Ex situ refers to the conservation of components of biological diversity outside of their natural habitats (Glazewski, 2000). A further important aspect of the convention and of particular relevance to South Africa is Article 21, which refers to mechanisms for financial assistance for developing countries like South Africa. The Global Facility (GEF) of the United Nations Development Programme and the United Nations Environmental programme, as well as the International Bank for Reconstruction and Development facilitate this process of financial assistance. GEF is in partnership with the Cape Action Plan for the Environment (CAPE) aiming at preserving the CFK (*see section 7.2.1*). The White Paper on the Conservation and Sustainable Use of South Africa’s Biological Diversity was published in 1997. The paper emphasises South Africa’s commitment to the Convention on Biological Diversity and the conservation of biological diversity in South Africa. Although private conservation initiatives are not specifically addressed by the White Paper, such initiatives would be in keeping with the general aims and objectives of biological conservation in South Africa.

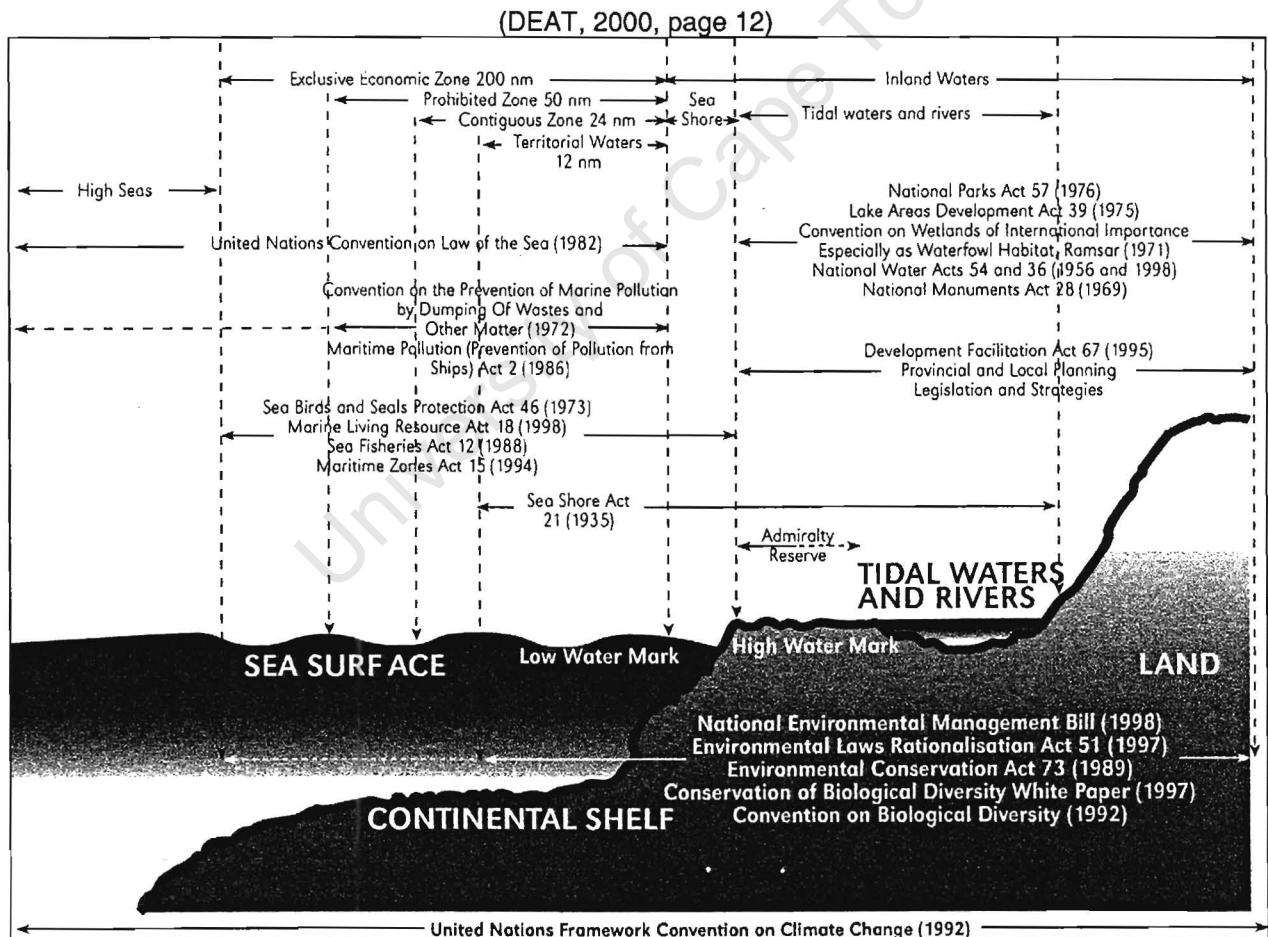
#### 4.3.2 The Coastal Environment

A wide range of legislation applies to the coastal environment. Ribbon coastal housing development represents a significant threat to coastal and marine biodiversity. The area of study has three coastal properties Rondeberg, Jakkalsfontein and Tygerfontein, all of which have already had approval for limited development. The limited development and proclamation of Private Nature Reserves protects this particular stretch of coastline from further development. In coastal legislation, an important consideration is the public’s right of access to the coast. Although the public in theory have right of access to the coast, this right is dependent on

common notions or public servitudes (Glazewski, 2000). Furthermore, the extent to which the Admiralty Reserve exists on coastal properties, will limit development.

Figure 4.1 illustrates the wide range of legislation that is applicable to the coast. The most important for the study area is the White Paper for Sustainable Coastal Development in South Africa (DEAT, 2000). Its main aim is to achieve sustainable coastal development in South Africa through an integrated coastal management policy. A further important Act with regards to the coast is the Sea Shore Act 21 of 1935. The Sea Shore Act is of significance as it gives the state ownership of the entire seashore, which extends to the high water mark. This empowers the state to regulate all activity carried out on the seashore or to delegate this administration. "The administrative functions of the Act have been largely delegated to the coastal provinces" (DEAT, 2000, page 15). The land above the high water mark falls into one of two categories, Admiralty Reserve or private property. The Admiralty Reserve, being State property is subject to any regulations the Minister may declare. Control of private land is generally in the hands of the owner, however, certain Acts and provincial and local authority by-laws and regulations may effect a degree of influence on control measures within private land. This Act is particularly relevant to the coastal properties of Rondebeg, Jakkalsfontein and Tygerfontein.

**Figure 4-1: Coastal Boundaries and Relevant Laws and Conventions**



### 4.3.3 The White Paper on Agriculture 1995

The principles of the White Paper on Agriculture emphasise the sustainable use of natural resources. This is a positive principle that supports conservation initiatives on agricultural land as the emphasis applies broadly to natural resources and not only that of agricultural resources. Therefore the conservation initiative in the study area is in keeping with the principles of the

## White Paper on Agriculture

**4.3.4 Agricultural Policy in South Africa – Discussion Document 1998**

An important feature of the Agricultural Discussion Document of 1988 is that it highlights the fact that although DEAT is the lead conservation agency in the country, the agricultural sector manages 80% of South Africa's land surface. Furthermore, it outlines three governing principles for promoting sustainable resource use:

- Firstly, it is the government's responsibility to promote the sustainable use of natural resources in agriculture, ensuring that resources are used within their capacity for renewal, maintaining and enhancing the ecological integrity of natural systems, and minimizing or avoiding risks that will lead to irreversible damage.
- Secondly, the primary custodian of the land is the resource user whose actions have an impact upon the environment. Thus the Government will design policies and enact legislation that will strengthen the rights of land users and facilitate their assumption of responsibility for the conservation, sustainability and maintenance of biodiversity. This is an important part of Government policy in the Land Care Program, which is discussed below.
- Thirdly, those responsible for all forms of environmental damage should pay the costs of remedial measures in respect of the impact of such damage on the environment and human health. It will be required of land users whose activities may have an impact on the environment to institute measures to prevent pollution and environmental damage.

(National Department of Agriculture: Agricultural policy in South Africa – A-DISCUSSION DOCUMENT. 2001)

Although the focus of the agricultural policy is on the sustainable use of agricultural resources, it has direct beneficial implications for all sustainable natural resource use in South Africa. Good agricultural practice can help to ensure less environmental damage and natural resource loss. The National Department of Agriculture has also committed itself to "introduce any necessary statutory measures to support efforts to restrict the destruction of endangered species, scarce habitats and ecosystems threatened by extinction by the use of land for agricultural purposes" (National Department of Agriculture: Agricultural policy in South Africa – A-DISCUSSION DOCUMENT, 2001)

A further feature of the document that has relevance to this study is the Land Care Program. Again, while the focus is on the conservation and sustainable use of agricultural natural resources, it has direct benefit for conservation in general. One of the key components of the land care program is to provide employment for the rural poor. One of the ways it aims to do this is through establishing physical public works in the provinces to alleviate soil and veld degradation, soil acidity, bush encroachment and invader plants. Although projects will be provincially implemented, they will be centrally coordinated and funded. In the clearing of alien vegetation in the study area, soil is likely to be exposed. The land care program is potentially a source of assistance for restoring the veld (*see section 7.23.5*).

**4.3.5 Conservation of Agricultural Resources Act 43 of 1983**

The Conservation of Agricultural Resources Act aims at protecting natural agricultural resources. This includes preventing soil erosion, degradation of water sources, protecting vegetation and combating alien vegetation. The Act enables the minister to prescribe control measures with which all land users must comply. Control measures for the utilisation of vleis,

marshes, water sponges and watercourses, the restoration and reclamation of eroded land, and the restoration and reclamation of disturbed or denuded land.

The Act also provides for the establishment of schemes by which financial subsidies may be provided. In respect of these schemes, subsidies may be provided for the reclamation or restoration of eroded, disturbed, denuded or damaged land and the combating of weeds or invader plants among others.

In 1999, proposed amendments to the regulations in terms of the Agricultural Resources Act were promulgated. The amendments specifically deal with weeds and invader plants.

Weeds are defined as "...alien plants with no known useful economic purpose. They are a menace, should be eradicated and trading cannot be allowed" (Agricultural Resources Act 43 Of 1983 – Regulations: Proposed Amendment)

Invaders are defined as "...also of alien origin and, except for their aggressive nature to invade into niches in a wide range of ecosystems, they may serve useful purposes as ornamentals, as sources of timber and may provide many other benefits. They should be managed and be prevented to spread into areas where they usurp water or invade the natural vegetation. Trading could be allowed, but only conditionally." (Agricultural Resources Act 43 Of 1983 – Regulations: Proposed Amendment-see appendix 4).

The weeds and invaders are designated with a status in one of three categories. The categories are:

- Category 1 plants are weeds and serve no useful economic purpose and possess characteristics that are harmful to humans, animals or the environment.
- Category 2 plants are plants that are useful for commercial plant production purposes but are proven plant invaders under uncontrolled conditions outside demarcated areas.
- Category 3 plants are mainly used for ornamental purposes in demarcated areas but are proven plant invaders under uncontrolled conditions outside demarcated areas.

Category 1 plants are prohibited from occurring on any land or inland water source and therefore need to be removed. Category 2 plants may occur or be established in demarcated areas in accordance with specific sub-regulations and certain conditions relating to the demarcated areas. Sub regulation 7(c) is particularly relevant as it prohibits certain Category 2 plants from being closer than 30 m of the outside boundaries of flood areas of perennial water courses and wetlands. This sub regulation is applicable to Rooikrans (*Acacia Cyclops*), which is common in the area of study.

#### **4.3.6 The Subdivision of Agricultural Lands Act of 1970**

The Subdivision of Agricultural Land Act prevented the subdivision of farms into uneconomic units. This has primarily operated as a zoning regulation and prevented land subdivision for residential or unauthorised change of use. This has been repealed, allowing for a more diverse farming structure. In this respect, the Agricultural Discussion Document points out that the use of agricultural land for eco-tourism, often leads to improved resource management in terms of biodiversity and economic benefits, including employment (Glazewski J, 2000).

#### **4.3.7 The Environmental Conservation Act 73 of 1989**

Although the Environmental Conservation Act (ECA) 73 of 1989 has largely been replaced by

the National Environmental Management Act 107 of 1998 (*see section 4.3.8*) it has certain key features which are directly relevant for the study area. Firstly the ECA enables the minister of environment or competent authority to declare specific forms of protected areas, namely a Protected Natural Environment, a Special Nature Reserve or a Limited Development Area (*see section 5.3*). Therefore should any of these conservation alternatives be applied to the study area, the ECA is the primary legal document for their declaration. The second key feature is that the Environmental Impact Assessment Regulations are determined by the Minister of Environmental Affairs and Tourism in terms of Section 21 of the ECA. These regulations are relevant should any development take place within the study area.

#### **4.3.8 National Environment Management Act 107 of 1998**

Although the National Environment Management Act (NEMA) does not address the issue of private conservation directly, it promotes integrated environmental management. An important feature of NEMA is that environmental management is often a condition of authorization for development. Environmental monitoring and auditing are important aspects of environmental management. Any private conservation initiative should include a sound environmental management plan, which incorporates ongoing monitoring and auditing, especially if any developments are proposed.

#### **4.3.9 The National Veld and Forest Fire Act 101 of 1998**

The National Veld and Forest Act stipulates fire protection associations should be established. Such an association has already been established in the area. Any conservation initiative would need to ensure they are part of the local fire association.

#### **4.3.10 The National Water Act 36 of 1998**

One of the most important features of the National Water Act is that it declares the government to be the public trustee of all of South Africa's water, Section 3 (1). Furthermore, the government has the power to regulate the use, flow and control of all water, Section 3 (3). Another important feature of the Act is that all water use is subject to a system of licensing. Provision is made for certain general water uses to be issued with authorisation of the responsible authority. Of particular relevance for the area of study is that all the properties (with the exception of Yzerfontein) fall within the Yzerfontein Subterranean Water Control Area. Any use of the water from the Grootwater aquifer requires a license from the responsible authority. The license system is set out in Part 2 of Chapter four of the National Water Act and the procedure for applying for a license in Parts 7 and 8 (*see appendix 2*)

#### **4.3.11 Western Cape Planning and Development Act 7 of 1999**

The Department of Constitutional Affairs, Local Government, Housing and Planning administer the Western Cape Planning and Development Act. The Act contains general principles of sustainable development including one, which aims at "promoting the sustained protection of the environment" (Principle 6 of Western Cape Planning and Development Act). An important function of the local authority enabled by the Act is the establishment of zoning schemes. Any zoning change needs to be authorized by the local authority (West Coast District Council for the current area of study). Another important feature of the Act is that it gives an environmental directive to local authorities in that "regard shall be given to the natural and developed environment and ecologically sustainable development in general". The local authorities should therefore incorporate this directive in their Integrated Development Frameworks (IDF).

### 4.3.12 Integrated Development Frameworks

Local authorities are required to prepare Integrated Development Frameworks or Plans in terms of the Local Government Transition Act 209 of 1993 and having regard for the land development principles set out in the Development Facilitation Act 67 of 1995 (Glazewski J, 2000). These principles include environmental considerations such as:

- *Encourage environmentally sustainable land development practices and processes;*
- *Promote sustained protection of the environment;*
- *Ensure the safe utilisation of land by taking into consideration factors such as geological formations and hazardous undermined areas.*

(Development Facilitation Act 67 of 1995, Section 3).

Integrated Development Plans are therefore in the process of being drawn up by most local authorities. The West Coast District Council and the Yzerfontein Local Council appointed Taylor, Van Rensburg and Van Der Spuy to draft a Spatial Plan for Yzerfontein and Environment in 1998. This was specifically in terms of the Western Cape's Land Use Planning Ordinance 15 of 1985 but is also required under the above mentioned Act.

The objectives of the Yzerfontein and Environment Spatial Plan includes the following:

d) *The natural environment must be preserved at all times by:*

- *providing the necessary conservation guidelines;*
- *initiating the necessary rehabilitation programs; and*
- *timeously contain potential pollution situations.*

*(Taylor, Van Rensburg, Van Der Spuy, 2000)*

The plan proposes actions to rehabilitate West Coast veld and declare more public Open Space III areas. Furthermore it aims to discourage subdivision of land into smallholdings. The Yzerfontein and Environment Spatial Plan therefore contains objectives that support greater conservation initiatives in the area. As the West Coast District Council commissioned the spatial plan, by implication they are also likely to support such initiatives.

### 4.3.13 Nature Conservation and Environmental Conservation Ordinance 19 of 1974

Various provincial ordinances form the legal basis for Provincial, Local and Private Nature Reserves in South Africa. In the Western Cape the Nature Conservation and Environmental Conservation Ordinance 19 of 1974 is the relevant legislation for the study area. This Ordinance is also significant as it is the primary legislation used by the Western Cape Nature Conservation Board for the management of nature reserves, including such aspects as the criteria for permitting wildlife reintroduction, professional hunting and fencing of reserves.

## 4.4 SUMMARY

The relevant institutional and legal requirements for private conservation initiatives vary according to the form of the conservation initiative undertaken. The primary institutions for the study area are the Department of Environmental Affairs and Tourism, the Western Cape Nature Conservation Board and the local authorities of the West Coast District Council and the Yzerfontein Local Council. The key legislation will depend on the conservation option chosen. The most relevant will be that which the above-mentioned institutions administer. For the study area the most important are the Environmental Conservation Act 73 of 1989 and the Cape Nature

Conservation and Environmental Conservation Ordinance 19 of 1974. The regulation amendments with regards to weeds and invader plants of the Agricultural Resources Act 43 of 1983 are also key for any conservation initiative within the study area.

University of Cape Town

**5 CONSERVATION  
ALTERNATIVES FOR PRIVATE  
LANDOWNERS**

University of Cape Town

## 5 CONSERVATION ALTERNATIVES FOR PRIVATE LANDOWNERS

### 5.1 INTRODUCTION

In total there are 21 different schemes and designations for protected areas in South Africa, many of them overlap and are managed by different agencies (Botha M, 2000) as indicated in *section 5*. This section provides an overview of the generally accepted international classification of protected areas. This is followed by a list and description of the South African categories that are most relevant to the current area of study.

### 5.2 INTERNATIONAL CLASSIFICATION OF PROTECTED AREAS

At an international level, the International Union for the Conservation of Nature (IUCN) has several categories for protected areas, as listed in the table below. Also listed in the table are the South African equivalents.

**Table 5-1: IUCN Protected Area Categories**

(from the White Paper on the Conservation and Sustainable Use of South Africa's Biological diversity, 1997)

CATEGORY	NAME	MANAGEMENT	SOUTH AFRICAN LEGAL OR OBJECTIVE OTHER EQUIVALENT CATEGORY
Category Ia	Scientific Reserves	Managed mainly for scientific research and monitoring	Special nature reserves Wilderness areas
Category Ib	Wilderness area	Managed mainly for wilderness, protection, subsistence and recreation	Special nature reserves Wilderness areas
Category II	National Parks and Equivalent Reserves	Managed mainly for ecosystem protection and recreation	National Parks Provincial Parks and nature reserves Indigenous state forests
Category III	Natural Monuments and Areas of Cultural Significance	Managed mainly for the conservation of specific natural or cultural features	Natural monuments Monuments Botanical gardens Zoological gardens Natural heritage sites Sites of conservation significance
Category IV	Habitat and Wildlife Management Areas	Managed mainly for conservation through management intervention	Provincial, local and Private Nature Reserves Conservancies
Category V	Protected Land and Seascapes	Managed mainly for land and seascape conservation and recreation	Protected natural environments Natural resource areas Scenic landscapes Urban landscapes
Category VI	Managed Resource Protected Area	Managed mainly for the sustainable use of natural ecosystems	Mountain catchments

### 5.3 SOUTH AFRICAN CLASSIFICATION OF PROTECTED AREAS

As already stated, there are 21 types of protected areas in South Africa. In terms of the area of study, the most relevant are listed in *Table 5-2* below, along with the applicable legislation and the responsible administrative agent (*see appendix 5 for full list*).

