

# **KOGELBERG NATURE RESERVE COMPLEX MANAGEMENT PLAN 2013-2018**

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**Edited by: Mr M. Johns, Dr A. Veldtman and Mrs G. Cleaver-Christie**

**DATE APPROVED:  
DATE OF MOST RECENT UPDATE: 30 November 2012**

The Kogelberg Nature Reserve Complex comprises the following:

The Kogelberg was proclaimed a mountain catchment area in October 1981 in Government Gazette No. 7824. The reserve is currently demarcated as State Forest under the Forest Act, (Act No. 122 of 1984). Legal responsibility for this total area was assigned to the Administrator of the Cape by State President's Proclamation No. 97 of 1992, in Government Gazette No. 14246 of 21 August 1992.

Rooisand Provincial Nature Reserve, established as a provincial nature reserve in terms of Section 6 of the Nature Conservation Ordinance, 1974, on 25 October 2002 and proclaimed in the Provincial Gazette of 20 November 2002 by Proclamation No. 21/2002.

Brodie Link Provincial Nature Reserve, established as a provincial nature reserve in terms of Section 6 of the Nature Conservation Ordinance, 1974, on 20 February 2002 and proclaimed in the Provincial Gazette of 15 March 2002 by Proclamation No. 5/2002.

The Betty's Bay Marine Protected Area, previously titled the H.F. Verwoerd marine reserve, was originally proclaimed in terms of the Sea Fisheries Act (1973) in Government Notice No. 21948, 29 December 2000. The H.F. Verwoerd Marine Reserve was re-proclaimed in terms of the Marine Living Resources Act ("MLRA"), (Act No 18 of 1998). In the process the name was changed to the Betty's Bay Marine Protected Area.

Farm Hangklip 559 portion 186 (WCNCB: Buffelstal) is unproclaimed and zoned agriculture.

Farm Hangklip 559 portions 115, 161, 165, 160, 163, 168, 159 & 169 (WWF-SA: Hangklip) is unproclaimed and zoned agriculture.

The Cape Floral Region Protected Areas World Heritage Site, a serial site in the Western Cape Province, South Africa - made up of eight protected areas, covering 553 000 ha, including the Kogelberg Nature Reserve - was declared a World Heritage Site by the World Heritage Convention, UNESCO in 2004.

## AUTHORIZATION PAGE

This Integrated Management Plan for the Kogelberg Nature Reserve Complex was drafted and recommended by the Reserve Management Committee (RMC), a multi-disciplinary team consisting of:

### Reserve Management Committee:

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Antoinette Veldtman	Regional Ecologist
Corlie Hugo	Ecological Coordinator
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**Approved by:**

Name and Title	Signature and Date
Environmental Affairs and Development Planning Mr A. Bredell PROVINCIAL MINISTER	

## **PREAMBLE**

The aim of the Management Plan is to ensure that the Kogelberg Nature Reserve Complex has clearly defined objectives and activities to direct the protection and sustainable use of its natural, scenic and heritage resources over a five year time period (2013-2018). The Management Plan thus provides the medium-term operational framework for the prioritized allocation of resources and capacity in the management, use and development of the reserve. The Management Plan intends to add value and continuity by clearly stating management objectives, scheduling action and providing guidelines on the management approach.

The reserve falls within the Cape Floristic Kingdom (CFK). The CFK in South Africa is the smallest and richest of the six floral kingdoms in the world, and it is the only one to be found entirely within one country. Its rich biodiversity is under serious threat for a variety of reasons including conversion of natural habitat to permanent agriculture, inappropriate fire management, rapid and insensitive development, overexploitation of water resources, marine resources, and infestation by alien species. The region has been identified as one of the worlds "hottest" hotspots of biodiversity.

This protected area is situated in the southern part of the Boland and is managed according to the internationally accepted principles of a Biosphere Reserve. The Kogelberg Nature Reserve Complex forms part of the sensitive pristine core area of 18 000 ha of the Kogelberg Biosphere Reserve, sustaining high levels of biological diversity, buffered by a surrounding area. Beyond the borders of the Nature Reserve Complex, agriculture and pine plantations of Cape Pine form part of the buffer and transitional zones of the Kogelberg Biosphere Reserve, in keeping with the UNESCO biosphere reserve concept.

The Kogelberg Nature Reserve Complex includes the Betty's Bay Marine Protected Area (MPA), which is on the western end of the warm temperate south coast, one of South Africa's four major biogeographic provinces. It is a productive and biologically diverse area, supporting substantial fish, invertebrate and algal fisheries. The environment is diverse, with rocky headlands, wave-cut platforms, high energy sandy beaches, pocket beaches, kelp forests, estuaries, extensive sub-tidal reefs and pelagic habitat. A draft management plan for the Betty's Bay MPA exists (Du Toit & Attwood, 2008) and covers all the associated managements actions of the MPA.

As a result of its mountainous terrain and high rainfall, the Boland Mountains are an important water catchment area, providing water for the Cape Metropolitan Area as well as for extensive areas on richer soils in the upper catchment under deciduous fruit orchards (some 25% of the catchment) grown for export and domestic use. The Palmiet River which flows through the protected area feeds the interbasin transfer to meet the Cape Metropole demand.

In response to the area's exceptional biodiversity and the demands thereon a process of extensive consultation involving various interested parties, including local government and non-governmental organisations (NGO) resulted in the establishment of a strategic plan referred to as Cape Action Plan for People and the Environment (C.A.P.E). It identified the key threats and root causes of biodiversity losses that need to be addressed in order to conserve the floral kingdom. This resulted in a spatial plan identifying areas which need to be conserved and a series of broad program activities which need to be undertaken over a 20

year period. Based on the situation assessment and analysis of threats, three overarching themes that complement and reinforce one another were developed: C.A.P.E. will:

- establish an effective reserve network, enhance off-reserve conservation, and support bioregional planning;
- strengthen and enhance institutions, policies, laws, co-operative governance, and community participation; and
- develop methods to ensure sustainable yields, promote compliance with laws, integrate biodiversity concerns into catchment management, and promote sustainable eco-tourism.

## THE PROCESS

The nature reserves in the Boland Area (Kogelberg, Hottentots-Holland/Jonkershoek and Limietberg) form an ecological unit and therefore it was decided to set the vision, purpose and objectives for the unit and not for each of the reserves separately. The planning session, facilitated by the Regional Ecologist and guided by the Area Manager, defined the vision and purpose of the Boland Nature Reserve Complex as an umbrella statement, indicating the direction of the management intent for Boland Nature Reserve Complex to guide the formulation of the management objectives. The submitted objectives were evaluated against the definitions in “A Procedure for Defining Conservation Management Objectives and Goals” (Coombes & Mentis 1992) and sorted into categories: Objectives, Action Plans and Tasks.

The final objectives were prioritised through a pairwise comparison and the results were used to populate the section in the management plan referred to as the Strategic Implementation Framework. Actions Plans were associated with Objectives, to which tasks (Activities) were allocated within each Action Plan.

Guiding Principles for defining Vision, Purpose, Objectives, Action Plans and Tasks:

**VISION:** Indicates the direction of management aspiration, describes the unit, reflects uniqueness of the unit and justifies the existence of the unit.

**PURPOSE:** The foundation on which all future actions are based and is in line with the overall management philosophy of the organisation.

**OBJECTIVES:** Derived from the vision and purpose, representing key areas in which achievement must be obtained to give direction to the management intention: not measurable or testable; aimed at Key Performance Areas; and prioritised with Action Plans developed.

**ACTION PLANS (Operational Goals):** Functional Performance Areas which describe expected results which will contribute to the realisation of the objectives. Achievable within capability, Measurable and Attainable. Performance indicators developed in description of outputs: Tasks, responsibilities, indicators, timeframes and references to existing procedures.

## **APPROVAL PROCESS**

The RMC compiled the draft management plan for review. The Kogelberg Nature Reserve Complex management plan was internally reviewed and recommended for stakeholder participation by all Executive Directors, Programme Managers, Catchment Managers, Senior Managers within each Support Service including Financial and Administration Services, Human Resource Management, Occupational Health and Safety, Risk Management and Marketing and Eco-tourism. A review was undertaken by Scientific Services on the ecological content of the management plan. Furthermore an internal review on the scientific and technical content was undertaken respectively, using the CapeNature Scientific and Technical Protected Area management plan review template (Waller 2011).

The management plan was then recommended for stakeholder participation to the Executive Director: Conservation Management. Stakeholder comments were considered and incorporated. The Kogelberg Nature Reserve Complex management plan was reviewed by an independent external reviewer on a voluntary basis, who commented and recommended that the management plan met the criteria as determined in the CapeNature Scientific and Technical PAMP review template.

The Executive Directors reviewed the Management Plan and the Executive Director: Conservation Management recommended the plan to the CEO. The Western Cape Nature Conservation Board (WCNCB) Conservation Committee recommended to the WCNCB that the management plan be adopted. The WCNCB adopted the Kogelberg Nature Reserve Complex management plan and submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) for submission to the Provincial Minister for approval.

## **ACKNOWLEDGEMENTS**

The authors would like to express their gratitude to all those who contributed to this Management Plan, including members of the public, community forums, as well as the following individuals:

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- Coral Birss (CapeNature – Previously Regional Ecologist) and Gail Cleaver-Christie (Technical Advisor) for assistance with creating the template of the document
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- Footprint Environmental Services for running the Stakeholder Engagement Process
- Amida Johns for photographs

## EXECUTIVE SUMMARY

In compliance with the National Environment Management: Protected Areas Act (Act No. 57 of 2003), CapeNature is required to develop management plans for each of its nature reserves. In developing the management plan for the Kogelberg Nature Reserve Complex, CapeNature strives to establish biodiversity conservation as a foundation of a sustainable economy creating access, benefits and opportunities for all.

The Kogelberg Nature Reserve Complex (KNRC) was largely proclaimed as crown land in 1937 and is situated between Sir Lowry's Pass and Bot River in the north and Hangklip and Bot River Estuary in the south. The nature reserve falls within the Theewaterskloof and Overstrand Municipalities. Kleinmond-Hangklip and Grabouw are two semi-urban areas bordering the KNRC. The region's economy is largely based on agriculture (especially deciduous fruit) and forestry and to a growing tourism industry.

The State Forest portions of the nature reserve were proclaimed mountain catchment areas in October 1981 under the Forest Act, (Act No. 122 of 1984). The Provincial Nature Reserve portions of Kogelberg, namely Rooisand and Brodie Link Nature Reserves were proclaimed under the Nature Conservation Ordinance 1974, (Ordinance 19 of 1974) on 20 November 2002 in Government Gazette No 5951 and 15 March 2002 in Government Gazette No 5841, respectively. The Betty's Bay Marine Protected Area, previously titled the H.F. Verwoerd marine reserve, was originally proclaimed in terms of the Sea Fisheries Act (1973) in Government Notice No. 21948, 29 December 2000. The H.F. Verwoerd Marine Reserve was re-proclaimed in terms of the Marine Living Resources Act ("MLRA"), (Act No. 18 of 1998). In the process the name was changed to the Betty's Bay Marine Protected Area. Several land parcels around Hangklip are unproclaimed but forms part of the KNRC.

The KNRC falls within a biodiversity hotspot, the Cape Floristic Kingdom (CFK), and under the strategic Cape Action for People and the Environment (C.A.P.E.), which is focused on minimising key threats and root causes to biodiversity losses.

From a biodiversity perspective, the nature reserve lies at a convergence between the north-south and west-east fynbos and marine corridors. The vegetation type is largely Kogelberg sandstone fynbos and is home to many rare and noteworthy plant species. The marine reserve is also an important sanctuary making the KNRC a unique biodiversity and landscape protected area.

The KNRC forms and integral part of the core area of the Kogelberg Biosphere Reserve under the UNESCO Man and Biosphere (MAB) programme. This programme attempts to harmonise conservation, sustainable development and the surrounding inhabitants in an attempt to establish a sustainable conservation economy.

The KNRC's vision and purpose was developed to guide reserve management in its daily operations and longer term planning. The KNRC's vision is to be leaders in biodiversity conservation in the Boland through integrated management for the benefit of all. The purpose of the reserve is to fulfil our mandate through conserving the unique biodiversity of the KNRC through integrated catchment management and effective partnerships; to ensure sustained



water yield; to allow the opportunity to access the reserve and to be proactive in fostering relationships with surrounding communities.

The objectives for the KNRC were developed in line with CapeNature's strategic goals, objectives and key measurable objectives. The objectives of the KNRC are:

**Objective 1:** To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.

**Objective 2:** To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the KNRC.

**Objective 3:** To implement effective integrated catchment management on the KNRC.

**Objective 4:** To develop and maintain relevant functional partnerships for KNRC.

**Objective 5:** To provide access to the KNRC for appropriate and sustainable activities.

**Objective 6:** To effectively conserve the KNRC's cultural heritage attributes

The KNRC's management plan outlines the reserve's strengths, weaknesses, opportunities and threats (SWOT). These are dealt with in the Strategic Implementation Framework. A conservation development framework is set out for the KNRC, which includes a sensitivity analysis and zonation. The KNRC can be considered to have moderate overall Biodiversity Sensitivity, but with a high probability of encountering highly sensitive local features.

The KNRC is zoned to provide tourism and access in identified areas, whilst still protecting extensive natural landscapes and Wilderness. Zones represent a refinement of previous Boland Mountain Zonation (Holness & Skowno 2008) with zones updated to be consistent with the current CapeNature scheme and zone boundaries more precisely mapped to features on the ground, except for the new addition of a Wilderness Zone not previously identified. Zones adhere to CapeNature's standard zonation scheme.

In addition to the KNRC's zonation plan, an all-inclusive conservation development framework (CDF) and expansion strategy for the KNRC is presented. These are in line with local IDPs to facilitate development and conservation issues. The KNRC is ideally situated within easy distance of Cape Town and a number of nearby smaller tourism nodes on good roads. Two phases of development at Oudebosch were carefully planned to allow for the sensitive, wetland rich environment, and have already received NEMA EIA authorisation after a Basic Assessment application to DEA. Buffelstal planning is still in the earliest stages and design, layout and capacity have not been determined, but would be confined to the non-natural areas of the identified Development – Low Intensity Zone. Day trails within the identified Nature Access Zone would be developed to provide activities for any proposed Buffelstal development.

Several mechanisms are available for the expansion of the KNRC to meet both biodiversity and protected area targets. The CapeNature Protected Area Expansion Strategy document describes an implementation plan and explicit spatial targets for the next 5 year period for the Biodiversity Stewardship Programme and provide a provincial framework for an integrated and coordinated approach to 1) the expansion of Protected Areas to allow for the protection of biodiversity and persistence of ecological services; and 2) the securing of landscape corridors to facilitate climate change adaptation. Properties were extracted from the CapeNature

Protected Area Expansion Strategy 5 year Priority Map that have specific biodiversity value and will aid in the expansion of the KNRC. Several of these are already in negotiation with landowners.

The KNRC's Strategic Implementation Framework guides the implementation of the management plan over five years to ensure that it achieves its management objectives. This framework set out how the KNRC will deal with boundary issues and expansion, cooperative governance, ecological issues, and wildlife management. Furthermore, actions for fire management and the control and management of invasive and non-invasive alien species are set out. Plans for cultural heritage resource management and law enforcement and compliance are set out in the framework as well as for infrastructure and disaster management. In addition, plans to facilitate youth and community development through environmental awareness and the assistance in development of knowledge, skills, values and commitment necessary to achieve sustainable development are also set out in detail.

Moreover, as a listed provincial public entity, CapeNature must comply with all the provisions of the Public Finance Management Act, with particular reference to Chapter 6 thereof which deals with the responsibilities of public entities. CapeNature is subject to, and guided by, the provincial budget and strategic planning processes. To monitor and evaluate non-financial performance of the organisation, CapeNature conforms to the following protocols: a strategic five-year plan; annual performance plan; quarterly reporting and the production of an annual report. In addition to these required protocols, CapeNature also implements a Performance Management System which ensures that organisational targets are embedded in individual performance contracts. Therefore, all management effectiveness and administration related actions on the reserve are also included in the Strategic Implementation Framework.

The short to medium-term strategic focus for tourism and recreation in the KNRC is the development of middle -market visitor accommodation facilities, the maintenance of a range of low impact recreational adventure activities, access control at entry points and the maintenance of key information on visitor profiles and their needs. Plans to accomplish this are set out in the implementation framework.

The Strategic Implementation Framework was compiled on an existing budget that is inadequate to adequately manage the KNRC.



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## PART 1

### SECTION 1: MANAGEMENT OBJECTIVES FRAMEWORK

#### 1.1 Vision and Mission of CapeNature

##### VISION:

A quality driven public entity conserving the unique natural heritage resources of the Western Cape for the benefit of all.

##### MISSION:

The establishment of biodiversity conservation as a foundation of a sustainable economy creating access, benefits and opportunities for all.

#### 1.2 CapeNature Strategic Goals, Objectives and Key Measurable Objectives

CapeNature has four strategic goals, underpinned by a nine strategic objectives. Each strategic objective is further divided into key measurable objectives, as shown in Table 1.1.

**Table 1.1: Summary of CapeNature Strategic Results and Programme Allocations.**

STRATEGIC STATEMENT	GOAL	STRATEGIC STATEMENT	OBJECTIVE	KEY MEASURABLE OBJECTIVES	CURRENT PROGRAMME
1. Securing biodiversity and ecosystem services through integrated biodiversity planning and management enabling appropriate climate change response.		1.1 Effective management informs and conservation priorities.	knowledge development	1.1.1 To provide biodiversity input into Western Cape Provincial land use planning and decision making. 1.1.2 To manage biodiversity knowledge to ensure effective conservation management.	2: Biodiversity Support
		1.2 Implementation of the Western Cape Biodiversity Plan and Protected Area Expansion Strategy secure priority biodiversity.		1.2.1 To ensure rigorous conservation planning in the Western Cape within the national legislative framework. 1.2.2 To implement measures to ensure resilience and persistence of biodiversity of the Province in the light of anticipated climate changes. 1.2.3 A network of Protected Areas with appropriate status and effectively managed by CapeNature (incorporating terrestrial, freshwater and marine).	2: Biodiversity Support 3. Conservation Management
		1.3 Sustained conservation management in priority catchments maintains ecosystem services.		1.3.1 To ensure the implementation of effective conservation management interventions in the Western Cape.	3: Conservation Management
		1.4 Legal and wildlife support services and biodiversity crime prevention result in the protection and sustainable use of biodiversity.		1.4.1 To enhance biodiversity protection and conservation in areas outside the formal CapeNature Protected Area Network.	2: Biodiversity Support 3. Conservation Management



2. Contributing to the reconstruction and development of social capital.	2.1 Facilitate youth and community development through environmental awareness and assist in developing the knowledge, skills, values and commitment necessary to achieve sustainable development.	2.1.1 To provide learners with access to a quality environmental education programme. 2.1.2 To provide experiential service learning opportunities in the conservation sector.	3: Conservation Management
3. Sustaining and growing the conservation economy.	3.1 Develop and implement strategies to facilitate equitable access to and participation in the conservation economy through a People and Parks Programme.	3.1.1 To provide access to work opportunities through implementation of conservation and tourism management services. 3.1.2 To improve access to protected areas for sustainable traditional, cultural and spiritual uses. 3.1.3 To enhance opportunities for stakeholder participation in protected area management. 3.1.4 To grow and effectively deploy volunteer capacity.	3: Conservation Management
4. Ensuring an efficient and effective institution through cutting edge leadership.	4.1 Increased sustainable revenue is attained through enhanced tourism product development and the development of a system for payment of ecosystem services.	4.1.1 Create awareness/market the tourism products within our portfolio to domestic and international visitors, and contributing positively towards sustainable tourism. 4.1.2 To establish partnerships that will improve corporate and social investment into our reserves and by so doing positively impacting on visitor expectations and the livelihoods of local communities. 4.1.3 Develop sustainable tourism products while providing access to both the domestic and international market. 4.1.4 To establish a system for payment for ecosystem services management as a sustainable basis for income in the MTEF allocation.	4: Marketing and Eco-tourism
			2: Biodiversity Support
	4.2. Develop policies, systems and processes to support effective service delivery.	4.2.1 Support strategic decision making to ensure good corporate governance. 4.2.2 Ensure all CapeNature's activities are executed within a framework of sound controls and the highest standards of corporate governance. 4.2.3 To develop and implement an effective and efficient communication strategy for all internal and external stakeholders and role-players. 4.2.4 To implement Information Technology and Systems that are compliant and support the core business of the organisation.	1: Administration/ Corporate
			4: Marketing and Eco-tourism
4.3. Institution building enables a supportive working environment.	4.3.1 To provide a professional human resource management support service.	1: Administration/ Corporate	

### 1.3 Values of CapeNature

CapeNature strives to create a work environment that nurtures people and motivates a high level of performance in putting people first through implementing the *Batho Pele* principles. The following are our core values:

- Honesty:** We conduct our business with honesty, accuracy and without error.
- Excellence:** We espouse a deep sense of responsibility to our work and endeavour to constantly improve it, so that we may give our stakeholders the highest quality of service. We believe that work done excellently gives us dignity, fulfilment, and self-worth.
- Fitness of purpose:** We strive to ensure that our mission remains relevant to the local, provincial, national and international context of transformation and modernisation of the biodiversity conservation sector.
- Fitness for purpose:** We strive to ensure that our strategic responses and resource allocations, including staff appointments, add optimal value in implementing our mandate.
- Accountability:** We ensure financial, performance and political accountability in the implementation of our mandate.
- Equity and access:** We strive to ensure that benefits and opportunities accruing from the conservation of biodiversity are equitably shared and that our resources and services are accessible to all; ensuring redress for historically disadvantaged individuals with specific emphasis on women, youth and the disabled; and enabling cultural, traditional and spiritual uses of natural resources on a sustainable basis.
- Personal responsibility:** We, as the custodians of the natural resources essential for human health and well-being; and growth and development in the Western Cape, undertake this responsibility with the highest possible level of personal responsibility. We are committed to measurable targets for individual performance which we pursue through strong professional work ethics, political neutrality and selfless service.

## **1.4 Reserve Vision, Purpose, Values and Objectives**

### **VISION**

To be leaders in biodiversity conservation in the Boland through integrated management for the benefit of all.

### **PURPOSE**

To fulfil our mandate through conserving the unique biodiversity of the Kogelberg Nature Reserve Complex through integrated catchment management and effective partnerships; to ensure sustained water yield; to allow the opportunity to access the reserve and to be proactive in fostering relationships with surrounding communities.

### **PURPOSE FOR DECLARATION OF KOGELBERG NATURE RESERVE COMPLEX EXTRACTED FROM NEM: PAA (SECTION 17):**

- (a) to protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas;
- (e) to protect South Africa's threatened or rare species;
- (f) to protect an area which is vulnerable or ecologically sensitive;
- (i) to create or augment destinations for nature-based tourism;
- (j) to manage the interrelationship between natural environmental biodiversity, human settlement and economic development;

### **VALUES**

The values of the Kogelberg Nature Reserve Complex are:

- The Kogelberg Nature Reserve Complex forms part of the core area of the Kogelberg Biosphere Reserve, designated as South Africa's first biosphere reserve in December 1998.
- The seclusion of the Kogelberg Nature Reserve Complex ensures its wilderness character.
- The Kogelberg Nature Reserve Complex is widely regarded as the heart of the Fynbos Flora.
- At least 150 rare and endemic plant species occur in the Kogelberg Nature Reserve Complex.
- The Kogelberg Nature Reserve Complex is included as part of the Cape Floral Region Protected Areas World Heritage Site, inscribed on the World Heritage List in 2004
- The Kogelberg peak is at 1270 m the highest mountain peak within 2 km of the coastline in the Southern Hemisphere.
- Kogelberg Nature Reserve has received an international development award for a green tourism facility at Oudebosch
- The Kogelberg Nature Reserve Complex conserves ecological systems from catchment to coast.
- The Kogelberg Nature Reserve Complex comprises a diversity of important vegetation units.

### **OBJECTIVES**

From the vision a number of key objectives have been identified that further articulate the purpose of the reserve. The prioritised objectives are:

- Objective 1:** To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the Kogelberg Nature Reserve Complex.
- Objective 2:** To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the Kogelberg Nature Reserve Complex.
- Objective 3:** To implement effective integrated catchment management on the Kogelberg Nature Reserve Complex.
- Objective 4:** To develop and maintain relevant functional partnerships for Kogelberg Nature Reserve Complex.
- Objective 5:** To provide access to the Kogelberg Nature Reserve Complex for appropriate and sustainable activities.
- Objective 6:** To effectively conserve the Kogelberg Nature Reserve Complex's cultural heritage attributes

## 1.5 Guiding Principles

The following guiding principles underpin the Management Plan for the Kogelberg Nature Reserve Complex. It is important to note that while these principles are intended to guide reserve management in its work, the reserve is also subject to the principles and provisions of relevant international treaties and conventions, national and provincial legislation and policy, and any local contractual agreements.

**Custodianship** - Reserve management will seek to respect, protect and promote the Kogelberg Nature Reserve Complex, and its environmental and heritage resources, as a common heritage and a national asset for all South Africans.

**Common Heritage** - The management of the Kogelberg Nature Reserve Complex must serve the public interest by safeguarding the ecological, cultural and scenic resources as a common heritage, and national asset for all South Africans.

**Duty of Care** - The Kogelberg Nature Reserve Complex must ensure that all individuals, institutions and organisations act with due care and share the responsibility to conserve, and avoid degradation of, the ecological, cultural and scenic resources, and to use the resources of the Kogelberg Nature Reserve Complex sustainably, equitably and efficiently.

**Sustainability** – Reserve management will seek to achieve a balance between ecological sustainability, social equity and economic efficiency without compromising the ecological integrity of the reserve.

**Holism** - The Reserve and its surrounds form an indivisible system. The management of the Reserve must adopt an integrated approach and recognise the interconnectedness and interdependence of social, ecological and economic components.

**Intrinsic Value** - All life forms and ecological systems have intrinsic value.

**Cooperation and Partnerships** - Reserve management will seek to work co-operatively and in partnership with public institutions, the private sector, NGOs and local communities.

**Equitable Access** - Reserve management shall seek to ensure that stakeholders shall have equitable, sustainable, and managed access to the reserves and the benefits that are derived from the reserves.

**Precaution** - Where there may be a threat of significant negative impact but inadequate or inconclusive scientific evidence exists to prove this, action shall be taken to avoid, prevent or minimise the potential impact.

**Empowerment and Transformation** - The Kogelberg Nature Reserve Complex shall strive to empower stakeholders involved in the Reserve through capacity building and access to economic opportunities.

**Co-operative Governance** - All spheres and organs of government that are involved in management of the Reserve, or in making decisions affecting the Reserve, shall work together co-operatively to ensure the conservation of the Reserve.

**Excellence in Management and Service** - The Kogelberg Nature Reserve Complex shall strive to attain excellence in managing the Reserve and servicing the visitors that use it through accountable and informed decision-making and co-ordination, co-operation and integration with relevant government agencies and stakeholders. The Kogelberg Nature Reserve Complex shall strive for continual improvement through a creative and collaborative approach to problem solving and learning.

**Capacity** – Reserve management will seek to ensure that the management of the Kogelberg Nature Reserve Complex is adequately resourced to meet its mandated and ethical responsibilities in the effective management of the respective reserves.

**Alignment and Integration** - Reserve management will seek to align and integrate the reserve's management activities and priorities into, and with, the relevant local and regional conservation, institutional, socio-economic and developmental context.

**Culture of learning** – Reserve management will aim for continual improvement through both a scientific based approach that provides the basis for informed decision making, and a creative and collaborative approach to problem solving and learning.

**Accountability and transparency** - Reserve management will seek to ensure that management tasks in the Kogelberg Nature Reserve Complex are carried out efficiently and within stipulated time frames, productivity is increased, costs are controlled and impacts are managed, with integrity and in compliance with applicable laws.

In practical terms, the Management Plan needs to ensure that the following requirements for the effective management of the Kogelberg Nature Reserve Complex are adequately addressed:

The necessary mandate, human capacity and financial resources to implement and achieve the objectives and activities described in the management plan;

- The delivery of socio-economic benefits to local communities where possible.

- Flexibility of service delivery that encourages innovation and a wide range of government, community and non-government sector involvement.  
Performance indicators and accountability measures that provides for regular review of outcomes.

## SECTION 2: LEGAL FRAMEWORK

### 2.1 Legal and Policy Framework

#### 2.1.1 Legal Framework

The legal framework that directs planning and operational management activities in the reserve are addressed in detail within the Strategic Implementation Framework.

#### Constitutional and Legislative mandates

The Constitution of the Republic of South Africa Act, (Act No. 108 of 1996, Section 24) states that: *'Everyone has the right to an environment that is not detrimental to their health or well-being'*. The Constitution further states that: *'The environment must be protected for present and future generations through reasonable legislation and other measures that will prevent pollution and environmental degradation, promote conservation and will ensure ecologically sustainable development and sustainable use of natural resources while striving for justifiable economical and social development.'*

CapeNature is a public entity established in terms of and governed by the Western Cape Nature Conservation Board Act (Act No. 15 of 1998) and the Western Cape Nature Conservation Laws Act, (Act No. 3 of 2000). This is a public institution with the statutory responsibility for biodiversity conservation in the Western Cape. It is mandated to: promote and ensure nature conservation; render services and provide facilities for research and training; and generate income.

- Constitution of the Republic of South Africa Act, (Act No. 108 of 1996)
- Western Cape Nature Conservation Board Act, (Act No. 15 of 1998)
- Western Cape Nature Conservation Laws Act, (Act No. 3 of 2000)

The following are the key national and provincial statutes *relevant to the implementation of the mandate of nature conservation* and include all amendments to these acts and ordinances and any regulations and norms and standards promulgated there under. Note that the list below excludes all other relevant legislation to which public entities as employers, implementers of government mandate and managers of public finance are subject.