**Table 5-2: The Management of Protected Areas in South Africa**

(adapted from the White Paper on the Conservation and Sustainable Use of South Africa's Biological diversity, 1997)

TYPE OF PROTECTED AREA	LEGISLATION	ADMINISTRATION
National Park	National Parks Act 57 of 1976	South African National Parks
Protected Natural Environment	Environmental Conservation Act 73 of 1989	Assigned to provinces
Special Nature Reserve	Environmental Conservation Act 73 of 1989	Assigned to provinces
Limited Development Area	Environmental Conservation Act 73 of 1989	Delegated to local authority and government institution
Wilderness Area	Forest Act 122 of 1984	Department of Water affairs and Forestry delegated to the provinces
Provincial, local and Private Nature Reserves	Various provincial ordinances	Provincial administrations, local authorities and private landowners
Private conservancies	No legal status	Farmers
Biosphere reserves	No legal status	Conservation authority/neighbours
Sites of conservation significance	No legal status	Private landowners

#### 5.3.1 National Parks

The National Parks Act 57 of 1976 allows for the establishment of National Parks and "Contractual Parks". Essentially a Contractual Park is made between South African National Parks and private landowners in which the South African National Parks manages the land through the terms of a contract. The Cape Peninsular National Park, the Richtersveld National Park and the West Coast National Park are examples of Contractual Parks. The southern boundary of the West Coast National Park is approximately 10 km north of the area of study. Originally there were plans to extend the West Coast National Park to include the study area (Chittenden, pers. comm, 2001). The current expansion plans of the WCNP do not at this stage include moving much further south, but rather eastward. Furthermore, the present condition of the land in the study area, being particularly heavily infested with alien vegetation is not ideal for a Contractual Park. However, should the condition of the land improve, the possibility of establishing a Contractual National Park does exist (Seiben P, pers. comm., 2001).

#### 5.2.2 Protected Natural Environments

In terms of the Environmental Conservation Act 73 of 1989, a competent authority may declare a Protected Natural Environment (PNE) provided that:

- (a) if in the opinion of the competent authority there are adequate grounds to presume that the declaration will substantially promote the preservation of specific ecological

- processes, natural systems, natural beauty or species of indigenous wildlife or the preservation of biotic diversity in general; and
- (b) after consultation with the owners of, and holders of real rights in, land situated within the defined area:...
- (ECA 73 of 1989 Section 16 a and b)

As a PNE, the competent authority may issue certain directives with regards to land use. These directives may be incorporated into the title deed and are binding on any owner of the property (Glazewski, 2000).

In terms of the various conservation options a PNE is a realistic conservation alternative for the current area of study. One of its key strengths is that the provincial minister of the DEAT sub directorate declares the protected area. This gives the PNE greater conservation status and it is not easily repealed.

### 5.3.3 Special Nature Reserves

The designation “Special Nature Reserve” is primarily aimed at areas of scientific research. Special Nature Reserves are usually on state or private land with the owners consent declared in terms of the Environmental Conservation Act 73 of 1989. The control of a special nature reserve may be assigned to a competent provincial authority.

While the study area definitely has scientific value and research potential, this value and the size of the area are probably not sufficient to justify it being declared a special nature reserve. However, the scientific community could most certainly benefit from the area being conserved through one of the other conservation alternatives.

### 5.3.4 Limited Development Area

The Environmental Conservation Act 73 of 1989 makes provision for the declaration of limited development areas. The declaration of a limited development area ensures no development or activity occurs without an environmental assessment being carried out. To date no limited development areas have been declared and there is other more appropriate legislation to ensure environmental assessment is carried out such as the Environmental Impact Assessment (EIA) regulations (Glazewski J, 2000). The Minister of Environmental Affairs and Tourism proclaimed the EIA regulations in terms of the ECA in 1997. The regulations list schedules of activities that require an EIA before authorisation can be given.

While this is an option for the area of study, there are better and more appropriate conservation alternatives. Therefore, declaring the area a Limited Development Area is not recommended.

### 5.3.5 Wilderness Area

There is no clear definition as to what exactly a wilderness area is (Glazewski, 2000). The legal basis for a wilderness area is contained in the now repealed Forest Act 122 of 1984. However, given the current declared wilderness areas in South Africa, such as the Cedarberg Wilderness Area and Antartica, it is unlikely that the current area of study would qualify for this conservation designation.

### 5.2.6 Provincial, Local and Private Nature Reserves

The legal basis for the establishment of these reserves in the Western Cape is the Nature

Conservation and Environmental Conservation Ordinance 19 of 1974 (Cape). The Western Cape Nature Conservation Board Act 15 of 1998 has led to the formation of the statutory board, the Western Cape Nature Conservation Board (WCNCB), but the rest of Ordinance 19 still applies. There are two relevant possibilities within this category for the area of study these are discussed below.

A Contractual Provincial Reserve is the first option. This would operate on a similar basis as the Contractual Parks of the South African National Parks. However, there are very few Contractual Provincial Reserves in existence and they are only established adjacent to state land (Stadler H, pers. comm., 2001). Given the location of study area this option would therefore appear to be unrealistic.

The second option is the establishment of a Private Nature Reserve. The WCNCB is the responsible authority and all applications are processed and approved by them. The establishment of Private Nature Reserves is encouraged by the WCNCB. This option may be implemented in two ways in the current study area. Three of the properties already have Private Nature Reserve status namely: Rondeberg, Jakkalsfontein and Tygerfontein. Therefore a phased approach could be taken by which each property gradually establishes itself as a Private Nature Reserve, with its own facilities and activities. Then once all properties are individual reserves, they could amalgamate into a single private reserve. The alternative would be to form a single private reserve from the outset, in which case the existing reserves would be incorporated into the new reserve. Since several properties have already established themselves as Private Nature Reserves, it would be important to incorporate their existing names into whatever new reserve name is conceptualized. Jakkalsfontein in particular has an extensive marketing campaign with its name and logo.

The establishment of a Private Nature Reserve is a very realistic and favourable alternative for this conservation initiative. Both a disadvantage and advantage of the Private Nature Reserve option is that as easily as they may be established, they are equally easily de-proclaimed. A possible protection to the environment may be the rezoning of the reserve to public Open Space III, which has limitations on development. Therefore even though the reserve may be de-proclaimed, the environment is still protected through its zoning status.

### 5.3.7 Private Conservancies

Private conservancies have no legal status, but are a valuable tool for voluntary conservation agreements between farmers and environmental agencies. The WCNCB strongly encourages the establishment of conservancies, particularly in the rural areas. The WCNCB is willing to facilitate the process of establishing conservancies.

All of the properties within the area of study, with the exception of Tygerfontein, are members of the Cape West Coast Rural Conservancy, founded on the 2 November 2000. The objectives of this conservancy are:

- To protect, conserve and responsibly manage the indigenous fauna and flora in the defined area of the conservancy.
- To educate the general public regarding the sensitivity of our Eco system.
- To promote the eradication of alien vegetation and noxious plants, in accordance with the agreements within the conservancy.
- To provide the members with a list of endangered fauna, flora as well as alien and noxious vegetation.

- To give guidance to the general public on the responsible utilisation, conservation and appreciation of our unique indigenous fauna and flora.
- To co-operate with the local authority and other interested parties to promote the objectives of the Conservancy.
- To co-operate in the establishment and maintenance of the local fire protection agency.
- To manage and conserve responsibly our resources, especially the aquifer.

All of these objectives are encompassed in the vision for the conservation initiative being addressed in this report. As all stakeholders with, the exception of Tygerfontein, are members of this conservancy, it is not a new option. All that can be suggested is that Tygerfontein join the conservancy. It should be noted that the conservancy covers a far greater area than the present area of study. Furthermore, the Yzerfontein Urban Conservancy is also located adjacent to the study area. Both these conservancies provide a good indication that the general opinion of the local community is that the area is worth conserving.

### 5.3.8 Biosphere Reserves

The significance of the conservation value of the area is further enhanced by the formation of the West Coast Biosphere Reserve. Biosphere Reserves originate from the United Nations international Man and the Biosphere programme (MaB), aimed at promoting a balance between development and conservation. "Biosphere Reserves are not fenced reserves, but are areas where environmental conservation and eco-tourism are promoted, without compromising the development of economic activity therein, such as agriculture, industry and urban growth" (Southern Africa Environment Project. 2001a).

A Biosphere's primary functions are considered to be conservation, sustainable development and support through research, monitoring, education and training. In order to achieve these functions, a Biosphere Reserve is divided into three broad land use zones:

- A *Core* conservation area [e.g. Nature Reserve], surrounded by
- A *Buffer Zone(s)* [e.g. Limited Development], in turn surrounded by
- *Transition Zones* [e.g. Agricultural, Urban or Resort Development]

(Southern Africa Environment Project. 2001a )

In South Africa, there are currently three Biosphere Reserves, two of which are located in the Fynbos Biome.

- Kogelberg (proclaimed in 1998)
  - Cape West Coast (proclaimed in 2000)
  - Waterberg (proclaimed in 2001)
- (UNESCO, 2001)

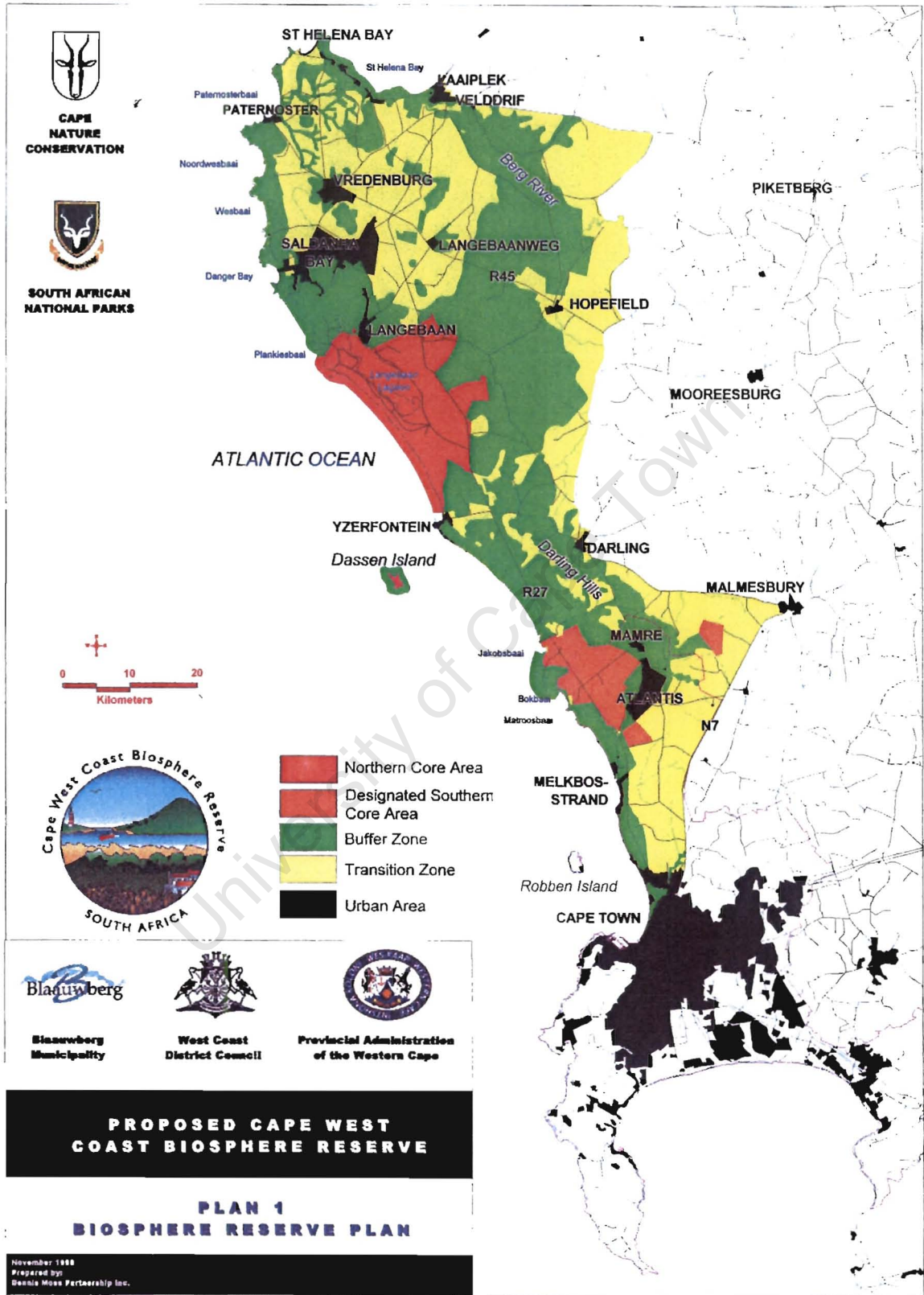
Biosphere Reserves are one of the strategies aimed at protecting the Cape Floral Kingdom. The Kogelberg Biosphere Reserve, located south east of Cape Town was the first Biosphere Reserve declared in South Africa. More recently, the West Coast Biosphere (*see figure 4-1*) has been established (Southern Africa Environment Project. 2001b ). This reserve extends from Saldanha to Koeberg. The area of study falls within the West Coast Biosphere Reserve (*see appendix 6*) and therefore the formation of a nature reserve would be in keeping with the Biosphere Reserve strategy. Although the study area primarily falls within the buffer zone, it is quite likely that a large Private Nature Reserve would be considered one of the core areas of the

West Coast Biosphere Reserve. Currently in South Africa, only state owned or managed Nature Reserves or National Parks are considered core areas of a Biosphere Reserve

#### 5.4 SUMMARY

Although there is many conservation options have already been discussed in this section, two are preferable for the study area, namely a Protected Natural Environment and a Private Nature Reserve. In the Western Cape, the provincial minister of the Department of Environment, Culture and Sport (DECAS) proclaims a PNE. Once proclaimed, the authority for the management of the PNE may be given to a local authority, in this case the West Coast District Council. The procedure for applying for a PNE would be through DECAS in the Western Cape. The PNE would have provincial statutory status with an advisory board and is likely to have easier access to funding. The advisory board would include representatives of the properties within the PNE and representation from key institutions such as the WCNCB and local authorities. A Private Nature Reserve is more easily established by applying to the WCNCB (*see appendix 3*). The major disadvantage of a Private Nature Reserve is that it can be de-proclaimed within a month and if change of ownership occurs, the Private Nature Reserve has to be re-applied for. One of the ways of protecting the land is to ensure that it is zoned for Open Space III, which limits development. Change of ownership does not change the zoning status; a zoning change would have to be re-applied for.

Figure 5-1: West Coast Biosphere Reserve



***6 POTENTIAL NATURE  
RESERVE ACTIVITIES AND  
ENVIRONMENTAL  
MANAGEMENT PLAN***

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## 6 POTENTIAL NATURE RESERVE ACTIVITIES AND ENVIRONMENTAL MANAGEMENT PLAN

### 6.1 INTRODUCTION

There is a wide range of potential activities associated with conservation initiatives. This section provides a discussion of the potential projects and activities, identified by the landowners at a workshop, which may be undertaken within the proposed nature reserve in the study area. It also provides the basic outline of an Environmental Management Plan (EMP), should a nature reserve be established.

### 6.2 POTENTIAL ACTIVITIES AND PROJECTS FOR A NATURE RESERVE

The potential activities and projects associated with a Private Nature Reserve are outlined in *Table 6-1*. This list was compiled at a workshop attended by all the primary stakeholders (*see appendix 1*). Further input was obtained from WCNCB officials responsible for approving Private Nature Reserves on the West Coast; their input has been included in this modified table from that which came out of the workshop. The ranking in respect to the time requirement for the development of the various activities varies from short term (within two years) to long term (five years or more). The ranking priority of activities is based simply on what is considered to be fundamental to the establishment of a sustainable Private Nature Reserve in the short term, to those activities and projects that are more long-term in nature.

Following the table, comment is given with regards to each particular activity. Where appropriate, similar activities have been grouped and commented on under the same sub-heading.

**Table 6-1: Potential Activities and Projects for a Private Nature Reserve**

<b>RANKING TABLE</b>	
Walking	ST
Alien clearing	ST
Anti poaching	ST
Game fencing – priority, security	ST
Bird watching and hides	ST
Prepare a map for lodges etc., land use map	ST
Flower viewing	ST
Game drives (including night drives)	ST
Serve as a research site	ST-MT
Whale/dolphin and other marine life viewing	ST-MT
Establish links with research institutions	ST-MT
Permanent residence	ST-LT
4X4	ST-MT
Archaeological sites	MT
History of farms in a booklet	MT
Horse	MT
Hiking	MT

Cycling	MT
Resource centre	MT
Education centre	MT
Interpretation centre	MT
Selecting right species	MT
Camping site(s) –limited facilities	MT
Lodges	MT
Chalets	MT
Dam	MT
Bring back historical species	MT-LT
Animal rescue	MT-LT
Raptor rehabilitation centre	MT-LT
Plant nursery	MT-LT
Craft shop	MT-LT
Coffee/tea shop	MT-LT
Restaurant	MT-LT
Game farming	MT-LT
Alien eradication	LT
Conference centre	LT
Health spa	LT
Hunting as part of management plan e.g. Trophy culling	LT
Breeding options	LT
Mineral water	LT

**KEY**

ST = Short Term project (Within the first two years)

MT = Medium Term project (3 – 5 years)

LT = Long Term project (more than 5 years)

**6.2.1 Trails**

Walking, horse, cycling, hiking and 4X4 trails have been identified as potential activities for the area. It would be important for the trails to cover the diversity of habitats that the reserve has to offer.

**Walking trails**

The establishment of walking trails is a short-term project that will continue to develop over time. Trails do already exist at Jakkalsfontein, but further walking trails would need to be established. These trails should connect places of interest and be sited close to accommodation, provided for both permanent residence and visitors. The trails should connect bird hides, vleis, pans and any other significant features or viewing opportunities. All trails should be clearly marked. Paths should be constructed and maintained in such a way as to ensure minimal negative environmental impact. Essential education boards with regards to fauna, flora and historical notes should be placed along the trails where appropriate.

**Hiking trail**

A term hiking trail is used to imply an overnight hike. Given the potential size of the reserve a

one or at the most two day hiking trail would be sufficient. Therefore overnight-sleeping locations would need to be established, either in the form of a camping area or small huts. This would include the coast and the dune belt through to the eastern boundary passing by significant landscapes and features such as vleis, pans and river courses. As a hiking trail requires over night points and more planning than day walking trails, it should be considered a medium-term project.

### **Cycling Trails**

Cycling trails are slightly more complex to establish in the proposed reserve area. The sandy ground is not conducive to cycling. Cycling therefore would be restricted to hard surfaces or tar roads. Gravel tracks could be established, but they are an expensive alternative and impact on the environment. Cycling trails should be considered a medium term project.

### **Horse Trails**

Horse trails would also be complex to set up although easier than cycling trails. The establishment of horse trails would require the provision of horses, stabling facilities and care for the horses. It is likely that horse trails would overlap to a certain extent with cycling and hiking trails. The beach would be a good section to include in a horse trail. It is important to note that horse trails need to avoid areas that are over run with moles, as mole burrows and holes are potential hazards to mounted horses as they are likely to injure the horse by stepping onto sand that suddenly gives way (Pretorius D, pers. comm., 2001). This should be considered a Medium-Term project.