#### International Conventions, Protocols and Policies

- Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on Biological Diversity (The) (CBD)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (The) (CITES)
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (The) (RAMSAR)

- United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol
- United Nations Convention on the Law of the Sea (UNCLOS)
- International Union for Conservation of Nature (The) (IUCN)
- Convention concerning the Protection of the World Cultural and Natural Heritage (WHC)
- World Tourism Organisation (WTO)
- Intergovernmental Oceanographic Commission
- International Whaling Commission (The) (IWC)
- United Nations Educational, Scientific and Cultural Organization (UNESCO) Man and Biosphere (MAB) Programme

## **National Legislation**

All National legislation applies to activities in the Kogelberg Nature Reserve Complex, but the following have direct reference to the reserve's management activities:

- Constitution of the Republic of South Africa, (Act No. 108 of 1996)
- National Environmental Management Act, (Act No. 107 of 1998)
- National Environmental Management Biodiversity Act, (Act No. 10 of 2004)
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)
- Mountain Catchment Areas Act, (Act No. 63 of 1970)
- National Forests Act, (Act No. 84 of 1998)
- Conservation of Agricultural Resources Act, (Act No. 43 of 1983)
- World Heritage Convention Act, (Act No. 49 of 1999)
- Marine Living Resources Act, (Act No. 18 of 1998)
- Environment Conservation Act, (Act No. 73 of 1989)
- National Water Act, (Act No. 36 of 1998)
- Sea-shore Act, (Act No. 21 of 1935)
- National Veld and Forest Fire Act, (Act No. 101 of 1998)
- National Heritage Resources Act, (Act No. 25 of 1999)
- Sea Birds and Seals Protection Act, (Act No. 46 of 1973)
- Disaster Management Act, (Act No. 57 of 2002)

This Management Plan is further guided by the principles outlined in Section 2 of the National Environmental Management Act, (Act No. 107 of 1998) and Section 17 of the National Environmental Management: Protected Areas Act, (Act No. 57 of 2003). Within Section 17 the purposes of the declaration of areas as protected areas are described. These are:

- a) To protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas;
- b) To preserve the ecological integrity of those areas;
- c) To conserve biodiversity in those areas;
- d) To protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;
- e) To protect South Africa's threatened or rare species;
- f) To protect an area, which is vulnerable or ecologically sensitive;
- g) To assist in ensuring the sustained supply of environmental goods and services;



- h) To provide for the sustainable use of natural and biological resources;
- i) To create or augment destinations for nature-based tourism;
- j) To manage the interrelationship between natural environmental biodiversity, human settlement and economic development;
- k) Generally, to contribute to human, social, cultural, spiritual and economic development; and
- l) To rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

## **Provincial Legislation**

Although all Provincial legislation applies to activities in the Kogelberg Nature Reserve Complex, the following have direct reference to the reserve management activities:

- Constitution of the Western Cape Act, (Act No. 1 of 1998)
- Western Cape Nature Conservation Board Act, (Act No. 15 of 1998)
- Western Cape Nature Conservation Laws Act, (Act No. 3 of 2000)
- Western Cape Planning and Development Act, (Act No. 7 of 1999)
- Land Use Planning Ordinance, (Ordinance No. 15 of 1985)
- Nature Conservation Ordinance, (Ordinance No. 19 of 1974)
- Nature and Environmental Conservation Regulations according to Provincial Notice 955 of 1975

## **New legislation**

The following legislation is either new or pending and it is envisaged that this legalisation will impact on CapeNature.

- CITES Regulations, 2009
- Threatened or Protected Species (ToPS) Regulations, 2007
- Alien and Invasive Species (AIS) Regulations, 2009, (still in draft form)
- National Environmental Management: Integrated Coastal Management Act, (Act No. 24 of 2008)
- NEM:PAA, (Act No. 57 of 2003) Regulation 99: Proper administration of nature reserves (Government Gazette No. 35021 Vol. 560, No. 6979, February 2012).
- Norms and Standards for the management of protected areas in South Africa, 2011, (still in draft form)
- Norms and Standards for Biodiversity Management Plans for Species, 2009, (Government Gazette No 214 March 2009)

### **2.1.2 Coordinated Policy Framework**

The Kogelberg Nature Reserve Complex management is guided by a number of internal CapeNature policies, procedures and guidelines. The policies, procedures and guidelines applicable to this management plan are referenced in the Strategic Implementation Framework (Section 7).

## 2.2 Management Agreements

Table 2.1 indicates the management agreements that are applicable to the Kogelberg Nature Reserve Complex.

**Table 2.1: Management agreements of the Kogelberg Nature Reserve Complex.**

Date	Type of Agreement	Partner	Duration	Area
2010-07-10	Memorandum of Agreement for the management of Rooisand Nature Reserve.	Arabella Country Estate (Pty) Ltd	50 years	Rooisand NR
2005	Memorandum of Agreement for the management of Brodie Link Nature Reserve and Hangklip Conservation Area.	WWF-SA	99 years	Brodie Link NR /Hangklip Conservation Area

## 2.3 Regional and Provincial Planning

In terms of the Municipal Systems Act, (Act No. 32 of 2000), local municipalities in South Africa are required to use integrated development planning to plot future development in their area. An Integrated Development Plan (IDP) is a 5-year strategic plan in which the municipal strategic and budget priorities are set.

An IDP is intended to be the principal strategic instrument to inform planning and development within a municipality. It should co-ordinate the work of local and other spheres of government and must take into account the existing conditions, constraints and resources available. Among other things, the IDP should address how the environment will be managed and protected. Among the key components of an IDP are disaster management plans and a Spatial Development Framework (SDF). SDFs are essentially the spatial reflection of a municipality's IDP.

A SDF is updated every five years and must indicate the desired patterns of land-use for the municipality and provide strategic guidance regarding the location and form of development, as well as conservation, within the municipality. A SDF must include basic guidelines for a land use management system for the municipality and should be used to guide changes in land-use rights and public investment in infrastructure.

The local municipalities are responsible for producing and co-coordinating IDPs and SDFs, but they must consult other stakeholders in the area who can impact on and/or be impacted on by development and other changes in the area. All government departments working in the area should refer to the IDP to ensure their work is aligned.

In essence SDF's and IDPs are tools for integrating social-, economic- and environmental issues and development within a municipality. As biodiversity is a fundamental component of sustainable development, SDFs and IDPs offer an opportunity to ensure that biodiversity priorities are incorporated into planning processes. In turn, the identification of biodiversity-related projects for the IDP can support local economic development and poverty alleviation.

In addition to municipal SDFs, the Kogelberg Biosphere Reserve Company has facilitated the drafting of a Kogelberg Biosphere Reserve Framework Plan to give physical effect to the MAB Programme. This Biosphere Reserve Framework Plan will be implemented from 2012 and will provide guidelines for the management of the Kogelberg Nature Reserve Complex as a core zone within the biosphere reserve context. Figure one shows some of the exceptional biodiversity of the area.



**Figure 1: The exceptional biodiversity of the Kogelberg Nature Reserve Complex.**

## **2.4 Institutional Framework**

The Western Cape Nature Conservation Board is trading as CapeNature. The organisational organogram is shown in Figure 2.

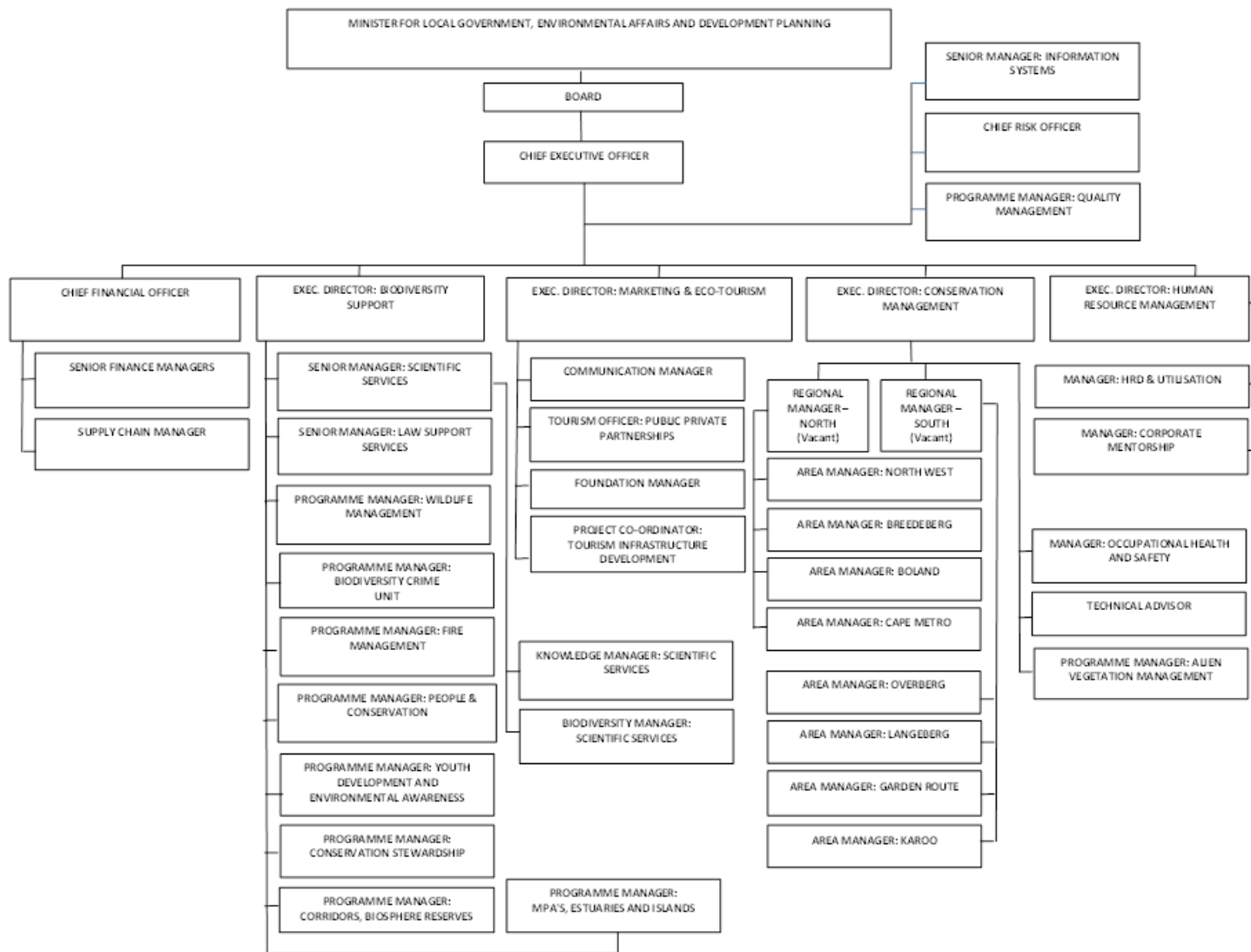
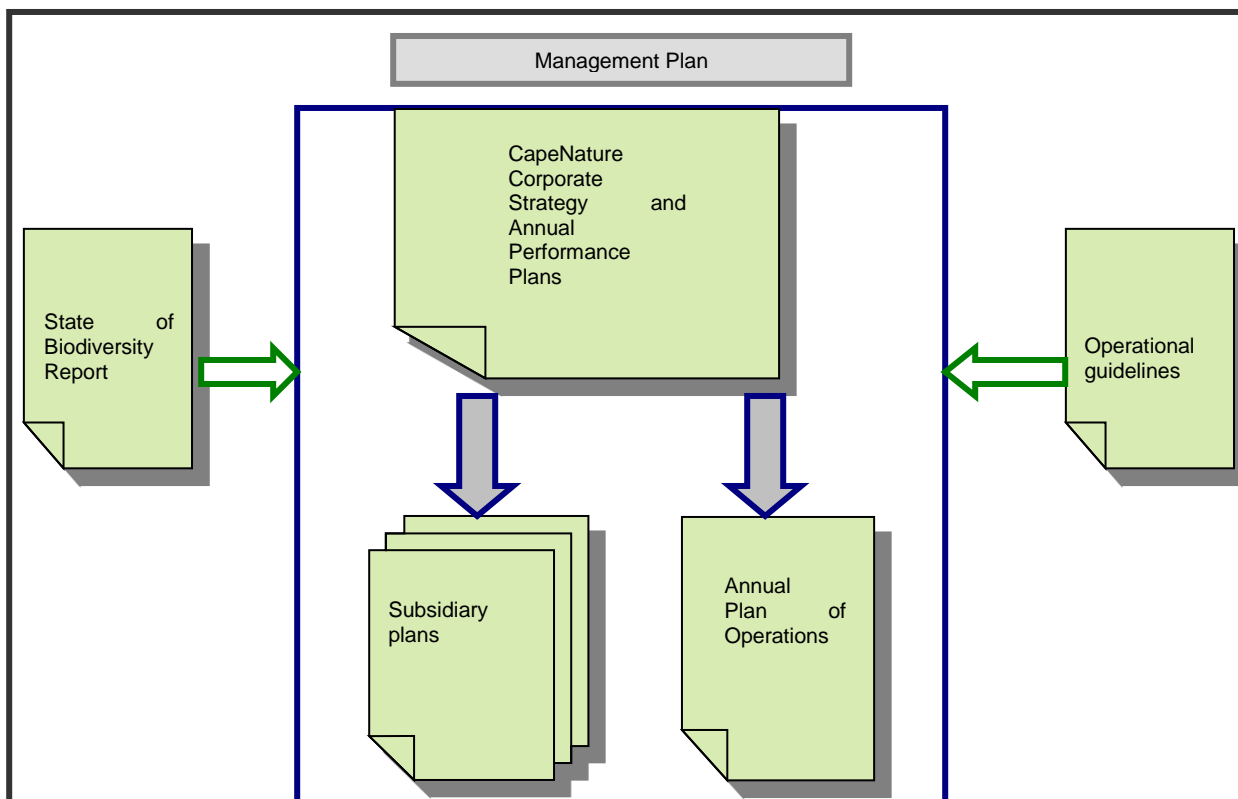


Figure 2: CapeNature Organogram (dated 18 October 2012).

## 2.5 Strategic Management Plan

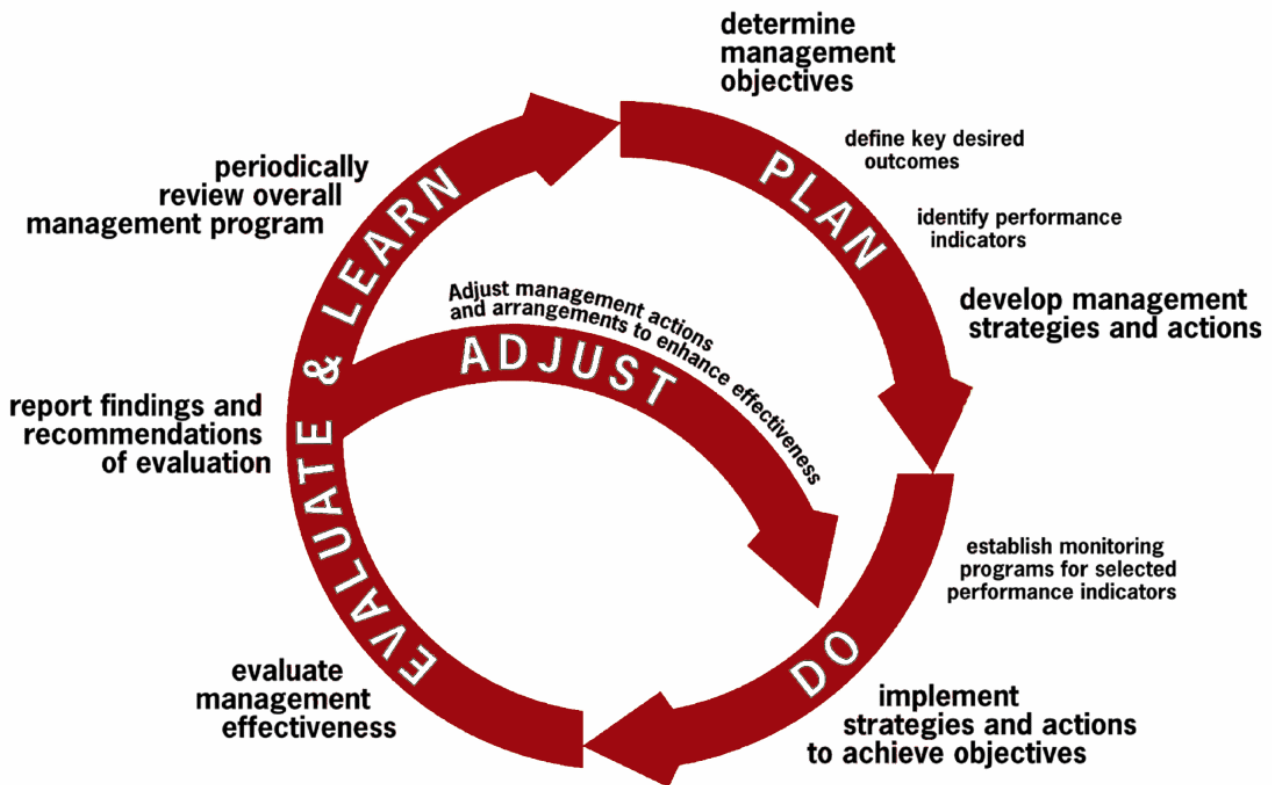
### 2.5.1 Purpose of this Management Plan

The major elements of the reserve planning process for the Kogelberg Nature Reserve Complex are: (i) a CapeNature corporate Strategic Plan and Annual Performance Plans (APP); (ii) detailed subsidiary plans (as required) and; (iii) an Annual Plan of Operations (APO). The management plan for the Kogelberg Nature Reserve Complex is informed by a number of strategic plans and operational guidelines to ensure on-going implementation and review of the reserve management activities (see Figure 3).



**Figure 3: The elements of CapeNature management plans.**

The management plan for the Kogelberg Nature Reserve Complex is determined based on policies, legislation and related planning documents at the sectorial, institutional, agency and local levels. The organisation adopts the adaptive management cycle, see Figure 4, whereby the management plan is developed and implemented and after annual evaluation the management plan can be adapted, to ensure key objectives are being achieved.



**Figure 4: Adaptive management cycle (CSIRO 2012).**

The approach to, and format of, this Management Plan is directed by the Guidelines for the development of a management plan for a protected area in terms of the National Environmental Management: Protected Areas Act (Cowan & Mpongoma 2010). The drafting of this Management Plan has been guided by a small interdisciplinary Reserve Management Committee (RMC) comprising the Area Manager, Conservation Manager, Ecological Coordinator, Regional Ecologist, Community Conservation Manager, Conservation Services Manager and Tourism Officer. Iterative drafts of the Management Plan were presented to, and discussed by, the RMC before broader circulation for inputs from the public.

The purpose of this Management Plan is to ensure that the Kogelberg Nature Reserve Complex has clearly defined objectives and activities to direct the protection and sustainable use of its natural, scenic and heritage resources over a five year period. The Management Plan indicates where reserve management intends to focus its efforts in the next five years (2013-2018). The Management Plan thus provides the medium-term operational framework for the prioritised allocation of resources and capacity in the management, use and development of the reserve.

It must be noted that the Management Plan focuses on strategic priorities rather than detailing all operational and potential reactive courses of action in the next five years. The timeframe referenced in the Strategic Implementation Framework follows financial years (1 April to 31 March), with Year 1 commencing from signing of the Management Plan by the Provincial Minister: Environmental Affairs and Development Planning. While planning for some emergencies is part of the Management Plan, it remains possible that unforeseen

circumstances could disrupt the prioritisation established in this Management Plan. These should be addressed in the annual review and update of the Management Plan. The scope of the Management Plan for the Kogelberg Nature Reserve Complex is constrained by the reserve's actual or potential performance capability - given available personnel, funding, and any other external factors - to ensure that the plan is achievable and sustainable.

The Kogelberg Nature Reserve Complex Management Plan has been compiled on the basis of current available resources (funding and human capital). The five year budget has been calculated at a 5% budget increase per annum and therefore actions as determined in the Strategic Management Framework are based the assumption that these resources will be forthcoming.

Legislation listed in the Strategic Implementation Framework is non-exhaustive.

## **2.5.2 Stakeholder Participation Process**

CapeNature has adapted the South African National Parks (SANParks), Stakeholder Participation in Developing Park Management Plans (Spies & Symonds 2011) for the stakeholder participation process.

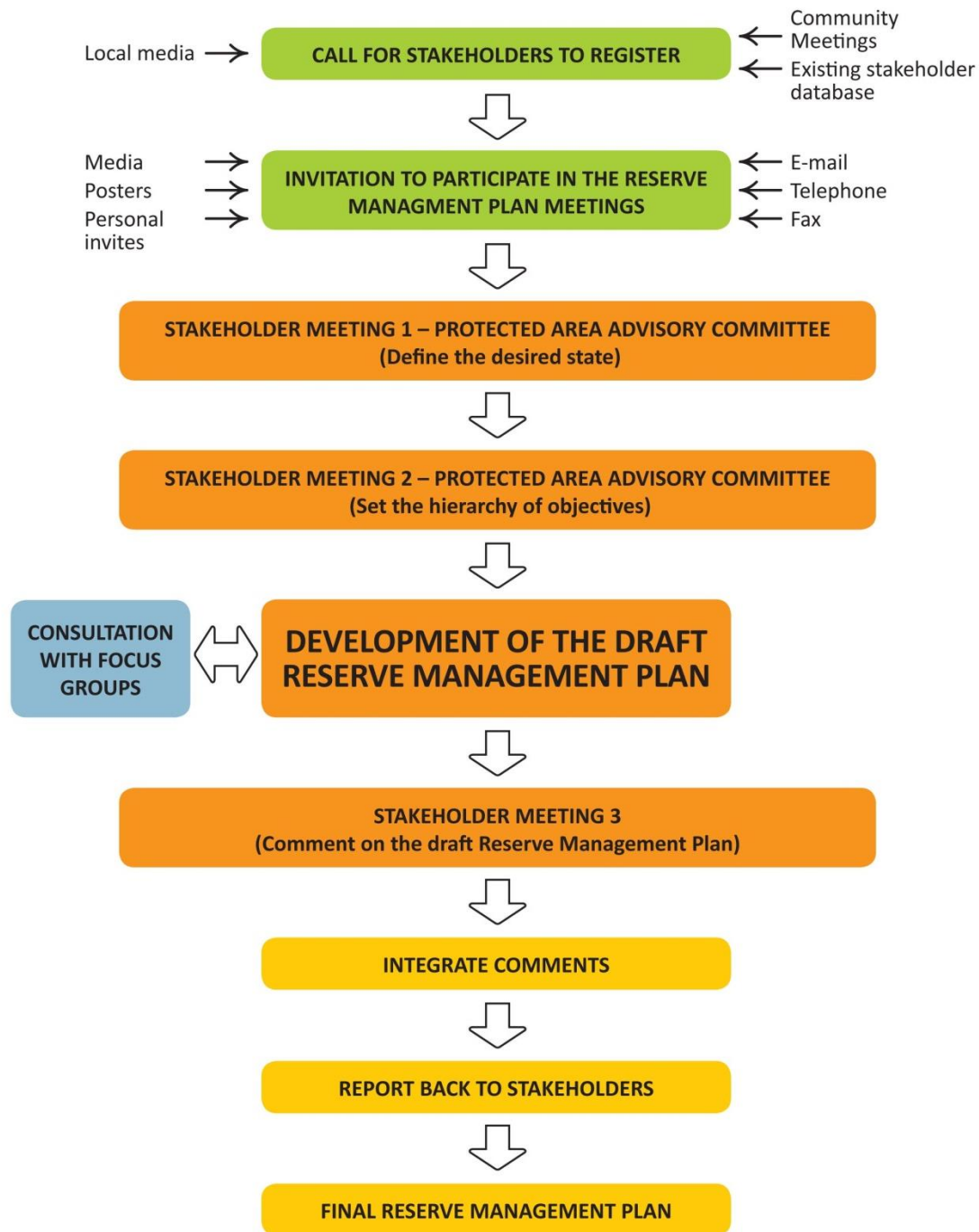
Section 39(3) of the National Environmental Management: Protected Areas Act, (Act No. 57 of 2003) states that *when preparing a management plan for a protected area, the management authority concerned must consult municipalities, other organs of state, local communities and other affected parties which have an interest in the area.* Section 41(2)(e) requires that the management plan contains *procedures for public participation, including participation by the owner (if applicable), any local community or other interested party.*

All stakeholders must register and a stakeholder register, as well as attendance registers for workshops and meetings, must be kept. Additional individuals, wishing to participate in the process, must register as stakeholders and should be accommodated to ensure that the process is inclusive. Figure 5 shows the stakeholder participation strategy for CapeNature management plans. Any persons having direct or indirect interests or rights in a nature reserve may be considered to be a stakeholder. The stakeholder process will facilitate the establishment of a comprehensive Protected Area Advisory Committee.

In CapeNature's efforts to comply with the deadlines for this process, certain of these steps had to be combined for this Management Plan. Stakeholder Meeting 1 and 2 shown in Figure 5 were combined with Stakeholder Meeting 3. At this meeting opportunity were provided to stakeholders to comment on the desired state and objectives of the Kogelberg Nature Reserve Complex.



# STAKEHOLDER PARTICIPATION STRATEGY FOR CAPENATURE NATURE RESERVE MANAGEMENT PLANS



**Figure 5: Stakeholder Participation Strategy for CapeNature Nature Reserve Management Plans.**



### **2.5.3 Establishment of a CapeNature Protected Area Advisory Committee**

In terms of the NEM:PAA, (Act No. 57 of 2003) Regulation 99: Proper administration of nature reserves (Government Gazette No. 35021 February 2012), a management authority may establish one or more advisory committees in respect of a nature reserve. These advisory committees will be called Protected Area Advisory Committee's (PAAC).

#### **Procedure**

CapeNature will invite community organisations, NGOs, residents of neighbouring communities, through direct invitation or through advertisements in at least two local newspapers and any other agreed upon manner by the reserve planning committee in order to reach the greatest number of residents of, and neighbouring communities to the nature reserve. The invitation will specify the method of submission and a date by which the nominations contemplated must reach CapeNature. Interested and affected parties will be required to complete the CapeNature PAAC application forms.

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

Any membership of the PAAC must be based on a real interest demonstrated by the member in respect of the relevant nature reserve. The member must be the nominated delegate from the organisation whom the member is representing and is expected to provide feedback to his/her organisation in terms of meetings and progress.

#### **Composition**

CapeNature, after considering any nominations submitted will appoint members in writing to the PAAC. At least one employee of CapeNature, nominated by CapeNature will be an ex officio member of the PAAC.

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

- Municipalities
- Local Municipality Ward Councillors
- Organs of state (National and Provincial)
- Neighbours
- Land owner/s

Other affected/interested parties such as:

- NGOs and Community Based Organisations (CBOs)
- Tourism
- Cultural/Natural heritage e.g. Rastafarian, Traditional Leaders and traditional healers
- Botanical and/or zoological interests
- Water quality/aquatic environment
- Nature-based recreation
- Educational institutions
- Research institutions
- And any other interested and affected party

## **Term of office**

- Each member is expected to serve for a fixed two year period as determined by CapeNature management but the respective organisation's rights and procedures with respect to member representation will be allowed as long as it is in the interest of conservation and good governance.
- Nominees representing organisations and formally constituted groups must be nominated by their organisation/group on official letter heads, signed by an executive authority, and be duly appointed to act in the interest of their organisation. Organisations must also nominate a second member to attend and represent the organisation when the primary nominee is not available. The nomination letters from the organisations must be accompanied by the application forms.
- Membership is voluntary and no remuneration will be provided to PAAC members.
- As part of good governance, all PAAC members will be required to adhere to the PAAC code of conduct and if any member does not adhere to the code of conduct stipulations, the organisation that the member is representing will be expected to deal with their member accordingly.

## **Terms of Reference for PAACs**

The committee will be expected to:

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

## **Functioning of the Advisory Committee**

The committee will meet a minimum of once a year. At the first meeting a Chairperson and a secretary who will be required to take minutes of all matters discussed, will be elected. The committee will be expected to submit a copy of the minutes for each meeting and a full report, to the management authority (the Area Manager for submission to the Executive Director: Conservation Management), highlighting issues and making recommendations on matters arising from the implementation of the Kogelberg Nature Reserve Complex Management Plan. The Chairperson may at his/her discretion form working groups when required. Minutes of all working groups meetings must be kept and submitted through the Chairperson to reserve management.

## Decision Making

The reserve management committee's acceptance and rejection of advice offered will follow the process as outlined in Figure 6.

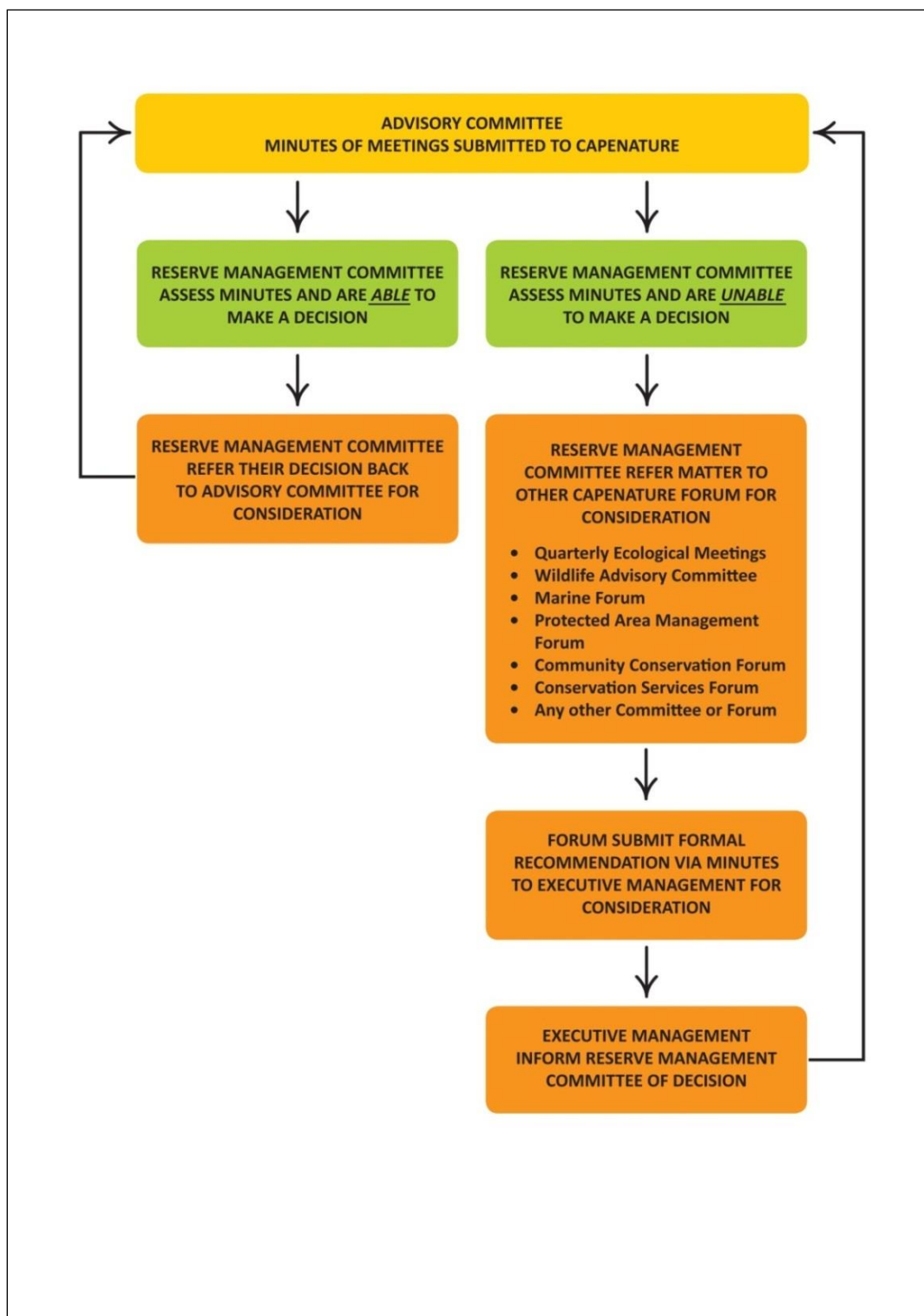


Figure 6: Decision Tree for the acceptance and rejection of advice from the PAAC.