### **4X4 Trail**

The topography of the area is not the ideal environment for a 4X4 trail, although the sandy soil may provide an attraction. The establishment of a 4X4 route is not regarded as a suitable activity, but the reserve as a whole may have something to offer the 4X4 enthusiast. For example, a campsite that can only be accessed by 4X4 vehicles may provide the opportunities for 4X4 enthusiasts or clubs to stopover enroute to other trails or simply for a camping trip. With regards to 4X4 trails, it is worth noting that if existing roads are utilized, no Environmental Impact Assessment (EIA) is required. However, if new roads were constructed, a full EIA would need to be carried out.

It should also be noted that should any campsites or huts be developed, they would require an EIA.

## **6.2.2 Bird watching and hides**

Bird watching is an activity that would be associated with the walking and hiking trails. It would also be appropriate to establish bird-hides at key points on the reserve, such as vleis and pans or any permanent water body that can be connected by the various trails that may be developed. The coast and its marine birds is also considered as a good bird watching environment.

## **6.2.3 Wildlife and flower viewing opportunities**

There is a number of wildlife viewing opportunities that are short-term activities requiring very little development to implement. These include viewing of marine life such as dolphins and seals throughout the year and whales during spring. Also associated with spring is the flower season, which could also attract visitors to the area. These viewing opportunities could be experienced through the various trails and through drives around the reserve. Game viewing night drives could also be established in the short-term, as there are already many small nocturnal mammals that are present in the area, such as caracal, bat eared fox and porcupines.

### 6.2.4 Archaeological sites

Very few archaeological sites have been found in the area. Apart from the coastal properties, no thorough archaeological survey of the site has been undertaken. In the medium-term it would be important to conduct a thorough archaeological survey of the area. Significant sites could then be included along the walking and hiking trails with appropriate environmental education signage.

### 6.2.5 Information centres

In the medium-term it would be helpful for the reserve to develop information centres such as an interpretation or resource centre. The centre could provide information on the various ecosystems and other important features of the environment. The centre should be connected to the various trails as either a starting, stopover or end point on the trail. Such a centre could form the basis for an environmental education program. The existing infrastructure on the farm Jakkalsfontein would make it a good place to site such a centre providing it does not infringe upon the rights of the permanent residents. Alternatively, smaller centres could be established on each individual property, providing information specifically relating to the farm.

### 6.2.6 Information brochures

The preparation of a map of the reserve and promotional material would be an important short-term project. Related to this would be a small booklet on the history of the area and the farms that make up the reserve, although this is perhaps a more medium-term project. Fauna, flora and bird lists would also be useful tourism aids. Information concerning other tourism related activities in the Yzerfontein environment could also be promoted.

### 6.2.7 Wildlife rehabilitation centre

In the medium to long-term period the development of a wildlife rescue and rehabilitation centre, especially for raptors, which are frequently injured by vehicles, power lines etc., could be a valuable project and attraction for the reserve. The WCNCB would need to be consulted for such a project as they issue the relevant permits and ensure that such a centre meets the required standards. For example, such a centre would need the support of a registered vet, although the vet need not be based at the centre itself. A possible location for a centre would be on Jakkalsfontein as it already has potential facilities.

### 6.2.8 Research potential

The areas significant flora provides opportunities to establish links with research institutions such as the University of Cape Town, Stellenbosch University, University of the Western Cape, the National Botanical Institute and other institutions. Partnerships with research institutions may provide a potential source of funding for particular projects in the reserve. Apart from the flora, the geology and the fact that the area overlies an important aquifer, raises further opportunities for study. With regards to the fauna, studies with regards to habitat suitability and carrying capacity would need to be carried out if some of the historical species were to be re-introduced. Research institutions could facilitate such studies. This could be considered a short to medium-term activity, although the reserve may continue to serve as a research site in the long-term.

### 6.2.9 Introduction of wildlife

The introduction of wildlife is a particularly sensitive, difficult and costly activity of the reserve.

The introduction of wildlife relates specifically to re-introducing medium-large mammals to the area. As noted in *section 3.6* there are already a number of mammal species and other animals present within the study area. One of the proposed objectives of the reserve is the re-introduction of historically indigenous species. The process of re-introducing historical species to an area is controlled by the WCNCB. Although *Table 3-3* in *section 3.6* indicates a relatively large number of potential species, habitats and environmental change over time along with the size of the proposed reserve is likely to restrict the type and number of the species that can be successfully re-introduced. Furthermore, WCNCB monitors and controls this process for the entire Western Cape following a specific strategy for each species. Therefore although certain species could be re-introduced, WCNCB may be reluctant to or refuse to grant permits if a particular species re-introduction is contrary to their overall plan.

After consultation with the relevant WCNCB officials for the West Coast, a list of potential mammal species was compiled, along with possible numbers that the area could support. It should be noted that these figures refer to individual species that are potentially suited to the area and is very much a preliminary estimate. Competition of habitat has not been considered in estimating numbers and no detailed study of the habitat has been undertaken. This list should therefore be read as a guide for the possible re-introduction of wildlife. Prior to any re-introduction of wildlife, an in-depth study would need to be conducted in conjunction with the WCNCB. Hence this can be considered a medium to long-term project.

**Table 6-2: Potential Historical Mammal Species for Re-introduction**

COMMON NAME	SCIENTIFIC NAME	APPROXIMATE NUMBER	COMMENT
Recommended and potential re-introductions			
Red Hartebees	<i>Alceiaphus buselaphus</i>	40	Selective feeders, good species to re-introduce
Grey Rhebok	<i>Pelea capreolus</i>	6-7	Not on the list in section 3.6, but possible to re-introduce. Extremely habitat selective and therefore not recommended
Eland	<i>Taurotragus oryx</i>	150	Very good species to re-introduce
Bontebok	<i>Damaliscus dorcas</i>	30-40	Good species to re-introduce
Black rhinoceros	<i>Diceros bicornis</i>	3 to start (1 bull, 2 cows), maximum 10	Fence would need to be strengthened with steel cables. Very expensive to obtain and a dangerous animal
Cape (African) buffalo	<i>Ynerus caffer</i>	8	Possible, but dangerous and requires quarantine
The following could be reintroduced, but are not recommended, therefore no number estimates are given			
Burchell's zebra	<i>Tragelaphus scriptus sylvaticus</i>	-	Competes with other species and requires quarantine. Not recommended
Black Wildebeest	<i>Connochaetes gnou</i>	-	Not recommended
Kudu	<i>Tragelaphus screpsiceros</i>	-	Not recommended

Although there are a number of other potential species on the historical list in *section 3.6*, the above species are the only species that should be considered for re-introduction. Other species listed are either problem animals or the reserve is not suitable for their re-introduction. It is also worth noting is that the ostrich is not considered a good animal to keep in such an environment as it is destructive for fynbos habitats.

Realistically, the following three mammals, namely Red Hartebees, Eland and Bontebok are most likely to be successfully re-introduced and would have the support of the WCNCB. All three would provide opportunities for game farming and breeding, especially the Eland.

### 6.2.10 Hunting

Related to the game farming of these species is the possible revenue that could be derived from

trophy culling. Culling should only be considered when the selling and translocation of excess animals is not an option. In a closed and controlled ecosystem as all nature reserves are, it is often necessary to cull or hunt, although culling and hunting are sensitive issues. Equally, game bird hunting (e.g. guinea fowl) is a possibility, but also raises emotions and may not be an appropriate activity for the proposed reserve. If any hunting were to be undertaken, it would need to be done in terms of Nature Conservation and Environmental Conservation Ordinance 19 of 1974 (Cape), which lays out strict conditions for hunting. One of the conditions is the use of a professional hunter. A simple solution would be to work through an existing hunting operation, which would no doubt employ registered professional hunters. Hunting is a very sensitive and emotional issue for many people. Careful planning and thought would therefore need to be given to introducing some form of hunting to the reserve. All interested and affected parties would need to be consulted.

### **6.2.11 Anti-poaching**

It is widely recognised that poaching is a problem with most conservation initiatives. It is not only wild animals that are poached, particularly marine and terrestrial fauna, but many plants are also removed, especially if they have traditional medicinal value. Therefore, whatever nature reserve option is adopted, anti-poaching operations would need to be an on-going activity right from the start of the establishment of the reserve. This would require a partnership with local nature conservation authorities.

### **6.2.12 Game fencing**

The construction of a perimeter fence is fundamental to the establishment of a nature reserve, particularly if wild animals are being kept. There are a number of reasons for constructing a game fence as a matter of priority, these include:

- **Security:** A fence enhances the security of both the residents and environment.
- **Certification:** It is the policy of the WCNCB that if wild animals are to be kept in a reserve, a certificate of adequate enclosure is only issued if policy standards are met according to the species of animals being kept in the reserve.

A certificate of adequate enclosure is extremely important if animals are bought and released into the reserve. Ownership of wild animals passes to whoever owns the land on which the animal is located (Glazewski J, 2000). However, according WCNCB (Stadler H, pers. comm., 2001) if the animals have escaped from a reserve with a certificate of adequate enclosure, the ownership remains with the holder of the certificate.

The issue of fencing while being extremely important and necessary raises other problems. Firstly, fencing is very expensive. The construction costs of a perimeter fence of 2.4 metres high (the required height if Eland are to re-introduced to the reserve) are approximately R18-R25 per metre for labour costs alone. Secondly, the western border of the reserve is the coast, which is very difficult to enclose. Appropriate means of enclosure for the coastline would need to be investigated? The fence would most likely be located inland of the beach with grids for vehicle access. Another consideration is the extent of the Admiralty Reserve on each coastal property. The fence would have to be located above the Admiralty Reserve zone.

### **6.2.13 Alien plant clearing and eradication**

While the clearing of alien vegetation is a short-term project, to rid the area of alien vegetation requires a long-term commitment from the landowners. In terms of the amendments to the

Agricultural Resources Act (*see section 4.2.3*), landowners have a legal obligation to clear and control certain alien plants. The clearing of alien vegetation therefore needs to be seen as a priority of any conservation initiative in the area. The costs of such an exercise are high (*see approximate costs below*) and it is recommended that funding be sought to support the initial clearing operation (*see section 7.3*). Thereafter a program for on going eradication would need to be established and implemented by the landowners.

While the infestation of alien vegetation on a large portion of the study area is a problem (more than 50% ground cover on some properties), there are a number of potential solutions and opportunities that arise from the clearing operation. The standard approach is to contract work out for manual clearing at approximately between R3000 - R4000 per day. At present, the West Coast National Park spends the following amount on Rooikrantz removal: Labour & machine maintenance costs only

- 75-100% density of aliens R 4400 per hectare
- 50% density of aliens R 3300 per hectare
- 5-25% density of aliens R 2900 per hectare (Sieben P, pers. comm., 2001)

The Working for Water program may be able to fund the initial costs of an alien vegetation-clearing programme (*see section 7.3.3*).

Recently Richard Staniforth has developed a mechanical method for clearing alien vegetation (Staniforth R, 2001). Staniforth considers mechanisation as an essential primary step in alien vegetation control programs. Staniforth proposes mechanical clearing through mulching. A mulcher is attached to a 350 hp Caterpillar front-end loader with large forestry tyres. Mulching is suitable for clearing flat areas and smooth slopes (including sand dunes) to an angle of 18° with a vertical operational reach of approximately 8 metres. Staniforth suggests that mechanical clearing can be done at a cost of about R1000 per day, with one machine and 2 people clearing 5-6 hectares. He argues that using 150 people, only one hectare would be cleared in a day at a cost of between R3000-R4000. Furthermore, Staniforth argues that more women and disabled people could be employed with this system, as the follow-up work does not require the intensity of training and fitness of manual initial clearing. Staniforth believes that mechanical clearing initially, with manual labour follow-up is a much more cost effective way for the private land owner to clear alien vegetation, than simply using manual labour from the start.

#### **6.2.14 Plant nursery**

A nursery already exists at the farm stall at the intersection of R27 and the road that leads to Yzerfontein. A second nursery is planned for next to the other farm stall opposite the current entrance to Jakkalsfontein on the R27. Rather than set up a further facility, efforts should be put into establishing partnerships with existing local initiatives. An emphasis the reserve could bring to the nurseries is the promotion of indigenous plants. With the alien vegetation clearing in the reserve, the restoration of the indigenous vegetation would require intensive nursery support. This support would primarily be in the form of providing indigenous plant seedlings for replanting in cleared areas.

#### **6.2.15 Permanent residence**

The presence of permanent residence is a short-term to long-term activity. This particularly relates to the coastal properties of Jakkalsfontein and Tygerfontein as they have permanent residents and additional permanent residence is planned for. Since these are sectional title dwellings, there is likely to be continuous buying and selling of property throughout the life

cycle of the reserve. A further important point to note is that all activities and projects undertaken in the reserve should be compatible with and in no way infringe upon the rights of the permanent residents.

### 6.2.16 Visitor accommodation

Eco-tourism is an important part of a nature reserve in order to make it sustainable as it generates income for the reserve. While day visitors are an important component of the visitor population, the proposed reserve is sufficiently large enough and far enough from Cape Town to warrant the establishment of visitor accommodation. The accommodation that is developed should cater for a range of people and ensure that it is affordable.

Three forms of visitor accommodation are mentioned in *table 6-1*, namely lodges, chalets and a camping site. Lodges could cater for the more up-market visitor sector and thus be more luxurious and possibly sited closer to the coast for better views. Chalets should be simple self-catering facilities. The campsite should be simple with no power points or caravan sites.

The development of these accommodation facilities can be considered to be medium term projects. The siting of the facilities needs to be carefully planned for the following reasons:

- It is recommended that the properties be rezoned Open Space III to become a Private Nature Reserve, as this limits development. Therefore it is important that in the rezoning application, specific development nodes are included for the establishment of visitor accommodation and associated facilities. The relevant authorities stipulate land use restrictions and additional provisions.
- The development sites should provide the visitor with a sense of being outdoors. Therefore any facilities should be developed far enough away from major traffic routes and be fairly secluded, maximising viewing opportunities and “wilderness experience”.
- Sites should be close enough to water sources such as vleis to provide good game viewing opportunities. Yet, equally important is that facilities should be far enough away from water sources, so as not to prevent or disturb game from drinking at the water source. Access to the various trails and beach should also be taken into consideration.

Potential sites for the lodges and chalets should be considered on the properties Yzerfontein, Coffeefontein and Uitkoms. All three properties have disturbed land and potential water holes. Furthermore, the coastal properties have already been rezoned and have permanent residents which may not be open to having visitor accommodation facilities developed too close to their homes. Grootwater is in the process of being rezoned Open Space III with an appropriate potential campsite facility. Market research would need to be undertaken to determine the number of accommodation units to be established and scoping reports to determine whether EIAs need to be conducted for the various developments.

### 6.2.17 Craft shop

The San Cultural Centre based at Grootwater on the eastern side of the R27 will have a craft shop. Furthermore, small crafts are sold at the two farm stalls along the R27 in the vicinity of the proposed reserve. Rather than establish another facility, it would be more appropriate to support the existing initiatives. This is also likely to strengthen local community support for the reserve.

### 6.2.18 Restaurant and tea/coffee shop

Both the above mentioned farm stalls offer these facilities, as does the town of Yzerfontein. All

three are close to the proposed reserve and have the potential to benefit from tourists visiting the reserve. To establish new facilities within the reserve would probably impact negatively on these existing facilities and possibly antagonise the local community. There is also likely to be more of a positive response from the local community, if the reserve could be seen to support local business. Furthermore, the farm stalls and other businesses could promote the reserve. Another possibility is to introduce some form of benefit for reserve guests who then dine at or visit local restaurants and coffee shops. This could be in the form of a discount or meal voucher. An appropriate business plan would need to be developed between interested parties. Given the existing facilities in the area, the establishment of a new restaurant is therefore not recommended due to the costs of establishing and running such an operation.

### **6.2.19 A Dam**

The establishment of a dam was suggested for the reserve. Given that the area sits on an aquifer and the nature of the water systems (vleis, pans periodic streams) in the environment, the construction of a dam would not be appropriate and is unlikely to be approved. However, with the clearing of alien vegetation, there is likely to be a significant increase in surface water. It is possible that several pans and vleis could become relatively large water bodies, particularly during the winter months, possibly even permanently. Any such water bodies should not be used for recreational activity other than bird and game viewing. These water bodies are small and unsuitable recreational features with many of the Red Data and rare flora species growing around the vleis e.g. Vlei Buchu, They would need adequate protection (Hanekom N, pers. comm., 2001).

### **6.2.20 Other reserve facilities**

The remaining three long-term projects from the table, which require significant development, are a conference centre, health spa and mineral water facility. While all three of these are valid suggestions, thorough market surveys and feasibility studies should be conducted for each to determine how realistic and sustainable they are for the area. A possible lesser alternative to the conference centre would be to promote the reserves team building and small group social opportunities. Jakkalsfontein already has basic facilities for workshops and conferences, with a pool and entertainment area. Small group and company functions could make use of such a venue, especially since it is relatively close to Cape Town.

## **6.3 ENVIRONMENTAL MANAGEMENT PLAN**

Whatever conservation alternative is applied, it is essential that an Environmental Management Plan (EMP) be developed for the area. An EMP would ensure effective and sustainable management of the reserve. The EMP would also provide a system to ensure compliance with current legislation, which may be relevant to the reserve. If appropriate environmentally friendly and sustainable methods are used for the EMP components mentioned below, the reserve could sell itself as being eco-friendly and set a model example for similar initiatives elsewhere.

### **6.3.1 Fire management**

Given the high risk of fire in the area, particularly with the infestation of alien vegetation it imperative that an effective fire management plan be incorporated into the EMP. The fire management plan should cover aspects such as training fire fighting teams, procedures to be followed in the event of a fire, an inventory of fire fighting equipment, controlled burning etc. This should be linked with the current fire association, which has been established in the area.

### **6.3.2 Vegetation management**

A vegetation management plan will be critical for the success of the reserve. Input from a specialist to assist in drawing up the plan would be required. A program for alien eradication should be developed from the initial clearing to ongoing monitoring and follow-up. Along side the alien-clearing program there would need to be an appropriate restoration ecology plan to ensure cleared areas do not remain exposed for too long increasing the potential for soil erosion. An appropriate burning regime for the fynbos would also need to be established in conjunction with the Western Cape Nature Conservation Board, which has specific guidelines to follow (Hanekom N, 2001)

### **6.3.3 Faunal management**

If wildlife is to be re-introduced to the reserve, a detailed faunal management plan should be developed. This would need to include veterinary treatment; culling and translocation procedures, breeding and game count procedures. Anti-poaching and stock recovery procedures should also be considered.

### **6.3.4 Pollution and waste management**

Appropriate mechanisms for preventing and controlling pollution from all aspects of the reserve should be developed. The disposal of waste should also be managed in accordance with current legislation and so as to not negatively impact the environment. The three principles of reduce; reuse and recycle are helpful in guiding a waste management plan. Essentially the reserve should aim to produce as little non-degradable waste as possible.

### **6.3.5 Water management**

The fact that area overlies an aquifer, with valuable pans and vleis on the surface, highlights the importance of good water management. Again, it is important to reduce water consumption and reuse or recycle water where possible. There are many products that are available to facilitate the reduction of water consumption, particularly household consumption. For example, low flow taps and multi-flush toilet systems. Furthermore, the introduction of water tanks to capture rainwater from roof run off should be considered.

### **6.3.6 Energy management**

Similarly with waste and water management, energy consumption should be reduced and renewable energy sources used where possible. For example, solar water heaters should be installed for accommodation units. Buildings should be built and designed to enhance energy efficiency, for example, north facing to maximize the use of the sun where possible.

### **6.3.7 Infrastructure management**

Infrastructure development and maintenance should be environmentally sustainable with as little negative environmental impact as possible. For example, buildings should not break the skyline where possible and power lines or telephone cables, if installed, should be laid underground. Such considerations would enhance the aesthetic appeal of the reserve.

### **6.3.8 Staff management**

Appropriate mechanism for staff training in skills and environmental education should be

established. This creates greater environmental efficiency and builds the skills capacity of the staff.