## SECTION 3: OVERVIEW AND BACKGROUND OF THE RESERVE

### 3.1 Location and Extent

The Kogelberg Nature Reserve Complex is situated between latitudes 34° 10' S and 34° 21' S and longitudes 18° 49' E and 19 ° 03' E. The reserve management office is situated on latitude S 34° 19' 20.7" and longitude E 18° 57' 58.1"

The Kogelberg Nature Reserve Complex is that section of the Hottentots Holland Mountain Range that lies between Sir Lowry's Pass and Bot River in the north and Hangklip and Bot River Estuary in the south (Figure 6). It is bounded by coastal areas to the west and agricultural and forestry land to the east. The boundaries are shown on Government Gazette No. 7824 of October 1981. The greater Hottentots Holland Mountain Catchment is orientated along a north-south axis over a distance of about 60 km. The average west-east "breadth" of the catchment is about 20 km.

The terrestrial section of the nature reserve is approximately 24 000ha in extent. The sectors are provided in Table 3.1.

**Table 3.1. Terrestrial sections of the Kogelberg Nature Reserve Complex.**

Reserve Component	Farm Name and Nr.	Title Deed
Brodie Link Nature Reserve	Caledon Farm 559/116	T34877/1999
Brodie Link Nature Reserve	Caledon Farm 559/115	T10057/2002
Brodie Link Nature Reserve	Caledon Farm 559/162	T34877/1999
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/160	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/163	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/164	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/165	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/168	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/159	T27742/2006
Brodie/Kogelberg WWF-land (Proposed Reserve)	Caledon Farm 559/169	T27742/2006
Houwhoek Nature Reserve	Caledon Farm 343	T11112/1937
Houwhoek Nature Reserve	Caledon Farm 342/1	T9914/1921
Houwhoek Nature Reserve	Caledon Farm 440/0 (part 2)	T24752/1975
Houwhoek Nature Reserve	Caledon Farm 440/0 (part 1)	T24752/1975
Houwhoek Nature Reserve	Caledon Farm 468/0	T9917/1972
Houwhoek Nature Reserve	Caledon Farm 444	Unreg. State Land
Houwhoek Nature Reserve	Caledon Farm 443	Unreg. State Land
Houwhoek Nature Reserve	Caledon Farm 445/0 (part1)	T24953/1976
Houwhoek Nature Reserve	Caledon Farm 445/0 (part 2)	T24953/1976
Kogelberg Nature Reserve	Caledon Farm 295/0	T6388/1931
Kogelberg Nature Reserve	Caledon Farm 311	Unreg. State Land
Kogelberg Nature Reserve	Caledon Farm 461	Unreg. State Land
Kogelberg Nature Reserve	Caledon Farm 460	T76/1976
Kogelberg Nature Reserve	Caledon Farm 549	T2740/1936
Kogelberg Nature Reserve	Caledon Farm 463	T719/1937
Kogelberg Nature Reserve	Caledon Farm 548	T2740/1936

<b>Reserve Component</b>	<b>Farm Name and Nr.</b>	<b>Title Deed</b>
Kogelberg Nature Reserve	Caledon Farm 559/92	T4063/1961
Kogelberg Nature Reserve (Buffelstal)	Caledon Farm 559/186	T32793/2002
Mt Hebron Nature Reserve	Caledon Farm 545/0	T2740/1936
Mt Hebron Nature Reserve	Caledon Farm 544/2	T2740/1936
Mt Hebron Nature Reserve	Caledon Farm 543/0	T2740/1936
Rooisand (Botrivier) Nature Reserve	Caledon Farm 564	G3/1946
Rooisand (Botrivier) Nature Reserve	Caledon Farm 565	Unreg. State Land
	Farm Elgin Forest 295/2	Unreg. State Land
	Caledon Farm 295/3	Unreg. State Land
	295/4	Unreg. State Land
	295/9	T98690/1999

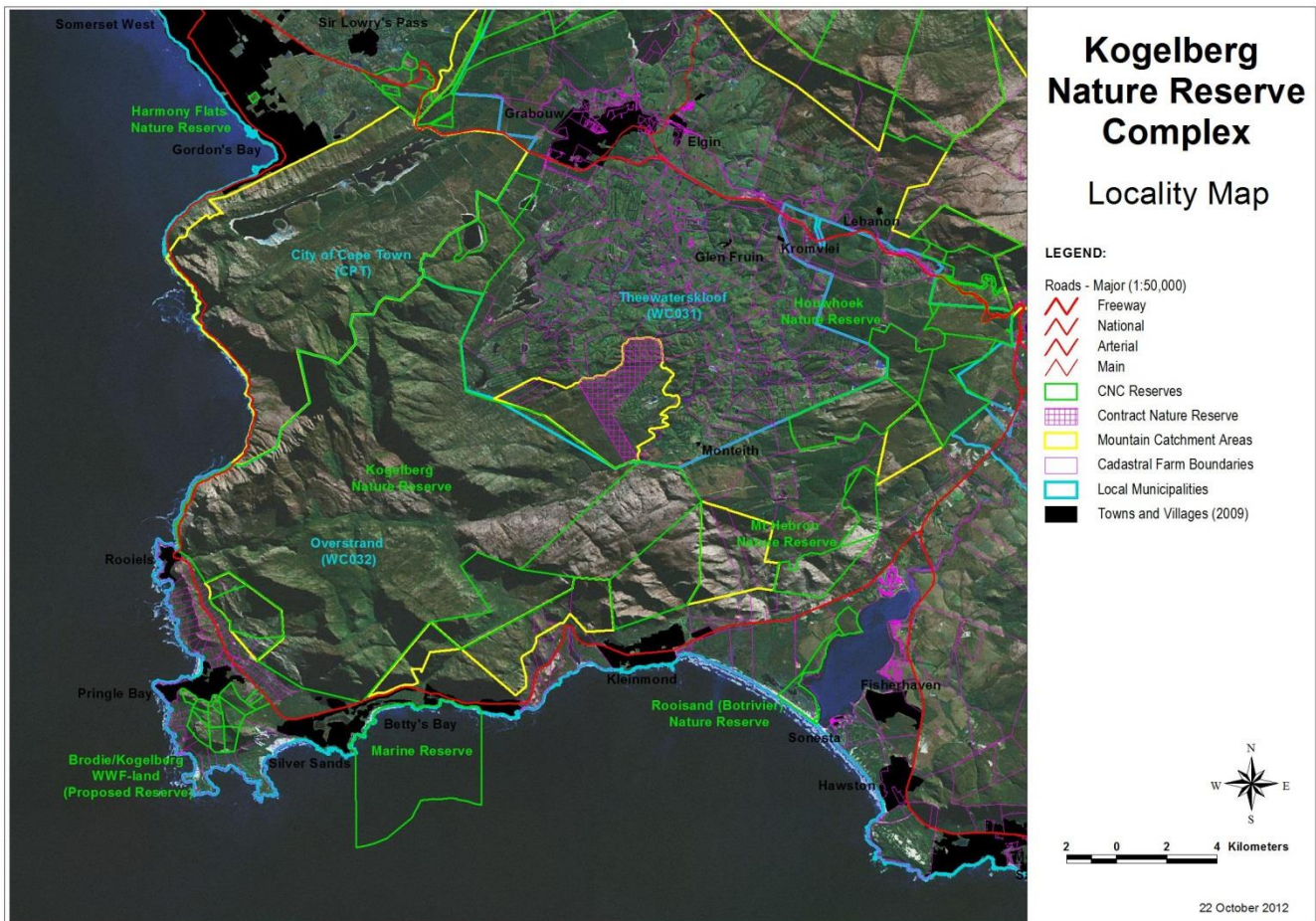
The Kogelberg Nature Reserve Complex includes the Betty's Bay Marine Protected Area (MPA), which lies approximately 29 km south-east of the coastal town of Gordon's Bay and approximately 37 km north-west of the popular holiday town known as Hermanus on the south western coastline of the Western Cape Province of South Africa. The coastal town of Betty's Bay is situated directly adjacent to it, which falls within the Overstrand Municipal area.

The MPA covers 3 km of coastline and encompasses the inshore marine environment between two beacons, the western one of which is situated on a rocky promontory at Stony Point and the eastern one, just to the east of Jock's Bay (Figure 7 and 8).



**Figure 7: Betties Bay Marine Protected Area - a view from Dawidskraal to Stony Point.**





**Figure 8: Location and extent of the Kogelberg Nature Reserve Complex.**

### 3.2 Legal Status

The State Forest portions of the nature reserve were proclaimed mountain catchment areas in October 1981 under the Forest Act, (Act No. 122 of 1984) in Government Gazette No. 7824.

The Provincial Nature Reserve portions of Kogelberg, namely Rooisand and Brodie Link Nature Reserves were proclaimed under the Nature Conservation Ordinance 1974, (Ordinance 19 of 1974) on 20 November 2002 in Government Gazette No 5951 and 15 March 2002 in Government Gazette No 5841, respectively.

The Betty's Bay Marine Protected Area, previously titled the H.F. Verwoerd marine reserve, was originally proclaimed in terms of the Sea Fisheries Act (1973) in Government Notice No. 21948, 29 December 2000. The H.F. Verwoerd Marine Reserve was re-proclaimed in terms of the Marine Living Resources Act ("MLRA"), (Act No. 18 of 1998). In the process the name was changed to the Betty's Bay Marine Protected Area.

Farm Hangklip 559 portion 186 (WCNCB: Buffelstal) is unproclaimed and zoned - agriculture.

Farm Hangklip 559 portions 115, 161, 165, 160, 163, 168, 159 and 169 (WWF-SA: Hangklip) is unproclaimed and zoned agriculture.

The Cape Floristic Kingdom Protected Areas World Heritage Site, a serial site in the Western Cape Province, South Africa - made up of eight protected areas, covering 553 000 ha, including the Kogelberg Nature Reserve - was declared a World Heritage Site by the World Heritage Convention, UNESCO in 2004.

### 3.3 History

A brief chronological history of the Kogelberg Nature Reserve Complex is given in Table 3.2. The State Forest portions of the nature reserve were proclaimed as mountain catchment areas in October 1981 under the Forest Act, (Act No. 122 of 1984) in Government Gazette No. 7824. Legal responsibility for this total area was assigned to the Administrator of the Cape by State President's Proclamation No. 97 of 1992, in Government Gazette no. 14246 of 21 August 1992. Historical details of land purchases are given in Reynecke (1975).

**Table 3.2. Management Plan history of the Kogelberg Nature Reserve Complex.**

Date	Ownership	Land Manger	Management Plan
< 1937	Crown land	Union of RSA	N/A
1937	Crown land	Department of Forestry	1.Reyneke Plan 1975 2. Combrink MCA Plan 1984
1987	State	Cape Provincial Administration: Cape Nature Conservation	Kogelberg NR Plan: June 1993
1999	State	DEAT: Western Cape Nature Conservation Board	Kogelberg NR plan: Oct 2003

Of considerable importance to this area is the Palmiet River Catchment Management Plan (refer to section 5.3d). Protecting all aspects of the ecology of the broader catchment, this plan was compiled through an exhaustive public participation process and has endorsement from all stakeholders.

### Biosphere Reserve

The southern part of the Boland Mountain Complex (the Kogelberg Nature Reserve Complex) and its environs was registered by UNESCO, Man and the Biosphere (MAB) programme, in December 1998 as the first Biosphere Reserve in South Africa.

The southern part of the Boland Mountain Complex (around Kogelberg) and surrounds are managed according to the internationally accepted principles of a Biosphere Reserve. This Biosphere Reserve has a sensitive pristine core area of 18 000 ha, sustaining high levels of biological diversity, buffered by a surrounding area. Beyond the borders of the Kogelberg Nature Reserve, agriculture and commercial pine plantations form part of the buffer and transitional zones of the Kogelberg Biosphere Reserve, in keeping with the UNESCO Biosphere Reserve concept.

## World Heritage Site

The World Heritage Convention Act, (Act No. 49 of 1999) provides for the enforcement and implementation of the convention and for the registration of World Heritage sites in South Africa. The primary mission of the World Heritage Convention is to define and conserve the world's heritage, but drawing up a list of sites whose outstanding universal values should be for all humanity and to ensure their protection through a closer co-operation among nations.

The Kogelberg Nature Reserve Complex forms part of the Cape Floral Region Protected Areas World Heritage Site, a serial site in the Western Cape Province, South Africa (made up of eight protected areas, covering 553 000 ha). This area was declared a World Heritage Site by the World Heritage Convention, UNESCO in 2004.

The potential exists in the Kogelberg to employ the World Heritage Convention and the UNESCO'S Biosphere programme as complementary to each another. *“The fact that the latter are both under the aegis of UNESCO should be used to ensure this complementary function where ever possible”* (Batisse 1982).

## 3.4 Climate

The climate of the area is classified as a Mediterranean type with warm dry summers and cool wet winters (see Figure 9). In winter successions of cold fronts bringing rain and snow sweep in from the northwest. Rainfall varies from its highest at the head of the Jonkershoek Valley near Stellenbosch at 3 000 mm per annum to around 1 000 mm along the coast. From the Kogelberg northwest through the Hottentots Holland Mountains the rainfall is strongly seasonal with markedly more rain falling in the winter months. This diminishes eastwards with the Klein River Mountains near Hermanus being less clearly seasonal. Here the contrast between winter and summer rain is not as well-defined, the summer months being somewhat wetter.

The coastal mountains seldom receive snow due to the moderating effect of the sea.

Winters are cold and very wet, often with gale-force north-westerly winds, and snow may fall occasionally on the higher peaks. The mountainous topography has a significant effect on the average annual rainfall, which (in parts of the Complex) is one of the highest in South Africa. Annual rainfall across the landscape varies between 700 mm to 1 700 mm per year (pers. obs.).

The summer months are hot and dry with strong south-easterly prevailing winds, which create serious fire hazards. Some relief from this summer drought, and often-intense heat, is provided in the form of moisture-laden air, pushed up from the ocean by the south easterly gales, providing misty conditions that cool and humidify the higher mountain slopes and plateaus.

With the change to summer, the wind shifts to southeast with fair amounts of moisture coming from clouds formed over the coastal mountains. Summer temperatures average 28°C and tend to be cooler at the coast. Occasionally temperatures soar to 40°C. The dry and windy conditions of summer make this the most hazardous time for fires. Natural fires that result from lightning strikes occur mostly during the late summer months.



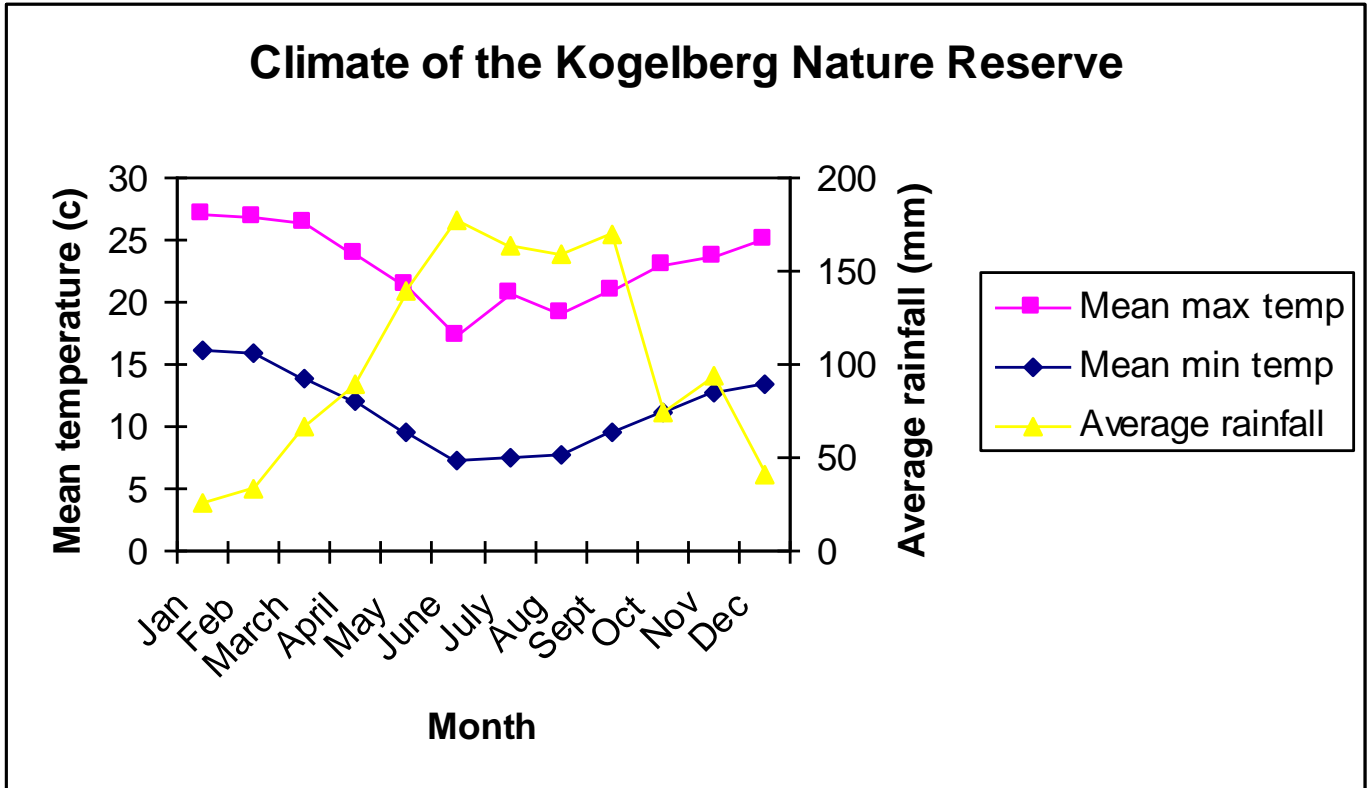


Figure 9: Climate for the Kogelberg Nature Reserve Complex (1992-2012).

### 3.5 Topography

High peaks and rugged mountainous terrain dominate the landscape of the Kogelberg Nature Reserve Complex. The high points are Kogelberg Peak (1 269m), Five Beacon Ridge (1 080m), Sanctuary Peak (1 051m), Buffelstalberg (844m), Voorberg (862m) and Platberg (909m). These features surround the Palmiet, Dwars and Louws rivers, which are open kloofs without lateral krantzies or high waterfalls. This creates an unusual central valley system effectively isolated from the surrounding developed environment. These characteristics provide the potential for a diversity of recreational activities in a wilderness atmosphere.

The Kogelberg Nature Reserve Complex includes the Betty’s Bay MPA with its rocky coastline and sandy beaches. Rooisand Nature Reserve is located on a coastal plain bordering the Bot River estuary.

### 3.6 Geology

#### Stratigraphy

The evolution of the landforms we see today began some 1000 million years ago when Africa lay at the centre of the great supercontinent Pangaea, later breaking up into Gondwana and a northern part. From this time two major cycles of deposition, mountain building and erosion

have ensued. It is from the latter cycle that the present landscape of the area has been so distinctly shaped. The deposition and consolidation of the layers of the Cape rocks - the Cape Supergroup - began around 450mya, to be deformed 200 million years later by an episode of folding and faulting of gigantic proportions (Cowling 1992).

### **Structural geology**

The Boland Mountain Complex is sited at the meeting of the two axes of the Cape Fold Belt. This mountain complex provides a range of habitats and landscape features and is a valuable biogeographical region within the Cape Floral Region. The mountains of the Boland Mountain Complex overlie the relatively erodible Cape granites. Enclosed in the granite are remnants of shale and metamorphosed sedimentary rocks that are overlain by the sedimentary layers of the Table Mountain Group. Incised by a number of large river catchments, including those of the Palmiet, Berg and Riviersonderend Rivers, Table Mountain Sandstones dominate the landscape that is predominantly rugged and mountainous. Altitudes within the Kogelberg Nature Reserve Complex vary from below sea level to Kogelberg Peak at 1 268 m. As a result of its rugged terrain, high rainfall and numerous large river systems, the Boland Mountain Complex is an important water catchment area (Cowling 1992).

Sandwiched between the Peninsula Formation and the formations of the Nardouw Subgroup is a layer of tillite, the Pakhuis Formation, followed by a band of shale, the Cederberg formation. The tillite is the result of a glacial episode that interrupted the deposition of the two sandstones some 400mya and may be identified in the landscape as blocks of rock with inclusions of scattered faceted pebbles (Cowling 1992).

The more erodible Cederberg shales have tended to form the kloofs and smoothly weathered slopes of the mountains - notably around Oudebosch in the Kogelberg Nature Reserve.

### **Soils and Sediments**

The two broad dominant groups of rock type, shale and sandstone, give rise to the major differences in soil type, habitat type and, ultimately, vegetation type in the region (Figure 10). The shale soils - generally found in the low-lying areas - are yellowed, clayey and richest in plant nutrients. The other - that derived from the sandstones - is white, coarse sand of low nutrient status. Granite soils are also yellowed and richer but are generally coarser grained or 'loamy' (Cowling 1992).

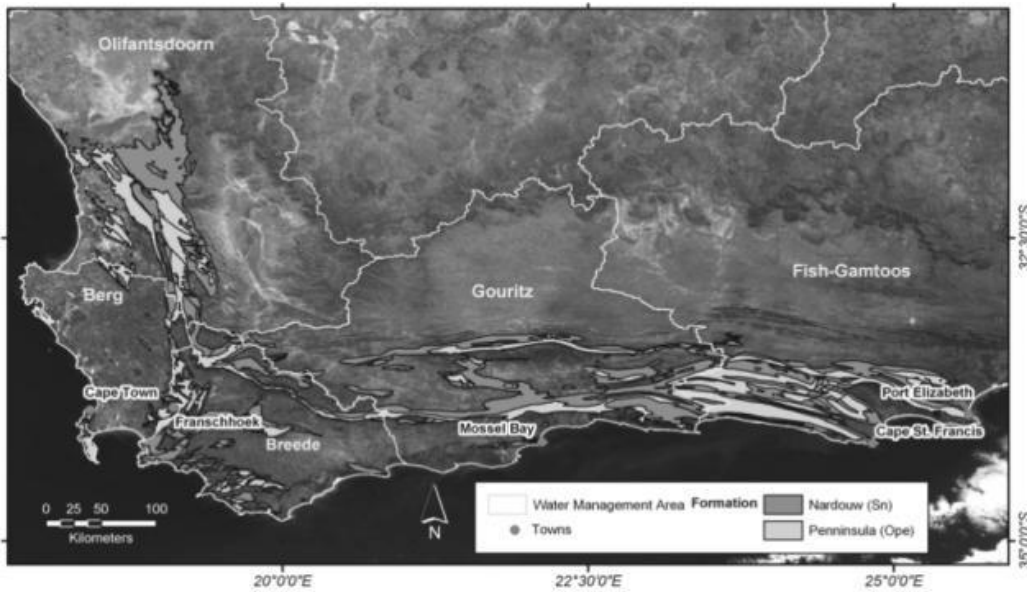
Scree - fallen rock - covers most of the lower slopes of the mountains. Extensive deposits are seen in the road cuts from Gordon's Bay as well as along all the coastal mountain slopes. Along the Hottentots Holland Mountains and Jonkershoek Valley, scree is found in conjunction with the granites and, less commonly, the Malmesbury shales. Scree deposits originate from the Cenozoic period, about 65 million years before present.

### **Table Mountain Group Aquifer**

The formations of the Table Mountain Group were formed some 400 million years ago when sediments were washed down prehistoric rivers and deposited in a shallow marine environment (<http://www.tmg-aquifer.co.za>, Fig. 10).

Layers of sediment, estimated to be 5 - 8 km thick, were deposited in the Cape Basin. Over time the layers became buried, eventually forming rocks such as quartz sandstones, shale and siltstones under the increasing pressures and temperatures (<http://www.tmg-aquifer.co.za>).

Continental movement caused the layers to be squeezed into folds. The pressure on these layers of rock was immense, causing buckling and fracturing in the layers. The Table Mountain Group is the lowest component of the Cape Supergroup and forms the backbone of the Cape Fold Mountains. Figure 9 shows areas where the rocks of the TMG occur at the surface. In these areas, the aquifers within the TMG may be recharged by rainfall (<http://www.tmg-aquifer.co.za>).



**Figure 10: South-Western Cape - Areas where the Nardouw and Peninsula formations occur at the surface (<http://www.tmg-aquifer.co.za>).**

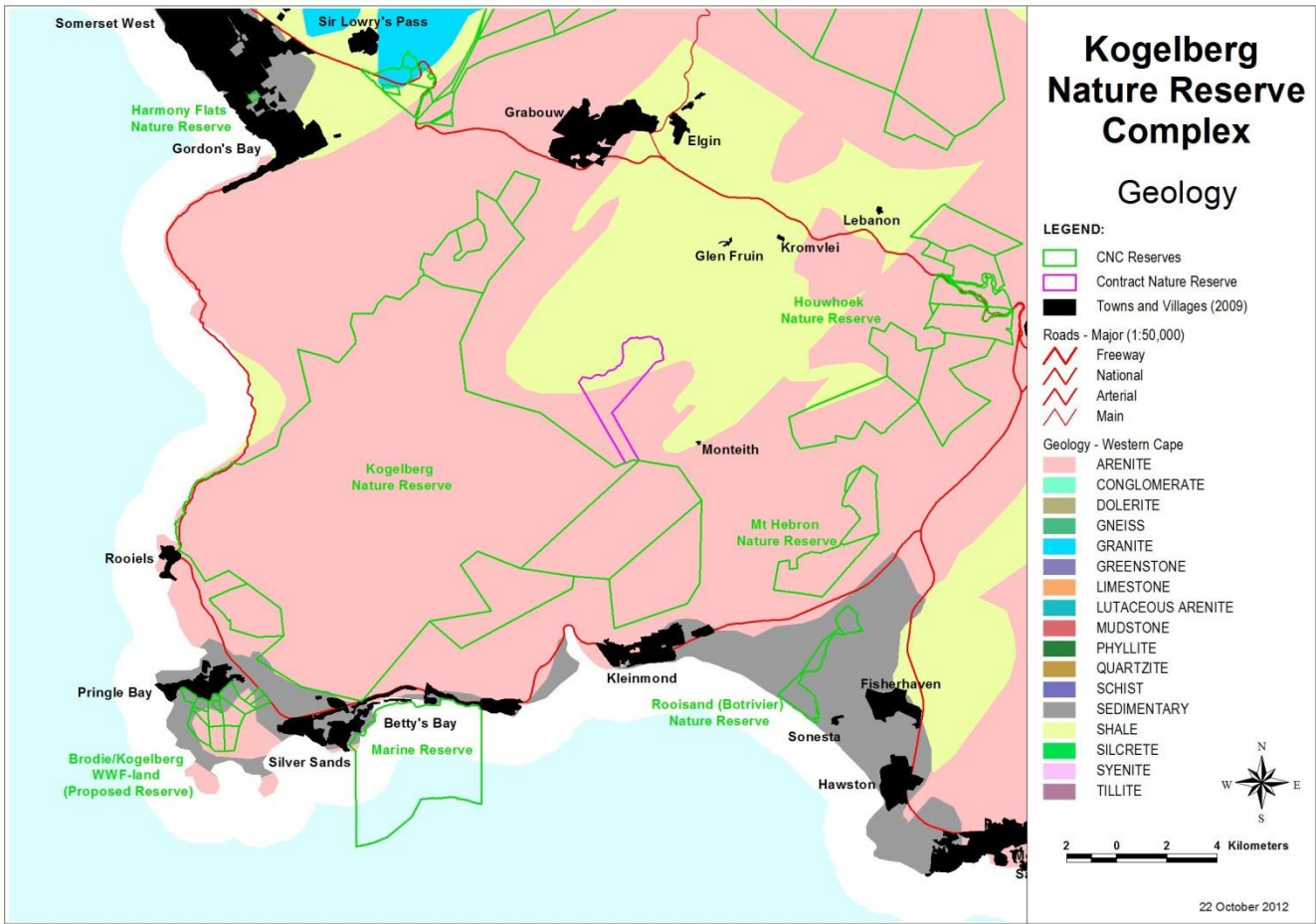
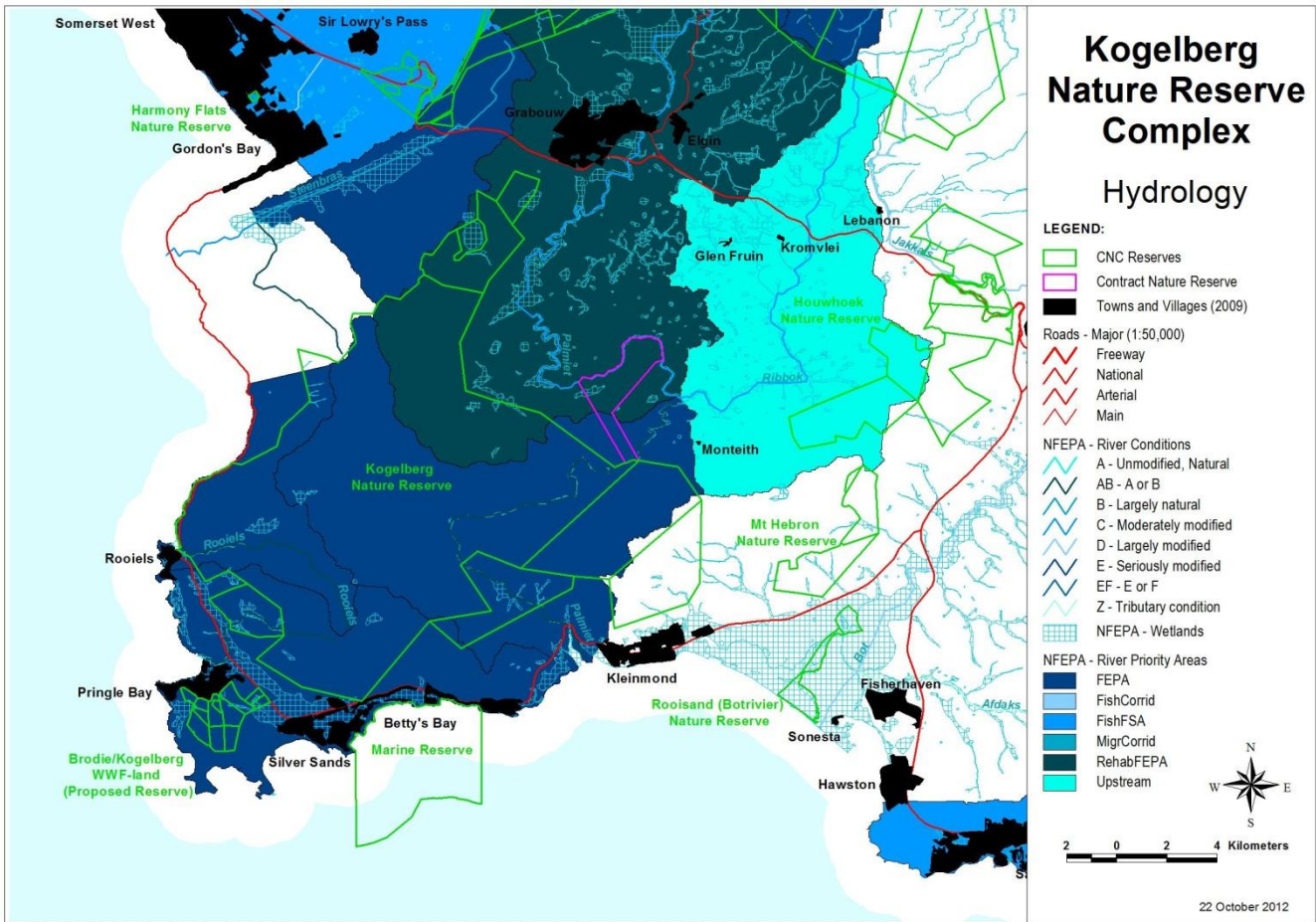


Figure 11: Geology map of the Kogelberg Nature Reserve Complex.

### 3.7 Hydrology

Hydrology of the Kogelberg Nature Reserve Complex, including river conditions and river priority areas are given in Figure 12.



**Figure 12: Hydrology of the Kogelberg Nature Reserve Complex.**

### 3.7.1 Catchments

As a result of its mountainous terrain and high rainfall, the Boland Mountain Complex is an important water catchment area, providing water for the Cape Metropolitan Area as well as for extensive areas on richer soils in the upper catchment under deciduous fruit orchards (some 25% of the catchment) grown for export and domestic use.

The Kogelberg Nature Reserve Complex is recognised as a critically important catchment area, and is managed to ensure the optimal sustained flow of high quality water. The Nature Reserve Complex encompasses the lower Palmiet river system, which is recognised as one of the highest quality lower foothill rivers in sub-Saharan Africa. An integrated and consultative Catchment Management Plan (CMP) for the Palmiet River has been developed. The CMP provides a framework for integrating objectives for the larger Palmiet River catchment with those of the Kogelberg Nature Reserve Complex. The CMP further requires the setting of objectives, indicators and ongoing monitoring to ensure management towards the desired (ecologically sustainable) future state of the river and its catchment. Previous management of the catchment and especially the middle reaches of the Palmiet system has had a negative impact on the ecology of the river systems in the Kogelberg area.



Streamflow measured at the gauging weir on the Palmiet river just below the Nature Reserve Complex averages  $173.8 \times 10^6 \text{ m}^3$  per year (Reynecke 1975). There are no other measuring weirs in the Nature Reserve Complex, but the contribution of the catchments within the Nature Reserve are estimated at approximately  $100 \times 10^6 \text{ m}^3$ , of which the Louws- and Dwars rivers contribute about  $40 \times 10^6 \text{ m}^3$  (Palmiet River Catchment Management Plan 2000).

### 3.7.2 Groundwater

### 3.7.3 Rivers

The Boland Mountain Complex maintains its rugged and pristine nature, exemplified by the impressive passage of the Palmiet River across steep gradients and rocky extrusions. Fed by flows from pristine sub-catchments, this is one of few rivers in South Africa that can boast of lower reaches in a near-natural state.

The Palmiet River catchment (Fig. 13) is one of national and international importance, characterised by areas of immense ecological significance and sensitivity, and possessing various unusual natural features. At the same time, and in seeming conflict with the above natural attributes of the system, human communities, both within and outside of the catchment boundaries also rely on it for their needs. An integrated and consultative Catchment Management Plan (CMP) for the Palmiet River has been developed. The CMP provides a framework for integrating objectives for the larger Palmiet River catchment with those of the Kogelberg Nature Reserve Complex. The CMP further requires the setting of objectives, indicators and ongoing monitoring to ensure management towards the desired (ecologically sustainable) future state of the river and its catchment.

Additionally, most of the Palmiet River catchment has also been identified as river and floodplain wetland Freshwater Ecosystem Priority Area's (FEPA's; according to the National Freshwater Ecosystem Priority Area process). The NFEPA project (Nel *et al.* 2011a, b) further identified both the Palmiet catchment and the Hangklip catchment as indigenous fish sanctuaries due to the presence of the Cape galaxias (*Galaxias zebratus*) in both catchments and the additional presence of the Cape kurper (*Sandelia capensis*) in the Hangklip River. The conservation status of both these species is presently listed by the IUCN as Data Deficient (Tweddle *et al.* 2009). The reason for this is that the taxonomic status of both species is in the process of being reviewed as recent genetic research has presented evidence for the existence of a number of unique lineages of which the exact distribution ranges have not been confirmed (Tweddle *et al.* 2009). These unique lineages are in the process of being described as new species, many of which will likely be listed as Endangered or Critically Endangered due to the presence of invasive alien fish species and a loss of suitable habitat (Swartz *et al.*, unpublished data).



**Figure 13: The Palmiet River.**

#### **3.7.4 Other freshwater aquatic systems (Wetland, springs, pans)**

Several priority wetlands (those found in Critical Biodiversity Areas (CBAs) and those found in NFEPA's (Nel *et al.* 2011a, b)) occur in the Kogelberg Nature Reserve Complex.

#### **3.7.5 Estuaries**

One of the most important natural systems in the area is the Bot River Estuary, which is described as a relatively shallow coastal lake fed by the Bot, Swart and the Afdaks Rivers. The Bot River Estuary, because of its exceptional value, including the Rooisand dune system and the Lamloch swamps near Kleinmond qualify for registration on the *List of Wetlands of International Importance* under the Ramsar Convention.

### 3.7.6 Marine system

The Betty's Bay Marine Protected Area, proclaimed in terms of the Marine Living Resources Act (1998), lies between Stony Point and Jock's Bay, Betty's Bay, extending two nautical miles to sea. The reserve plays a vital role in protecting the marine environment, particularly with respect to the South African abalone. Recreational angling is permitted. Illegal harvesting of abalone in the MPA is a serious problem. A separate management plan exists for the Betty's Bay MPA (Du Toit & Attwood 2008).

## 3.8 Flora

Full species lists are not provided in the management plan. If required species lists are available on request from Scientific Services, Assegaaibosch Nature Reserve, Jonkershoek Road, Stellenbosch.

### 3.8.1 Terrestrial vegetation

At the geographic centre of the Cape Region, the South western area has the largest flora and highest levels of endemism (Goldblatt & Manning 2000). The area is located within the South Western Phytogeographic Centre and is further delineated into two Broad Habitat Units, the Kogelberg Mountain Fynbos Complex, and the Hottentots Holland Mountain Fynbos Complex, within this Phytogeographic Centre. The high species diversity and endemism characteristic of this area is the result of the greater diversity of microhabitats and seasonality of climate (Goldblatt & Manning 2000). The ultimate explanation lies in evolutionary history (Cowling & Richardson 1995).

The vegetation of the Boland Mountain Complex is mainly mountain fynbos although there are patches of relict indigenous forest in narrow, moist valleys that are sheltered from fire. The Palmiet River and its associated riparian vegetation provide one of the most pristine habitats in the south-western Cape. This nature reserve importantly conserves a large part of the highly significant Southwest Phytogeographic Centre.

The Kogelberg area is of exceptional conservation significance. The plant communities of this area are described in detail by Boucher (1978). It may be regarded as the floristic heart of the globally unique Cape Floral Kingdom since it has the highest levels of plant species richness and endemism in the fynbos biome. More than 1 850 plant species are estimated to occur in the Kogelberg area of which ca. 150 taxa are estimated to be locally endemic (e.g. Fig.14) The remarkable floral diversity of this area is also evident from the distribution patterns of a sample of 1 936 plant taxa from plant families and genera which are characteristic of the Cape Flora such as Proteaceae, Ericaceae, Restionaceae and Bruniaceae. The highest percentage occurrence of these taxa per quarter degree square (20 - 26 %) is found in the Kogelberg area (Oliver *et al.* 1983). This is twice the species density for these taxa in the northern parts of the Cape Floral region (Cedarberg) and more than three times the species density in the mountains of the southern and eastern parts of the region (Oliver *et al.* 1983). In a single 14 400 ha core Protected Area, centered on the Kogelberg



Nature Reserve and adjacent coastal area, an estimated 17 % of the Cape Flora (about 1 400 plant taxa out of a total of 8 500 taxa) could be protected (Rebello & Siegfried 1990).



**Figure 14: Three endemic species to the Kogelberg Nature Reserve Complex (from left to right): *Erica cunoniensis*, *Erica kogelbergensis*, and *E. thomae thomae*.**

The vegetation of the Kogelberg area is predominately fynbos and essentially fine leaved vegetation comprising the taller emergent Proteaceae, a middle layer of shrubs often dominated by *Erica* and *Restio* and a lower layer of herbaceous plants and geophytes. The relative dominance of each of these is often used to describe the community type occurring. After fire, the geophytes are at their most prevalent and in some habitat types may produce brightly coloured mass displays of flowers.

The vegetation of the Kogelberg-Hangklip area has been well studied and grouped into communities based on species composition and community structure. Boucher (1978) undertook extensive vegetation studies and described communities associated with environmental conditions of geology and soil, drainage regime and moisture availability, altitude and aspect or exposure, and special conditions such as maritime influences on community composition. These studies form the basis for the account of the vegetation described here.

The Kogelberg Nature Reserve Complex comprises a number of different vegetation types including Sandstone Fynbos, Shale Fynbos, Shale Band Vegetation, Western Strandveld, and Seashore Vegetation (Figure 16 – Mucina & Rutherford 2006). Boucher (1978) has broadly grouped the vegetation into three main categories, namely coastal plain vegetation, mountain vegetation and riparian vegetation. Many spectacular members of the Proteaceae are found in this nature reserve. It has the highest concentration of *Mimetes* species in the Western Cape, most notably the rare *M. hottentoticus* and *M. capitulatus*. Another member of this family is the beautiful, but endangered marsh rose, *Orothamnus zeyheri* (Figure. 15), once on the brink of extinction, but now conserved on a few relatively inaccessible peaks.



Figure 15: *Mimetes stokoei* (left) and the marsh rose, *Orothamnus zeyheri* (right).

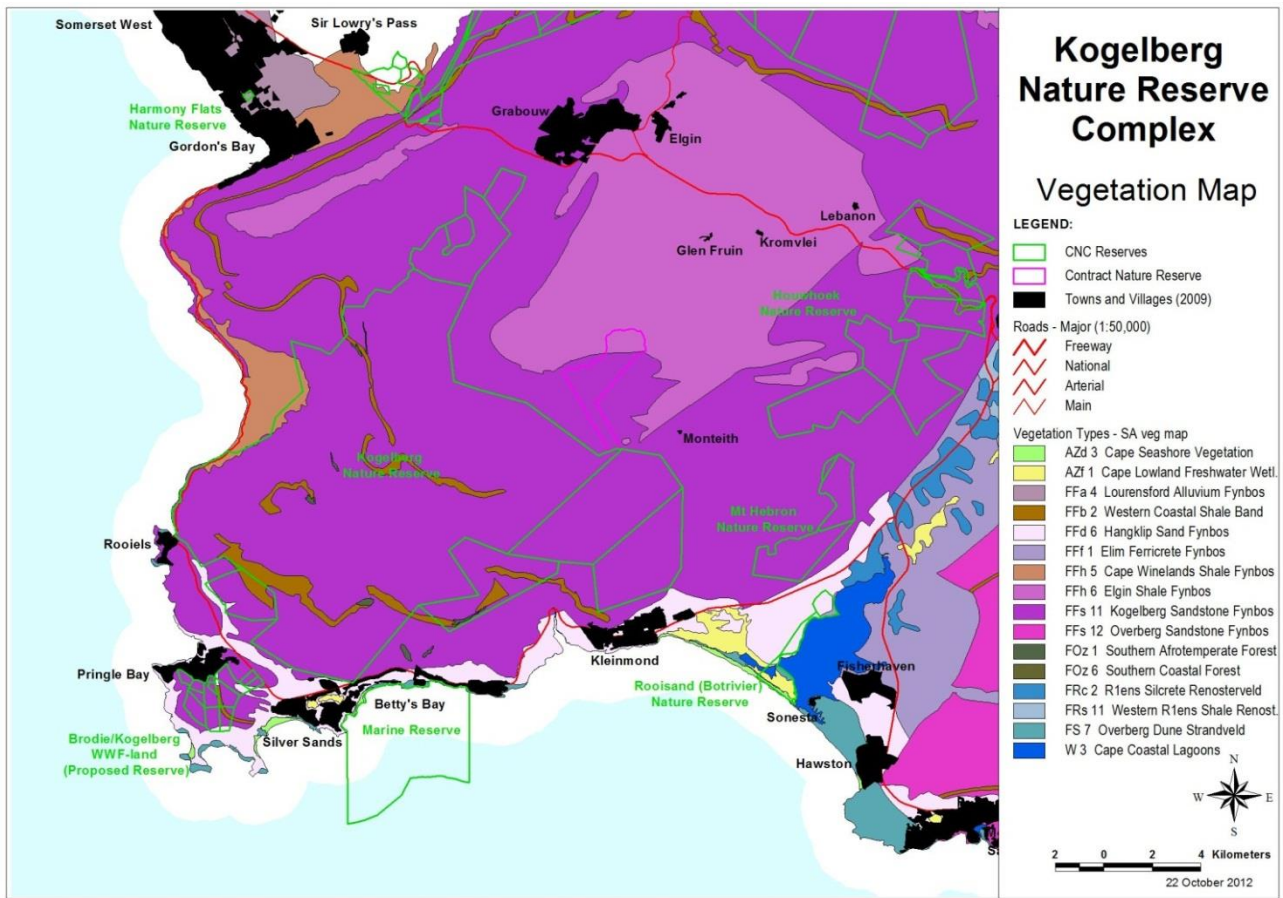


Figure 16. Vegetation map of the Kogelberg Nature Reserve (Mucina & Rutherford 2006).

### 3.8.2 Aquatic (Freshwater and marine)

Although four species of kelp occur in South Africa, the most familiar is the sea bamboo *Ecklonia maxima*, which is often found washed up in large quantities on the shore, or on the rocky shores. This is the dominant kelp on the south-western cape coast, but it gives way to the smaller split-fan kelp *Laminaria pallid*. The washed up kelp is a source of food and shelter for a variety of amphipods and isopods, better known as sand hoppers and sea lice, on both the sandy and rocky shores and forms an integral part of the associated ecosystem. These crustaceans are preyed upon by birds such as sand plovers and sanderlings. In addition, the crustaceans help to break down the kelp into fragments small enough to be consumed by filter-feeders in the surf zone, such as white mussels on the adjacent sandy beaches.

### 3.8.3 Invasive Alien Plants

It is recognised that invasive alien biota have a negative impact, not only on biodiversity, but also on stream-flow and water quality, in the case of invasive alien vegetation. While the Kogelberg Nature Reserve Complex is relatively free of invasive alien vegetation, the potential exists for invasive alien plant species to spread rapidly should management fail to continue implementing a properly planned control programme. Distributions of invasive species are listed in Table 3.3. The active control and eradication of alien taxa will continue to be carried out according to the Nature reserve’s long-term strategic plan. Priority should be given to controlling those species that impact most significantly on the key conservation objectives of the Nature Reserve Complex.

**Table 3.3. Invasive alien plant species list in order of dominance and infestation density.**

Scientific Name	Common Name	Distribution
<i>Acacia mearnsii</i>	Black wattle	Widespread in water courses, Jakkals & Bot River
<i>Acacia saligna</i>	Port Jackson	Widespread
<i>Acacia cyclops</i>	Rooikrans	Isolated patch along coastal zone
<i>Acacia longifolia</i>	Long leaved wattle	Widespread in water courses
<i>Cortaderia selloana</i>	Pampas grass	Isolated patches near Rockview
<i>Hakea sericea</i>	Silky Hakea	Scattered colonies
<i>Pennisetum clandestinum</i>	Kikuyu grass	At Oudebosch office and houses
<i>Pinus pinaster</i>	Italian Stone	Widespread throughout catchment area
<i>Pinus radiata</i>	Monterey Pine	Scattered, Old plantations
<i>Rubus fruticosus</i>	English Bramble	Forest patches
<i>Solanum mauritianum</i>	Bugweed	Oudebosch river

### 3.9 Fauna

As is generally the case in Fynbos areas, the Kogelberg has a low vertebrate animal biomass, while the species diversity is high. More than 300 bird species occur in the larger Boland Mountain Complex, which represents some 40% of all South African species. A number of small fynbos specialist feeders namely the Protea canary, Cape siskin, Cape rockjumper and the Victorian's Warbler can be found in the Kogelberg Nature Reserve Complex.

The extensive, rugged mountains and deep valleys characteristic of the Kogelberg Nature Reserve Complex provide habitats for a variety of mammals, such as the klipspringer (*Oreotragus oreotragus*), and their predator, the Rare leopard (*Panthera pardus*). The high peaks and steep cliffs dropping to the sea support a range of cliff nesting birds and large raptors such as black eagle (*Aquila verreauxii*) and spotted eagle owl (*Bubo africanus*). Kingfishers and typical fynbos birds - the Cape sugarbird (*Promerops cafer*) and orange-breasted sunbird (*Nectarinia violacea*) - are abundant, playing an important role in the reproductive biology of fynbos. The southwestern Cape endemic Verreaux's mouse (*Praomys verreauxii*), associated with pollination of certain *Protea* species, occurs in this nature reserve.

Of special interest, the locally endemic montane marsh frog (*Poyntonia paludicola*) was only recently described and represents a new monotypic genus. An endemic freshwater crab (*Potamonautes brincki*), restricted to the Grabouw / Kogelberg area, is also found in this nature reserve, while the only known population of the endemic dwarf crag lizard (*Pseudocordylus nebulosus*) is found in the Hottentots Holland Mountains.

A herd of wild horses roam the flats of the Bot River Estuary at Rooisand. Apparently these horses are the offspring of horses that were abandoned by a British Garrison after World War II.

Full species lists are not provided in the management plan. If required species lists are available on request from Scientific Services, Assegaibosch Nature Reserve, Jonkershoek Road, Stellenbosch.

### **3.9.1 Mammals**

No fewer than 31 mammal species have been recorded for the reserve (Smithers 1986). The following Red Data Book or threatened populations of mammal species occur in the catchment, namely *Mysorex longicaudatus* (Long-tailed Forest Shrew) and *Mystromys albicaudatus* (White-tailed Mouse).

### **3.9.2 Avifauna**

One hundred and thirty-one species of birds have been recorded for the Kogelberg complex. The reserve extends from the mountains to the coast and also abuts onto a marine/freshwater estuary. The bird species recorded for the reserve reflects this wide diversity of habitats and include mountain fynbos species such as Cape Sugarbird and Verreaux's Eagle, while along the coast Bank Cormorant and Arctic Tern have been recorded. African Spoonbill and Lesser Flamingo are to be found on the portion adjacent to the estuary. Threatened bird species recorded on the reserve complex are listed in the Table 3.4.



**Table 3.4. Threatened bird species that occur on the Kogelberg Nature Reserve Complex.**

Species	IUCN Category (IUCN 2011)	South African Red Data Book Category (Barnes 2000)
Bank Cormorant <i>Phalacrocorax neglectus</i>	Endangered	Vulnerable
African Black Oystercatcher <i>Haemotopus moquini</i>	Near Threatened	Near Threatened
Black Harrier <i>Circus maurus</i>	Vulnerable	Near Threatened
Lesser Kestrel <i>Falco naumanni</i>	Vulnerable	Vulnerable
Martial Eagle <i>Polemaetus bellicosus</i>		Vulnerable
Secretary Bird <i>Sagittarius serpentarius</i>		Near Threatened
Greater Flamingo <i>Phoenicopterus ruber</i>		Near Threatened
Blue Crane <i>Anthropoides paradiseus</i>	Vulnerable	Vulnerable
Denham's Bustard <i>Neotis denhami</i>	Near Threatened	Vulnerable
Caspian Tern <i>Sterna caspia</i>		Near Threatened
Great White Pelican <i>Pelecanus onocrotalus</i>		Near Threatened

### 3.9.3 Reptiles

Twenty-six reptiles have been recorded from the reserve (Baard *et al.* 1999). Only one reptile listed in the South African Red Data Book has been recorded for the Protected Area namely the Yellow-bellied House snake, *Lamprophis fuscus* (Rare). Additional information on the reptiles of the Cape Floristic Region can be obtained from the Southern African Reptile Conservation Assessment (SARCA). Visit [www.sarca.adu.org.za](http://www.sarca.adu.org.za).

### 3.9.4 Amphibians

Fourteen frog species have been recorded from the reserve. Threatened amphibian species that have been recorded for the area are listed in Table 3.5.

**Table 3.5. Threatened amphibian species that occur on the Kogelberg Nature Reserve Complex.**

Species	Common name	South African Red Data Book Category (Minter <i>et al.</i> 2004)
<i>Microbatrachella capensis</i>	Micro frog	Critically Endangered (B2ab)
<i>Poyntonina paludicola</i>	Marsh frog	Near Threatened
<i>Xenopus gilli</i>	Cape platanna	Endangered (B1ab+2ab)

Species	Common name	South African Red Data Book Category (Minter <i>et al.</i> 2004)
<i>Capensibufo rosei</i>	Cape Mountain toad	Vulnerable (B1ab+2ab)
<i>Amietophrynus pantherinus</i>	Western Leopard toad	Endangered (B1ab+2ab)

### 3.9.5 Fish

There are no Red Data Book fish species recorded for the Nature reserve. The NFEPA project identified both the Palmiet catchment and the Hangklip catchment as indigenous fish sanctuaries due to the presence of the Cape galaxias (*Galaxias zebratus*) in both catchments and the additional presence of the Cape kurper (*Sandelia capensis*) in the Hangklip River.

### 3.9.6 Invertebrates

The focus on the region's exceptionally high floristic diversity has somewhat overshadowed its faunal diversity and, in consequence, there is a lack of information on insect species diversity within the CFR, although their functional significance is appreciated. The consensus view is that diversity is low (Johnson 1992; Giliomee 2003), although several local scale studies of specific host plants and their herbivores suggest that insect richness might be much higher than is generally thought to be the case (e.g. Cicadellidae: Davies 1988a,b; gall-forming insects: Wright & Samways 1998). However, few groups have been subject to careful surveys, and most comparisons have been qualitative and based on examinations of studies that differ substantially in their methods.

There is one group of Colophon beetle species present on high altitude peaks in the Kogelberg, (*Colophon barnardii*, *C. thunbergii*, and *C. izardii*). No information is available on the metapopulation dynamics.

Studies have revealed that the Palmiet River and its tributaries is a mega hotspot for dragonflies (Odonata). Grant & Samways (2007) refer to the Kogelberg as an 'irreplaceable area' and have shown that 53% of dragonflies and 26% of recorded taxa are national endemics. The Yellow presba (*Syncordulia gracilis*) is a SA endemic and IUCN red listed. It is very rare and threatened and the Kogelberg is the only stronghold for this species in the Western Cape. *Ecchlorolestes perengueyi* is also an IUCN red-listed species and is only known from two other spots, Du Toits Kloof and Bainskloof. *Chlorolestes conspicuus* is yet another Western Cape endemic and highly localized. *Platygypha fritzsimoni* is a SA endemic, with a melanic subspecies at one locality in Zimbabwe. Known principally as a Drakensberg species, this is the only known population in the southwestern Western Cape.

"What is also surprising were the very high population densities of some of these species. Besides *S. gracilis* and *P. fritzsimoni* which are remarkable finds, other species, such as *P. fuscigerum* and *E. frenulata*, as well as some of the more widespread species, were present in numbers much higher than any other known locality. In short, the Palmiet River and its tributaries is an odonatological mega hotspot, and this is clear from even these brief surveys. It has more endemics than any other locality I have surveyed in the last 12 years. Odonatologically, one could rank it as SA's no. 1 river system, in terms of its irreplaceability. The apparent absence of trout, and the continual flow, without overextraction, and the lack (and removal) of alien trees and bushes are probably the main reasons for this, against of course, a naturally and historically salubrious climate." (Grant & Samways, 2007)

Three noteworthy species of Odonata are of particularly interest;

<i>Ceratogomphus tricerativcus</i>	Cape thorn tail
<i>Proischnura polycchromaticum</i>	Cape bluet
<i>Orthetrum rubens</i>	Waxy-winged skimmer

Unfortunately the Long-tongue fly that pollinates *Nivenia stokoei* has not been seen for a number of years. Despite searches by Dr John Manning and Dr Peter Goldblatt it is presumed to have gone extinct. Pollination seems to be undertaken by bee species. (J. Manning pers. comm.). Of note is the presence of oil-collecting bees, as opposed to pollen-collecting, on *Tritoniopsis parviflora* along the lower Palmiet River, a first such recording within the genus (J. Manning pers. comm.). The noteworthy *Peripertis capensis* has been found under rocks in Oudebosch River Kloof. This species is not under threat and found on Table Mountain as well as elsewhere.

Invertebrate collections were done by Simon Van Noort of the Iziko Museum of South Africa. Lists and rare species from this survey are still pending and include a new species of ant. A survey of geometrid moths (Lepidoptera: Geometridae) in the Nature reserve is being undertaken by Hermann Staude of the Insect Research Foundation of Africa to determine the diversity of these insects within nature reserves. The sampling is to be continued by Nature Reserve staff to give more complete overview of the species represented within the Nature Reserve Complex. At present one unidentified Epirrhoe sp. (Geometridae) has been recorded as well as a range extension of *Collix foraminata* collected from Oudebosch forest. This species had a previous southernmost record at Grootvadersbos.

### 3.9.7 Invasive/alien fauna

It is recognised that the impact of and control measures for invasive alien fauna is not well understood, and requires further academic investigation. If alien and non-local taxa outside of the Kogelberg Nature Reserve Complex are identified as potential threats to the Nature Reserve Complex's conservation objectives, then steps should be taken to implement control measures through partnerships with other departments and stakeholders.

The following species are likely to occur, if not permanently, then sporadically:

<i>Rattus rattus</i>	(House/Black rat)
<i>Rattus norvegicus</i>	(Brown rat)
<i>Mus musculus</i>	(House mouse)
<i>Felis catus</i>	(Domestic cat)
<i>Canis familiaris</i>	(Domestic dog)
<i>Sturnus vulgaris</i>	(European Starling)
<i>Sciurus carolinensis</i>	(Grey squirrel)

Problem fauna known to occur in the Nature Reserve Complex are:

- Fish: A number of alien fish species are present in the Palmiet River system. These include smallmouth bass (*Micropterus dolomieu*) and bluegill sunfish (*Lepomis macrochirus*). The presence of rainbow trout (*Oncorhynchus mykiss*) in the Palmiet

system is likely as a result of past and present aquaculture activities on Eikenhof and Arrieskraal dams

- Ants: The Argentine ant (*Linepithema humile*) displaces the indigenous ants vital to myrmecochorous plants.
- Dogs: Vagrant dogs from adjacent agricultural land and informal settlements enter the Nature Reserve Complex occasionally to hunt.

### 3.10 Cultural Heritage Resources

Evidence of Late Stone Age occupation can be found in the Hottentots Holland Mountains where people are likely to have been living for about 250 000 years. The Khoi and San inhabited the Cape mountain ecosystems, regularly traversing the mountain ranges in the vicinity of the present-day Sir Lowry's Pass and Franschoek Pass (Kruger 1983) leaving many indications of their passing.

Known sites include the following:

- Khoisan Caves: Middleridge with pothards and "Dorosters" hideout at Rooiels. Hangklip & Rooi Els cave.
- Rooisand: Coastal middens, fish traps.
- Mud/stone ruins: White's ruins
- Stokoei's Grave (Palmiet River Valley)
- Early Prehistoric site at Cape Hangklip (Gatehouse 1954)
- Houwhoek ruins

### 3.11 People and Conservation

The Overberg District is a relatively small centre for economic activity in the Western Cape with areas such as Grabouw and including to a lesser extent Kleinmond and Bot River, being important areas of local economic activity. CapeNature seeks to unlock opportunities to ensure that the benefits of natural resources and their sustainable utilisation and conservation are realised by local communities. The Kogelberg Nature Reserve Complex provides opportunities to ensure that the benefits of natural resources and/or their sustainable utilisation and conservation are realized by local communities. This is partly achieved through the Kogelberg Nature Reserve Advisory Committee which was established in October 2009 and with local community representation addresses for example matters such as job creation opportunities created through "Extended Public Works Programmes" (such as the Working for Water Programme), cultural access and utilisation of flora for example for medicinal use, firewood etc. Open days to encourage surrounding community involvement are also scheduled to coincide with national environmental days such as Heritage Day.

### 3.12 Awareness, Youth Development and Volunteers

The Buffelstal environmental facility and surrounds provides opportunities to those organizations focused on advancing the lives of "youth at risk" through environmental



education. The overnight facility caters for 18 participants with access to the nature reserve and surrounding areas of environmental interest (Figure 17).

### 3.13 Infrastructure

The operational centre at Oudebosch comprises of the office, tourist accommodation units, (6), official quarters (1) and a gate house. Other infrastructure at Buffelstal and Brodie Link include an environmental education centre and gate house, and two small residences respectively.