### **6.3.9 Resident and visitor management**

A management plans for the control and education of both the permanent residents and the visitors to the reserve should be established. This creates greater environmental awareness and helps prevent negative environmental damage caused through ignorance. For example, building walkways over sensitive vegetation rather simply through the vegetation.

### **6.3.10 Environmental audit**

An annual environmental audit of the reserve should be undertaken by an independent company to ensure compliance with the EMP and current legislation.

University of Cape Town

**7 FINANCIAL  
CONSIDERATIONS AND  
POTENTIAL SOURCES OF  
FUNDING**

University of Cambridge

## **7 FINANCIAL CONSIDERATIONS AND POTENTIAL SOURCES OF FUNDING**

### **7.1 INTRODUCTION**

The development of approximately 8000 hectares into a nature reserve, involving several landowners requires careful financial planning. Costs would need to be shared, as would income. To that end a comprehensive financial business plan would need to be drawn up by an appropriate specialist. Furthermore, an endeavour of this size would incur certain initial costs for which additional funding may be sought. This section seeks to address some of these concerns.

### **7.2 POTENTIAL FINANCIAL MODELS FOR THE CONSERVATION INITIATIVE**

The establishment of a nature reserve will require a thorough business plan to be developed by all stakeholders. This report offers some guidelines as to potential financial models that could form the basis of a business plan in terms of the division of costs and income from establishing a nature reserve. Three potential models are given below.

#### **7.2.1 Proportional Financial Model**

A simple model would be to divide all income and expenditure for the proposed reserve on a proportional basis. The proportion could be based on the percentage of the individual properties as to the reserve as a whole. For example, if a particular property covers 20% of the reserve, then the owner of that property would be expected to pay 20% of all costs related to the reserve and equally receive 20% of all income generated by the reserve. The obvious advantage of this model is its simplicity, and that is also its disadvantage. The financial management of a nature reserve with several stakeholders is more complex than a simple proportional division of costs and income. For example, the development of chalets on one particular property may have no direct benefit for several of the other properties and is a costly project. To simply proportionally divide the cost of such a project between the landowners based upon the percentage of the reserve their land covers, would be grossly unfair. Therefore, although this model has merit, it would not be appropriate for the financial management of the entire reserve.

#### **7.2.2 Activity Based Financial Model**

This model suggests that income and expenditure is proportionally based on activities occurring on the individual's property. For example, if chalets are built on a property, the owner of the property pays for the development and receives the revenue they generate. A syndicate may be formed between owners to share in such a development. A hiking trail, which traverses several properties, would require its costs and income to be proportionally divided according to the property it covers. Although this model is based more on the extent to which the individual is proportionally sharing the costs and reaping the rewards to a particular activity, there will inevitably be communal expenditure and income, such as an entrance fee and fence maintenance. As with the proportional financial model, an activity based financial model is also inappropriate for the financial management of the entire reserve. There are many components of the reserve that can be proportionally based, for example, the employment of staff to manage the reserve. All owners would benefit directly from the proper management of the reserve; therefore the financial costs could be equally or proportionally shared. An entrance fee to the reserve is an example of a financial gain that should be equally or proportionally shared by all landowners. The activity based models strength is for activities or projects that do not directly benefit all

landowners; examples have already been given above.

### 7.2.3 Communal and Private Individual Financial Model

The most logical financial model would be a combination of the above two models. Certain activities, projects and aspects of the proposed reserve would need to be proportionally or equally divided between all landowners. These aspects would include functions that are considered to be of direct communal benefit such as an entrance fee, reserve staff, game fence, purchasing and selling of game etc. Most aspects of an Environmental Management Plan (*see section 6.3*) would be considered communal. However, all property owners would not necessarily participate in all developments that take place, such as the building of chalets or lodges, although some may choose to invest in a particular development. Therefore whoever invests in the development would also reap the rewards and be responsible for the ongoing maintenance of the development. Each specific venture would need to be considered on its own as to what the most reasonable division of cost and income should be. For developments that have no direct communal financial benefits, a levy may need to be considered to ensure the reserve as a whole receives some financial gain from a particular activity. This financial model would require a detailed business plan to be developed. Although this model is more complex, it is fair and equitable and therefore the recommended model for the reserve.

One particular activity, which would be costly, yet is extremely important and urgent in the light of recent legislation (*see section 4.3.5*) is the clearing of alien vegetation. This is made more complex by the fact that several properties in the study area are quite clear of alien vegetation, while others are heavily infested. The clearing of the alien vegetation is in the interests of all landowners, but all landowners may not be willing to contribute financially to the project owing to the costs involved. A possible solution to this issue is to source funding for the alien vegetation clearing operation. The possibility of securing funding is enhanced by the significance of the area in terms of its fynbos, location in the West Coast Biosphere Reserve and the importance of the Grootwater aquifer. A second initial cost that would require some financial assistance is likely to be the fencing of the reserve. The following section suggests potential sources for such funds. It should be noted though that the ongoing eradication of the alien vegetation would need to be a communal reserve project as it would be a component of an Environmental Management Plan.

## 7.3 POTENTIAL SOURCES OF FUNDING

The nature reserve is likely to boost the local economy through increased tourism and to a lesser extent job creation, although alien vegetation clearing could be quite labour intensive. These socio-economic advantages further enhance the reserve's potential for attracting funding.

### 7.3.1 Cape Action Plan for the Environment

The Cape Action Plan for the Environment (CAPE, 2000) is aimed at protecting the diversity of the Cape Floral Kingdom. The CAPE has developed a partnership with the Global Environmental Facility (GEF) to assist in funding the various projects it undertakes. World Wildlife Fund – South Africa (WWF- SA) manages the CAPE project, which has:

- Identified the priorities for conservation on the basis of biodiversity and threats developed a long-term strategic vision
- Drawn up scenarios for the development of new reserves
- Developed guidelines for effective conservation strategies outside reserves

- Drafted a 5-year action plan, with priority projects. (WWF-SA, 2001)

While the area of study is possibly too small to benefit directly from the CAPE projects, owing to its biodiversity value, integration into one of the existing CAPE projects could be explored with potential financial support (*see appendix 7 for contact details*).

### 7.3.2 West Coast Biosphere

As the area of study falls within the West Coast Biosphere Reserve, the management committee of the biosphere reserve could be approached to assist with funding the clearing of alien vegetation and fencing particularly. If the Biosphere Reserve Management committee is not able to give financial assistance, it is likely they would support any efforts to clear the alien vegetation and preserve the sensitive vegetation (*see appendices 6 and 7 for contact details*).

### 7.3.3 The Working for Water Program

The Working for Water Program is a multi departmental initiative led by the Department Water Affairs and Forestry. The program aims to:

- Enhance water security; promote equity, efficiency, sustainability in the supply and use of water.
- Improve ecological integrity and counteract abnormal fires, erosion, flooding, scouring, siltation and protect biodiversity.
- Restore the productive potential of land and promote sustainable use of natural resources, and to develop economic benefits from land, water, wood and people (secondary industries).
- Invest in the most marginalised sectors of South African society, and to optimise the social benefits in such a public works programme.

The Working for Water programme addresses the problem posed by alien invading plants by:

- Public works clearing programme.
- Ensuring that legislation relating to water, agriculture and the environment are optimised in the battle to control invasives.
- Enhancing awareness of the problem through education (schools, consumers, nursery stockists etc).
- Supporting research and managing the implementation of bio-control in the field, which is seen as the long-term sustainable solution to the problem.

(Department of Water Affairs and Forestry, Working for Water, 2001)

Although there are not established systems of incentives or financial assistance for private landowners for alien eradication and control, there are some mechanisms to assist them (Waddilove in Shaw, 2001):

- Private landowners can pay an additional charge on their water bill, which goes towards recovering the costs of clearing;
- Private land over which the state has control, such as land that has been absorbed into national parks, is fully funded by the state through Working for Water;
- Private land that has been identified as a priority area for conservation reasons, 80% of clearance costs are covered in the form of labour; and
- Private land without a conservation priority is covered by the state through Working for Water for 50% of the initial clearing costs. Working for Water envisions private landowners

entering into lasting partnerships with them and their contractors, as a means of economic empowerment for the individuals involved in the program.

(Marais in Shaw, 2001)

The last two points above are the most relevant to the area of study (*see appendix 7 for contact details*).

### 7.3.4 Ukuvuka Operation Firestop Campaign

The Ukuvuka (“wake up”) Operation Firestop Campaign developed as a response to the devastating fires on the Cape Peninsular during January 2000. One of the negative impacts of alien vegetation is that it burns at a high intensity, far greater than the natural burning regime of fynbos (Living with Fire, 2001; Shaw, 2001). The high intensity burn of alien vegetation has a destructive impact on fynbos, damaging fynbos seeds and the soil (Shaw, 2001). The Ukuvuka campaign aims to rid the Cape Peninsula of invading aliens on both private and public land. It is a multi-million rand joint initiative between government, private sector, local authority, non-governmental organizations and GEF.

Two years ago there were significant fires along the West Coast, again alien vegetation was a major factor in the intensity and spread of the fires. While the Ukuvuka campaign is not directed beyond the Cape Peninsular at this stage, the concept could be extended to other areas. A collaborative effort between conservation authorities, local government and private landowners has the potential to establish a similar Ukuvuka campaign for the West Coast. The formation of a nature reserve in the current study area, along with the West Coast National Park and the West Coast Biosphere Reserve, could provide the basis for such a campaign with funding to clear alien vegetation. The Western Cape Nature Conservation Board officials for the West Coast, along with the management committee of the West Coast Biosphere Reserve should initiate an Ukuvuka related campaign for the West Coast (*see appendix 7 for contact details*).

### 7.3.5 National Department of Agriculture

In *section 4.3.4* the Agricultural Policy in South Africa was briefly discussed. The land care program may be considered as a potential source for funding, particularly with regards to preventing soil erosion after alien clearing. Although the National Department of Agriculture may be considered a potential source for funding, it is an unlikely source as its primary concern is the protection of agricultural land and not necessarily the conservation of biodiversity through establishing a nature reserve on previously zoned agriculture land (*see appendix 7 for contact details*).

## 7.4 SUMMARY

The establishment of a nature reserve with several landowners requires careful financial consideration. A communal and private individual financial model should form the basis for a detailed business plan. Several initial activities for a reserve, such as fencing and the clearing of alien vegetation are very expensive and funding should be sought. Although there are several potential funding sources, the Working for Water Program of the Department of Water Affairs and Forestry is the most likely source of funds in the short term for alien vegetation clearing. The extent of the alien vegetation in the study area, together with its location above the Grootwater Aquifer would be strong motivation points for the Working for Water Program to be involved. In terms of financial assistance for fencing, the West Coast Biosphere Reserve Management Committee would be a potential source for funds. The support of the Western Cape Nature Conservation Board would be a great advantage in seeking financial assistance.

# ***8 SUMMARY OF FINDINGS AND RECOMMENDATIONS***

University of Cape Town

## 8 SUMMARY OF FINDINGS AND RECOMMENDATIONS

### 8.1 INTRODUCTION

This section aims to summarize the key findings of the study and provide recommendations on a way forward for all stakeholders to achieve the vision outlined at the start of this report.

### 8.2 SUMMARY OF KEY FINDINGS

#### 8.2.1 Biophysical Assessment

The preliminary biophysical review of the area of study is based largely on biophysical assessments prepared for the properties of Rondeberg Flats, Jakkalsfontein and Tygerfontein. Information has also been obtained from the Western Cape Nature Conservation Board, Department of Water Affairs and Forestry and relevant literature for the area. Furthermore, relevant information obtained from the various interviews conducted for this project, has also been included.

Based on the findings of the review, there are two significant biophysical attributes of the area:

Firstly the study area falls within the Yzerfontein Subterranean Government Water Control Area, and therefore overlays the Grootwater aquifer. The implication of falling within a Government water control area is that ground water abstraction is strictly controlled, with each property overlying the aquifer having a specific allocation obtained through acquiring a license form the Department of Water Affairs and Forestry. Apart from the aquifer, there are number of other hydrological features in the area of study worth noting. Three river courses and a number of important vleis and pans are scattered throughout the area.

Secondly, the coastal plain of the Western Cape falls within the Cape Floristic Region. The value of the Cape Floral Kingdom (CFK) is internationally recognised, as are the major threats to its existence. These threats include land transformation through urban and coastal development, agricultural and pastoral farming. Furthermore the spread of alien vegetation threatens the biodiversity of the CFK. Although the area of study has not been thoroughly researched in terms of species composition, based on studies that have been completed on three of the properties, it is clear that the level of species diversity is high. Furthermore, there are a significant number of Red Data species present. In terms of alien vegetation, woody alien vegetation is scattered throughout the area and is particularly dense on the properties Uitkoms, Grootwater and Vyge Valley. The dominant alien species are Port Jackson and Rooikrans. The costal properties of the study area are generally free of aliens, although scattered clusters do occur. Port Jackson is found particularly along the river courses and Rooikrans among the coastal dunes. Manitoka, a less invasive woody alien plant and the Red Water fern are also found in the area.

#### 8.2.2 Institutional Arrangements and Relevant Legislation

There are a variety of legal and institutional arrangements, which are relevant to private conservation initiatives.

The institutional arrangements at the National, Provincial and Local government level, encompass a broad range of departments, the extent to which the various departments are

involved, in a particular conservation initiative, will depend on the nature and form of the proposed conservation initiative. The primary institutions for the study area are the Department of Environmental Affairs and Tourism, the Western Cape Nature Conservation Board, the West Coast District Council and the Yzerfontein Local Council.

There is a wide range of legislation that is relevant to conservation initiatives. The key legislation will depend on the conservation option chosen and the institutions involved. The most relevant will be that which the above-mentioned institutions administer. For the study area the most important legislation is the Environmental Conservation Act 73 of 1989 and the Cape Nature Conservation and Environmental Conservation Ordinance 19 of 1974. The regulation amendments with regards to weeds and invader plants of the Agricultural Resources Act 43 of 1983 are also key for any conservation initiative within the study area.

### **8.2.3 Conservation Alternatives**

Of all the conservation options for private land conservation presented in the report, two are regarded as suitable for the study area. The two preferred options are a Protected Natural Environment (PNE) for all the properties mentioned and a single Private Nature Reserve of those same properties. In the Western Cape, the provincial minister of the Department of Environment, Culture and Sport (DECAS) proclaims a PNE. Once proclaimed, the authority for the management of the PNE may be delegated to a local authority, in this case the West Coast District Council. The procedure for applying for a PNE would be through DECAS in the Western Cape. A PNE would have provincial statutory status with an advisory board and is likely to have easier access to funding. The advisory board would include representatives of the properties within the PNE and representation from key institutions such as the WCNCB and local authorities. A Private Nature Reserve is more easily established by applying to the WCNCB. The major disadvantage of a Private Nature Reserve is that it can be de-proclaimed within a month and if change of ownership occurs, the Private Nature Reserve has to be re-applied for. One of the ways of strengthening the Private Nature Reserve option is to ensure that it is zoned for Open Space III, which limits development. Change of ownership does not change the zoning status; a zoning change would have to be re-applied for.

### **8.2.4 Potential Nature Reserve Activities and Environmental Management Plan**

There is a wide range of potential activities for any conservation initiative. An Environmental Management Plan (EMP) should also be established for effective and sustainable environmental management of the reserve.

#### **Potential Activities and Projects for the Nature Reserve**

Although there were many potential activities and projects identified by the landowners at the workshop, the following is a list of priority activities and projects considered fundamental to the establishment of a single, large Private Nature Reserve or a PNE being established in the area of study. These are activities are considered short-term projects, which should be undertaken within two years.

- Walking trails;
- Alien clearing with an appropriate eradication plan;
- Anti poaching system;
- Game fencing for the reserve;
- Bird watching and establishing bird viewing hides;

- Prepare a land use map for developing lodges, chalets and other potential activities and facilities;
- Wildlife and flower viewing; and
- Develop research potential with key research institutions such as universities.

A further point worth noting is that local business initiatives should be supported as much as possible, rather than duplicating services, for example in the establishing of a nursery, craft shop or restaurant.

### **Environmental Management Plan**

Whatever conservation alternative is applied, it is essential that an Environmental Management Plan (EMP) be developed for the area. An EMP would ensure effective and sustainable management of the reserve. The EMP would also provide a system to ensure compliance with current legislation, which may be relevant to the reserve. If appropriate environmentally friendly and sustainable methods are used for the EMP components mentioned below, the reserve could sell itself as being eco-friendly and set a model example for similar initiatives elsewhere. An EMP should include aspects such as: fire management, vegetation management, faunal management, pollution and waste management, the management of water, energy, staff, infrastructure, residents and visitors. Furthermore, the EMP should also have an annual environmental audit to ensure compliance with the EMP.

#### **8.2.5 Potential Financial Models and Sources of Funding**

The development of approximately 8000 hectares into a nature reserve, involving several landowners requires careful financial planning. Costs would need to be shared, as would income. To that end a comprehensive financial business plan would need to be drawn up by an appropriate specialist. Furthermore, an endeavour of this size would incur certain initial costs for which additional funding may be sought. Three potential financial models are given below and potential sources for funding.

A communal and private individual financial model should form the basis for a detailed business plan. Several initial activities for a reserve, such as fencing and the clearing of alien vegetation are very expensive and funding should be sought. The nature reserve is likely to boost the local economy through increased tourism and to a lesser extent job creation, although alien vegetation clearing could be quite labour intensive. These socio-economic advantages associated with a Private nature Reserve further enhance the reserve's potential for attracting finance.

Although there are several potential funding sources, the Working for Water Program of the Department of Water Affairs and Forestry is the most likely source of funds in the short term for the clearing of alien vegetation. The extent of the alien vegetation in the study area, together with its location above the Grootwater aquifer would be strong motivation points for the Working for Water Program to be involved. In terms of financial assistance for fencing, the West Coast Biosphere Reserve Management Committee would be a potential source for funds. The support of the Western Cape Nature Conservation Board would be a great advantage in seeking financial assistance.

## 8.3 RECOMMENDATIONS

The following recommendations should be implemented in order to establish the desired conservation initiative and for all stake holders to achieve the vision proposed in this report.

### Conservation Model

The formation of a single, large Private Nature Reserve is recommended, although a PNE is also a possibility. In the short term a Private Nature Reserve will be quicker to establish and it does not rule out the formation of a PNE at a later stage.

### Environmental Management Plan

An Environmental Management Plan for the effective and sustainable management of the reserve should be developed. An appropriate specialist should be consulted for the development of the plan. The WCNCB could also be consulted in establishing the EMP.

### Potential Activities and Projects

The prioritised potential activities and projects listed above should be initiated with the formal establishment of the Private Nature Reserve. These activities should be developed in conjunction with the EMP to ensure effective environmental management and compliance with relevant legislation.

### Biophysical Studies

Appropriate specialists, prior to the reserve being established, should carry out thorough biophysical studies of the full extent of the reserve.

### Market Research

Market research to establish accommodation demand in the area should be carried out by appropriate specialists.

### Financial Recommendation

The establishment of a nature reserve will require a thorough business plan to be developed by all stakeholders with an appropriate model for the division of costs and income. A communal and private individual financial model should form the basis of the detailed business plan. This model covers both the individual and communal financial needs. The business plan should also take into consideration partnerships with local industry and businesses.

### Funding Source

The Working for Water Program should be approached to secure funding specifically for alien vegetation clearing. The other major initial cost is fencing; the West Coast Biosphere Management Committee is a potential source for funding in this regard. This should be done in conjunction with the West Coast representatives of the Western Cape Nature Conservation Board (*see appendix 7 for contact details*).

### Public Participation

In order to ensure the support of the local community, a thorough public participation programme should be carried out if the decision to establish a reserve is taken.