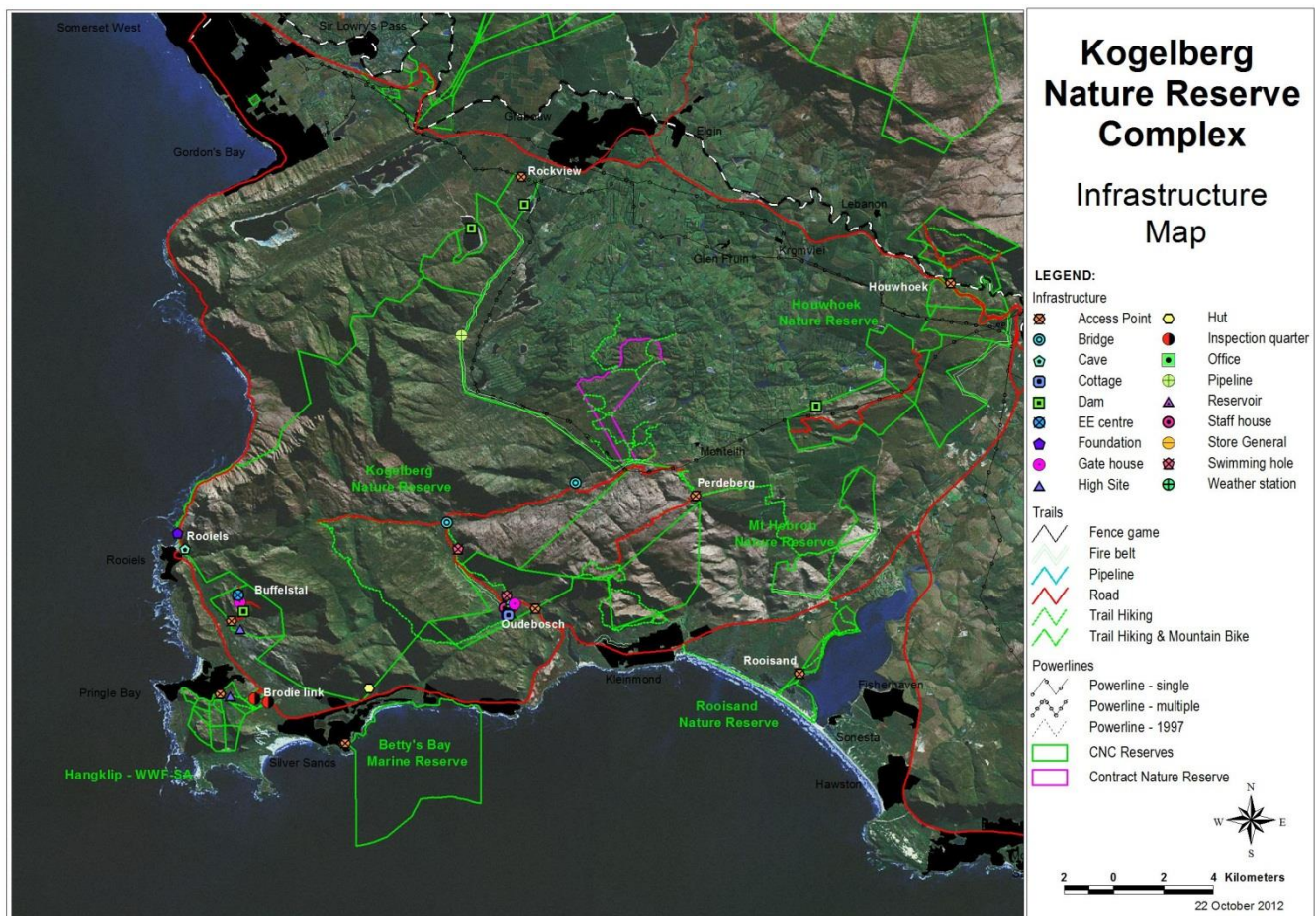


Figure 19. Infrastructure of the Kogelberg Nature Reserve.

### 3.14 Recreational and tourism services

The wilderness character of the area creates an ideal atmosphere for hiking trails. Trails range from a few hours duration to a two-day hike, while in appropriately zoned areas white water kayaking, swimming and mountain biking are allowed. Visitor accommodation is provided for at Oudebosch development node while an environmental facility at Buffelstal caters for Youth Development. The tourism development at Oudebosch has recently been

selected for an award by the Holcim Foundation for sustainable construction. As a contextualised feature within the Kogelberg Biosphere Reserve, the Oudebosch development was hailed as a commendable example for good practice of balancing tourist needs and preservation aspects. CapeNature and the professional team were awarded an acknowledgement award at the 2011 prize giving ceremony.

Within the boundaries of the Betty's Bay MPA, all marine organisms are protected and no fishing is allowed, with the exception of shore angling (subject to valid permits) between the beacon at Stony Point and the beacon to the east of Jock-se-baai, extending two nautical miles seawards from the high-water mark. The latter includes shore angling competitions which are held on a regular basis in the Betty's Bay MPA.

## SECTION 4: SWOT ANALYSIS

## 4.1 SWOT Analysis

## 4.1.1 Strengths, Weaknesses, Opportunities and Threats

Although the Kogelberg Nature Reserve Complex is largely in a near pristine condition, the biodiversity and ecological integrity and aesthetic beauty of the area is at risk. The following analysis identifies the Nature Reserve Complex's Strengths, Weaknesses, Opportunities and Threats (Table 4.1).

**Table 4.1. SWOT analysis of the Kogelberg Nature Reserve Complex.**

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> <li>• Secure annual budget</li> <li>• Motivated staff</li> <li>• Experienced team</li> <li>• Improved operational management tools (GIS, Fire database, etc.)</li> <li>• Core of the Kogelberg Biosphere Reserve</li> <li>• World Heritage Site</li> <li>• Leadership and support</li> <li>• Leadership capacity</li> <li>• Wilderness type areas</li> <li>• Good communication within Area</li> <li>• Close spatial proximity of reserves compared to other areas for knowledge exchange and collaboration</li> <li>• Job opportunities for local communities</li> <li>• Good support to partnerships</li> <li>• Creativity of staff</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate budget</li> <li>• Insufficient staff component</li> <li>• Management support systems (policies, supply chain policy, etc.)</li> <li>• Insufficient corporate planning</li> <li>• Inadequate infrastructure maintenance</li> <li>• Poor communication in CapeNature</li> <li>• Proximity to Head Office – sharing of functions. Capacity drained to support Head Office</li> <li>• Insufficient management fee directed at operations for project management such as ICM/AVM and others</li> <li>• Research results not communicated back to reserves</li> <li>• Identification of applied research projects</li> <li>• Our research priorities not identified and communicated to Universities</li> <li>• Lack of lowland conservation</li> <li>• Lack of High site management</li> <li>• Lack of coordinated approach to volunteers</li> <li>• Inadequate support services</li> <li>• Lack of accountability</li> </ul>

### **Threats**

- Climate change increasing fire frequency and ,alien plant invasion and resultant loss of water production.
- Unseasonal, large and too frequent wildfires
- Alien species invasion
- Changing political climate threatens conservation priority and funding stability
- Uncontrolled access and unsustainable utilisation
- MTO Forestry exit areas have not yet been finalised and therefore spread of fires and aliens into the reserve remains a threat.
- Surrounding land use pressures and incompatible land management practices
- Illegal harvesting
- Lack of Infrastructure maintenance
- Ground water abstraction (TMF aquifer)
- Tertiary institutions do not buy into the Fynbos Forum Research guidelines
- Unfunded mandates
- Water demand for dam sites
- Inter-basin transfer
- Encroachment of informal settlements (e.g. Kleinmond and Bot River) on the reserve boundary and the resulting increase in fire risk.
- National and Provincial roads runs through the reserve and increase fire risk, edge effect, spread of aliens, potential hazardous material spills.
- Legal status and mandate for forest reserve areas must be entrenched.

### **Opportunities**

- Access to external funding to increase job opportunities for communities
- Increase partnerships, e.g. volunteers
- Tourism opportunities.
- Environmental Education opportunities
- Access to huge recreational market
- Close proximity to Cape Town, two National roads (N1 and N2) for access and tourism
- Establish ecological reserves for rivers
- External communication
- Reserve expansion
- Proximity to three major Universities
- Potential income from High sites
- Joint marketing, interpretation and education opportunities in partnership with other organisations
- Payment of ecosystem service for biodiversity conservation
- The Nature Reserve Complex is botanically well researched and offers many more research opportunities, with much scientific information available for management purposes
- Exceptionally high levels of biodiversity and endemism
- Scenic beauty

## SECTION 5: CONSERVATION DEVELOPMENT FRAMEWORK

### 5.1 Sensitivity-value mapping

***Sensitivity-value mapping of reserve biodiversity, heritage and physical environment*** provides a consistent approach, intended to be the main decision support tool guiding spatial planning in protected areas:

- for all planned and ad-hoc infrastructure development e.g. location of management and tourism buildings and precincts, roads, trails, firebreaks;
- for whole-reserve planning and formalisation of use and access as a Reserve Zonation Scheme;
- to support conservation management decisions and prioritisation.

Outputs allow direct comparison of sites both within and between reserves to support CapeNature planning at local and regional scales. The process maps:

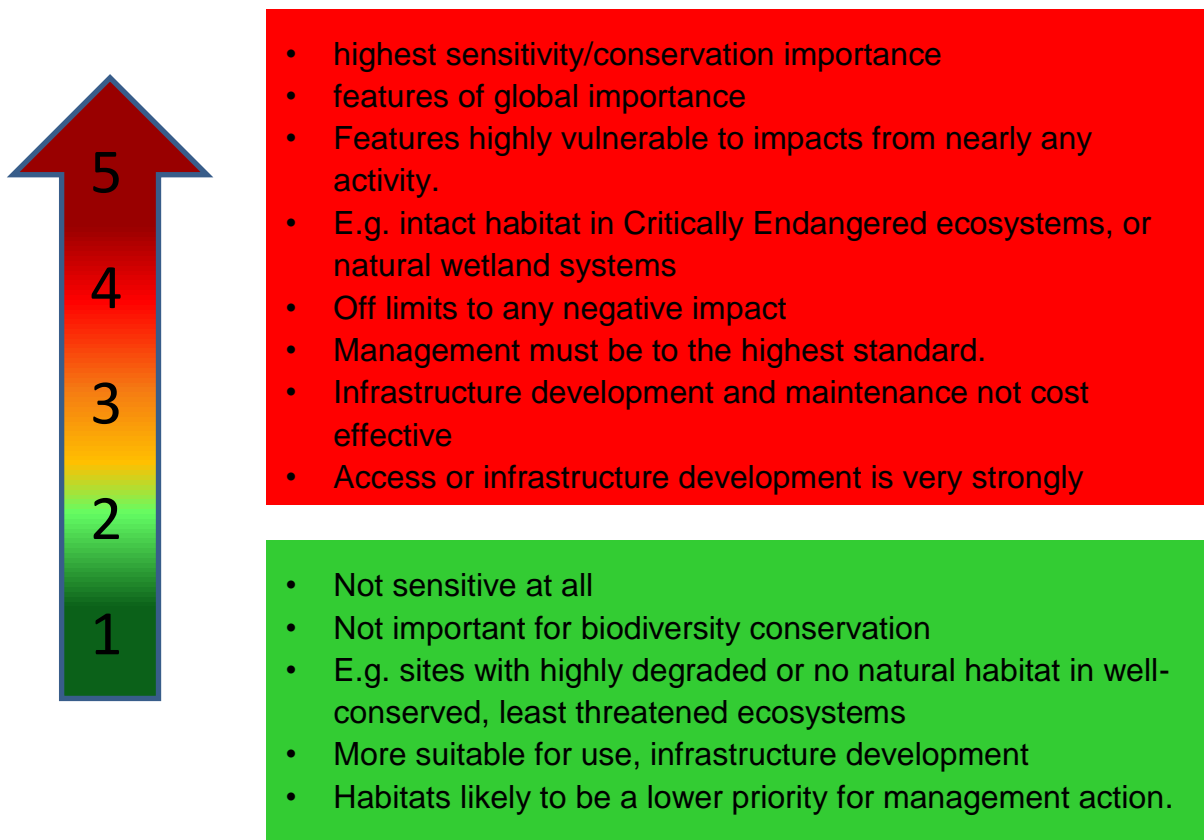
- sites with highest regional conservation value;
- areas where human access or disturbance will have a negative impact on biodiversity or heritage, and specific environmental protection is required
- areas where physical disturbance or infrastructure development will cause higher environmental impacts, and/or higher construction and on-going maintenance costs;
- areas where there is significant environmental risk to infrastructure.

The method ensures that the location, nature and required mitigation for access, activities, and infrastructure development within protected areas can be guided by the best possible landscape-level biodiversity informants.

The process accommodates both expert-derived information and more objective scientific data. Decisions are defensible and based on a transparent process.

Biodiversity, heritage and physical features are rated on a standard scale of 1 to 5, where 1 represents no or minimal sensitivity and 5 indicates maximum sensitivity (See Figure 18). Additional features such as visual sensitivity, fire risk and transport costs can also be included. Higher scores represent areas that should be avoided for conventional access and infrastructure, or where specific mitigation would be required in order to address identified environmental sensitivity. A score of 5 typically represents areas where mitigation for conventional access or infrastructure development would be extensive, costly or impractical enough to be avoided at all costs, or features so sensitive that they represent a 'no go' area. For biodiversity features highest scores represent high priority sites where conservation management cannot be compromised.

Sensitivity maps cannot replace all site-scale investigation, but they are ideal for rapidly reviewing known environmental risks, and guiding whole-reserve planning to minimise overall negative environmental impact.



**Figure 18: CapeNature Method for Sensitivity Scoring and Synthesis**

Figures 19 and 20 show examples of the sensitivity of the Palmiet Valey and the Buffelstal and Brody Link areas in the Kogelberg Nature Reserve Complex. Please note that these are just examples and that only one layer (habitat sensitivity) was used to develop the sensitivity.





Figure 19. The Palmiet Valey Ecosystem Representivity Sensitivity.

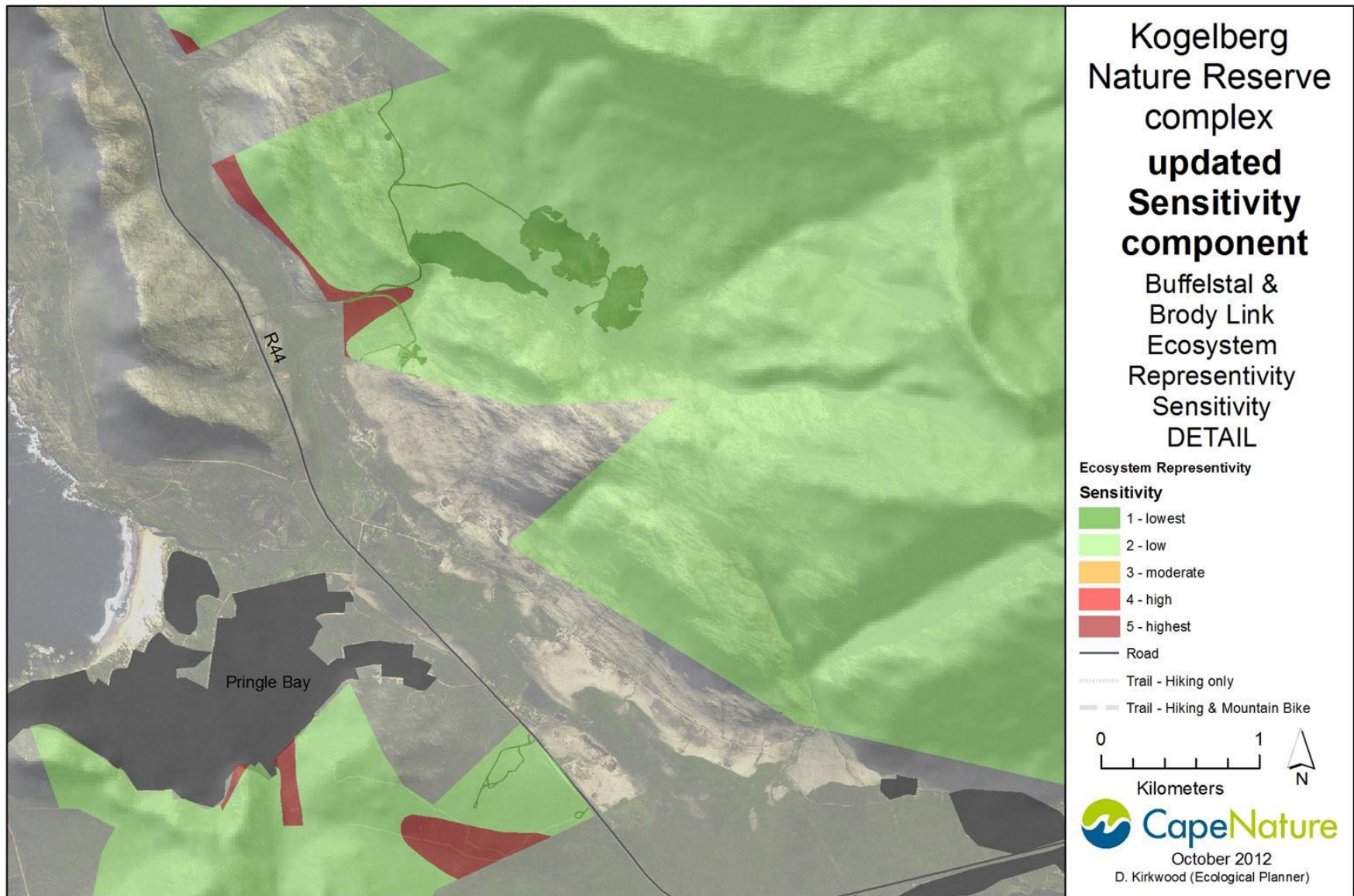


Figure 20. The Buffelstal and Brody Link Ecosystem Representivity Sensitivity.



## 5.2 Protected Area Zonation

**Protected Area Zonation** provides a standard framework of formal guidelines for conservation, access and use for particular areas.

Zonation goes beyond natural resource protection and must also provide for:

- appropriate visitor experience;
- access and access control;
- environmental education;
- commercial activities;

Ideally Zonation development should be done at the same time as Infrastructure Development Planning. Good planning must aim to reduce cumulative environmental impacts and the long term operating costs of all activities. Zonation and Infrastructure Development Planning must be guided by:

- existing infrastructure and use;
- potential future infrastructure and access requirements;
- careful evaluation of overall impact, construction costs and operating costs vs. likely benefits; for alternatives for every component.

Zonation requires input from all appropriate internal CapeNature stakeholders, and is a key component to be evaluated during Public Participation evaluation of Management Plans.

## 5.3 Zonation Categories

CapeNature Zonation Categories were developed by an internal workshop process completed in September 2010. Existing protected area zoning schemes worldwide were examined to develop a simple and powerful scheme that provides for the required range of visitor experience, access and conservation management. Particular effort was made to maintain consistency with the best developed South African zonation schemes, in particular those of SANParks and Ezemvelo KZN Wildlife (EKZNW). CapeNature Zonation Categories have fewer tourism-access categories, but provide more detailed and explicit guidelines with regard to zone objectives and characteristics. Further, CapeNature Zonation includes additional new zones specifically required in the context of highly sensitive biodiversity sites and zoning of privately owned Contract Nature Reserves. For a guide to the zones as used by CapeNature, see Table 5.1.

Figure 22 provides a zonation map for the Kogelberg Nature Reserve Complex and Figure 23 depicts a special management area at Rooisand Nature Reserve (Fig. 21).



**Figure 21: Rooisand Nature Reserve.**

**Table 5.1: Guide to CapeNature Zones.**

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

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Primitive	<p><b>Users:</b> To provide an experience of solitude in natural landscapes with little nearby evidence of human presence.</p> <p>Can provide access to and buffer Wilderness Zones.</p> <p><b>Conservation:</b> To limit visitor use, numbers and infrastructure to minimise impact in sensitive environments.</p> <p>To reduce need for management of users and visitor impacts.</p> <p>Allows for minimal or more intensive biodiversity management intervention.</p> <p><i>Include extensive areas of sensitive or threatened habitats &amp; species in this low use zone when sites do not meet the criteria for wilderness.</i></p>	<p>Intrinsically wild appearance &amp; character.</p> <p>Areas where users will seldom encounter other human groups or presence.</p> <p>Any visible human impact or infrastructure inside the zone is unobtrusive.</p> <p>Human activities outside zone may be audible or visible in places.</p> <p>Areas remote from management centres, or otherwise difficult or expensive to access for management.</p> <p>Areas that might not meet the criteria for Wilderness but can serve as undeveloped visual buffers for Wilderness.</p> <p>Areas that may have natural burning regimes, with no active fire management and road/firebreak infrastructure OR areas that require active fire management to stay within thresholds of concern.</p>	<p>Guided or unguided nature observation</p> <p>Primarily intended for hiking or walking access.</p> <p>Only allows for 4x4 routes or vehicle access if specifically considered and noted.</p> <p>Only allows for non-hiking accommodation node if specifically considered and noted.</p>	<p>Deviation from natural state to be minimised.</p> <p>Infrastructure should not be visible from Wilderness Zones.</p> <p>May provide isolated, small, unobtrusive accommodation facilities for up to 16 guests on restricted footprints, particularly for overnight hiking trails.</p> <p>May have defined or beacons hiking routes, management access roads, tracks and firebreaks.</p> <p>All roads, tracks or trails to be located and constructed to reduce maintenance, visibility and erosion. Where un-surfaced tracks will result in erosion, use concrete strip or interlocking pavers to stabilise. Re-route unstable or erosion-prone road sections if this will lower long-term visual and environmental impact.</p> <p>New roads for visitor access only justified if also required for management access.</p> <p>Avoid wide surfaced roads or roads and tracks wider than required for a single vehicle.</p>	<p>Visitor access only by permit.</p> <p>Control of visitor numbers, frequency and group sizes to meet zone objectives.</p> <p>Only users of facilities/activities will access to this zone.</p> <p>Defined or non-defined hiking and day trail routes.</p> <p>On foot always.</p> <p>Bicycle, 2x4 or 4x4 vehicle, or horseback on designated routes only.</p> <hr/> <p>No access without zone permit</p>	<p><b>Visitor Management:</b></p> <p>Manage to conserve natural and cultural resources, ecological processes and wild appearance &amp; character.</p> <p>Restrict numbers of visitors and allow for no-use rest periods if required.</p> <p>All facilities will be small, very basic, self-catering and distributed to avoid contact between users.</p> <p>There should be limited if any interaction between groups.</p> <p>Since visitor use usually cannot be intensively managed, re-route trails away from any areas with sensitive local habitats or plant and animal species.</p> <p>Trail layout, design and construction must reduce maintenance requirements.</p> <p>Visible &amp; audible human impacts from adjacent zones should be mitigated.</p> <p><b>Conservation Management:</b></p> <p>Habitats with lower or higher management requirements. May be natural burning zones.</p> <p>Usually remote areas so roads and trails should be planned and constructed assuming infrequent maintenance.</p> <p>Prevent or restore visible trampling or any other visitor impact.</p> <p>Rehabilitate non-useful roads to natural vegetation.</p> <p><b>Consumptive Use:</b></p> <p>Sustainable use can be appropriate under controlled circumstances subject to a formal assessment and application in accordance with CapeNature policies.</p>



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

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Development – Low Intensity	<p><b>Users:</b> To provide access to adjacent natural landscapes with no expectation of solitude.</p> <p>To provide primarily self-catering accommodation or camping.</p> <p>Can provide for Environmental Education accommodation and access into surrounding landscapes.</p> <p><b>Conservation:</b> To locate the zone and infrastructure to minimise impact on sensitive environments.</p> <p>To actively manage users and visitor impacts on adjacent sensitive areas.</p> <p><i>Provide additional protection to sensitive or threatened habitats, species or other features by Special Management Overlays</i></p>	<p>Areas with existing degraded or transformed footprints. Natural or semi-natural habitats only where essential to minimise impacts over whole reserve.</p> <p>Areas able to accommodate high numbers of visitors regularly, with no identified sensitive or regionally rare biodiversity.</p> <p>Areas able to accommodate roads, trails and accommodation infrastructure without risk of erosion or degradation.</p> <p>Areas easily accessible from reserve management centre.</p> <p>Areas where risk of fire damage to infrastructure is low or can be mitigated without unacceptable impacts on surrounding environment.</p> <p>Areas where new infrastructure can be located with low visibility from the surrounding landscape. Areas not visible from Primitive or Wilderness Zones.</p> <p>Areas with available potable water, and not sensitive to disposal of treated wastewater via soak away.</p>	<p>Picnicking.</p> <p>Walking or bicycle access into adjacent areas.</p> <p>Self-catering accommodation and camping.</p> <p>Meeting, workshops or mini-conference activities for no more than the number of people that can be accommodated overnight in the zone.</p> <p>Can provide for Environmental Education accommodation and access into surrounding landscapes, but this must be carefully planned not to conflict with visitor use.</p>	<p>Reception offices.</p> <p>Self-catering accommodation and camping for up to 100 guests in total at any time<sup>1</sup></p> <p>Single small lodges for up to 30 guests are permissible if all facilities are contained in a compact footprint, this represents the total accommodation for the zone, and any restaurant or catering facilities are for overnight guests only.</p> <p>If possible roads should be narrow with separate incoming and outgoing routes; otherwise double vehicle width roads are strongly advisable for safety and usability.</p> <p>Roads in this zone should be surfaced to reduce management cost and environmental impacts.</p> <p>Development and infrastructure may take up a significant proportion of the zone, but planning should ensure that area still provides relatively natural outdoor experience.</p>	<p>Motorised self-drive 2x4 sedan car access.</p> <p>Tour bus access.</p> <p>Parking areas.</p> <p>This zone should be used to provide parking and walk-in access for day visitors to adjacent Nature Access zone if possible.</p>	<p><b>Visitor Management:</b></p> <p>Use infrastructure solutions such as railings, hard surfacing and boardwalks to manage undesirable visitor impacts.</p> <p>Accept negative impacts on natural habitats in this zone unless these are specifically addressed in a Special Management Overlay.</p> <p>Frequent footpath and road maintenance must be scheduled for high impact routes.</p> <p>Visible impacts to adjacent Zones should be considered and mitigated.</p> <p><b>Conservation Management:</b></p> <p>Provide access and generate revenue.</p> <p>Management should aim to mitigate the impacts of the high number of visitors.</p> <p>Largely transformed habitats with lower management requirements. Usually fire exclusion areas.</p> <p>Prevent or rehabilitate visible trampling or any other visitor impact.</p> <p>Plan for a compact overall development footprint, avoiding dispersed infrastructure that will increase fire risk and/or environmental footprint. This is most critical in fire-prone environments.</p> <p><b>Consumptive Use:</b></p> <p>Sustainable use may be appropriate subject to a formal assessment and application in accordance with CapeNature policies.</p>

<sup>1</sup> Although 100 guests seem high this is in line with CapeNature sites that would fall within this zone definition, e.g. configured as 10 x 4-sleeper self-catering units and 15 campsites.

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

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



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

## Protection Zones

Zone	Zone Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
Species / Habitat / Cultural Protection	<p><b>Users:</b> This zone's primary purpose is conservation and research.</p> <p>Limited tourism use only if compatible with conservation objective.</p> <p><b>Conservation:</b> Protection of species or habitats of special conservation concern.</p> <p>Restrict access to prevent disturbance and/or damage.</p>	<p>Larger areas where uncontrolled public access is undesirable due to presence of regionally critically rare and endangered fauna, flora, habitat.</p> <p>Typical example would be a seabird breeding colony, particularly for threatened species.</p>	<p>Research.</p> <p>Nature observation under strictly controlled conditions only if specifically noted.</p>	<p>Usually none, but footpaths and tracks to allow management access may be permitted.</p> <p>Where visitor access is permitted, strict access control infrastructure is required to delimit access routes, and if necessary screen visitors. I.e. hides, boardwalks, screened routes, and paths with railings may be appropriate.</p>	<p>Public / Tourism access normally not allowed. May be permitted under very tightly controlled conditions, to be determined per site.</p>	<p><b>Visitor Management:</b> Prevent visitor access or restrict numbers of visitors and allow for no-use rest periods if required.</p> <p>Infrastructure layout, design and construction must be designed and maintained to highest environmental standards.</p> <p><b>Conservation Management:</b> Feature specific – as required.</p> <p>Prevent any negative impacts on identified feature/s.</p> <p>Consider removal and/or rehabilitation of non-essential infrastructure.</p> <p><b>Consumptive Use:</b> Not compatible.</p>

## Special Management Overlays

Special management overlays provide an indication of areas requiring special management intervention within the above zones. Overlays would typically only be applied where zoning does allow visitor or management access, but special measures are required, particularly to ensure protection of important and sensitive features or sites. Overlays should include specific indication of permitted activities, access, facilities/infrastructure and management guidelines that differ from the rest of that zone. Overlay requirements can be flexible, adapted to the requirements of the feature/s they protect.

Overlay	Overlay Objective	Characteristics	Visitor Activities	Facilities / Infrastructure	Visitor Access	Management Guidelines
<b>Cultural</b>	Protection of localised identified important Cultural Feature.	Can overlap any zone. Permanent, temporary or temporal zone to manage important cultural or heritage features.	Specific activities dependent on ability to manage activity and feature in question.	Usually none, but specific infrastructure dependent on feature in question.	Specific access dependent on ability to manage access and feature in question.	Feature specific – as required.
<b>Species / Habitat</b>	Protection of localised identified important Biodiversity Feature	Can overlap any zone. Permanent, temporary or temporal zone to manage important and sensitive species and/or habitats. Typically only applied where visitor impacts are expected.	Specific activities dependent on ability to manage activity and feature in question.	Usually none, but specific infrastructure dependent on feature in question.	Specific access dependent on ability to manage access and feature in question.	Feature specific – as required.
<b>Visual</b>	Protection of sensitive view sheds and particularly for Wilderness Zone view sheds.	Can overlap any zone. Sensitive view sheds and particularly for areas within Wilderness Zone view sheds.	Specific activities dependent on ability to manage activity and feature in question.	No roads, firebreaks or buildings. No visible infrastructure. Trails may be appropriate.	Walking access likely to be appropriate.	Feature specific – as required.
<b>Natural Resource Access</b>	Access to identified sustainable consumptive use resources as per a resource management plan.	Can overlap any zone except Wilderness and Protection zones. Areas with identified natural resources formally assessed as not sensitive to harvesting and where an approved sustainable harvesting plan is in place.	Harvesting of identified resources.	None	Specific access dependent on feature in question.	Feature specific – as required.

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

For a detailed description of process and outputs, including the underlying reserve Sensitivity Analysis, please refer to the report *Conservation Development Framework: Kogelberg Nature Reserve complex* (Kirkwood pers. comm. 2012) which includes full descriptions of the Sensitivity and Opportunity Analysis, Zonation and Infrastructure Development Plan process and outputs.