### Socio-economic development

The socio-economic needs of the area should be considered in establishing the reserve. Employment opportunities within the reserve are an important positive factor, together with support of local tourist related activities, which may also create further employment. The alien

vegetation-clearing program will at times be labour intensive. Furthermore, the likely boost in tourism a reserve of this nature will bring to the area is a positive socio-economic effect.

**Task Team**

A task team made up of representatives from all key stakeholders should be established to move this private conservation initiative forward.

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## 9 REFERENCES

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White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity 1997

The White Paper on Agriculture 1995

National Environment Management Act 107 of 1998

The National Veld and Forest Fire Act 101 of 1998

The National Water Act 36 of 1998

Development Facilitation Act 57 of 1995

Local Government Transition Act 209 of 1993

The Environmental Conservation Act 73 of 1989

Conservation of Agricultural Resources Act 43 of 1983

Nature Conservation and Environmental Conservation Ordinance 19 of 1974

Subdivision of Agricultural Lands Act of 1970

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Paul Sieben	Warden of West Coast National Park	022 7722144
Hannes Stadler	WCNCB West Coast Area Manager	022 9312900
Derek Chittenden	Chettenden Nicks de Villiers	021 4616302
Mark Botha	Botanical Society	021 7972284
Henk Van Kleef	DWAF	021 9507189
Richard Staniforth	Mulch Master Alien vegetation proposal	082 8008222

# ***10 APPENDICES***

University of Cape Town

## 10 APPENDICES

APPENDIX 1: PROCEEDINGS OF THE WORKSHOP AT JAKKALSFONTEIN

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APPENDIX 3: PRIVATE NATURE RESERVE APPLICATION FORM

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University of Cape Town

## APPENDIX 1: PROCEEDINGS OF THE WORKSHOP AT JAKKALSFONTEIN

### Proceedings of the workshop at Jakkalsfontein, 6 March 2001, 10h00-12h30

It should be noted that these minutes of the proceedings of the workshop held at Jakkalsfontein on the 6 March 2001, are not a verbatim report.

**Attendance:** Frikkie Bester - Uitkoms  
 Danie Pretorius - Jakkalsfontein  
 Wessel Rauch - Yzerfontein and Coffeefontein  
 Michael Daiber - Grootwater  
 Willie Loffler - Tygerfontein  
 Tony Barber - Project Supervisor (EEU)  
 Barry Wiesner - Research Student

### Introduction

Barry Wiesner welcomed all present and outlined the purpose of the meeting, primarily to report back on research done to date and brainstorm idea for a vision and list of potential activities.

### THE AGENDA INCLUDED

1. **Welcome and introduction (tea/coffee)**
2. **Report back**
  - *West Coast Biosphere Reserve*
  - *West Coast Conservancy*
  - *Biophysical Assessment*
3. **Possible Alternatives**
  - I. *Individual properties part of broader West Coast Conservancy*
  - II. *Individual, but linked/co-managed Private Nature Reserves*
  - III. *Single Private Nature Reserve*
3. **Tea/coffee break**
4. **Vision**
5. **Potential Activities**
6. **Closure**

Barry Wiesner gave a brief report back with regards to research undertaken so far and setting the Private Nature Reserve in the context of the West Coast Biosphere Reserve and the Cape West Coast Conservancy. Three possible alternatives were briefly presented and discussed. These were:

**Alternative 1: Conservancy**

This is essentially the status quo. There would be no need for this present study if this option were chosen. The fact that this study has been initiated suggests that more is wanted in terms of the conservation of the area.

**Alternative 2: Individual Private Nature Reserves**

This is a realistic possibility that has both advantages and disadvantages. An obvious advantage is the greater autonomy of individual landowners. Disadvantages include greater individual costs for establishing separate reserves and possible duplication of activities. Furthermore there is likely to be a need for some form of co-management of the area, especially if fences between properties are removed.

**Alternative 3: Single Private Nature Reserve**

This option requires greater collective effort but is also likely to have greater collective rewards. Advantages include shared costs and management of the reserve. Greater tourism potential through promoting a large single reserve rather than several small ones, with the obvious potential to offer more eco-tourism orientated activities. Perhaps a disadvantage is that individual autonomy is governed by a reserve constitution i.e. individuals cannot do as they like; individuals are bound by the constitution of the reserve. However, each landowner would have the opportunity to give input into the drafting of the constitution. Furthermore, it can be considered advantageous to be part of something bigger in terms of the security it gives the smaller landowner.

After discussion there was general agreement that alternative 3, a single Private Nature Reserve, would be the preferred alternative and the visual data gathering exercise would proceed with that in mind. However, it should be noted that establishing a single large Private Nature Reserve would have significant implications for those reserves that are already established, such as Jakkalsfontein. Mechanisms for including existing names for example would need to be considered.

Tony Barbour then facilitated the visual gathering exercise. The aim of the exercise was to facilitate the generation of ideas for a unified vision and potential activities for the reserve. The information obtained from the visual gathering exercise is presented below and a provisional vision statement is given. The ideas for activities are then presented and ranked.

Following the visual gathering exercise, the meeting was concluded with a vote of thanks to Danie, for use of Jakkalsfontein facilities.

## VISION

The following principles and concepts should be included in a vision statement for the Private Nature Reserve. All the ideas given are simply listed under various subtitles where feasible. A possible vision statement is then provided at the end:

### Conservation

Conservation - all resources

Conservation

Conservation of fauna and flora and introduction of historical game species

### Sustainability

Sustainable eco-tourism

Sustainability

Conservation by incorporating sustainable development

### Nature Reserve

Game Reserve

Introducing game

Private game reserve

Nature reserve (green)

### Co-management

Shared costs will be equally divided and benefits

Work together

Co-management

TOP Co-managed Nature Reserve

### Separate issues identified

Protect from too much public

Install a constitution for all participants

Capacity building

Co-operation with IAPs

### PROVISIONAL VISION STATEMENT

**To establish a private nature reserve on the principles of sustainability and co-management, to conserve and protect the natural environment while enhancing the socio-economic potential of the area, specifically through eco-tourism and cooperation with each of the individual landowners and other interested and affected parties.**

## ACTIVITIES

Potential activities, which would enable the vision to be fulfilled, are listed below and grouped under a sub-heading where appropriate. Each suggestion has been ranked according to the following key:

ST = Short Term project (Within the first two years)

MT = Medium Term project (3 – 5 years)

LT = Long Term project (more than 5 years)

This ranking is purely a subjective ranking to generate discussion as to what are priorities for the establishment of activities in a Private Nature Reserve.

<b>Historicity</b>	
Archaeological sites	MT
History of farms in a booklet	MT
<b>Trails</b>	
Horse	MT
Hiking	MT
Walking	ST
Cycling	MT
4X4	LT
Game drives (including night drives)	LT
<b>Restoration ecology</b>	
Alien clearing	ST
Alien eradication	LT
Serve as a research site	ST-MT
<b>Service centres</b>	
Conference centre	LT
Resource centre	MT
Education centre	MT
Interpretation centre	MT
Health spa	LT
<b>Management</b>	
Hunting as part of management plan e.g. Trophy culling	LT
Anti poaching	ST
Game fencing – priority, security	ST
<b>Game management plan</b>	
Bring back historical species	MT-LT
Selecting right species	MT
Breeding options	LT
Bird watching and hides	ST
Prepare a map for lodges etc., land use map	ST
<b>Accommodation</b>	
Camping site(s) –limited facilities	MT
Lodges	MT
Chalets	MT
Permanent residence	ST-LT
Animal rescue	MT-LT
Raptor rehabilitation centre	MT-LT

Plant nursery	MT-LT
Craft shop	MT-LT
Coffee/tea shop	MT-LT
Restaurant	MT-LT
Mineral water	LT
Whale watching	ST-MT
Dam	MT
Flower viewing	ST
Establish links with research institutions	ST-MT

Below follows the Ranking Table listing the activities from ST to LT and thus indicating which activities should be prioritised initially.

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<b>RANKING TABLE</b>	
Walking	ST
Alien clearing	ST
Anti poaching	ST
Game fencing – priority, security	ST
Bird watching and hides	ST
Prepare a map for lodges etc., land use map	ST
Flower viewing	ST
Serve as a research site	ST-MT
Whale watching	ST-MT
Establish links with research institutions	ST-MT
Permanent residence	ST-LT
Archaeological sites	MT
History of farms in a booklet	MT
Horse	MT
Hiking	MT
Cycling	MT
Resource centre	MT
Education centre	MT
Interpretation centre	MT
Selecting right species	MT
Camping site(s) –limited facilities	MT
Lodges	MT
Chalets	MT
Dam	MT
Bring back historical species	MT-LT
Animal rescue	MT-LT
Raptor rehabilitation centre	MT-LT
Plant nursery	MT-LT
Craft shop	MT-LT
Coffee/tea shop	MT-LT
Restaurant	MT-LT
4X4	LT
Game drives (including night drives)	LT
Alien eradication	LT
Conference centre	LT
Health spa	LT
Hunting as part of management plan e.g. Trophy culling	LT
Breeding options	LT
Mineral water	LT

## APPENDIX 2: NATIONAL WATER ACT CHAPTER 4 PARTS 2, 7 AND 8

### *Part 2: Considerations, conditions and essential requirements of general authorisations and licences*

*This Part deals with matters relevant to all general authorisations and licences issued under the Act. It guides responsible authorities in the exercise of their discretion to issue and to attach conditions to general authorisations and licences. It also sets out the essential features of licences, such as effective periods, purposes and places for which they may be issued, and the nature of conditions that may be attached to them. The granting of a licence does not imply any guarantee regarding the availability or quality of water which it covers.*

#### Considerations for issue of general authorisations and licences

27. (1) In issuing a general authorisation or licence a responsible authority must take into account all relevant factors, including -
- (a) existing lawful water uses;
  - (b) the need to redress the results of past racial and gender discrimination;
  - (c) efficient and beneficial use of water in the public interest;
  - (d) the socio-economic impact -
    - (i) of the water use or uses if authorised; or
    - (ii) of the failure to authorise the water use or uses;
  - (e) any catchment management strategy applicable to the relevant water resource;
  - (f) the likely effect of the water use to be authorised on the water resource and on other water users;
  - (g) the class and the resource quality objectives of the water resource;
  - (h) investments already made and to be made by the water user in respect of the water use in question;
  - (i) the strategic importance of the water use to be authorised;
  - (j) the quality of water in the water resource which may be required for the Reserve and for meeting international obligations; and
  - (k) the probable duration of any undertaking for which a water use is to be authorised.
- (2) A responsible authority may not issue a licence to itself without the written approval of the Minister.

#### Essential requirements of licences

28. (1) A licence contemplated in this Chapter must specify -
- (a) the water use or uses for which it is issued;
  - (b) the property or area in respect of which it is issued;
  - (c) the person to whom it is issued;
  - (d) the conditions subject to which it is issued;
  - (e) the licence period, which may not exceed forty years; and
  - (f) the review periods during which the licence may be reviewed under section 49, which must be at intervals of not more than five years.
- (2) Subject to subsection (3), restriction, suspension or termination in terms of this Act and review under section 49, a licence remains in force until the end of the licence period, when it expires.
- (3) Subject to subsection (4) and notwithstanding section 49(2), a responsible authority may extend the licence period of a licence if this is done as part of a general review of licences carried out in terms of section 49.
- (4) An extension of a licence period contemplated in subsection (3) may only be made after the responsible authority has considered the factors specified in section 49(2) and all other relevant factors, including new applications for water use and has concluded that there are no substantial grounds not to grant an extension.
- (5) An extension of a licence period in terms of subsection (3) may only be given for a single review period at a time as stipulated in subsection (1)(f).
- (6) If the licence period of a licence is extended in terms of subsection (3), the licence may, in respect of the period for which it is extended, be issued subject to different conditions which may include a lesser permitted water use.

## Conditions for issue of general authorisations and licences

29. (1) A responsible authority may attach conditions to every general authorisation or licence -
- (a) relating to the protection of -
    - (i) the water resource in question;
    - (ii) the stream flow regime; and
    - (iii) other existing and potential water users;
  - (b) relating to water management by -
    - (i) specifying management practices and general requirements for any water use, including water conservation measures;
    - (ii) requiring the monitoring and analysis of and reporting on every water use and imposing a duty to measure and record aspects of water use, specifying measuring and recording devices to be used;
    - (iii) requiring the preparation and approval of and adherence to, a water management plan;
    - (iv) requiring the payment of charges for water use as provided for in Chapter 5;
    - (v) requiring the licensee to provide or make water available to a person specified in the licence; and
    - (vi) in the case of a general authorisation, requiring the registration of the water use with the responsible authority and the payment of a registration fee as a pre-condition of that use;
  - (c) relating to return flow and discharge or disposal of waste, by -
    - (i) specifying a water resource to which it must be returned or other manner in which it must be disposed of;
    - (ii) specifying permissible levels for some or all of its chemical and physical components;
    - (iii) specifying treatment to which it must be subjected, before it is discharged; and
    - (iv) specifying the volume which may be returned;
  - (d) in the case of a controlled activity -
    - (i) specifying the waste treatment, pollution control and monitoring equipment to be installed, maintained and operated; and
    - (ii) specifying the management practices to be followed to prevent the pollution of any water resource;
  - (e) in the case of taking or storage of water -
    - (i) setting out the specific quantity of water or percentage of flow which may be taken;
    - (ii) setting out the rate of abstraction;
    - (iii) specifying the method of construction of a borehole and the method of abstraction from the borehole;
    - (iv) specifying the place from where water may be taken;
    - (v) specifying the times when water may be taken;
    - (vi) identifying or limiting the area of land on which any water taken from a resource may be used;
    - (vii) limiting the quantity of water which may be stored;
    - (viii) specifying locations where water may be stored; and
    - (ix) requiring the licensee to become a member of a water user association before water may be taken;
  - (f) in the case of a stream flow reduction activity -
    - (i) specifying practices to be followed to limit stream flow reduction and other detrimental impacts on the water resource; and
    - (ii) setting or prescribing a method for determining the extent of the stream flow reduction caused by the authorised activity;
  - (g) which are necessary or desirable to achieve the purpose for which the licence was issued;
  - (h) which are necessary or desirable to ensure compliance with the provisions of this Act; and
  - (i) in the case of a licence -

- (i) specifying times when water may or may not be used;
- (ii) containing provisions for its termination if an authorised use of water is not implemented or not fully implemented;
- (iii) designating water for future or contingent use; or
- (iv) which have been agreed to by the licensee.

(2) If a licensee has agreed to pay compensation to another person in terms of any arrangement to use water, the responsible authority may make the obligation to pay compensation a condition of the licence.

### **Security by applicant**

**30.** (1) A responsible authority may, if it is necessary for the protection of the water resource or property, require the applicant to give security in respect of any obligation or potential obligation arising from a licence to be issued under this Act.

(2) The security referred to in subsection (1) may include any of the following:

- (i) A letter of credit from a bank;
- (ii) a surety or a bank guarantee;
- (iii) a bond;
- (iv) an insurance policy; or
- (v) any other appropriate form of security.

(3) The responsible authority must determine the type, extent and duration of any security required.

(4) The duration of the security may extend beyond the time period specified in the licence in question.

(5) If the responsible authority requires security in the form of an insurance policy, it may require that it be jointly insured under or be a beneficiary of the insurance policy and where appropriate, the responsible authority must be regarded as having an insurable interest in the subject matter of the insurance policy.

(6) A person may apply in writing to the responsible authority to have any security given by that person in terms of this section amended or discharged at any time, which application may not be unreasonably refused.

### **Issue of licence no guarantee of supply**

**31.** The issue of a licence to use water does not imply a guarantee relating to -

- (a) the statistical probability of supply;
- (b) the availability of water; or
- (c) the quality of water.

## ***Part 7: Individual applications for licences***

*This Part sets out the procedures which apply in all cases where a licence is required to use water, but where no general invitation to apply for licences has been issued under Part 8. Water users who are not required to license their use, but who wish to convert the use to licensed use, may also use the procedure set out in this Part, but the responsible authority may decline to grant a licence when the applicant is entitled to the use of water under an existing lawful use or by a general authorisation. In considering an application a responsible authority may require additional information from the applicant, and may also require the applicant to undertake an environmental or other assessment, which assessments may be subject to independent review.*

### **Application for licence**

**40.** (1) A person who is required or wishes to obtain a licence to use water must apply to the relevant responsible authority for a licence.

(2) Where a person has made an application for an authorisation to use water under another Act, and that application has not been finalised when this Act takes effect, the application must be regarded as being an application for a water use under this Act.

(3) A responsible authority may charge a reasonable fee for processing a licence application, which may be waived in deserving cases.

(4) A responsible authority may decline to consider a licence application for the use of water to which the applicant is already entitled by way of an existing lawful water use or under a general authorisation.

### Procedure for licence applications

41. (1) An application for a licence for water use must -

- (a) be made in the form;
- (b) contain the information; and
- (c) be accompanied by the processing fee, determined by the responsible authority.

(2) A responsible authority -

- (a) may, to the extent that it is reasonable to do so, require the applicant, at the applicant's expense, to obtain and provide it by a given date with -
  - (i) other information, in addition to the information contained in the application;
  - (ii) an assessment by a competent person of the likely effect of the proposed licence on the resource quality; and
  - (iii) an independent review of the assessment furnished in terms of subparagraph (ii), by a person acceptable to the responsible authority;
- (b) may conduct its own investigation on the likely effect of the proposed licence on the protection, use, development, conservation, management and control of the water resource;
- (c) may invite written comments from any organ of state which or person who has an interest in the matter; and
- (d) must afford the applicant an opportunity to make representations on any aspect of the licence application.

(3) A responsible authority may direct that any assessment under subsection (2)(a)(ii) must comply with the requirements contained in regulations made under section 26 of the Environment Conservation Act, 1989 (Act No. 73 of 1989).

(4) A responsible authority may, at any stage of the application process, require the applicant -

- (a) to give suitable notice in newspapers and other media -
  - (i) describing the licence applied for;
  - (ii) stating that written objections may be lodged against the application before a specified date, which must be not less than 60 days after the last publication of the notice;
  - (iii) giving an address where written objections must be lodged; and
  - (iv) containing such other particulars as the responsible authority may require;
- (b) to take such other steps as it may direct to bring the application to the attention of relevant organs of state, interested persons and the general public; and
- (c) to satisfy the responsible authority that the interests of any other person having an interest in the land will not be adversely affected.

### Reasons for decisions

42. After a responsible authority has reached a decision on a licence application, it must promptly -

- (a) notify the applicant and any person who has objected to the application; and
- (b) at the request of any person contemplated in paragraph (a), give written reasons for its decision.

### *Part 8: Compulsory licences for water use in respect of specific resource*

*This Part establishes a procedure for a responsible authority to undertake compulsory licensing of any aspect of water use in respect of one or more water resources within a specific geographic area. It includes requirements for a responsible authority to prepare schedules for allocating quantities of water to existing and new users. The procedure is intended to be used in areas which are, or are soon likely to be, under "water stress" (for example, where the demands for water are approaching or exceed the available supply, where water quality*

*problems are imminent or already exist, or where the water resource quality is under threat), or where it is necessary to review prevailing water use to achieve equity of access to water.*

*In such cases the responsible authority must publish a notice in the Gazette and other appropriate media, requiring people to apply for licences in the designated area. Applicants may be required to submit additional information, and may also be required to undertake an environmental or other assessment, which assessment may be subject to independent review.*

*In determining the quantities of water to be allocated to users, the responsible authority must consider all applications received, and draw up a schedule detailing how the available water will be allocated among the applicants. In drawing up an allocation schedule the responsible authority must comply with the plans, strategies and criteria set out elsewhere in the Act and must give special consideration to certain categories of applicants. A responsible authority need not allocate all the available water in a water resource, and may reserve some of the water for future needs. Provision is also made for any water still available after the requirements of the Reserve, international obligations and corrective action have been met to be allocated on the basis of public auction or tender. A system of objections and appeals in relation to proposed and preliminary allocation schedules ensures that licences may be issued only after the allocation schedule has been finalised.*

*Licences issued under this Part replace previous entitlements to any existing lawful water use by the applicant.*

### **Compulsory licence applications**

**43.** (1) If it is desirable that water use in respect of one or more water resources within a specific geographic area be licensed -

(a) to achieve a fair allocation of water from a water resource in accordance with section 45-

- (i) which is under water stress; or
- (ii) when it is necessary to review prevailing water use to achieve equity in allocations;
- (b) to promote beneficial use of water in the public interest;
- (c) to facilitate efficient management of the water resource; or
- (d) to protect water resource quality, the responsible authority may issue a notice requiring persons to apply for licences for one or more types of water use contemplated in section 21.

(2) A notice in terms of subsection (1) must -

- (a) identify the water resource and the water use in question;
- (b) state where licence application forms may be obtained;
- (c) state the address to which licence applications must be submitted;
- (d) state the closing date for licence applications;
- (e) state the application fee; and
- (f) contain such other information as the responsible authority considers appropriate.

(3) A notice in terms of subsection (1) must be made known by publishing the notice in the *Gazette* at least 60 days before the closing date, giving suitable notice in newspapers and other media and taking other steps to bring the notice to the attention of interested persons.

(4) Section 41 applies to an application in terms of this section as if the application had been made in terms of that section.

### **Late applications**

**44.** A responsible authority may, for good reason, condone a late application and charge a reasonable additional fee for processing the late application.

### **Proposed allocation schedules**

**45.** (1) A responsible authority must, after considering -

- (a) all applications received in response to the publication of a notice in terms of section 43(1);
- (b) any further information or assessment obtained; and
- (c) the factors contemplated in section 27, prepare a proposed allocation schedule specifying how water from the water resource in question will be allocated.

(2) A proposed allocation schedule must, subject to subsection (3), reflect the quantity of water to be -

- (a) assigned to the Reserve and any relevant international obligations;
- (b) assigned to meet the requirements of existing licences;
- (c) allocated to each of the applicants to whom licences ought to be issued in order to redress the results of past racial and gender discrimination in accordance with the constitutional mandate for water reform;
- (d) allocated to each of the applicants exercising existing lawful water uses to whom the licensing authority determines that licences should be issued;
- (e) allocated to each of the applicants, taking into account the factors set out in section 27; and
- (f) allocated to every other applicant by public tender or auction, subject to any regulation made under section 26(1)(n).

(3) A responsible authority is under no obligation to allocate all available water.

(4) After completing a proposed allocation schedule the responsible authority must publish a notice in the *Gazette* -

- (a) containing a copy of the proposed schedule, or stating the address where it may be inspected;
- (b) inviting written objections to be submitted on the proposed schedule, specifying an address to which the objections are to be submitted and specifying a date before which the objections are to be submitted, which date must be not less than 60 days after the date of publication of the notice; and
- (c) must consider what further steps, if any, are appropriate to bring the contents of the notice to the attention of interested persons, and take those steps which the responsible authority considers to be appropriate.

### Preliminary allocation schedules

46. (1) After considering all objections received on the proposed allocation schedule on or before the date specified in the notice contemplated in section 45(4), the responsible authority must prepare a preliminary allocation schedule and publish a notice in the *Gazette* -

- (a) containing a copy of the preliminary allocation schedule, or stating the address where it may be inspected; and
- (b) stating that an appeal in respect of any unsuccessful objection to the preliminary allocation schedule may be made in accordance with Chapter 15.

(2) If an appeal under subsection (1)(b) succeeds, the responsible authority must amend the preliminary allocation schedule as directed by the Water Tribunal.

### Final allocation schedule

47. (1) A preliminary allocation schedule becomes a final allocation schedule -

- (a) (i) if no appeal is lodged within the time limit;
- (ii) if it has been amended following every successful appeal; or
- (iii) if every appeal lodged is dismissed; and
- (b) on publication by the responsible authority of a notice in the *Gazette* -
  - (i) stating that a preliminary allocation schedule has become final; and
  - (ii) containing a copy of the final allocation schedule, or stating the address where it may be inspected.

(2) A responsible authority must, as soon as reasonably practicable after a preliminary allocation schedule becomes final, issue licences according to the allocations provided for in it.

### Licences replace previous entitlements

48. (1) Any licence issued pursuant to an application contemplated in section 43(1) replaces any existing lawful water use entitlement of that person in respect of the water use in question.

(2) Notwithstanding the provisions of section 4, no person to whom a general notice to apply for a licence has been directed in terms of section 43 in respect of an existing lawful water use may exercise that water use -

- (a) after the closing date stated in the notice if that person did not apply for a licence; or
- (b) after the licence application has been finally disposed of, if that person did apply for a licence.

## APPENDIX 3: PRIVATE NATURE RESERVE APPLICATION FORM

**PROVINSIALE ADMINISTRASIE: WES-KAAP  
PROVINCIAL ADMINISTRATION: WESTERN CAPE**

**DEPARTEMENT VAN OMGEWING, KULTUUR EN SPORT  
DEPARTMENT OF ENVIRONMENT, CULTURE AND SPORT**

AANSOEK DEUR 'N PLAASLIKE OWERHEID VIR DIE STIGTING VAN 'N PLAASLIKE NATUURRESERVAAT  
APPLICATION BY A LOCAL AUTHORITY FOR THE ESTABLISHMENT OF A LOCAL NATURE RESERVE

Ordonnansie op Natuur- en Omgewingsbewing, 1974 (Ordonnansie 19 van 1974) (Artikel 7)  
Nature and Environmental Conservation Ordinance, 1974 (Ordinance 19 of 1974) (Section 7)

GEBRUIK ASSEBLIEF HOOFLETTERS / PLEASE USE CAPITAL LETTERS

## 1. Besonderhede van Plaaslike owerheid -

## 1. Particulars of Local authority

Naam en adres _____	Name and address _____
Telefoon/Faks nommer _____	Telephone/Fax number _____

## 2. Besonderhede van eiendom

## 2. Particulars of property

Naam van eiendom _____	Name of property _____
Grootte van eiendom _____	Extent of property _____
Is die eiendom in the naam van die Raad geregistreer? _____	Is the property registered in the name of the Council? _____
Is die eiendom in sy geheel omhein? _____	Is the property totally fenced? _____
Indien wel, gee 'n beskrywing van die omheining: _____	If so, give a description of the fence: _____
Hoogte in meters _____	Height in metres _____
Aantal dwarsdrade _____	Number of crosswires _____
Ander besonderhede _____	Other particulars _____



-3-

6. Voorgestelde naam van reservaat

6. Proposed name of reserve

--

7. Heg aan -

7. Attach -

Sketskaart van eiendom	Sketch map of property.
Kopie van kennisgewing waarna in artikel 7(2) verwys word.	... Copy of notice referred to in section 7(2).
*Besware en Raad se kommentaar daarop / * 'n Verklaring dat geen besware ontvang is nie.	* Objections and Council's comments thereon / * A statement that no objections were received.
*Skrap wat nie van toepassing is nie	* Delete whichever is not applicable

\_\_\_\_\_  
 Sekretaris van Afdelingsraad / Secretary of Divisional Council

Stadsklerk / Town Clerk

Uitvoerende Beamppte / Executive Officer

\_\_\_\_\_  
 Datum / Date

## APPENDIX 4: ALIEN VEGETATION REGULATION AMENDMENTS

DEPARTMENT OF AGRICULTURE

No. R.

**CONSERVATION OF AGRICULTURAL RESOURCES ACT, 1983**  
(ACT No. 43 OF 1983)

### REGULATIONS: AMENDMENT

The Minister of Agriculture has, under section 29 of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), made the regulations in the Schedule.

### SCHEDULE

#### Definition

1. In this Schedule "the regulations" means the regulations published by Government Notice No. R. 1048 of 25 May 1984, as amended by Government Notice No. R. 2687 of 6 December 1985.

#### Amendment of regulation 1 of the regulations

2. Regulation 1 of the regulations is hereby amended –

(a) by inserting the following definitions before the definition of "excessive soil loss":

**“ ‘biological control’ means the use of natural enemies of category 1, 2 and 3 plants to control such plants;**

‘biological control agent’ means a natural enemy of category 1, 2 or 3 plants that is used to control such plants;

‘biological control expert’ means an academic or research institute or an academic or research organisation established by legislation which, or a person associated with or in the employment of such an institute or organisation who, practises and researches biological control of category 1, 2 and 3 plants;

‘biological control reserve’ means an area designated by the executive officer in terms of regulation 15D of the regulations for the breeding of biological control agents;

‘bush encroachment’ means stands of plants of the kinds specified in column 1 of Table 4 where individual plants are closer to each other than three times the mean crown diameter;

‘category 1 plants’ means plants of the kinds specified as category 1 in column 3 of Table 3 opposite the names of the respective kinds of plants;

‘category 2 plants’ means plants of the kinds specified as category 2 in column 3 of Table 3 opposite the names of the respective kinds of plants;

‘category 3 plants’ means plants of the kinds specified as category 3 in column 3 of Table 3 opposite the names of the respective kinds of plants;

‘control’ means to combat category 1, 2 and 3 plants by means of the methods prescribed in regulation 15E to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading of such plants;

'demarcated area' means an area of land approved by the executive officer in terms of regulation 15B of the regulations for the occurrence, establishment and maintenance of category 2 plants;

'environment conservation regulations' means regulations in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), as published by Government Notice No. R.1182 of 5 September 1997, as amended from time to time, or similar regulations promulgated under legislation administered by the Department of Environmental Affairs and Tourism;";

**(b) by inserting the following definition after the definition of "flood area":**

" 'propagating material' means any material of a plant that can be used for the propagation of that plant;";

**(c) by inserting the following definition after the definition of "secretary":**

" 'sell' includes agree to sell, or offer, advertise, keep, exhibit, send, consign, convey or deliver for sale, or exchange for anything or dispose of or deliver to any other person in any manner, whether for a consideration or otherwise; and 'sold' and 'sale' have corresponding meanings;";

(d) by deleting the word "and" after the definition of "veld";

(e) by adding the word "and" after the definition of "waterway"; and

(f) by adding the following definition:

" 'wetland' means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

Substitution of regulation 15 of the regulations

3. Regulation 15 of the regulations is hereby substituted for the following regulation:

**"Declaration of weeds and invader plants**

15. (1) Plants of the kinds specified in column 1 of Table 3 as category 1 plants are hereby declared weeds to the extent indicated in column 3 of the said Table opposite the names of the respective kinds of plants.

(2) Plants of the kinds specified in column 1 of Table 3 as category 2 plants and as category 3 plants are hereby declared invader plants to the extent indicated in column 3 of the said Table opposite the names of the respective kinds of plants."

Insertion of regulations 15A to 15F

4. The regulations are hereby amended by the insertion of the following regulations after regulation 15:

**"Combating of category 1 plants**

15A. (1) Category 1 plants may not occur on any land or inland water surface other than in biological control reserves.

(2) A land user shall control any category 1 plants that occur on any land or inland water surface in contravention of the provisions of sub-regulation (1) by means of the methods prescribed in regulation 15E.

(3) No person shall, except in or for purposes of a biological control reserve –

(a) establish, plant, maintain, multiply or propagate category 1 plants;

(b) import or sell propagating material of category 1 plants or any category 1 plants;

(c) acquire propagating material of category 1 plants or any category 1 plants.

(4) The executive officer may, on good cause shown in writing by the land user, grant written exemption from compliance with the requirements of sub-regulation (1) on such conditions as the executive officer may determine in each case.

### **Combating of category 2 plants**

**15B.** (1) Category 2 plants may not occur on any land or inland water surface other than a demarcated area or a biological control reserve.

(2) (a) The executive officer may on application in writing demarcate an area as an area where category 2 plants may occur, be established and be maintained.

(b) An area in respect of which a water use license for stream flow reduction activities has been issued in terms of section 36 of the National Water Act, 1998 (Act No. 36 of 1998) shall be deemed to be a demarcated area.

(3) The executive officer shall demarcate an area for the occurrence, establishment and maintenance of category 2 plants only if –

(a) the category 2 plants in the area are cultivated under controlled circumstances; and

(b) the land user concerned has been authorised to use water in terms of the National Water Act, 1998 (Act No. 36 of 1998); and

(c) the category 2 plants or products of category 2 plants in the area are demonstrated to primarily serve a commercial purpose, use as a woodlot, shelter belt, building material, animal fodder, soil stabilisation, medicinal or other beneficial function that the executive officer may approve; and

(d) all reasonable steps are taken to curtail the spreading of propagating material of the category 2 plants outside the demarcated areas.

(4) When an area is demarcated for the occurrence, establishment and maintenance of category 2 plants the executive officer may impose such additional conditions as may reasonably be deemed necessary to keep the category 2 plants in the area in check.

(5) No person shall sell propagating material of category 2 plants or any category 2 plants to another person unless such other person is a land user of a demarcated area or of a biological control reserve.

(6) No person shall acquire propagating material of category 2 plants or any category 2 plants unless such material or such plants are intended for use in a demarcated area or in a biological control reserve.

(7) Propagating material of category 2 plants or category 2 plants shall only be imported or sold in accordance with the provisions of the Plant Improvement Act, 1976 (Act No. 53 of 1976), the Agricultural Pests Act, 1983 (Act No. 36 of 1983) and the environment conservation regulations.

(8) A land user shall control any category 2 plants that occur on any land or inland water surface in contravention of the provisions of sub-regulation (1) by means of the methods prescribed in regulation 15E.

(9) Unless authorised thereto in terms of the National Water Act, 1998 (Act No. 36 of 1998), no land user shall allow category 2 plants to occur within 30 meters of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland.

(10) The executive officer may, on good cause shown in writing by the land user, grant written exemption from compliance with one or more of the requirements of sub-regulations (1), (3), (5), (6), (8) and (9) on such conditions as the executive officer may determine in each case.

### **Combating of category 3 plants**

**15C.** (1) Category 3 plants shall not occur on any land or inland water surface other than in a biological control reserve.

(2) Subject to the provisions of sub-regulation (3), the provisions of sub-regulation (1) shall not apply in respect of category 3 plants already in existence at the time of the commencement of these regulations.

(3) (a) No land user shall allow category 3 plants to occur within 30 meters of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland.

(b) The executive officer may impose such additional conditions as may reasonably be deemed necessary with regard to category 3 plants already in existence at the time of the commencement of these regulations.

(c) A land user must take all reasonable steps to curtail the spreading of propagating material of category 3 plants.

(d) The executive officer may, after consultation with the land user, issue a direction in terms of section 7 of the Act that category 3 plants in existence at the time of the commencement of these regulations must be controlled by means of the measures prescribed in regulation 15F.

(4) No person shall, except in or for purposes of a biological control reserve –

(a) plant, establish, maintain, multiply or propagate category 3 plants;

(b) import or sell propagating material of category 3 plants or any category 3 plants;

(c) acquire propagating material of category 3 plants or any category 3 plants.

(5) The executive officer may, on good cause shown in writing by the land user, grant written exemption from compliance with one or more of the requirements of sub-regulations (1), (3) and (4) on such conditions as the executive officer may determine in each case.

## Designation of biological control reserves

**15D.** (1) The executive officer may on application in writing designate an area as a biological control reserve.

(2) The executive officer shall designate an area as a biological control reserve only if –

(a) the area concerned is used for the breeding of biological control agents by a biological control expert; and

(b) no other measures that may destroy or render the biological control ineffective are applied in that area; and

(c) the area concerned serves as a refuge from where biological control agents can move or be distributed to other infestations of category 1, 2 and 3 plants.

## Methods of control

**15E.** (1) Where category 1, 2 or 3 plants occur contrary to the provisions of these regulations, a land user shall control such plants by means of one or more of the following methods of control as is appropriate for the species concerned and the ecosystem in which it occurs:

(a) Uprooting, felling, cutting or burning;

(b) Treatment with a weed killer that is registered for use in connection with such plants in accordance with the directions for the use of such a weed killer;

(c) Biological control carried out in accordance with the stipulations of the Agricultural Pests Act, 1983 (Act No. 36 of 1983), the Environment Conservation Act, 1989 (Act No. 73 of 1989) and any other applicable legislation;

(d) Any other method of treatment recognised by the executive officer that has as its object the control of the plants concerned, subject to the provisions of sub-regulation (4);

(e) A combination of one or more of the methods prescribed in paragraphs (a), (b), (c), and (d), save that biological control reserves and areas where biological control agents are effective shall not be disturbed by other control methods to the extent that the agents are destroyed or become ineffective.

(2) The methods contemplated in sub-regulation (1) shall also be applied with regard to the propagating material and the re-growth of category 1, 2 and 3 plants in order to prevent such plants from forming seed or re-establishing in any manner.

(3) The performance of an act of control is not in itself proof that the objects of the control methods have been achieved and follow-up operations are mandatory to achieve the appropriate level of combating.

(4) Where uncertainty exists about the presence or efficacy of any biological control agent, a biological control expert shall be consulted.

(5) Any action taken to control category 1, 2 and 3 plants shall be executed with caution and in a manner that will cause the least possible damage to the environment.

## Application of other laws

**15F.** Nothing contained in this regulation shall derogate in any way from any obligation imposed on any land user in terms of any other law.”.

#### Substitution of Regulation 16 of the regulations

**5.** Regulation 16 of the regulations is hereby substituted for the following regulation:

#### “Indicators of bush encroachment

**16.** (1) Indigenous plants of the kinds specified in column 1 of Table 4 are regarded as indicator plants indicating bush encroachment in the areas specified in column 2 of the said Table opposite the names of the respective kinds of plants.

(2) A land user of an area in which natural vegetation occurs and that contains communities of indicator plants shall follow practices to prevent the deterioration of natural resources and to combat bush encroachment where it occurs.

(3) One or more of the following practices shall be followed with regard to communities of indicator plants contemplated in sub-regulation (2) in order to remove the cause of the deterioration of the natural resources and to improve and maintain the production potential of the natural pastoral land:

(a) Uprooting, felling or cutting;

(b) Treatment with a weed killer that is registered for use in connection with such plants in accordance with the directions for the use of such a weed killer;

(c) The application of control measures regarding the utilisation and protection of veld in terms of regulation 9;

(d) The application of control measures regarding livestock reduction or removal of animals in terms of regulations 10 and 11;

(e) Any other method or strategy that may be applicable and that is specified by the executive officer by means of a directive.”.