Key Drivers of the Kogelberg Nature Reserve Cluster's zonation:

- Kogelberg Nature Reserve Cluster can be considered to have moderate overall Biodiversity Sensitivity, but with a high probability of encountering highly sensitive local features. The vast majority of the Kogelberg Nature Reserve Cluster consists of Kogelberg Sandstone Fynbos, which although approximately 80% intact relative to its original extent, is considered a Critically Endangered ecosystem due to the high number of threatened plant species (Draft National List of Threatened Ecosystems 2009, Notice 1477 of 2009, Government Gazette No 32689). Kogelberg Sandstone Fynbos is well protected with approximately 58% of the original extent conserved in Type 1 protected areas, and a further 18% in other conservation areas relative to a biodiversity target of 30% (2006 National Spatial Biodiversity Assessment, SANBI). Rooisand Nature Reserve includes several poorly conserved and threatened habitats, most noteworthy being areas of Hangklip Sand Fynbos (Vulnerable, moderately protected), Elim Ferricrete Fynbos (Critically Endangered, very poorly protected), and the important estuarine shore environments of Bot Vlei.
- Kogelberg Nature Reserve Cluster is almost entirely within a 1 to 1.5 hour driving distance of the metropolitan centre of Cape Town, and easily accessible from the towns of Hermanus, Kleinmond, Betty's Bay, Pringle Bay, Rooiels and Gordon's Bay, all of which are also important tourism nodes.
- Kogelberg Nature Reserve Cluster is a large reserve, with a wide range of access and activity requirements.
- Despite its proximity to a number of towns and major agricultural areas, Kogelberg Nature Reserve Cluster's mountains shield an extensive internal area that provides a true Wilderness experience with no sight of any human infrastructure.
- Existing identified tourism nodes at Oudebosch and Buffelstal are acceptably located with regard to reserve sensitivity, access and principles of peripheral development.

The Kogelberg Nature Reserve Complex is therefore zoned to provide tourism and access in identified areas, whilst still protecting extensive natural landscapes and Wilderness. Zones represent a refinement of previous Boland Mountain Zonation (Holness & Skowno 2008) with zones updated to be consistent with the current CapeNature scheme and zone boundaries more precisely mapped to features on the ground, except for the new addition of a Wilderness Zone not previously identified. Zones adhere to CapeNature's standard zonation scheme – please refer to this for full zone descriptions.

**Kogelberg Development – Low Intensity Zones:** Two Development – Low Intensity Zones intended to accommodate self-catering accommodation are tightly mapped to existing transformed or heavily historically degraded footprints at Oudebosch near the Palmiet River, and at Buffelstal. Both sites are optimally located near the periphery of the reserve and allow for nearby Nature Access areas. A further Development – Low Intensity Zone is provided in heavily degraded and transformed habitat at the existing access point at Rooisand Nature Reserve to allow for ablution facilities, an

interpretation centre and similar infrastructure required to support and encourage appropriate day visitor use and access.

**Kogelberg Development – Management Zones:** These zones reflect the appropriate location of existing management accommodation at Oudebosch and in Brody Link Nature Reserve. Management stores, offices and parking at the reserve management hub at Oudebosch are located at the existing combined office and reception facility, and can continue to be operated from this tourism oriented Development – Low Intensity Zone without negatively impacting tourism experience.

**Kogelberg Nature Access Zones:** A Nature Access Zone is provided around Oudebosch and along the Palmiet River Valley to accommodate popular day visitor use on existing roads and trails. Another Nature Access Zone within the visually sheltered Buffelstal area provides for day trails for future tourism development at this site. Most of Rooisand Nature Reserve and Brody Link Nature Reserve are zoned Nature Access to reflect current use as popular recreational areas for visitors and nearby residents. The final Nature Access Zone at Rockview allows for current use of the northernmost tip of the reserve as a filming location site, and as a relatively flat and accessible area, could in future provide for day visitor access if gate control could be provided.

**Kogelberg Primitive Zones:** Primitive Zoning encompasses the largest area of Kogelberg, providing for habitat protection of extensive areas and high expectation of solitude in areas where visitor access is provided by special permit. Although the Kogelberg Nature Reserve Cluster currently has no overnight hiking trails, this zone could allow for overnight hiking with or without hiking huts or similar accommodation. Regular views of towns, farmlands or other human infrastructure outside the reserve can be expected throughout these zones.

**Kogelberg Wilderness Zone:** Viewshed analysis indicates that an extensive area of Kogelberg Nature Reserve Complex can be zoned as Wilderness with no roads or vehicle tracks and no significant views of any human infrastructure. Any future development proposed within the nature reserve should be carefully assessed with regard to visual impact on this Wilderness Zone.

**Kogelberg Species / Habitat Protection Zone:** A no-access Species / Habitat Protection Zone protects Critically Endangered Elim Ferricrete Fynbos and ecotonal habitat with a number of known threatened plant species. Existing day trails within this zone will be closed and alternative routes outside of the zone will be provided.

The zonation of the Kogelberg Nature Reserve Complex is shown in Figure 22.

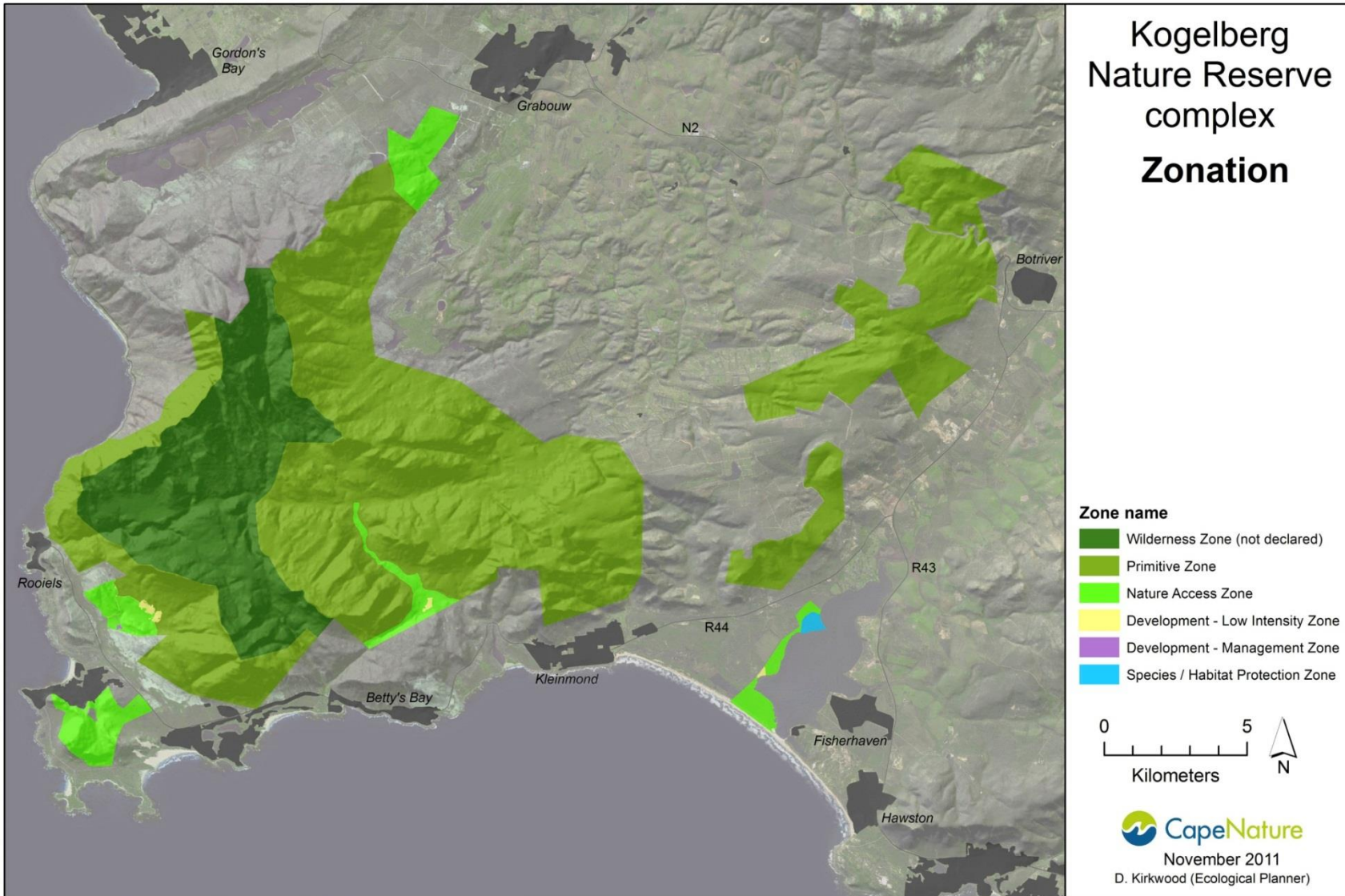
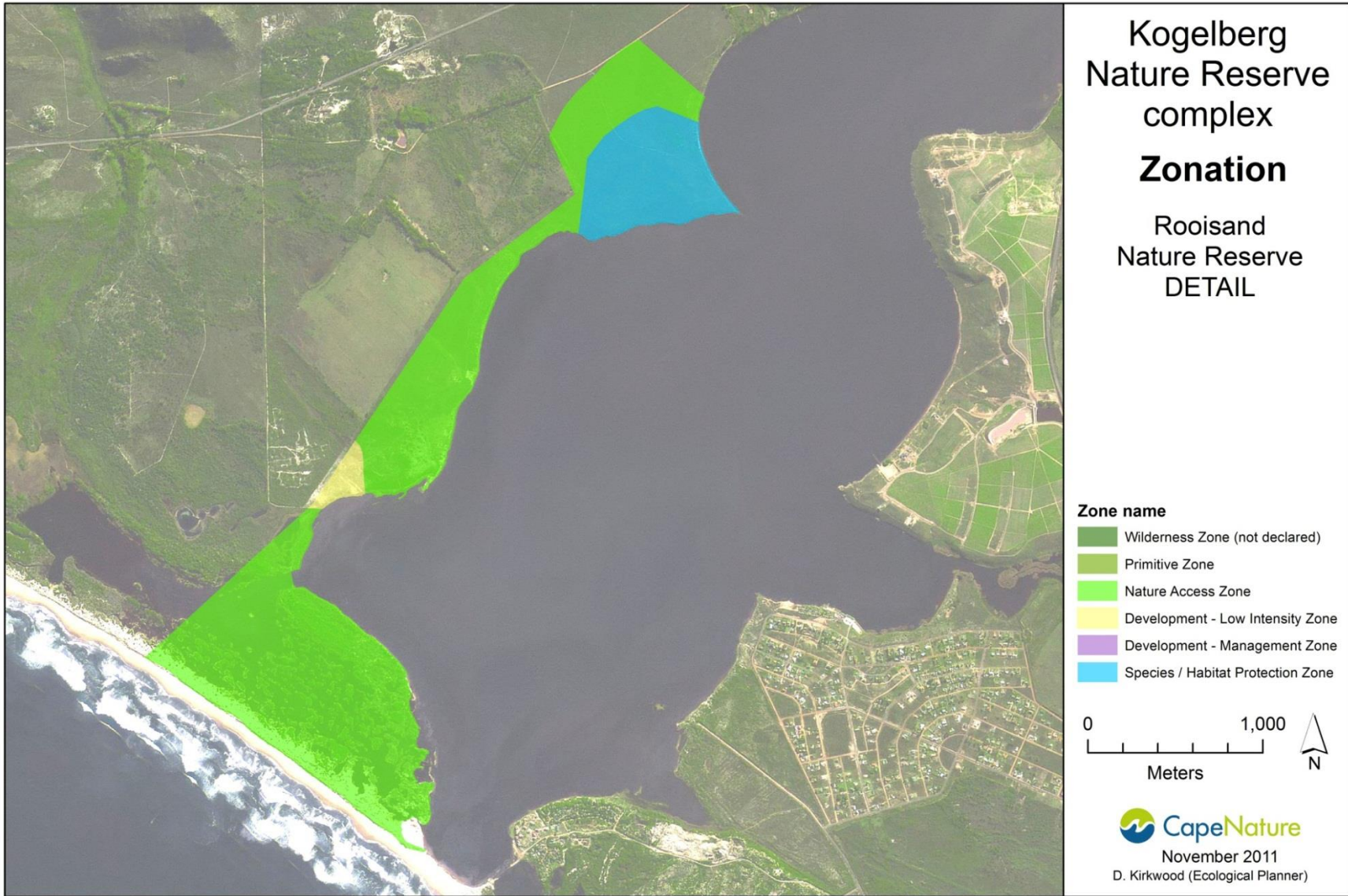


Figure 22: Zonation of the Kogelberg Nature Reserve Complex.





**Figure 23. Special management area at Rooisand Nature Reserve.**

## 5.4 Access

All nature reserves need to provide access to the general public. Access points must be easily accessible to relevant user groups, but controlled by nature reserve staff. The main activities for which access must be granted within the Kogelberg Nature Reserve Complex include hiking, overnighing, biking and boating. Access points for the public are listed in Table 5.2. Access and specific facilities are spatially mapped in Figure 17.

**Table 5.2: Public access points to the Kogelberg Nature Reserve Complex.**

No.	Locality	Name	Type of Access	Activity
1	Pringle Bay	Buffelstal	Vehicle access	Environmental Education
2	Pringle Bay	Hangklip	Pedestrian	Hiking
3	Betty's Bay	Stony Point	Boat	Boating
4	Kleinmond	Oudebosch	Vehicle, pedestrian and bicycle	Overnighing, hiking, biking, kayaking
5	Arabella	Rooisand	Pedestrian	Hiking, horse riding
6	Highlands	Perdeberg	Pedestrian	Hiking
7	Bot River	Houwhoek	Pedestrian	Hiking
8	Grabouw	Rockview	Vehicle	Film shoots

CapeNature is a partner in a number of servitude agreements for which the respective partners are provided access to land managed as part of the Kogelberg Nature Reserve Complex. Current servitudes are listed in Table 5.3 and mapped in Figure 17.

**Table 5.3: Servitudes and granted rights of the Kogelberg Nature Reserve Complex.**

No.	Locality	Name	Type of servitude
1	Elgin Basin, Highlands	Eskom transmission	Powerline
2	Pringle Bay	MTM Cellular mast	High site
3	Elgin Basin, Somerfontein	Somersfontein	Pipeline

No prospecting and mining activities are permitted in the Kogelberg Nature Reserve Complex.

No formal commercial and community activities take place by concession or agreement in the nature reserve.



## **5.5 Concept Development Plan**

### **5.5.1 Long term development plan**

A long-term Concept Development Plan (CDP) (Figure 24 and 25) to increase the nature reserve conservation status and management is outlined in the expansion strategy.

Kogelberg is ideally situated within easy distance of Cape Town and a number of nearby smaller tourism nodes on good roads. The reserve offers accessible walking, river swimming, mountain biking, and spectacular scenery. It is also a nature-lover's mecca, known for its exceptional plant diversity and endemism. Kogelberg's Oudebosch entrance is a popular day visitor access point but historically, little accommodation of relatively poor quality was available. Two independent financial feasibility studies indicate that further tourism development would be highly viable, and would provide a significant income stream for CapeNature. Both Oudebosch (Figure 26) and Buffelstal (Figure 27) are therefore identified in CapeNature's Tourism Strategy for development of further self-catering tourism accommodation.

Two phases of development at Oudebosch were carefully planned to allow for the sensitive, wetland rich environment, and have already received NEMA EIA authorisation after a Basic Assessment application to DEA:

- Oudebosch Phase 1 consisting of demolition of the existing 6 Oudebosch cabins and replacement with 5 luxury self-catering cabins and a multipurpose communal cabin is due for completion by end December 2012 and will result in no increase in accommodation capacity.
- Oudebosch Phase 2, located adjacent to the existing offices in an old field area, adds 3 units with 2 bedrooms each, 10 single bed units and one communal recreation facility which together can accommodate 32 guests in accommodation that will be more cost-effective and accessible than Phase 1. Detailed design and construction is expected to start in 2014, but may be initiated in 2013.

Both Oudebosch phases together represent a capacity of 52 guests (an additional capacity of only 16 guests relative to the accommodation it replaces) designed to be higher quality, more aesthetically pleasing and better integrated into the environment, and allowing more flexible use to encourage higher overall use throughout peak and off-peak periods.

Buffelstal planning is still in the earliest stages and design, layout and capacity have not been determined, but would be confined to the non-natural areas of the identified Development – Low Intensity Zone. Day trails within the identified Nature Access Zone would be developed to provide activities for any proposed Buffelstal development.

Although no planning or has yet been initiated, it seems likely that an overnight hiking route in the Kogelberg Nature Reserve Cluster would be viable and extremely popular, and a feasibility assessment and further detailed planning is likely to be initiated in the period 2013 – 2017.

### **5.5.2 Kogelberg Management Infrastructure**

Existing roads and trails are currently adequate for management activities and no new infrastructure is planned. Any infrastructure development or layout must follow due process with regard to any environmental application and authorisation required.

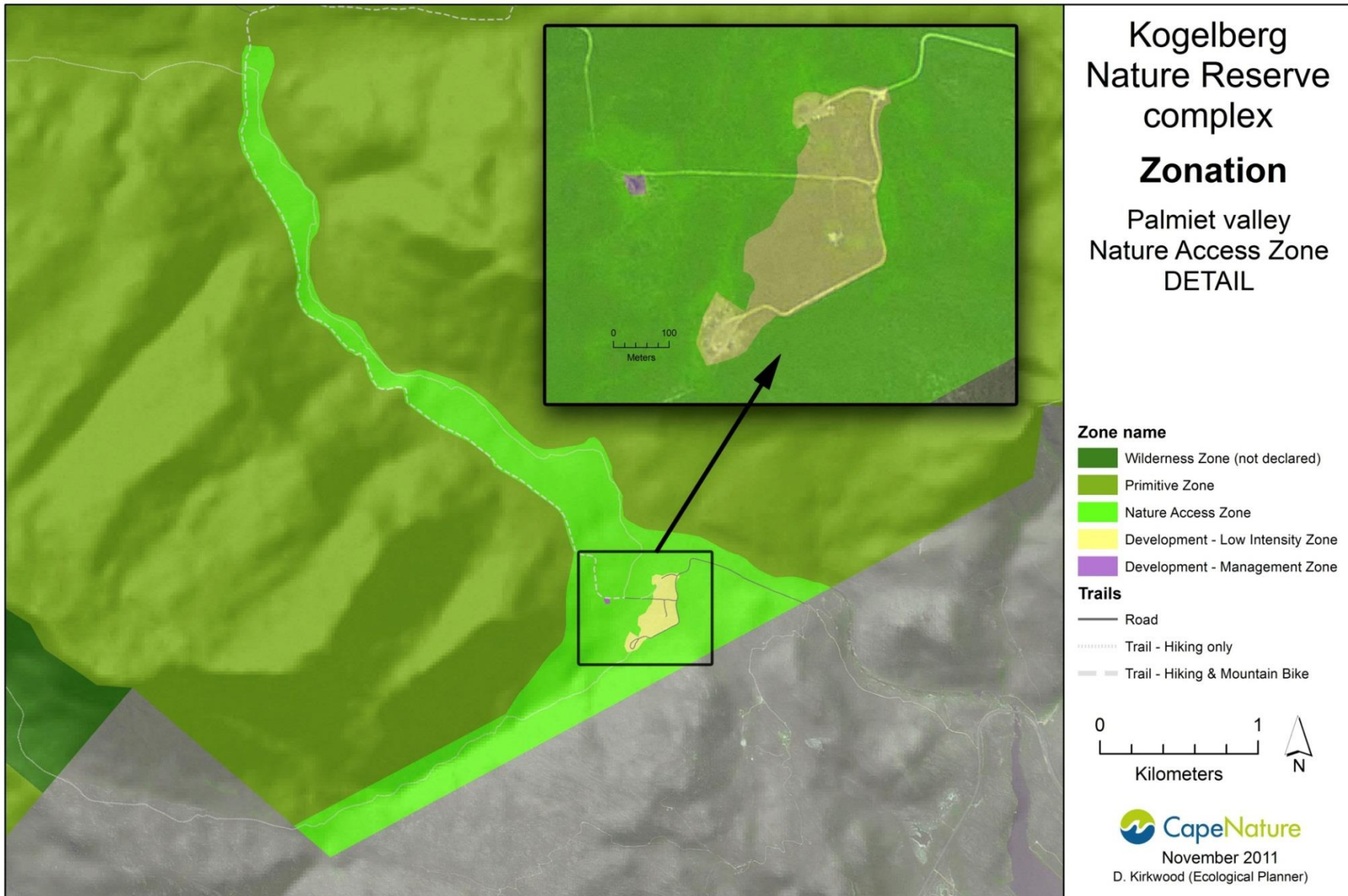


Figure 24: Concept Development Plan for the Kogelberg Nature Reserve Complex: Oudebosch development.

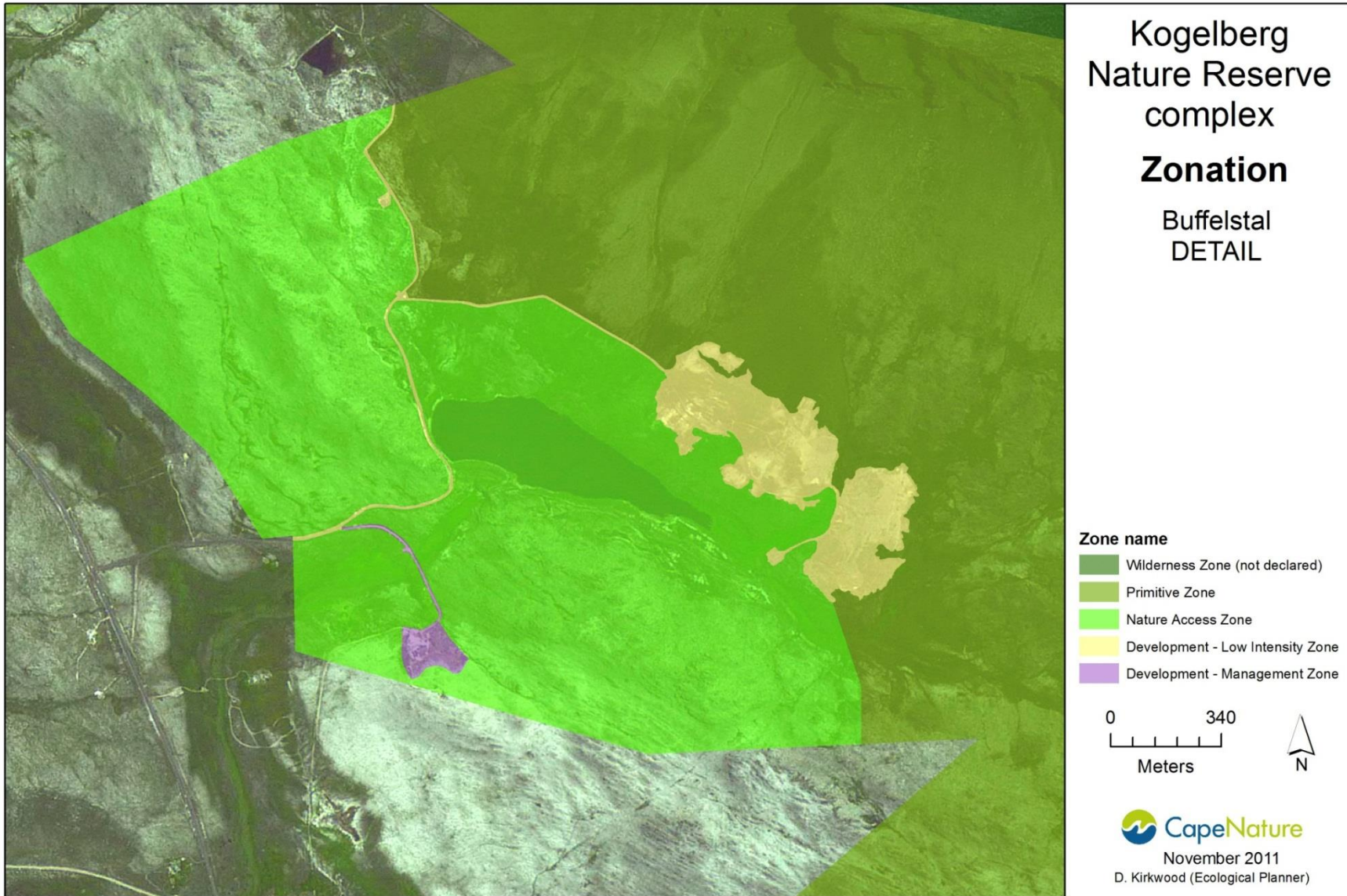


Figure 25. Zonation of the Buffelstal area in the Kogelberg Nature Reserve Complex.



## SECTION 6: RESERVE EXPANSION STRATEGY

### 6.1 Protected Area Expansion

#### 6.1.1 Introduction

The establishment and management of a provincial protected area system which is aligned with the National Protected Area Expansion Policy (South African National Biodiversity Institute and Department of Environmental Affairs 2010), is a key strategic approach to the conservation of the globally significant biodiversity of the Western Cape. Several conservation planning initiatives, have been, and will in future be used to inform a consolidated Provincial Protected Area Expansion Strategy.

The strategy aims to guide expansion priorities which

- Contribute towards meeting national and provincial biodiversity targets <sup>2</sup>
- Contribute towards national and provincial protected area targets<sup>3</sup>

Several mechanisms are available for the expansion of protected areas in order to meet both biodiversity and protected area targets. A further requirement in order to adequately manage these protected areas is the establishment and management, co-management or management guidance of buffer areas. Protected area expansion and buffer areas, although closely linked, will be dealt with as two distinct activities.

#### 6.1.2 Spatial Focus

The National and Provincial Protected Area network was assessed at a broad scale by the National Spatial Biodiversity Assessment (NSBA, now NBA) and the National Biodiversity Framework (NBF). The NBA (Driver *et al.* in prep) identified crucial freshwater, estuarine and marine conservation priorities to inform the Protected Area Expansion strategy for the Western Cape.

CapeNature employs several conservation planning products which may inform the CapeNature Protected Area Expansion Strategy and Implementation Plan 2010-2015 (Purnell *et al.* 2010) in order to meet national and provincial biodiversity targets as well as protected area targets. These include the Conservation Action Plan (CAP) map, Important Biodiversity Layers (IBL) and the various regional Fine Scale Plans (e.g. Matzikama, Saldanha Peninsula).

#### 6.1.3 Protected Area Expansion Mechanisms

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<sup>2</sup> Biodiversity targets refer to how much of a biodiversity feature should be protected in order for it to persist.

<sup>3</sup> Protected Area targets refer to the area of land which should be represented in Protected Areas by a certain date

Several mechanisms are available for the expansion of protected areas in order to meet both biodiversity and protected area targets and are linked to land ownership and tenure.

Table 6.1 is an extract from the National Protected Area Expansion Policy (South African National Biodiversity Institute and Department of Environmental Affairs 2010), and is relevant to CapeNature.

**Table 6.1: Mechanism for protected area expansion.**

<b>Mechanism</b>	<b>Implementation options</b>	<b>Land ownership and tenure</b>
1. Declaration of public land available for conservation	i) Allocate unvested / unallocated national state land to the conservation agency	State (national)
	ii) Re-allocate national state land from a responsible national organ of state to the conservation agency	State (national)
	iii) Lease national state land under communal tenure to the conservation agency	State (national) Communal tenure
	iv) Dispose of provincial state land to the conservation agency	State (provincial)
	v) Allocate, sell, lease or contract non-state, public land to the conservation agency	Non-state public land (local authorities, public entities, government enterprises)
2. Acquisition of land	i) Land donation	Private
	ii) Land purchase	Non-state public land Private land
	iii) Property lease	State (provincial) Private land State (national) under communal tenure
	iv) S23 Contract nature reserve / protected environment with title deed restrictions	Private land
3. Negotiation of contractual arrangements with landowners	i) Contract nature reserve / protected environment	Private land State (national) under communal tenure Non-state public land
4. Regularizing the protected area status of existing conservation areas within the informal	i) Statutory informal conservation areas	Private land State (national) State (provincial) Non-state public land

conservation system.	area	ii) Non-statutory conservation areas	informal	Non-state public land Private land
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## 6.1.4 CapeNature’s Strategic Approach to Protected Area Expansion in the Western Cape

### 6.1.4.1 Spatial Focus

The CAP map is the primary informant to the expansion priorities for CapeNature. This product is supported by IBL and the Fine-Scale Plans. These plans are all biodiversity driven and CapeNature will unreservedly pursue priorities based on biodiversity net gain. Marine priorities which are adjacent to existing terrestrial areas or protected islands will be prioritised accordingly. Other marine / terrestrial interfaces e.g. estuaries will be considered in the priority evaluation process as informed by relevant biodiversity conservation plans not listed above.

Properties which have cultural, archaeological and paleontological features will also be evaluated in the context of biodiversity.

### 6.1.4.2 Primary Mechanisms for CapeNature

The following mechanisms which address the various landownership scenarios for properties which are identified will be used by CapeNature for the immediate future:

- i. Declaration of Provincial Nature Reserves on state owned land / sea or islands:
  - a. CapeNature as management authority
  - b. Co-management agreement with another organ of state
  - c. Another organ of state delegated as management authority
- ii. Declaration of S23 Nature Reserves on private land as per the stewardship protocol.
- iii. Biodiversity Agreements (including those with “in perpetuity” title deed restrictions usually also zoned Open Space III Nature Reserve).
- iv. Declared Protected Environments (preferably with title deed restrictions in perpetuity or at least 30 years).
- v. Donation of land which contributes significantly to both biodiversity and protected area targets.
- vi. Purchase of land of biodiversity significance either with state or donor funds.

### 6.1.4.3 Implementation Phases

- a) Annual Expansion plan spatially depicted per Area or conservation region;
- b) Five Year Plan (revised at end of MTEF three year cycle); and
- c) 20 Year Plan.

#### **6.1.4.4 Planning and Implementation Review Protocol**

Annual and 5-year Protected Area Expansion plans at Area level will be reviewed by an appropriately constituted panel. This is in order to verify biodiversity and other strategic gains and to consolidate a provincial plan for CapeNature for executive approval. All sites identified for protected area expansion will be assessed using the appropriate site review process these site assessments will be evaluated by the Protected Area Expansion Review Panel (appropriate management and scientific representation being a pre-requisite). A site assessment protocol will be provided (using refinements from the draft land acquisition policy and the stewardship site assessment template as well as protected areas and their expansion by other agencies e.g. SANParks, DEA, Oceans and Coast and Department Agriculture Forestry and Fisheries).

#### **6.1.5 Financial Plan for Protected Area and Buffer zone expansion**

Should CapeNature be the management authority of a stewardship site as per agreement with the private landowner then the details of this budget should be reflected in the respective management plan whether it is an extension of one of CapeNature's own reserves or a Nature Reserve in its own right which will require a management plan approved by the Provincial Minister: Environmental Affairs and Development Planning.

### **6.2 Buffer zones**

The term "buffer zone" is widely used in the context of the conservation of biodiversity, and is usually used to denote some sort of spatial protection mechanism. The configuration and extent of, and "restrictions" applied to a particular buffer zone may vary considerably depending on the attributes that require protection, and the nature of the "threat/s".