#### Substitution of Tables 3 and 4 of the regulations

**6.** The following tables are hereby substituted for Tables 3 and 4 of the regulations, respectively:

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Acacia baileyana</i> F.Muell.	Bailey – se – wattel / Bailey's wattle	Indringer / Invader	3	
<i>Acacia cyclops</i> A.Cunn. ex G.Don	Rooikrans / Red eye	Indringer / Invader	2	
<i>Acacia dealbata</i> Link	Silwerwattel / Silver wattle	Onkruid / Weed	Kategorie 1 plant in die Wes – Kaap, Kategorie 2 plant in die res van Suid – Afrika / Category 1 plant in the Western Cape, Category 2 plant in the rest of South Africa	
<i>Acacia decurrens</i> (Wendl.) Willd.	Groenwattel / Green wattle	Indringer / Invader	2	
<i>Acacia elata</i> A.Cunn. ex Benth. ( <i>A. terminalis</i> misapplied in South Africa)	Peperboomwattel / Pepper tree wattle	Indringer / Invader	3	
<i>Acacia implexa</i> Benth.	Screw – pod wattle	Onkruid / Weed	1	
<i>Acacia longifolia</i> (Andr.) Willd.	Langblaarwattel / Long – leaved wattle	Onkruid / Weed	1	
<i>Acacia mearnsii</i> De Wiid.	Swartwattel / Black wattle	Indringer / Invader	2	
<i>Acacia melanoxylon</i> R.Br.	Australiese swarthout / Australian blackwood	Indringer / Invader	2	
<i>Acacia paradoxa</i> DC. (= <i>A. armata</i> R.Br.)	Kangaroo wattle	Onkruid / Weed	1	
<i>Acacia podalyriifolia</i> A.Cunn. ex G.Don	Vaalmimosa / Pearl acacia	Indringer / Invader	3	
<i>Acacia pycnantha</i> Benth.	Gouewattel / Golden wattle	Onkruid / Weed	1	
<i>Acacia saligna</i> (Labill.) H.L.Wendl.	Port Jackson / Port Jackson willow	Indringer / Invader	2	
<i>Achyranthes aspera</i> L.	Grootklits, Langklitskablom / Burweed	Onkruid / Weed	1	
<i>Agave sisalana</i> Perrine	Garingboom / Sisal hemp, Sisal	Indringer / Invader	2	
<i>Ageratina adenophora</i> (Spreng.) R.M.King & H.Rob. (= <i>Eupatorium adenophorum</i> Spreng.)	Crofton weed	Onkruid / Weed	1	
<i>Ageratina riparia</i> (Regel) R.M.King & H.Rob. (= <i>Eupatorium riparium</i> Regel)	Misblom / Mistflower	Onkruid / Weed	1	

<b>Soort plant / Kind of plant</b>		<b>Tipe / Type</b>	<b>Kategorie / Category</b>	<b>Spesiale voorwaardes / Special conditions</b>
<b>Botaniese naam / Botanical name</b>	<b>Gewone naam / Common name</b>			
<b>Kolom 1 / Column 1</b>		<b>Kolom 2 / Column 2</b>	<b>Kolom 3 / Column 3</b>	<b>Kolom 4 / Column 4</b>
<i>Ageratum conyzoides</i> L.	Indringer – ageratum / Invading ageratum	Onkruid / Weed	1	
<i>Ageratum houstonianum</i> Mill Uitgesluit kultivars / Excluding cultivars	Mexikaanse ageratum / Mexican ageratum	Onkruid / Weed	1	
<i>Allanthus altissima</i> (Mill.) Swingle	Hemelboom / Tree – of – heaven	Indringer / Invader	3	
<i>Albizia lebeck</i> (L.) Benth.	Lebeckboom / Lebeck tree	Onkruid / Weed	1	
<i>Albizia procera</i> (Roxb.) Benth.	Basterlebeck / False lebeck	Onkruid / Weed	1	
<i>Alhagi maurorum</i> Medik. (= <i>A. camelorum</i> Fisch.)	Kameeldoringbos / Camel thorn bush	Onkruid / Weed	1	
<i>Anredera cordifolia</i> (Ten.) Steenis ( <i>A. baselloides</i> (Kunth) Baill. misapplied in South Africa)	Madeira ranker / Madeira vine, Bridal wreath	Onkruid / Weed	1	
<i>Araujia sericifera</i> Brot.	Motvanger / Moth catcher	Onkruid / Weed	1	
<i>Ardisia crenata</i> Sims ( <i>Ardisia crispa</i> misapplied in South Africa)	Koraalbessieboom / Coralberry tree, Coral Bush	Onkruid / Weed	Kategorie 1 plant slegs in die Noordelike Provinsie, KwaZulu - Natal en Mpumalanga / Category 1 plant only in the Northern Province, KwaZulu – Natal and Mpumalanga	
<i>Argemone mexicana</i> L.	Geelblom – bloudissel / Yellow – flowered Mexican poppy	Onkruid / Weed	1	
<i>Argemone ochroleuca</i> Sweet subsp. <i>Ochroleuca</i> (= <i>A. subfusiformis</i> G.B.Ownbey)	Witblom – bloudissel / White – flowered Mexican poppy	Onkruid / Weed	1	
<i>Arundo donax</i> L.	Spaanse riet / Giant reed, Spanish reed	Onkruid / weed	1	
<i>Atriplex lindleyi</i> Moq. Subsp. <i>inflata</i> (F.Müll.) P.G.Wilson	Blasiesoutbos / Sponge – fruit saltbush	Indringer / Invader	3	
<i>Atriplex nummularia</i> Lindl. Subsp. <i>Nummularia</i>	Oumansoutbos / Old man saltbush	Indringer / Invader	2	
<i>Azolla filiculoides</i> Lam.	Rooiwatervaring / Azolla, Red water fern	Onkruid / Weed	1	
<i>Bauhinia purpurea</i> L.	Skoenlapperorglideëboom / Butterfly orchid tree	Indringer / Invader	3	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Bauhinia variegata</i> L.	Orgideëboom / Orchid tree	Indringer / Invader	3	
<i>Bryophyllum delagoense</i> (Eckl. & Zeyh.) Schinz (= <i>B. tubiflorum</i> Harv.; <i>Kalanchoe tubiflora</i> Raym. – Hamet; <i>K. delagoensis</i> Eckl. & Zeyh.)	Kandelaarplant / Chandelier plant	Onkruid/ Weed	1	
<i>Caesalpinia decapetala</i> (Roth) Alston (= <i>C. sepiaria</i> Roxb.)	Kraaldoring / Mauritius thorn	Onkruid / Weed	1	
<i>Campuloclinium macrocephalum</i> (Less.) DC. (= <i>Eupatorium macrocephalum</i> Less.)	Pom – pom bossie / Pom pom weed	Onkruid / Weed	1	
<b><i>Canna indica</i> L.</b> Uitgesluit hibriede kultivars / Excluding hybrid cultivars	Indiese kanna / Indian shot	Onkruid / Weed	1	
<i>Cardiospermum grandiflorum</i> Sw.	Blaasklimop / Balloon vine	Onkruid / Weed	1	
<i>Casuarina cunninghamiana</i> Miq.	Kasuarisboom / Beefwood	Indringer / Invader	2	Nie vir gebruik in duin - stabilisering nie / Not for use in dune stabilisation
<i>Casuarina equisetifolia</i> L.	Perdestertboom / Horsetail tree	Indringer / Invader	2	Nie vir gebruik in duin - stabilisering nie / Not for use in dune stabilisation
<i>Cereus jamacaru</i> DC. ( <i>C. peruvianus</i> misapplied in South Africa)	Nagblom / Queen of the Night	Onkruid / Weed	1	
<i>Cestrum aurantiacum</i> Lindl.	Oranjesestrum / Yellow or Orange cestrum	Onkruid / Weed	1	
<i>Cestrum elegans</i> (Brongn.) Schtdl. (= <i>C. purpureum</i> (Lindl.) Standl.)	Karmosynsestrum / Crimson cestrum	Onkruid / Weed	1	
<i>Cestrum laevigatum</i> Schtdl.	Inkbessie / Inkberry	Onkruid / Weed	1	
<i>Cestrum parqui</i> L'Hér.	Chileense Inkbessie / Chilean cestrum	Onkruid / Weed	1	
<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob. (= <i>Eupatorium odoratum</i> L.)	Paraffienbos, Chromolaena / Triffid weed, Chromolaena	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Cinnamomum camphora</i> (L.) J.Presl	Kanferboom / Camphor tree	Onkruid / Weed	Kategorie 1 plant slegs in die Noordelike Provinsie, KwaZulu – Natal en Mpumalanga / Category 1 plant only in the Northern Province, KwaZulu – Natal and Mpumalanga	
<i>Cirsium vulgare</i> (Savi) Ten. (= <i>C. lanceolatum</i> Scop.)	Speerdissel, Skotse dissel / Spear thistle, Scotch thistle	Onkruid / Weed	1	
<i>Convolvulus arvensis</i> L.	Akkerwinde, Klimop / Field bindweed, Wild morning – glory	Onkruid / Weed	1	
<i>Cortaderia jubata</i> (Lem.) Stapf	Pampasgras / Pampas grass	Onkruid / Weed	1	
<i>Cortaderia selloana</i> (Schult.) Asch. & Graebn. Uitgesluit steriele kultivars / Excluding sterile cultivars	Pampasgras, Silwergras / Pampas grass	Onkruid / Weed	1	
<i>Cotoneaster franchetii</i> Boiss.	Dwergmispel, Oranje cotoneaster / Cotoneaster	Indringer / Invader	3	
<i>Cotoneaster pannosus</i> Franch.	Silwerdwergmispel / Silver – leaf cotoneaster	Indringer / Invader	3	
<i>Cuscuta campestris</i> Yunck.	Gewone dodder / Common dodder	Onkruid / Weed	1	
<i>Cuscuta suaveolens</i> Ser.	Lusemdodder / Lucerne dodder	Onkruid / Weed	1	
<i>Cytisus monspessulanus</i> L. (= <i>C. candicans</i> (L.) DC., <i>Genista monspessulana</i> (L.) L. Johnson)	Montpellierbrem / Montpellier broom	Onkruid / Weed	1	
<i>Cytisus scoparius</i> (L.) Link (= <i>Genista scoparia</i> (L.) Lam.)	Skotse brem / Scotch broom	Onkruid / Weed	1	
<i>Datura ferox</i> L.	Grootstinkblaar / Large thorn apple	Onkruid / Weed	1	
<i>Datura innoxia</i> Mill.	Harige stinkblaar / Downy thorn apple	Onkruid / Weed	1	
<i>Datura stramonium</i> L.	Gewone stinkblaar / Common thorn apple	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Echinopsis spachiana</i> (Lem.) Fiedrich & Rowley (= <i>Trichocereus spachianus</i> (Lem.) Riccob.)	Orrelkaktus / Torch cactus	Onkruid / Weed	1	
<i>Echium plantagineum</i> L. (= <i>E. lycopsis</i> L.)	Pers echium / Patterson's curse	Onkruid / Weed	1	
<i>Echium vulgare</i> L.	Blou – echium / Blue echium	Onkruid / Weed	1	
<i>Egeria densa</i> Planch. (= <i>Elodea densa</i> (Planch.) Casp.)	Waterpes / Dense water weed	Onkruid / Weed	1	
<i>Eichhornia crassipes</i> (C.Mart.) Solms	Waterhiasint / Water hyacinth	Onkruid / Weed	1	
<i>Elodea canadensis</i> Michx.	Kanadese waterpes / Canadian water weed	Onkruid / Weed	1	
<i>Eriobotrya japonica</i> (Thunb.) Lindl.	Lukwart / Loquat	Indringer / Invader	3	
<i>Eucalyptus camaldulensis</i> Dehnh.	Rooibloekom / Red river gum	Indringer / Invader	2	
<i>Eucalyptus cladocalyx</i> F.Muell.	Suikerbloekom / Sugar gum	Indringer / Invader	2	
<i>Eucalyptus diversicolor</i> F.Muell.	Karie / Karri	Indringer / Invader	2	
<i>Eucalyptus grandis</i> W.Hill ex Maiden ( <i>E. saligna</i> Sm. (p.p.))	Salignabloekom / Saligna gum, Rose gum	Indringer / Invader	2	
<i>Eucalyptus lehmannii</i> (Schauer) Benth.	Spinnekopbloekom / Spider gum	Onkruid / Weed	Kategorie 1 plant in die Wes – Kaap, Kategorie 2 plant in die res van Suid-Afrika / Category 1 plant in the Western Cape, Category 2 plant in the rest of South Africa	
<i>Eucalyptus paniculata</i> Sm.	Gryssysterbasbloekom / Grey ironbark	Indringer / Invader	2	
<i>Eucalyptus sideroxylon</i> A.Cunn. ex Woolls	Swartysterbasbloekom / Black ironbark, Red ironbark	Indringer / Invader	2	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Eugenia uniflora</i> L.	Pitanga / Pitanga, Surinam cherry	Onkruid / Weed	Kategorie 1 plant in die Noordelike Provinsie, KwaZulu – Natal en Mpumalanga, Kategorie 3 plant in die res van Suid-Afrika / Category 1 plant in the Northern Province, KwaZulu – Natal and Mpumalanga, Category 3 plant in the rest of South Africa	
<i>Gleditsia triacanthos</i> L. Uitgesluit steriele kultivars / Excluding sterile cultivars	Amerikaanse driedoring, Soetpeulboom / Honey locust, Sweet locust	Indringer / Invader	2	
<i>Grevillea robusta</i> A.Cunn. ex R.Br.	Australiese silwereik / Australian silky oak	Indringer / Invader	3	
<i>Hakea drupacea</i> (C.F.Gaertn.) Roem. & Schult. (= <i>H. suaveolens</i> R.Br.)	Soethakea / Sweet hakea	Onkruid / Weed	1	
<i>Hakea gibbosa</i> (Sm.) Cav.	Harige hakea / Rock hakea	Onkruid / Weed	1	
<i>Hakea sericea</i> Schrad. & J.C.Wendl.	Syerige hakea / Silky hakea	Onkruid / Weed	1	
<i>Harrisia martinii</i> (Labour.) Britton & Rose (= <i>Eriocereus martinii</i> (Labour.) Riccob.	Toukaktus, Harrisia kaktus / Moon cactus, Harrisia cactus	Onkruid / Weed	1	
<i>Hedychium coccineum</i> Sm.	Rooigemmerlelie / Red ginger lily	Onkruid / Weed	1	
<i>Hedychium coronarium</i> J. König	Witgemmerlelie / White ginger lily	Onkruid / Weed	1	
<i>Hedychium flavescens</i> Roscoe	Geelgemmerlelie / Yellow ginger lily	Onkruid / Weed	1	
<i>Hedychium gardnerianum</i> Ker Gawl.	Kahiligemmerlelie / Kahili ginger lily	Onkruid / Weed	1	
<i>Hypericum perforatum</i> L.	Johanneskruid / St. John's wort, Tipton weed	Indringer / Invader	2	Beheerde aanplanting / Controlled cultivation