World Heritage Sites (WHS) are designed to recognise and protect areas of "Outstanding Universal Value" (OUV) to humanity, both cultural and natural. Biosphere Reserves are designed to combine three specific functions of biodiversity conservation, sustainable development and logistic support that include research, education and training. Biosphere reserves are selected based on a specific set of criteria and the sites need to be representative of a major biogeographic region (UNESCO 1996). Thus WHS have to have OUV and Biosphere Reserves are representative examples of specific bioregions. Both include "buffer zones" as part of their spatial design.

WHS "buffer zones" are clearly delineated area(s) outside a World Heritage property but adjacent to its boundaries which contribute to the protection, management, integrity, authenticity and sustainability of the OUV of the property. Although World Heritage "buffer zones" are not regarded as part of the inscribed World Heritage property, their boundaries and relevant management approaches are evaluated, approved and formally recorded at the time they are proposed by a State Party. Where "buffer zones" are defined, they should be seen as an integral component of the State Party's commitment to the protection and management of the World Heritage property. The functions of the buffer zone should reflect the different types and levels of protection needed to protect the outstanding universal value of the World Heritage property. Biosphere Reserve "buffer zones" are typically arranged



concentrically around the core areas to which they provide protection by restricting potentially detrimental activities and promoting wise utilisation. Such buffer zones form an integral part of the biosphere reserve and its management activities and are included as part of the UNESCO designation.

Due to the importance and distribution across the landscape of the biodiversity of the CFR several “buffering mechanisms” have been developed to ensure the long term persistence of both pattern and process, as well to provide mitigation for Global Climate Change. These “buffering mechanisms” are often overlapping, always mutually supportive and continuously evolving and expanding. These buffering mechanisms include but are not restricted to, declared private mountain catchments areas, biosphere reserve buffer areas, corridor initiatives, stewardship agreements and critical biodiversity areas (both terrestrial and aquatic). It is from these “buffer zones” that most, but not all, stewardship sites are likely to come. It is also important to bear in mind that local development plans need to take into account the buffering requirements of protected areas.

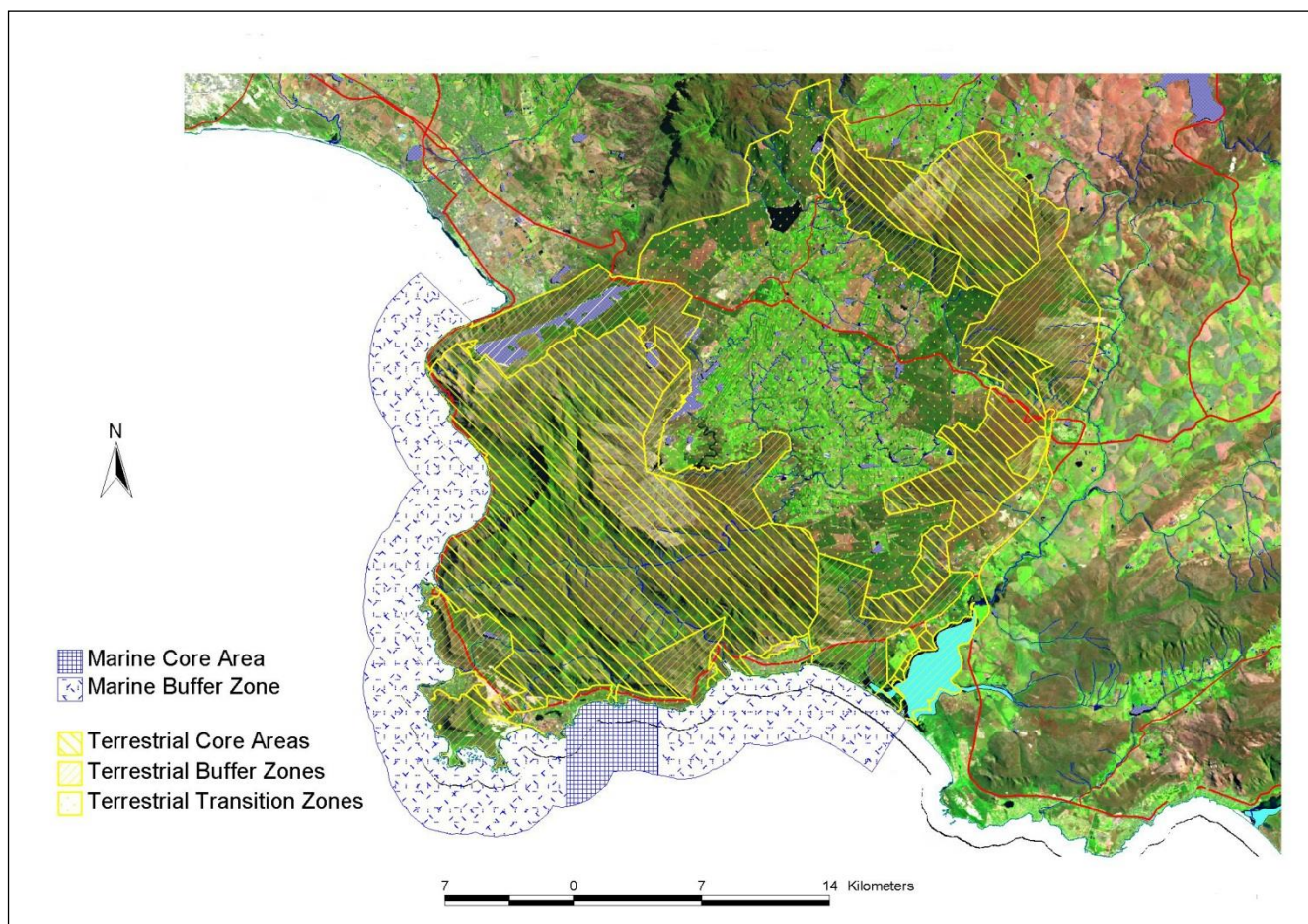
### **Biosphere reserves and zoning schemes**

Biosphere reserves aim to achieve integrated management of land, fresh and marine waters and living resources by putting in place bioregional planning schemes based on integrating conservation into development through appropriate zoning. While countries maintain flexibility at the national levels with regard to the definition of zones, the zonation needs to ensure that biosphere reserves effectively combine conservation, sustainable use of resources and knowledge generation through integrated zonation and collaborative management:

The zonation of each biosphere reserve should include:

- **Core area(s):** securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education). In addition to its conservation function, the core area contributes to a range of ecosystem services which, in terms of the development functions, can be calculated in economic terms (e.g. carbon sequestration, soil stabilization, supply of clean water and air, etc.). Employment opportunities can also complement conservation goals (e.g. environmental education, research, environmental rehabilitation and conservation measures, recreation and eco-tourism).
- **Buffer zone(s):** which usually surrounds or adjoins the core areas, and is used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research. In addition to the buffering function related to the core areas, buffer zones can have their own intrinsic, ‘stand-alone’ functions for maintaining anthropogenic, biological and cultural diversity. They can also have an important connectivity function in a larger spatial context as they connect biodiversity components within core areas with those in transition areas.
- **Transition area:** area with a central function in sustainable development which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, NGO, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

See Figure 26 for Kogelberg Biosphere Reserve zonation.



**Figure 26. Zonation map of the Kogelberg Biosphere Reserve.**

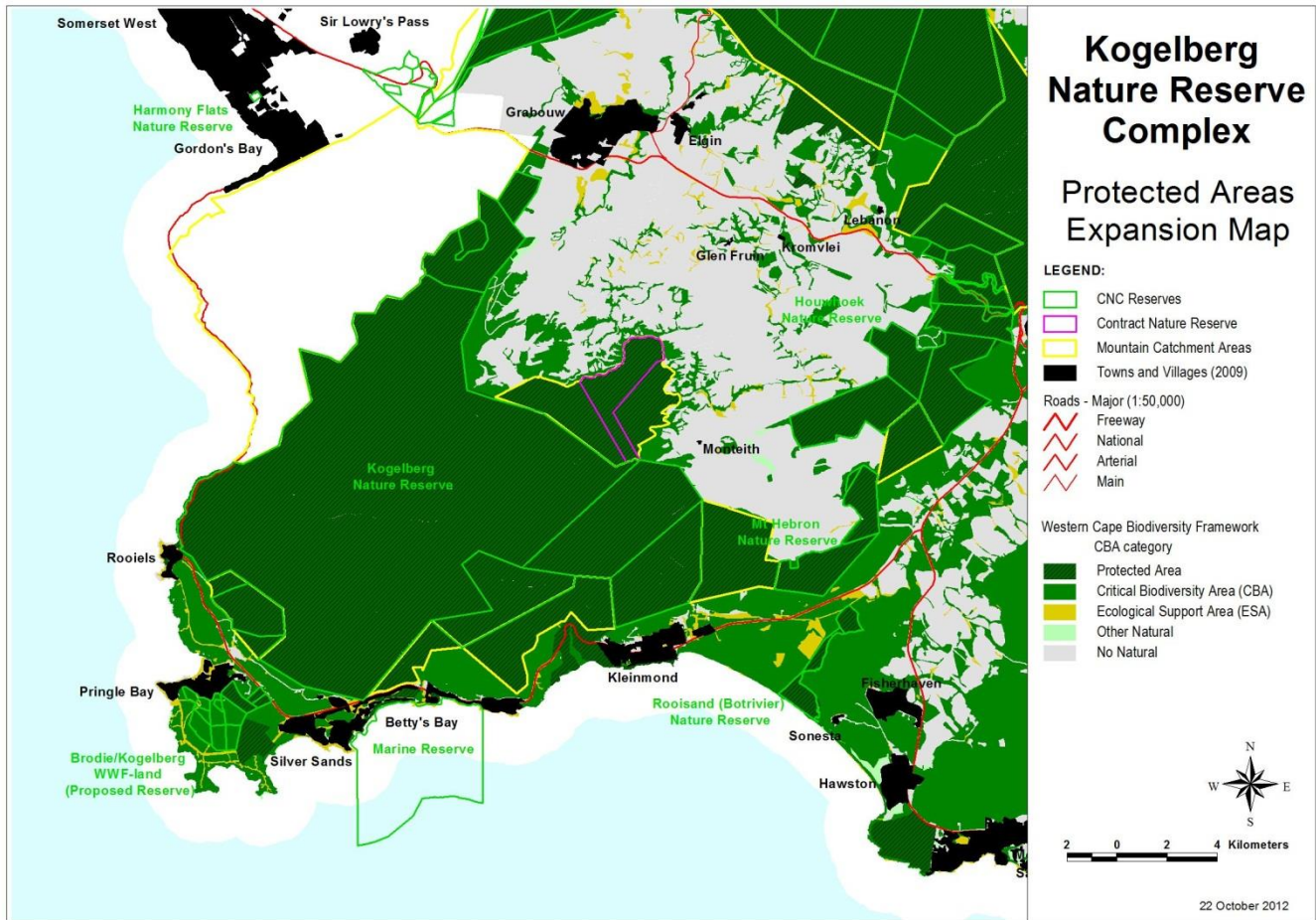
The Kogelberg Biosphere Reserve Company has facilitated the drafting of a Kogelberg Biosphere Reserve Framework Plan which will be implemented from 2012. This plan has resulted in fine-scale detailed zonation of the three biosphere reserve zones as well as a slight increase in size of the biosphere reserve. These changes will be submitted to UNESCO during 2012.

### **6.3 Expansion Opportunities**

The CapeNature Protected Area Expansion Strategy document describes an implementation plan and explicit spatial targets for the next 5 year period for the Biodiversity Stewardship Programme. It also describes the current approach to land acquisition, and how explicit spatial targets and a funding and implementation strategy will be developed for this mechanism. The CapeNature Protected Area Expansion Strategy and Implementation Plan therefore provide a provincial framework for an integrated and coordinated approach to:

- the expansion of Protected Areas to allow for the protection of biodiversity and persistence of ecological services; and
- the securing of landscape corridors to facilitate climate change adaptation.

The Kogelberg Nature Reserve Complex expansion map is given in Figure 27. The properties were extracted from the CapeNature Protected Area Expansion Strategy 5 year Priority Map that are already in negotiation and with landowner consent.



**Figure 27. Proposed expansion of the Kogelberg Nature Reserve Complex.**

### 6.4 Marine Protected Area Expansion

The historical context of fragmentation in legislation and strategies regarding marine and terrestrial conservation planning has particular reference to implementation of protected area expansion. Prior to the National Spatial Biodiversity Assessment (NSBA) (Driver et al. 2004), marine habitats had never been mapped for all of South Africa's waters. There was no consensus on an approach for mapping marine habitats or even agreement that this was possible, with little spatial assessment ever having been done in the marine environment. The NSBA marine team led a series of workshops to agree on an approach and then gathered the data required to do the mapping which resulted in the mapping of 34 marine biozones. These biozones extend from the coastal zone to the end of the Exclusive Economic Zone (EEZ), which marks the end of South African waters. The status of marine ecosystems, using the marine biozones and the level of impact on those biozones, was



assessed: 65 % of marine biozones are threatened with 12 % critically endangered, 15 % endangered, 38 % vulnerable and 35 % least threatened.

MPA targets are based on underlying targets for marine bioregions. South Africa's mainland EEZ is divided into five inshore marine bioregions and four offshore marine bioregions. The most important areas for protected area expansion have been identified as the Namaqua inshore and offshore areas, the Agulhas Bank and the Prince Edwards Islands EEZ.

The NSBA Technical Report for the Marine Environment (Lombard et al. 2004) is a spatial assessment of the conservation status of selected marine biodiversity patterns in South Africa's marine environment. The scale is national and the results can be interpreted at a national scale only. It is not intended to provide fine-scale spatial solutions and it does not cover all marine biodiversity patterns nor does it address biodiversity processes. The biodiversity patterns addressed include the intertidal (both species and habitats) and the sub-tidal (abiotic sediments). Notable exceptions are fish, birds, reefs and the water column. Owing to data availability and time constraints, the study was confined to that component of marine biodiversity that can currently be mapped at a national scale and is not mobile. It acknowledges that one of the most threatened components of marine biodiversity is the fish fauna and that a separate assessment of fish conservation status is required when appropriate data have been collated in a usable format. The report is, therefore, not useful for fisheries management and does not provide information on sustainable use. It is, however, useful for improving biodiversity management in the marine environment.

An intergovernmental task team (still to be formalized) will be looking at integrating the systems and species for future MPA and MPA expansion planning and aims to develop clear objectives for each MPA and then plan expansion processes accordingly.

The CapeNature PAES will be updated to accommodate national strategy with regard to Marine Protected Area expansion and will interact with other organs of state towards contributing to the National Biodiversity Assessment (NBA, previously NSBA) to inform MPA Expansion. South Africa's MPAs are declared in terms of the Marine Living Resources Act, 1998, which is administered by the DEA: Oceans & Coast. This will be the primary informant to any MPA expansion pertaining to the Betty's Bay MPA, which forms part of the Kogelberg Nature Reserve Complex.

The aim is to expand Betty's Bay MPA by closing down the existing angling pressure.

## PART 3

### SECTION 7: STRATEGIC IMPLEMENTATION FRAMEWORK

#### 7.1 Management Programmes

##### 7.1.1 Legal Status and Reserve expansion

The Kogelberg Nature Reserve was proclaimed a mountain catchment area in October 1981 in Government Gazette No. 7824. The reserve is currently demarcated as State Forest under the Forest Act, (Act No. 122 of 1984). Legal responsibility for this total area was assigned to the Administrator of the Cape by State President's Proclamation No. 97 of 1992, in Government Gazette No. 14246 of 21 August 1992.

Rooisand Provincial Nature Reserve, established as a provincial nature reserve in terms of section 6 of the Nature Conservation Ordinance, 1974, on 25 October 2002 and proclaimed in the Provincial Gazette of 20 November 2002 by Proclamation No. 21/2002.

Brodie Link Provincial Nature Reserve, established as a provincial nature reserve in terms of Section 6 of the Nature Conservation Ordinance, 1974, on 20 February 2002 and proclaimed in the Provincial Gazette of 15 March 2002 by Proclamation No. 5/2002.

The Betty's Bay Marine Protected Area, previously titled the H.F. Verwoerd marine reserve, was originally proclaimed in terms of the Sea Fisheries Act (1973) in Government Notice No. 21948, 29 December 2000, the H.F. Verwoerd Marine Reserve was re-proclaimed in terms of the Marine Living Resources Act ("MLRA"), (Act No. 18 of 1998). In the process the name was changed to the Betty's Bay Marine Protected Area.

Farm Hangklip 559 portion 186 (WCNCB: Buffelstal) is unproclaimed and zoned agriculture.

Farm Hangklip 559 portions 115, 161, 165, 160, 163, 168, 159 and 169 (WWF-SA: Hangklip) is unproclaimed and zoned agriculture.

##### 7.1.2 Legislation

- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003) (NEM: PAA)
- National Forest Act, (Act No. 84 of 1998)
- Mountain Catchment Areas Act, (Act No. 63 of 1970)
- Marine Living Resources Act, (Act No. 18 of 1998)
- Nature Conservation Ordinance, (Ordinance No. 19 of 1974)

All parcels of land of the Kogelberg Nature Reserve Complex need to be consolidated and awarded secure conservation status in terms of the NEM: PAA.

Section 9 of the NEM: PAA recognises the following kinds of protected areas:

- Special Nature Reserves, National Parks, Nature Reserves (including Wilderness Areas) and Protected Environments
- World Heritage Sites
- Specially protected Forest Areas, Forest Nature Reserves and Forest Wilderness Areas declared in terms of the National Forests Act, (Act No. 84 of 1998)
- Mountain Catchment Areas declared in terms of the Mountain Catchment Areas Act, (Act No. 63 of 1970).

Section 38(4) of the NEM: PAA requires marine and terrestrial protected areas with common boundaries to be managed as an integrated protected area by a single management authority including:

- Any Marine Protected Areas declared in terms of the Marine Living Resources Act, (Act No. 18 of 1998) sharing a common boundary with the terrestrial protected area.

### **7.1.3 Guiding Principles**

- Reserve Management will ensure the Reserve is awarded secure legal status according to the Protected Areas Act.
- Reserve Management will ensure that the Reserve boundaries are clearly demarcated and known to local residents.
- Reserve Management shall identify and prioritise parcels of land, public and private, to be incorporated into the Reserve through an on-going systematic, defensible and socially acceptable procedure in accordance with the CapeNature Protected Area Expansion Strategy and Implementation Plan 2010-2015.
- Reserve Management shall strive to seek the incorporation of identified land parcels at the lowest possible financial, social and ecological net cost to the Reserve.
- Reserve Management shall continue to work together with private, public, and communal landowners, to enable the donation, purchase and contracting-in of conservation worthy land into the Reserve in accordance with the Cape Nature Protected Area Expansion Strategy.
- Reserve Management shall, with the co-operation of stakeholders, strive to prevent any fragmentation of the Reserve and of areas that have been identified for inclusion into the Reserve.

### **7.1.4 Management Actions**

Refer to Table 7.1

<b>7.1</b>	<b>LEGAL STATUS AND RESERVE EXPANSION</b>				
<b>Objective 1</b>	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. The KNRC has secure permanent legal conservation status in terms of NEM: PAA.	<ul style="list-style-type: none"> <li>Formalise and consolidate legal status of State Forest, and WWF leased land, WCNCB owned land and Provincial Nature Reserve, including Bettys Bay MPA and are listed in the Protected Areas Register as required by NEM:PAA.</li> </ul>	<ul style="list-style-type: none"> <li>Law Admin Manager</li> <li>Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>The KNRC is legally secure.</li> </ul>	<ul style="list-style-type: none"> <li>Year 1-5</li> </ul>	
2. The KNRC boundary is known and appropriately demarcated and secure.	<ul style="list-style-type: none"> <li>Survey boundaries for inclusion in proclamations.</li> <li>Demarcate boundaries and make sure that these are known by both the protected area management and the neighbouring community</li> <li>There are no known disputes regarding land tenure or use rights</li> <li>Potential conflicts with the local community will be addressed</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Law Admin Manager</li> <li>Community Conservation Manager</li> </ul>		<ul style="list-style-type: none"> <li>Year 1-5</li> </ul>	
3. The KNRC design (size and shape) are adequate to achieve the conservation objectives in the SMP.	<ul style="list-style-type: none"> <li>Consolidation of the KNRC, including BBMPA, Mountain Catchment Area (MCA), Stewardship and WHS extensions for optimal reserve design.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Biodiversity Manager</li> <li>Regional Ecologist</li> </ul>		<ul style="list-style-type: none"> <li>Year 1-5</li> </ul>	CapeNature Protected Area Expansion Strategy and Implementation Plan 2010-2015 (Purnell <i>et al.</i> 2010); Extension nomination for the Cape Floral Region Protected Areas World Heritage Site, Biosphere Reserve.
4. A buffer zone for the KNRC has been established.	<ul style="list-style-type: none"> <li>The buffer zones will be aligned and based on the Kogelberg Biosphere Reserve principles.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Programme Manager: Corridors, WHS and Biosphere Reserves</li> </ul>		<ul style="list-style-type: none"> <li>Year 1-5</li> </ul>	
5. To consolidate all possible land within the KNRC, as well as other identified conservation-worthy areas adjacent to and contiguous with the reserve as identified.	<ul style="list-style-type: none"> <li>Identify potential WHS extensions</li> <li>Incorporate Private Mountain Catchment into expansion plan of the KNRC.</li> <li>Identify potential stewardship agreements with the surrounding land owners.</li> <li>Maintain relationships with existing and future agreements.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Conservation Services Manager</li> <li>Programme Manager: Corridors, WHS and Biosphere Reserves</li> </ul>	<ul style="list-style-type: none"> <li>Hectares added to the conservation estate (TBD).</li> </ul>	<ul style="list-style-type: none"> <li>Year 1-5</li> </ul>	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R34 231



## **7.2 Regional Integrated Planning and Cooperative Governance**

### **7.2.1 Legislation**

When South Africa implemented the new Constitution [Constitution of the Republic of South Africa Act, (Act No. 108 of 1996)], adopted in 1996, they included a South African innovation: a chapter on 'cooperative government', which aims to ensure good relations between South Africa's three spheres of government.

- Intergovernmental Relations Framework Act, (Act No. 13 of 2005).

It is therefore essential that co-operative relationships are maintained and improved with all spheres of government and stakeholders and that all directly or indirectly contribute to the attainment of the vision and objectives of the Kogelberg Nature Reserve Complex. The same applies to regional planning and initiatives within the Province.

### **7.2.2 Guiding Principles**

- Reserve Management shall co-operate with national, provincial and local government and stakeholders in strategic conservation initiatives aimed at conserving conservation-worthy areas adjacent, or related, to the Reserve.
- Reserve Management, together with relevant authorities, shall strive to integrate planning and development in areas of their respective control.
- Reserve Management shall, in co-operation with the local and provincial authorities, strive to avoid further fragmentation of contiguous natural areas within and adjacent to the Reserve.
- Reserve Management shall co-operate with other conservation initiatives adjacent to the Reserve, especially where these are contiguous with the Reserve.

### **7.2.3 Management Actions**

Refer to Table 7.2.

<b>7.2</b>	<b>REGIONAL INTEGRATED PLANNING AND COOPERATIVE GOVERNANCE</b>				
<b>Objectives 1</b> <b>Objectives 3</b>	<ul style="list-style-type: none"> <li>• To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</li> <li>• To implement effective Integrated Catchment Management in the KNRC.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. The KNRC is integrated into land-use planning outside of the nature reserve.	<ul style="list-style-type: none"> <li>• Integrate with the SDFs and IDP's of the district and local municipalities as well as the Kogelberg Biosphere Reserve Framework Plan.</li> <li>• Integrate with the Kogelberg management framework.</li> <li>• Identify projects to be include in the local IDP's.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Conservation Services Manager</li> <li>• Community Conservation Manager</li> <li>• Biodiversity Mainstreamer</li> </ul>	<ul style="list-style-type: none"> <li>• The protected area is integrated into land-use planning outside of the protected area</li> </ul>	<ul style="list-style-type: none"> <li>• Year 1</li> </ul>	Kogelberg Biosphere Reserve framework plan.
2. Water-use planning outside the KNRC takes into account the objectives of the nature reserve.	<ul style="list-style-type: none"> <li>• Attend regular meetings with the Groenland Water User's Association.</li> <li>• Attend TMG Aquifer management meetings</li> <li>• Integrate with Palmiet Catchment management plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> </ul>		<ul style="list-style-type: none"> <li>• Year 1</li> </ul>	Palmiet Catchment management plan (2000).
3. Establish a functioning Advisory committee for the KNRC.	<ul style="list-style-type: none"> <li>• Improve representivity of established PAAC to include all role players.</li> <li>• PAAC is meeting as required to provide input and advice into the management of the KNRC.</li> <li>• Maintain partnerships with KOBIO and Kogelberg Marine Working Group.</li> </ul>	<ul style="list-style-type: none"> <li>• Community Conservation Manager</li> <li>• Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Advisory committee for the KNRC has been established, is functioning and effective.</li> </ul>	<ul style="list-style-type: none"> <li>• Year 1</li> </ul>	Ref Section 10.1.3; Proper administrations of protected areas Regulations, 2012 (Notice 105 of Government Gazette No. 35019)

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R342 313

### **7.3 Ecosystem and biodiversity management**

Conserving biodiversity is vital, not only in terms of its intrinsic values but because many economic activities are based on healthy and functioning natural ecosystems. Any use of natural resources must be sustainable and the conservation and management of biodiversity is essential for the maintenance of natural ecosystems.

#### **7.3.1 Legislation**

Although all legislation mentioned in Part 1 can be applied, the following is specific to the conservation of biodiversity:

- National Environmental Management Act, (Act No. 107 of 1998)
- National Environmental Management Biodiversity Act, (Act No. 10 of 2004)
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)
- Conservation of Agricultural Resources Act, (Act No. 43 of 1983)
- Sea Birds and Seals Protection Act, (Act No. 46 of 1973)
- Western Cape Nature Conservation Board Act, (Act No. 15 of 1998)
- Nature Conservation Ordinance, (Ordinance No. 19 of 1974)
- Threatened or Protected Species Regulations, 2007
- Alien and Invasive Species Regulations, 2009 (still in draft form)
- CITES Regulations, 2009
- NEM:PAA, (Act No. 57 of 2003) Regulation 99: Proper administration of nature reserves (Government Gazette No. 35021 February 2012).
- Norms and Standards for the compilation of Biodiversity Management Plans for Species (BMP-s) in terms of. NEM: BA
- Norms and Standards for the management of protected areas in South Africa (still in draft) ) in terms of NEM: PAA

#### **7.3.2 Guiding Principles**

- Biodiversity resources must be conserved at community and species levels in the long term and the reduction of population levels of individual species, or the extinction of any species, as a result of human activity, must be prevented.
- Adequate management attention must be given to maintaining and improving, where relevant, the status of endemic, rare or threatened species (species of conservation concern).
- The unintentional introduction into the reserve of all plants or plant materials must be controlled.
- An active adaptive management, minimum intervention approach, based on scientific evidence will be followed.
- Management actions must ensure that the KNRC is managed according to the high standards of a World Heritage Site and as core of the Kogelberg Biosphere Reserve.
- The quantity, quality and reliability of water required to maintain the ecological functions on which humans depend shall be reserved so that the human use of water does not individually or cumulatively compromise the long term sustainability of aquatic and associated ecosystems.

- Water quality and quantity are interdependent and shall be managed in an integrated manner, which is consistent with broader environmental management approaches.
- Water quality management options shall include the use of economic initiatives and penalties to reduce pollution; and the possibility of irretrievable environmental degradation as a result of pollution shall be prevented.
- Water resource development and supply activities shall be managed in a manner which is consistent with the broader national approaches to environmental management.
- Water management issues must be integrated into local catchment management authorities' activities.
- The knowledge base available to the reserve will be promoted and developed to support applied and other research.
- Research cooperation and collaboration partnership will be established and maintained.
- All research carried out on CapeNature reserves require permits.

### **7.3.3 Threats to Biodiversity and Ecosystems**

- Climate change
- Unseasonal, large and too frequent wildfires
- Alien species
- Uncontrolled access and unsustainable utilisation
- Surrounding land use pressures and bad management practices
- Illegal harvesting
- Unsustainable harvesting of natural resources
- Ground water abstraction
- Unsustainable water demand and inter-basin transfer
- Loss of habitat and increased competition due to invasive alien fauna and flora

### **7.3.4 Management Actions**

Refer to Table 7.3.