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Ipomoea alba</i> L.	Maanblom / Moonflower	Onkruid / Weed	Kategorie 1 plant in die Noordelike Provinsie, KwaZulu – Natal en Mpumalanga, Kategorie 3 plant in die res van Suid-Afrika / Category 1 plant in the Northern Province, KwaZulu – Natal and Mpumalanga, Category 3 plant in the rest of South Africa	
<i>Ipomoea indica</i> (Burm.f.) Merr. (= <i>I. Congesta</i> R.Br.)	Purperwinde / Morning glory	Onkruid / Weed	Kategorie 1 plant in die Noordelike Provinsie, KwaZulu – Natal en Mpumalanga, Kategorie 3 plant in die res van Suid-Afrika / Category 1 plant in the Northern Province, KwaZulu – Natal and Mpumalanga, Category 3 plant in the rest of South Africa	
<i>Ipomoea purpurea</i> (L.) Roth	Purperwinde / Morning glory	Indringer / Invader	3	
<i>Jacaranda mimosifolia</i> D.Don Uitgesluit steriele kultivar 'Alba' Excluding sterile cultivar 'Alba'	Jakaranda / Jacaranda	Indringer / Invader	3	
Alle saadvormende spesies of saadvormende hibriede van <i>Lantana</i> wat nie inheems in Afrika is nie / All seed producing species or seed producing hybrids of <i>Lantana</i> that are non-indigenous to Africa.	Lantana / Lantana, Tickberry, Cherry pie	Onkruid / Weed	1	
<i>Lepidium draba</i> L. (= <i>Cardaria draba</i> (L.) Desv.)	Peperbos / Pepper – cress, Hoary cardaria, White top	Onkruid / Weed	1	
<i>Leptospermum laevigatum</i> (Gaertn.) F.Muell.	Australiese mirt / Australian myrtle	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Leucaena leucocephala</i> (Lam.) de Wit (= <i>L. glauca</i> Benth.)	Reuse wattel / Leucaena	Onkruid / Weed	Kategorie 1 plant in die Wes – Kaap, Kategorie 2 plant in die res van Suid-Afrika / Category 1 plant in the Western Cape, Category 2 plant in the rest of South Africa	
<i>Ligustrum japonicum</i> Thunb.	Japanese liguster / Japanese wax – leaved privet	Indringer / Invader	3	
<i>Ligustrum lucidum</i> Aiton	Chinese liguster / Chinese wax – leaved privet	Indringer / Invader	3	Slegs vir gebruik as onderstam indien goed – gekeur deur die Uitvoerende Beamppte in terme van regulasie 15C(5) / Only for use as root – stock if authorised by the Executive Official in terms of regulation 15C(5)
<i>Ligustrum ovalifolium</i> Hassk.	Kaliforniese liguster / Californian privet	Indringer / Invader	3	
<i>Ligustrum sinense</i> Lour.	Chinese liguster / Chinese privet	Indringer / Invader	3	
<i>Ligustrum vulgare</i> L.	Gewone liguster / Common privet	Indringer / Invader	3	
<i>Lilium formosanum</i> A. Wallace (= <i>L. longiflorum</i> Thunb. var. <i>formosanum</i> Baker) ( <i>L. longiflorum</i> has sometimes been misapplied to this species in South Africa)	Sintjosefslelie, Trompetlelie / St Joseph's lily, Trumpet lily, Formosa lily	Indringer / Invader	3	
<i>Litsea glutinosa</i> (Lour.) C.B.Rob. (= <i>L. sebifera</i> Pers.)	Indiese lourier / Indian laurel	Onkruid / Weed	1	
<i>Lythrum salicaria</i> L.	Purple loosestrife	Onkruid / Weed	1	
<i>Macfadyena unguis-cati</i> (L.) A.H.Gentry	Katteklouranker / Cat's claw creeper	Onkruid / Weed	1	
<i>Melia azedarach</i> L.	Maksering, Bessieboom / "Syringa", Persian lilac	Indringer / Invader	3	
<i>Metrosideros excelsa</i> Sol. ex Gaertn. (= <i>M. tomentosa</i> A.Rich.)	Nieu-Seelandse perdestert / New Zealand christmas tree	Indringer / Invader	3	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Mimosa pigra</i> L.	Raak - my - nie / Giant sensitive plant	Indringer / Invader	3	
<i>Montanoa hibiscifolia</i> Benth.	Montanoa / Tree daisy	Onkruid / Weed	1	
<i>Morus alba</i> L. Uitgesluit kultivar 'Pendula' Excluding cultivar 'Pendula'	Witmoerbeï, Gewone moerbeï / White mulberry, Common mulberry	Indringer / Invader	3	Slegs vir gebruik as onderstam indien goed - gekeur deur die Uitvoerende Beambte in terme van regulasie 15C(5) / Only for use as root - stock if authorised by the Executive Official in terms of regulation 15C(5)
<i>Myoporum tenuifolium</i> G.Forst. subsp. <i>montanum</i> (R.Br.) Chinnock (= <i>M. montanum</i> R.Br.) ( <i>M. acuminatum</i> misapplied in South Africa)	Manatoka	Indringer / Invader	3	
<i>Myriophyllum aquaticum</i> (Vell.) Verdc.	Waterduisendblaar / Parrot's feather	Onkruid / Weed	1	
<i>Myriophyllum spicatum</i> L.	Spiked water - milfoil	Onkruid / Weed	1	
<i>Nassella tenuissima</i> (Trin.) Barkworth (= <i>Stipa tenuissima</i> Trin.)	Witpolgras / White tussock	Onkruid / Weed	1	
<i>Nassella trichotoma</i> (Nees) Arech. (= <i>Stipa trichotoma</i> Nees)	Nassella polgras / Nassella tussock	Onkruid / Weed	1	
<i>Nephrolepis exaltata</i> (L.) Schott (= <i>Polypodium exaltatum</i> L.) Uitgesluit kultivars / Excluding cultivars	Swaardvaring / Sword fern	Indringer / Invader	3	
<i>Nerium oleander</i> L. Uitgesluit steriele dubbelblom kultivars / Excluding sterile, double - flowered cultivars	Selonsroos / Oleander	Onkruid / Weed	1	
<i>Nicotiana glauca</i> Graham	Wildetabak / Wild tobacco	Onkruid / Weed	1	
<i>Opuntia aurantiaca</i> Lindl.	Litjieskaktus / Jointed cactus	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Opuntia exaltata</i> A.Berger (= <i>Austrocylindropuntia exaltata</i> (A.Berger) Backeb.)	Langdoringkaktus / Long spine cactus	Onkruid / Weed	1	
<i>Opuntia ficus-indica</i> (L.) Mill. (= <i>O. megacantha</i> Salm-Dyck) Uitgesonderd alle doringlose turksvy kultivars en seleksies / Excluding all spineless cactus pear cultivars and selections	Boereturksvy, Grootdoringturksvy / Mission prickly pear, Sweet prickly pear	Onkruid / Weed	1	
<i>Opuntia fulgida</i> Engelm. ( <i>O. rosea</i> misapplied in South Africa.)	Roseakaktus / Rosea cactus	Onkruid / Weed	1	
<i>Opuntia humifusa</i> (Raf.) Raf. ( <i>O. compressa</i> (Salisb.) J.Macbr. illegitimate)	Large flowered prickly pear, Creeping prickly pear	Onkruid / Weed	1	
<i>Opuntia imbricata</i> (Haw.) DC. (= <i>Cylindropuntia imbricata</i> (Haw.) Knuth)	Imbrikaatkaktus, Kabelturksvy / Imbricate cactus, Imbricate prickly pear	Onkruid / Weed	1	
<i>Opuntia lindheimeri</i> Engelm. (= <i>O. tardospina</i> Griffiths)	Klein rondeblaarturksvy / Small round – leaved prickly pear	Onkruid / Weed	1	
<i>Opuntia monacantha</i> Haw. ( <i>O. vulgaris</i> Mill. misapplied)	Suurturksvy, Luisiesturksvy / Cochineal prickly pear, Drooping prickly pear	Onkruid / Weed	1	
<i>Opuntia spinulifera</i> Salm-Dyck	Blouturksvy, Groot rondeblaar turksvy / Saucepan cactus, Large roundleaved prickly pear	Onkruid / Weed	1	
<i>Opuntia stricta</i> (Haw.) Haw. (= <i>O. dillenii</i> (Ker Gawl.) Haw.)	Suurturksvy / Pest pear of Australia	Onkruid / Weed	1	
<i>Orobanche minor</i> Sm.	Klawerbesebraap, Bremraap / Lesser broomrape, Clover broomrape	Onkruid / Weed	1	
<i>Paraserianthes lophantha</i> (Willd.) Nielsen (= <i>Albizia lophantha</i> (Willd.) Benth.)	Australiese Albizia, Stinkboon / Australian Albizia, Stink bean	Onkruid / Weed	1	
<i>Parthenium hysterophorus</i> L.	Parthenium	Onkruid / Weed	1	
<i>Passiflora caerulea</i> L.	Siergrenadella / Blue passion flower	Onkruid / Weed	1	
<i>Passiflora mollissima</i> (Kunth) L.H.Bailey	Piesangdilla / Banana poka, Bananadilla	Onkruid / Weed	1	
<i>Passiflora suberosa</i> L.	Devil's pumpkin, Indigo berry	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Passiflora subpeltata</i> Ortega	Granadina	Onkruid / Weed	1	
<i>Pennisetum setaceum</i> (Forssk.) Chiov. Uitgesluit steriele kultivar 'Rubrum' / Excluding sterile cultivar 'Rubrum'	Pronkgras / Fountain grass	Onkruid / Weed	1	
<i>Pennisetum villosum</i> R.Br. ex Fresen.	Veergras / Feathertop	Onkruid / Weed	1	
<i>Pereskia aculeata</i> Mill.	Pereskia / Barbados gooseberry	Onkruid / Weed	1	
<i>Phytolacca dioica</i> L.	Bobbejaandruifboom, Belhambra / Belhambra	Indringer / Invader	3	
<i>Pinus canariensis</i> C.Sm.	Kanariese den / Canary den	Indringer / Invader	2	
<i>Pinus elliotti</i> Engelm.	Basden / Slash pine	Indringer / Invader	2	
<i>Pinus halepensis</i> Mill.	Aleppoden / Aleppo pine	Indringer / Invader	2	
<i>Pinus patula</i> Schlttdl. & Cham.	Treurden / Patula pine	Indringer / Invader	2	
<i>Pinus pinaster</i> Aiton	Trosden / Cluster pine	Indringer / Invader	2	
<i>Pinus radiata</i> D.Don	Radiataden / Radiata pine, Monterey pine	Indringer / Invader	2	
<i>Pinus roxburghii</i> Sarg. (= <i>P. longifolia</i> Roxb.)	Tjirden / Chir pine, longifolia pine	Indringer / Invader	2	
<i>Pinus taeda</i> L.	Loblollyden / Loblolly pine	Indringer / Invader	2	
<i>Pistia stratiotes</i> L.	Waterslaai / Water lettuce	Onkruid / Weed	1	
<i>Pittosporum undulatum</i> Vent.	Australiese kasuur, Soet Pittosporum / Australian cheesewood, Sweet pittosporum	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Plectranthus comosus</i> Sims (= <i>Coleus grandis</i> Cramer) ( <i>Plectranthus barbatus</i> Andr. Misapplied in South Africa)	'Abessiniese' coleus / 'Abyssinian' coleus, Woolly plectranthus	Indringer / Invader	3	
<i>Pontederia cordata</i> L.	Jongsnoekkruid / Pickerel weed	Indringer / Invader	3	
<i>Populus alba</i> L.	Witpopulier / White poplar	Indringer / Invader	2	
<i>Populus x canescens</i> (Aiton) Sm.	Vaalpopulier / Grey poplar, Matchwood poplar	Indringer / Invader	2	
<i>Prosopis glandulosa</i> Torr. Var. <i>torreyana</i> (Benson) Johnst. en hibriede / and hybrids	Heuningprosopis / Honey mesquite	Indringer / Invader	2	
<i>Prosopis velutina</i> Wooton en hibriede / and hybrids	Fluweelprosopis / Velvet mesquite	Indringer / Invader	2	
<i>Psidium cattleianum</i> Sabine (= <i>P. littorale</i> Raddi var. <i>longipes</i> (O.Berg) Fosb.)	Aarbei koejawel / Strawberry guava	Indringer / Invader	3	
<i>Psidium guajava</i> L. en hibriede / and hybrids	Koejawel / Guava	Indringer / Invader	2	
<i>Psidium guineense</i> Sw.	Brasiliaanse koejawel / Brazilian guava	Indringer / Invader	3	
<i>Psidium x durbanensis</i> Baijnath ined.	Durbanse koejawel / Durban guava	Onkruid / Weed	1	
<i>Pueraria lobata</i> (Willd.) Ohwi	Kudzuranker / Kudzu vine	Onkruid / Weed	1	
<i>Pyracantha angustifolia</i> (Franch.) C.K.Schneid. Uitgesluit kultivars / Excluding cultivars	Geelbranddoring / Yellow firethorn	Indringer / Invader	3	
<i>Pyracantha crenulata</i> (D.Don) M.Roem.	Rooivuurddoring / Himalayan firethorn	Indringer / Invader	3	
<i>Rhus succedanea</i> L. (= <i>Toxicodendron succedaneum</i> (L.) Kuntze	Wasboom / Wax tree	Onkruid / Weed	1	
<i>Ricinus communis</i> L.	Kasterolieboom / Castor - oil plant	Indringer / Invader	2	
<i>Rivina humilis</i> L.	Bloedbessie / Rivina, Bloodberry	Onkruid / Weed	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
<i>Robinia pseudoacacia</i> L.	Witakasia / Black locust	Indringer / Invader	2	Slegs vir gebruik as onderstam indien goed - gekeur deur die Uitvoerende Beampte in terme van regulasie 15B(10) / Only for use as root - stock if authorised by the Executive Official in terms of regulation 15B(10)
<i>Rorippa nasturtium - aquaticum</i> (L.) Hayek (= <i>Nasturtium officinale</i> R.Br.)	Bronkors / Watercress	Indringer / Invader	2	
<i>Rosa rubiginosa</i> L. (= <i>R. eglantheria</i> L.)	Wilderoos / Eglantine, Sweetbriar	Indringer / Invader	1	
<i>Rubus cuneifolius</i> Pursh and hybrid <i>R. x proteus</i> C.H.Stirt.	Amerikaanse braam / American bramble	Onkruid / Weed	1	
<i>Rubus fruticosus</i> L. agg.	Braam / European blackberry	Indringer / Invader	2	
<i>Salix babylonica</i> L. (moet nie verwar word met die onderstaande inheemse spesie nie / not to be confused with the indigenous <i>S. mucronata</i> Thunb. (= <i>S. capensis</i> , <i>S. subserrata</i> , <i>S. woodii</i> )	Treurlwilger / Weeping willow	Indringer / Invader	2	
<i>Salix fragilis</i> L. (moet nie verwar word met die onderstaande inheemse spesie nie / not to be confused with the indigenous <i>S. mucronata</i> Thunb. (= <i>S. capensis</i> , <i>S. subserrata</i> , <i>S. woodii</i> )	Crack or brittle willow	Indringer / Invader	2	
<i>Salvinia molesta</i> D.S.Mitch. and other species of the Family Salviniaceae	Waternaring / Kariba weed	Onkruid / Weed	1	
<i>Schinus terebinthifolius</i> Raddi	Brasiliaanse peperboom / Brazilian pepper tree	Onkruid / Weed	Kategorie 1 in Kwa - Zulu Natal, Kategorie 3 in die res van Suid - Afrika / Category 1 in Kwa - Zulu Natal, Category 3 in the rest of South Africa	
<i>Senna bicapsularis</i> (L.) Roxb. (= <i>Cassia bicapsularis</i> L.)	Rambling cassia	Indringer / Invader	3	
<i>Senna didymobotrya</i> (Fresen.) Irwin & Barneby	Grondboontjeboterkassia / Peanut butter cassia	Indringer / Invader	3	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
(= <i>Cassia didymobotrya</i> Fresen.)				
<i>Senna pendula</i> (Willd.) Irwin & Barneby var. <i>glabrata</i> (Vogel) Irwin & Barneby (= <i>Cassia coluteoides</i> Collad.)		Inringer / Invader	3	
<i>Sesbania punicea</i> (Cav.) Benth.	Rooi sesbania / Red sesbania	Onkruid / Weed	1	
<i>Solanum elaeagnifolium</i> Cav.	Satansbos / Silver-leaf bitter apple	Onkruid / Weed	1	
<i>Solanum mauritianum</i> Scop.	Luisboom / Bugweed	Onkruid / Weed	1	
<i>Solanum seforthianum</i> Andr.	Aartappelranker / Potato creeper	Onkruid / Weed	1	
<i>Solanum sisymbriifolium</i> Lam.	Wildetamatie, Doringtamatie / Wild tomato, Dense - thorned bitter apple	Onkruid / Weed	1	
<i>Sorghum halepense</i> (L.) Pers.	Johnsongras / Johnson grass, Aleppo grass	Inringer / Invader	2	
<i>Spartium junceum</i> L.	Spaanse besem / Spanish broom	Onkruid / Weed	1	
<i>Syzygium cumini</i> (L.) Skeels	Jambolan	Inringer / Invader	3	
<i>Syzygium jambos</i> (L.) Alston	Jamboes / Rose apple	Inringer / Invader	3	
<i>Tamarix chinensis</i> Lour.	Chinese tamarisk / Chinese tamarisk	Onkruid / Weed	Kategorie 1 plant in die Noord-, Wes-, en Oos Kaap, Kategorie 3 plant in die res van Suid – Afrika / Category 1 plant in the Northern-, Western-, and Eastern Cape, Category 3 plant in the rest of South Africa	
<i>Tamarix ramosissima</i> Ledeb.	Perstamarisk / Pink tamarisk	Onkruid / Weed	Kategorie 1 plant in die Noord-, Wes-, en Oos Kaap, Kategorie 3 plant in die res van Suid – Afrika / Category 1 plant in the Northern-, Western-, and Eastern Cape, Category 3 plant in the rest of South Africa	
<i>Tecoma stans</i> (L.) Kunth	Geelklokkies / Yellow bells	Onkruid /	1	

Soort plant / Kind of plant		Tipe / Type	Kategorie / Category	Spesiale voorwaardes / Special conditions
Botaniese naam / Botanical name	Gewone naam / Common name			
Kolom 1 / Column 1		Kolom 2 / Column 2	Kolom 3 / Column 3	Kolom 4 / Column 4
		Weed		
<i>Thelechitonina trilobata</i> (L.) H. Rob. & Cuatrec. (= <i>Wedelia trilobata</i> (L.) A. Hitchc.)	Singapoer – madeliefie / Singapore daisy	Onkruid / Weed	Kategorie 1 in Kwa – Zulu Natal, Kategorie 3 in die res van Suid – Afrika / Category 1 in Kwa – Zulu Natal, Category 3 in the rest of South Africa	
<i>Thevetia peruviana</i> (Pers.) K. Schum. (= <i>T. nerifolia</i> A. Juss. ex Steud.)	Geel – oleander / Yellow oleander	Onkruid / Weed	1	
<i>Tipuana tipu</i> (Benth.) Kuntze (= <i>T. speciosa</i> Benth.)	Tipoeboom / Tipu tree	Indringer / Invader	3	
<i>Tithonia diversifolia</i> (Hemsl.) A. Gray	Mexikaanse sonneblom / Mexican sunflower	Onkruid / Weed	1	
<i>Tithonia rotundifolia</i> (Mill.) S. F. Blake	Rooisonneblom / Red sunflower	Onkruid / Weed	1	
<i>Toona ciliata</i> M. Roem. (= <i>Cedrela toona</i> Rottler)	Toonboom / Toon tree	Indringer / Invader	3	
<i>Triplaris americana</i> L.	Triplaris / Triplaris, Ant Tree	Onkruid / Weed	1	
<i>Ulex europaeus</i> L.	Gaspeldoring / European gorse	Onkruid / Weed	1	
<i>Xanthium spinosum</i> L.	Boetebos / Spiny cocklebur	Onkruid / Weed	1	
<i>Xanthium strumarium</i> L.	Kankerroos / Large cocklebur	Onkruid / Weed	1	

**APPENDIX 5: THE MANAGEMENT OF PROTECTED AREAS IN SOUTH AFRICA**

(adapted from the White Paper on the Conservation and Sustainable Use of South Africa's Biological diversity, 1997)

<b>TYPE OF PROTECTED AREA</b>	<b>LEGISLATION</b>	<b>ADMINISTRATION</b>
National Park	National Parks Act 57 of 1976	South African National Parks
Lake Area	Lake Areas Development Act 139 of 1975	South African National Parks
Mountain Catchment Area	Mountain catchment Areas Act 63 of 1970	Assigned to provinces
Protected Natural Environment	Environmental Conservation Act 73 of 1989	Assigned to provinces
Special Nature Reserve	Environmental Conservation Act 73 of 1989	Assigned to provinces
Limited Development Area	Environmental Conservation Act 73 of 1989	Delegated to local authority and government institution
National Botanical Garden	Forest Amendment Act 1991	National Botanical Institute
State Forest	Forest Act 122 of 1984	Department of Water affairs and Forestry delegated to the provinces
Forest Nature Reserve and Wilderness Area	Forest Act 122 of 1984	Department of Water affairs and Forestry delegated to the provinces
National Monument	National Monuments Act 28 of 1969	National Monuments Council and provinces
Conservation Area	National Monuments Act 28 of 1969	National Monuments Council and provinces
Defence Area	Defence Act 44 of 1957	South African National Defence Force
Marine Reserve	Sea Fishery Act 12 of 1988	Department of Environmental Affairs and Tourism: Directorate of Sea Fisheries, and provinces in respect of coastal zone and specified resources
Restricted Area	Sea Fishery Act 12 of 1988	Department of Environmental Affairs and Tourism: Directorate of Sea Fisheries, and provinces in respect of coastal zone and specified resources
Most South African Islands	Sea Birds and Seals Protection Act 46 of 1973	Department of Environmental Affairs and Tourism: delegated to provinces in respect of sea birds
Provincial, Local and Private Nature Reserves	Various provincial ordinances	Provincial administrations, local authorities and private landowners
Ramsar Site	No legal status (Proposed Wetland Conservation Act)	Department of Environmental Affairs and Tourism
Private Conservancies	No legal status	Farmers
Biosphere Reserves	No legal status	Conservation authority/neighbours
Sites of conservation significance	No legal status	Private landowners
Natural Heritage Sites	Not legally enforceable	Private landowners

## APPENDIX 6: WEST COAST BIOSPHERE RESERVE

## UNESCO MAB BIOSPHERE RESERVE DIRECTORY



**SOUTH AFRICA**  
**CAPE WEST COAST**

<b>Major ecosystem type</b>	Coastal plains, marine-influenced fynbos area (Mediterranean sclerophyllous shrublands), marine areas; wetlands
<b>Major habitats &amp; land cover types</b>	Dune thicket, Strandveld ( <i>Euclea racemosa</i> shrublands) dominated by <i>Colpoon compressum</i> , <i>Euclea racemosa</i> , <i>Asparagus capensis</i> , <i>Ballota africana</i> etc.; sand plain fynbos ( <i>Phylica cephalantha</i> shrublands); West coast Renosterveld ( <i>Elytropappus rhinocerotis</i> shrublands) characterized by <i>Elytropappus rhinocerotis</i> , <i>Eriocephalus africanus</i> and <i>Anthospermum aethiopicum</i> ; littoral vegetation (communities on sand, shell, calcrete, granite, shale); riparian vegetation characterized by <i>Metrosideros angustifolius</i> , <i>Olea europaea</i> subsp. <i>africana</i> , <i>Rhus tomentosa</i> and <i>Podocarpus elongatus</i> ; freshwater wetlands; saltmarsh communities in the Berg River and around the Langebaan Bay; anthropogenic old lands; woody exotic stands with various exotic invasive species such as <i>Acacia cyclops</i> , <i>A. saligna</i> , <i>Eucalyptus lehmannii</i> and <i>Myoporum insulare</i> ; agroecosystems; stock farming; urban areas; gypsum mining; salt mining areas
<b>Location</b>	33°00' to 34°00'S; 18°00' to 18°30'E
<b>Area (hectares)</b>	
<i>Total:</i>	~378,000
<i>Core area:</i>	47,490
<i>Buffer zone:</i>	172,643
<i>Transition area:</i> (when given)	~157,867
<b>Altitude (metres above sea level)</b>	0 to +500
<b>Year designated</b>	2000
<b>Current principal research/monitoring activities</b>	<ul style="list-style-type: none"> <li>● The use of Cape Gannets to provide ancillary information on the status of epipelagic fish stocks</li> <li>● Long-term monitoring and population dynamics of seabirds</li> <li>● Long-term study of demography and dietary changes of African Black Oyster Catchers</li> <li>● Groundwater resources</li> <li>● Tortoise populations</li> </ul>

- Wader populations in the Langebaan Lagoon and the Berg River

**Administrative authority(ies)**

Department of Environmental Affairs and Tourism

**Contact(s) address(es)**Chairman, Management Committee of the Cape West Coast Biosphere Reserve  
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**E-mail**[narac@blaauwberg.co.za](mailto:narac@blaauwberg.co.za)**Web site****Related web pages**Ramsar wetland: [Langebaan](#)*Last updated: 29/11/2000*<http://www.unesco.org/mab/br/brdir/africa/safrica2.htm>

University of Cape Town

## **APPENDIX 7: CONTACTS**

### **Western Cape Nature Conservation Board**

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### **Cape Action Plan for the Environment (C.A.P.E.)**

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### **Land Care Program**

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### **West Coast District Council**

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