7.3	ECOSYSTEM AND BIODIVERSITY MANAGEMENT				
Objective 2 Objective 3	<ul style="list-style-type: none"> <li>• To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the KNRC.</li> <li>• To implement effective Integrated Catchment Management in the KNRC.</li> </ul>				
Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
1. Compile an Ecological Plan of Operation and Ecological Matrix for KNRC.	<ul style="list-style-type: none"> <li>• Compile an Ecological Plan of Operations to support the Ecological Matrix.</li> <li>• Collate all relevant monitoring and research protocols and data sheets to inform the Ecological Plan of Operations.</li> <li>• Develop and implement an approved Ecological Matrix for the KNRC.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>	<p>The KNRC will annually indicate an upward trend in METT-SA score.</p> <p>100% of actions identified in the integrated auditing system will be implemented.</p>	Annually	Baseline data collection and monitoring manual (2010)
2. A biodiversity resource inventory for the KNRC is in place.	<ul style="list-style-type: none"> <li>• Prioritisation of species for inclusion on the Ecological Matrix.</li> <li>• Compile and implement the Ecological Matrix</li> <li>• Collect specimens (where relevant) and submit to Scientific Services.</li> <li>• Analyse data, re-assess and implement adaptive management strategies.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>		Annually	
3. A monitoring programme for the KNRC is being implemented.	<ul style="list-style-type: none"> <li>• Review monitoring protocols.</li> <li>• Identify monitoring needs of the reserve in consultation with Scientific Services.</li> <li>• Establish indicators for monitoring.</li> <li>• Implement monitoring activities as per the Ecological Matrix.</li> <li>• Report on monitoring activities as per the Ecological Matrix.</li> <li>• Analyse data, re-assess and implement adaptive management strategies.</li> <li>• Implement monitoring programmes as per ecological matrix.</li> <li>• Implement rare plant species monitoring.</li> <li>• Collection of climatic data on the KNRC.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>		Annually	
4. A research programme for the KNRC is being implemented.	<ul style="list-style-type: none"> <li>• Identify research needs for the reserve.</li> <li>• Develop and implement an applied research programme for the reserve in consultation with Scientific Services.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>		Annually	

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	<ul style="list-style-type: none"> <li>Results of research projects are fed back to the management of the reserve.</li> <li>Results are used to adapt management of the nature reserve where relevant.</li> </ul>				
5. The KNRC contributes to the maintenance of ecosystem services.	<ul style="list-style-type: none"> <li>Design and implement appropriate fire (Refer to Table 7.5) and alien invasive management (Refer to Table 7.6) programmes to ensure sound catchment management.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Catchment Manager</li> <li>Regional Ecologist</li> </ul>		Annually	
6. Prevent and mitigate soil erosion on the KNRC.	<ul style="list-style-type: none"> <li>Conduct a soil erosion assessment.</li> <li>Map and ensure photos are available.</li> <li>Compile an erosion maintenance plan.</li> <li>Monitor the affectivity of the erosion control mitigation.</li> <li>Monitor cost effectiveness of maintenance.</li> <li>Monitor site recovery.</li> <li>Conduct a roads and footpath assessment.</li> <li>Close and rehabilitate inappropriate roads within the reserve and re-design road networks where applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>		Annually	
7. Mitigate the impacts of river water abstraction on the reserve.	<ul style="list-style-type: none"> <li>Monitor river water abstraction on the KNRC.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>		Annually	Palmiet Catchment management plan
8. Conserve and protect rivers.	<ul style="list-style-type: none"> <li>Conduct SASS monitoring on the Palmiet River in conjunction with Scientific Services.</li> <li>To prevent future permanent infrastructure within the determined 1: 100 year flood line (where it is not known it must be determined by a qualified person).</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Scientist: Aquatic</li> </ul>		Annually	South African River Scoring System
9. Rehabilitate and conserve wetlands.	<ul style="list-style-type: none"> <li>To prevent future permanent infrastructure within the determined 1: 100 year flood line (where it is not known it must be determined by a qualified person).</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Scientist: Aquatic</li> </ul>		Year 1-5	Working Wetlands protocols for



Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	<ul style="list-style-type: none"> <li>The presence of CBA and/or FEPA wetlands should be verified in order to update these layers in the mapping process for the Fine Scale Planning and NFEPA program maps.</li> <li>Identify wetlands and seeps potentially impacted by groundwater abstraction.</li> <li>Investigate appropriate monitoring strategy for wetlands and seeps.</li> <li>Identify and prioritise wetlands that require future rehabilitation (use appropriate norms and standards to rehabilitate).</li> <li>Close, rehabilitate roads within wetland areas and re-design road networks where applicable.</li> </ul>				
10. Ensure effective management of estuaries.	<ul style="list-style-type: none"> <li>Implement the Bot River Estuary Management Plan.</li> <li>No future permanent infrastructure within the determined 1: 100 year flood line (where it is not known it must be determined by a qualified person). In the absence of the determined 1:100 year flood line the 5m contour line will act as a surrogate.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Programme Manager: MPA. Islands and Estuaries</li> </ul>		Annually	Bot River estuary management plan
11. Conserve, protect and manage Marine Protected Areas (MPA).	<ul style="list-style-type: none"> <li>Implement the Betty's Bay MPA management plan.</li> <li>Revise the MPA management plan when necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Programme Manager: MPA. Islands and Estuaries</li> </ul>		Year 1-5	Betty's Bay management plan.
12. The protection of flora species of conservation concern.	<ul style="list-style-type: none"> <li>Monitor rare and threatened plants species.</li> <li>Monitor endangered species as listed in Nature Conservation Ordinance</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Co-ordinator</li> <li>Regional Ecologist</li> </ul>		Annually	Ecological matrix
13. Conservation of Threatened and Endemic Fauna	<ul style="list-style-type: none"> <li>Monitor Cape leopard, African penguin, Abalone, Blue crane and black oystercatcher as per ecological matrix.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Co-ordinator</li> <li>Regional Ecologist</li> </ul>		Annually	Ecological matrix

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
14. Manage consumptive utilisation of biological resources.	<ul style="list-style-type: none"> <li>To take special measures for the conservation of medicinal species including the establishment of nurseries to alleviate pressures on wild populations.</li> <li>Monitor line fishing utilisation within the BBMPA for sustainable resource management.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Co-ordinator</li> <li>Community Conservation Manager</li> </ul>		Year 1-5	CapeNature Policy on consumptive utilisation (2007).

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R5 477 006

## **7.4 Wildlife Management**

### **7.4.1 Legislation**

- Western Cape Nature Conservation Ordinance, (Ordinance 19 of 1974)
- Regulations proclaimed in terms of the Ordinance, Provincial Notice 955 of 1975.

### **7.4.2 Guiding Principles**

- Biodiversity resources of the reserve must be protected from illegal harvesting and unsustainable use.
- Re-introduction of species to the reserve is only considered if a species occurred historically and suitable habitat is still available on the reserve. Genetics of source populations is also taken into consideration to prevent 'contamination'.
- Lethal control may be used as a management tool in certain instances. This should be professionally done through a tender process. Species must be selected only through extensive research and knowledge of population dynamics.
- Damage causing wildlife/nuisance fauna shall be managed in a humane manner, through recommendation from CapeNature's Wildlife Advisory Committee and authorisation from CapeNature Executive.

### **7.4.3 Management Actions**

Refer to Table 7.4.

<b>7.4</b>	<b>WILDLIFE MANAGEMENT</b>				
<b>Objective 2</b> <b>Objective 3</b>	<ul style="list-style-type: none"> <li>• To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the KNRC.</li> <li>• To implement effective Integrated Catchment Management KNRC.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Manage escaped game from neighbouring properties (historical occurrences, extra-limital and alien species).	<ul style="list-style-type: none"> <li>• Evaluate potential impacts of escapees on the nature reserve.</li> <li>• Implement appropriate measures to manage escapees.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Conservation Services Manager</li> <li>• Programme Manager: Wildlife</li> </ul>	Species specific. To be determined as required.	Ongoing	Game Translocation and Utilisation Policy for the Western Cape Province (2011)
2. Manage damage causing/ nuisance fauna.	<ul style="list-style-type: none"> <li>• Comment on permit applications from neighbouring landowners to remove game.</li> <li>• Lethal control of problematic seals to protect endangered African penguin colony at Stony Point Nature Reserve.</li> <li>• Trap problematic Baboons and management as per policy.</li> <li>• Trap and manage feral dogs.</li> <li>• Manage pets kept by staff on the reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Conservation Services Manager</li> <li>• Programme Manager: Wildlife</li> </ul>		Ongoing	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R34 231

## **7.5 Fire Management**

The overall goals of fire management in the Western Cape are as follows:

- The maintenance of the optimum levels of biodiversity in all regions managed either directly or indirectly by CapeNature.
- The conservation of all natural processes within the Fynbos Biome.
- The conservation of hydrological systems that deliver a sustained yield of stream flow in all Mountain Catchment Areas.
- The reduction of fire risk and hazard in all protected and neighbouring areas.

The aims of fire management include:

- The maintenance of fire as a vital ecological process in fynbos ecosystems.
- The integration of Fire Management into programmes aimed at the reduction and control of invasive alien plant species.
- The minimisation of the occurrence and extent of ecologically undesirable or otherwise potentially damaging wildfires.

### **7.5.1 Legislation**

- National Veld and Forest Fire Act, (Act No. 101 of 1998)
- National Forests Act, (Act No. 84 of 1998)

### **7.5.2 Guiding Principles**

- Fire management in CapeNature is governed by the Fire Management Policy and Guidelines Version 6 (Erasmus 2010).
- Prescribed burning will be used when and where appropriate to achieve ecological goals.
- Unplanned wildfires that occur in areas where they could have undesirable ecological effects will be suppressed or controlled where possible.
- Fires that threaten neighbouring property will also be controlled where possible.
- Unplanned wildfires that occur in areas where they will do no ecological or other harm can or may be allowed to burn, provided that safety concerns and the relevant threshold of potential concern (TPC) are not compromised.
- Fire protection measures and resources (equipment, trained personnel, fire-breaks etc) must be maintained at optimal levels of suitability and affectivity at all times.
- Reserve Management will implement integrated fire and alien vegetation management to limit the proliferation of fire adapted alien vegetation and facilitate the alien vegetation control programmes.
- Reserve Management will establish partnerships with neighbours and other role-players through agreements and membership of Fire Protection Associations (FPA).

### **7.5.3 Management Actions**

Refer to Table 7.5.

<b>7.5</b>	<b>FIRE MANAGEMENT</b>				
<b>Objective 2</b> <b>Objective 3</b>	<ul style="list-style-type: none"> <li>• To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the KNRC.</li> <li>• To implement effective Integrated Catchment Management in the KNRC.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Reduce and prevent the spread of fires, when possible, across the Reserve's boundaries, and minimize accidental and deliberate fires within the reserve.	<ul style="list-style-type: none"> <li>• Update and implement Fire Protection and Reaction Plans including risk assessments.</li> <li>• Construct priority firebreaks according to schedule.</li> <li>• Assess appropriateness of current firebreak network and re-align where appropriate.</li> <li>• Negotiate firebreak agreement with neighbours where relevant.</li> <li>• Fuel reduction around infrastructure to minimise risk.</li> <li>• Conduct a pre-fire season fire audit.</li> <li>• Fire Reports completed.</li> <li>• Mapping of all fires and capture on GIS.</li> <li>• De-briefing sessions held after each fire and records kept.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Catchment Manager</li> </ul>	<p>Reserve has a minimum pre-fire season audit score of 90% by Year 5.</p> <p>The distribution and range of veld age is within the limits of acceptable change (TBD).</p>	Annually	Fire Management Policy and Guidelines; Fire break register; ICM APO
2. To allow for natural fire processes to occur without negatively impacting on safety and infrastructure.	<ul style="list-style-type: none"> <li>• Simulate natural burning cycle through prescribed burning to create protective corridors.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Catchment Manager</li> </ul>		Year 1-5	Fire Management Policy and Guidelines.
3. Establish and maintain partnerships to improve fire management on the KNRC.	<ul style="list-style-type: none"> <li>• Attend local FPA meetings.</li> <li>• Maintain firebreak agreements with neighbouring landowners.</li> <li>• Attend pre-fire season meetings with local Fire &amp; Rescue Services.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> </ul>		Annually	Fire Management Policy and Guidelines; FPA operational rules and guidelines.
4. Determine and implement thresholds of potential concern for fire management on the KNRC.	<ul style="list-style-type: none"> <li>• Establish a series of fixed point photograph monitoring plots.</li> <li>• Conduct permanent <i>Protea</i> plot monitoring.</li> <li>• Conduct post fire regeneration monitoring.</li> <li>• Set and monitor TPC's.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>		Annually	Fire Management Policy and Guidelines; Baseline data collection and Monitoring Manual; Ecological Matrix.
5. Wildfires as a result of human negligence are reduced.	<ul style="list-style-type: none"> <li>• Create a fire awareness programme for tourists, local communities and staff through the Firewise initiative.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> </ul>		Year 1	Fire Management Policy and Guidelines; Fire wise Implementation Guidelines

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R2 053 877



## **7.6 Invasive and Non-invasive Alien Species Management**

### **7.6.1 Legislation**

Although most legislation mentioned in Section 2.1 can be applied, the following is specific to the eradication of alien and invasive species:

- Section 64 to 77 of the National Environmental Management: Biodiversity Act, (Act No. 10 of 2004).

It must be noted that Section 77 of the National Environmental Management: Biodiversity Act, (Act No. 10 of 2004) states the following: The management authority of a protected area must at regular intervals prepare and submit to the Minister or the MEC for Environmental Affairs in the Province a report on the status of any listed invasive species that occurs in that area.

A status report must include -

- a detailed list and description of all listed invasive species that occur in the protected area
- a detailed description of the parts of the area that are infested with listed invasive species;
- an assessment of the extent of such infestation; and
- a report on the efficacy of previous control and eradication measures.

- Conservation of Agricultural Resources Act, (Act No. 43 of 1983): Amendments published in the Government Gazette Vol. 429, No 22166 of 30 March 2001.

### **7.6.2 Guiding Principles**

- Maintain the integrity of local species biodiversity by prohibiting and, as far as possible, preventing the introduction of alien and invasive species.
- Discourage the keeping of domestic animals within and from entering the Reserve from surrounding areas. Removal of alien and invasive species must be performed in a cost-effective manner.

### **7.6.3 Management Actions**

Refer to Table 7.6.

<b>7.6</b>	<b>INVASIVE AND NON-INVASIVE ALIEN SPECIES MANEGEMEMNT</b>				
<b>Objective 1</b> <b>Objective 2</b> <b>Objective 3</b>	<ul style="list-style-type: none"> <li>• To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</li> <li>• To ensure effective conservation of species and processes by maintaining and improving ecosystem functioning in the KNRC.</li> <li>• To implement effective Integrated Catchment Management in the KNRC.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
<b>Invasive Alien Flora</b>					
1. Eradicate alien and invasive species within the KNRC on an on-going basis.	<ul style="list-style-type: none"> <li>• Identify and map all alien and invasive flora within the KNRC or threatening the Reserve.</li> <li>• Integrated Catchment Management informs both fire and alien vegetation management.</li> <li>• Compile a Management Unit Clearing Plan using the IAP prioritisation map.</li> <li>• Implement APO as approved.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>	100% of hectares IAP's cleared annually versus planned.  % total area cleared where IAP's have been controlled to a maintenance phase by Year 5 (TBD).	Annually	Ecological matrix
2. Monitoring of alien vegetation on the KNRC informs adaptive management strategies.	<ul style="list-style-type: none"> <li>• Monitor management effectiveness to identify areas in maintenance phase.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> </ul>		Annually	Ecological matrix
3. Implement biological control as a method of IAP management.	<ul style="list-style-type: none"> <li>• Identify potential biological control sites and prioritise accordingly.</li> <li>• Biological control sites mapped and updated.</li> <li>• Implement new and supplement existing biological control.</li> <li>• Monitor success of biological control.</li> <li>• Ensure accurate record keeping of biological control data.</li> <li>• Ensure biological control site security.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Co-ordinator</li> <li>• Regional Ecologist</li> </ul>		Year 1-5	Ecological matrix CapeNature Bio Control Strategy
4. Prevent the introduction of alien and invasive species from neighbouring landowners.	<ul style="list-style-type: none"> <li>• Ensure surrounding landowners are aware of relevant legislation.</li> <li>• Eradication and control of infestations where necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>		Ongoing	Working for Water and Dept Agriculture LandCare Guidelines
<b>Invasive Alien Fauna</b>					
5. Prevent the introduction of alien and invasive species.	<ul style="list-style-type: none"> <li>• Implement the guidelines with regards to domestic animals within the reserve.</li> <li>• Tourists not permitted to bring in any domestic animals into the reserve.</li> <li>• No introduction of alien fish species</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>	100% of hectares IAP's cleared annually versus planned.  % total area cleared where IAP's have been controlled to a maintenance phase by Year 5 (TBD).	Ongoing	CNC Policy on domestic animals on nature reserves Distribution of freshwater fish policy

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	into all river systems.				
6. Control alien and invasive species within the KNRC.	<ul style="list-style-type: none"> <li>Identify alien fauna occurring on the reserve.</li> <li>Monitor populations of alien fauna on the reserve.</li> <li>Implement control measures where appropriate.</li> <li>Measure success of control methods utilised.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Co-ordinator</li> <li>Regional Ecologist</li> </ul>		Ongoing	CNC Policy on domestic animals on nature reserves SASS methodology Distribution of freshwater fish policy

Budget Allocation	Development	R0
	Operation (5 Year Forecast)	R15 404 079

## **7.7 Cultural Heritage Resource Management**

### **7.7.1 Legislation**

- National Heritage Resource Act, (Act No. 25 of 1999) which has repealed the National Monuments Act, (Act No. 28 of 1969)
- World Heritage Convention Act, (Act No. 49 of 1999)

### **7.7.2 Guiding Principles**

- Reserve Management will seek to respect, protect and promote the natural and cultural heritage resources of the reserve.
- Cultural Heritage referred to in the Management Plan includes cultural, historical, archaeological and paleontological resources.

### **7.7.3 Management Actions**

Refer to Table 7.7.

<b>7.7</b>	<b>CULTURAL HERITAGE RESOURCE MANAGEMENT</b>				
<b>Objective 4</b> <b>Objective 6</b>	<ul style="list-style-type: none"> <li>• To develop and maintain relevant functional partnerships for the KNRC.</li> <li>• To effectively conserve our cultural heritage attributes in the KNRC.</li> </ul>				
<b>Key Deliverable</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. To protect cultural heritage resources.	<ul style="list-style-type: none"> <li>• Compile and maintain a cultural heritage resource inventory for the KNRC.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Heritage assets and values being managed consistent to objectives</li> </ul>	Year 1	<ul style="list-style-type: none"> <li>• SAHRA</li> <li>• Ecological matrix</li> </ul>
2. Cultural Heritage resources are managed to meet the protected area objectives.	<ul style="list-style-type: none"> <li>• Compile a Cultural Heritage Resource Management Plan for the KNRC and determine management priorities.</li> <li>• Implement the Cultural Heritage Resource Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>		Year 5	
3. Monitor cultural heritage resources.	<ul style="list-style-type: none"> <li>• Monitoring and control access to cultural heritage sites: Graves (Stokoe), mud brick houses (Oudebosch and Houw Hoek) and Strandloper cave (Rooiels River kloof).</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> </ul>		Ongoing	
4. Management interventions for cultural heritage resources.	<ul style="list-style-type: none"> <li>• Implement cultural resource management plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>		Year 5	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R34 231

## **7.8 Law Enforcement and Compliance**

### **7.8.1 Legislation**

- National Environmental Management Act, (Act No. 107 of 1998)
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)
- National Environmental Management: Biodiversity Act, (Act No. 10 of 2004)
- Threatened or Protected Species (ToPS) Regulations, 2007
- Marine Living Resources Act, (Act No. 18 of 1998)
- Government Notice R1111 of 1998 - Marine Living Resource Regulations
- National Environmental Management: Integrated Coastal Management Act, (Act No 24 of 2008).
- Sea-shore Act, (Act No 21 of 1935).
- Western Cape Nature Conservation Ordinance, (Ordinance 19 of 1974)
- Regulations proclaimed in terms of the Ordinance, Provincial Notice 955 of 1975.
- Proclamation 357 of 1972, Fish and Rivers Regulations.

Also the provisions of the Bill of Rights detailed in Chapter 2 in the Constitution, No. 108 of 1996, as well as the provisions of the Criminal Procedure Act, (Act No. 51 of 1977), are also important when performing law enforcement actions.

### **7.8.2 Guiding Principals**

- Reserve Management and personnel will ensure that all law enforcement actions are executed in a fair, reasonable and objective manner, with due respect for Human Rights and in accordance with applicable Law.
- Reserve Management and personnel will identify and prioritise sensitive areas and species and prioritise law enforcement patrols accordingly, in order to ensure that resources are allocated in the most efficient and effective manner.
- Reserve Management and personnel will partner with local law enforcement role-players, such as SAPS, local authorities and Oceans and Coasts, in order to effectively utilise resources to combat biodiversity crime within the protected area.
- Reserve Management will liaise with adjacent communities, in conjunction with relevant components, in order to identify and prioritise areas of natural and cultural heritage significance, in order to effectively manage impacts and to prevent illegal activities in these areas.

### **7.8.3 Management Actions**

Refer to Table 7.8.



<b>7.8</b>	<b>LAW ENFORCEMENT AND COMPLIANCE</b>				
<b>Objective 1</b>	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Law enforcement for the KNRC is effective.	<ul style="list-style-type: none"> <li>Ensure that all staff must have a working knowledge of all legislation applicable to their function and mandate.</li> <li>Capacitate all staff to enforce legislation within the organisation's mandate and does so effectively.</li> <li>Appropriate staff have been designated as environmental management inspectors.</li> <li>Ensure that adequate law enforcement support from other sections of the organisation is received.</li> <li>Local policing forum meetings are attended in priority areas in order to build partnerships with local law enforcement.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Conservation Services Manager</li> <li>Programme Manager: Biodiversity Crime Unit (BCU)</li> </ul>	<ul style="list-style-type: none"> <li>Number of peace officers trained and appointed</li> <li>Number of EMI's trained and appointed.</li> <li>Number of sea fisheries officers trained and appointed.</li> </ul>	Year 1-5	<ul style="list-style-type: none"> <li>Approved Fine list</li> </ul>
2. Protection systems are in place and operating effectively.	<ul style="list-style-type: none"> <li>Develop and implement standard operating procedures to control activities within the nature reserve for relevant aspects of management.</li> <li>Awareness raising activities are held with adjacent communities in order to raise awareness concerning reserve and biodiversity conservation.</li> <li>Regular routine patrols are performed in all identified priority areas.</li> <li>All compliance documentation is properly completed and retained as Means of verification.</li> <li>Reported relevant legal cases via Biodiversity Monitoring System (BMS) with verification.</li> <li>Monitor incidences to identify trends.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Conservation Services Manager</li> <li>Programme Manager: BCU</li> <li>Community Conservation Manager</li> </ul>		Year 1-5	<ul style="list-style-type: none"> <li></li> </ul>

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R4 107 754

## **7.9 Infrastructure Management**

### **7.9.1 Legislation**

- Occupational Health and Safety Act, (Act No 85 of 1993)
- Water Services Act, (Act No.108 of 1997)
- National Water Act, (Act No. 36 of 1998)
- Constitution of the Republic of South Africa (1996)
- Water Services Act, (Act No. of 1997)
  - The management of sewage sludge is currently regulated by this Act.
- National Environmental Management Act, (Act No. 107 of 1998) (NEMA)
  - NEMA increases the ambit of people who can be held responsible for pollution damage from not only any person, company or government department causing pollution, to any person, company or department owning, using or controlling the land on which the problem exists - even if the pollution causing activity was authorised by law.
- White Paper on Integrated Pollution and Waste Management, 1998
- White Paper on the Energy Policy of the Republic of South Africa (approved by Cabinet on 2 December 1998)

### **7.9.2 Guiding Principles**

- Infrastructure management includes the planning, construction, maintenance, replacement, control and monitoring of all fixed structures, equipment and other moveable assets.
- Reserve management will strive to improve systems so as to reduce costs and negative impacts on the physical environment.
- Ensure that future developments within the Reserve are socially, environmentally and economically sustainable.
- Reserve Management will strive to phase out all French drains, pit latrines and other sewerage disposal systems on the reserve.
- Environmental management includes waste, dumping sites, potable water, water systems, sewage systems and herbicide and fuel stores.

### **7.9.3 Infrastructure Maintenance**

#### **7.9.3.1 Roads/Jeep Tracks**

Access roads within the Kogelberg Nature Reserve are mainly vehicle track roads that are usually only negotiable by means of a 4x4 vehicle, especially during the wet season. Due to the high risk of erosion of soils in the region the grading of management roads is not allowed. In many instances cement track roads were constructed at key areas and the aim is to extend these to as many frequently used management roads practically and financially possible.

#### **7.9.3.2 Trails**

A 50km network of footpaths provides day access to the nature reserve while mountain biking is permitted on specific management tracks in the Palmiet River Valley. At Rooisand, a short bridal trail follows the Bot River estuary shoreline.

### 7.9.3.3 Buildings

All buildings on the Kogelberg Nature Reserve Complex are listed in Table 13.

**Table 13. Buildings on the KNRC.**

Location	Type of building	Size m <sup>2</sup>
Oudebosch	Office, 6 room	100
Oudebosch	Garage, (Store) & Abultion	40
Oudebosch	Gate House, Oudebosch	20
Oudebosch	Residential House, Oudebosch	120
Pringle Bay	Residential House, Brodie-Link	60
Pringle Bay	Residential House, Brodie-Link	60
Betty's Bay	Rondawel, Betty's Bay	10
Oudebosch	Cabin, wooden, Oudebosch	100
Oudebosch	Cabin, wooden, Oudebosch	90
Oudebosch	Cabin, wooden, Oudebosch	90
Oudebosch	Cabin, wooden, Oudebosch	90
Oudebosch	Cabin, wooden, Oudebosch	90
Oudebosch	Cabin, wooden, Oudebosch	90
Pringle Bay	Gate House, Buffelstal	20
Pringle Bay	Environmental Education facility, Buffelstal	150
Oudebosch	Entrance road, Oudebosch	10000
Kleinmond	Boardwalk, wooden, Rooisand	600
Kleinmond	Birdhide, wooden, Rooisand	40

### 7.9.3.4 Fences

All fences of the Kogelberg Nature Reserve Complex are listed in Table 14.

**Table 14. Fencing on the KNRC.**

Location	Type of fence	Length m
Kleinmond, Rooisand	Wire strand 1.2	4000
Pringle Bay, Buffelstal	Wire strand 1.2	4000
Oudebosch, entrance	Wire strand 1.2	1000
Highlands	Wire strand 1.2	7500
Betty's Bay	Wire strand 1.2	4500
Bot River	Wire strand 1.2	2500
Monteith	Wire strand 1.2	2000

### 7.9.3.5 Environmental management

No waste disposal sites are available within the Reserve and waste disposal is carried out at registered dumping sites at the Kleinmond waste disposal transfer station. It is policy to use

primate proof dustbins at all development or other sites to prevent pollution (Refer to Waste Management Programme).

In general available water quantity is mostly sufficient to support infrastructure at different sites where domestic water is required. Water is pumped from the Palmiet River and filtered to the Oudebosch settlement. Rain water tanks and boreholes supply the Brodie Link and Buffelstal infrastructure.

Dry composting sewage systems are installed in tourism facilities while all other soak-aways currently in service are to be phased out.

The storage of fuel and oils is compliant with the Occupational Health and Safety Act. No herbicide stock is kept on the reserve.

#### **7.9.3.6 High Sites**

The proliferation of high sites for radio towers and masts is discouraged however a lease agreement with a cellular company exists at Buffelstal near Pringle Bay. Access is gate controlled.

#### **7.9.3.7 Signage**

Discrete regulatory and safety signage to inform visitors is maintained as per CapeNature standard.

#### **7.9.4 Management Actions**

Refer to Table 7.9.

<b>7.9</b>	<b>INFRASTRUCTURE MANAGEMENT</b>				
<b>Objective 1</b>	To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Ensure maintenance of infrastructure and equipment.	<ul style="list-style-type: none"> <li>Map all infrastructure and compile infrastructure register.</li> <li>Ensure that adequate infrastructure to manage the nature reserve effectively is in place (U-AMP).</li> <li>Assess if staff facilities are adequate to perform critical management activities.</li> <li>Ensure that there is adequate operational equipment as required for operational management purposes.</li> <li>Maintain Infrastructure as scheduled in registers to ensure upkeep and prevent degradation.</li> <li>Maintain equipment in functional condition.</li> <li>Liaise with Public Works where required.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>Serviceable infrastructure and equipment</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>User Assert Management Plan (U-AMP)(2012)</li> </ul>
2. Align all infrastructure to the conservation development framework and zonation.	<ul style="list-style-type: none"> <li>Assess infrastructure development appropriateness to the CDF.</li> <li>Compile a re-alignment plan.</li> <li>Implement the re-alignment plan.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Planner</li> </ul>	<ul style="list-style-type: none"> <li>All infrastructure is aligned to the reserve CDF and zonation.</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>CapeNature Zonation Scheme</li> </ul>
3. Roads/Jeep Tracks and Trails are managed to minimise impact on the environment.	<ul style="list-style-type: none"> <li>Conduct an assessment on the KNRC.</li> <li>Compile maintenance plan.</li> <li>Re-align road network and align with the CDF.</li> <li>Rehabilitate where necessary.</li> <li>Map burrow pits assess and rehabilitated (where required).</li> <li>Monitor use and impact of roads, jeep track and trails/footpaths.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>Serviceable infrastructure and equipment</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>User Assert Management Plan</li> <li>Policy regarding the management of radio repeater sites in the Western Cape</li> <li>CapeNature Signage manual</li> </ul>
4. Buildings are effectively maintained.	<ul style="list-style-type: none"> <li>Compile and maintain a building register.</li> <li>Provide Department of Public Works with works list to reflect maintenance requirements.</li> <li>Maintenance or new infrastructure is appropriately planned (EMP), approved by the QEM and if required the Appropriate EIA completed.</li> <li>Ensure energy saving and environmentally sound options are</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>		Ongoing	

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	being implemented by Department of Public Works (Green Building principals).				
5. Environmental Management: Waste Disposal	<ul style="list-style-type: none"> <li>Maintenance of storage bins as scheduled in registers to ensure upkeep and prevent pollution.</li> </ul>			Ongoing	
6. Environmental Management: Water	<ul style="list-style-type: none"> <li>Maintenance of water works as scheduled in registers to ensure upkeep and prevent degradation.</li> <li>Schedule regular inspections.</li> </ul>			Ongoing	
7. Environmental Management: Sewage	<ul style="list-style-type: none"> <li>Install effective environmentally friendly sewage facilities.</li> </ul>			Year 5	
8. Environmental Management: Energy	<ul style="list-style-type: none"> <li>Install energy and water saving devices and promote cost effective habits.</li> </ul>			Year 5	
9. Environmental Management: Fuel Store	<ul style="list-style-type: none"> <li>Maintenance of fuel stores for safe environmental management</li> </ul>			Ongoing	
10. Management of High Sites.	<ul style="list-style-type: none"> <li>Map and photograph all high sites for radio masts and towers.</li> <li>Monitor impacts.</li> <li>Control Access.</li> </ul>			Ongoing	
11. Signage is appropriate and effective to support management.	<ul style="list-style-type: none"> <li>Compile a signage register with maintenance schedule</li> <li>Conduct annual signage audit.</li> </ul>			Ongoing	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R342 313

## **7.10 Disaster Management**

### **7.10.1 Legislation**

- Disaster Management Act, (Act No. 57 of 2002)
- Occupational Health and Safety Act, (Act No. 85 of 1993)
- Seabirds and Seals Protection Act, (Act No. 46 of 1973)
- South African Maritime Safety Act, (Act No. 5 of 1998)

### **7.10.2 Guiding Principles**

- The first priority of disaster management is the protection of the people who are most at risk. The second priority is the protection of the critical resources and systems on which communities depend.
- Disaster prevention and preparedness should be an integral part of every development policy.
- Disaster assistance must be provided in an equitable, consistent and predictable manner in association with the Local and Provincial authorities.
- Communities, with the assistance from the Local and Provincial tiers of government and Reserve Management, must know what disaster management and risk reduction stand for, what their own responsibilities are, how they can help prevent disasters, how they must react during a disaster (and why) and what they can do to support themselves and relief workers, when necessary.

### **7.10.3 Management Actions**

Refer to Table 7.10.



<b>7.10</b>	<b>DISASTER MANAGEMENT</b>				
<b>Objective 1</b>	<b>• To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Disaster prevention and preparedness	<ul style="list-style-type: none"> <li>Conduct a risk assessment and identify areas of potential concern</li> <li>Compile and implement disaster management plan for KNRC.</li> <li>Engage and assist with disaster management units from municipalities.</li> <li>Conduct an annual audit of disaster management plans and mitigation measure readiness.</li> <li>Annual review and exercise of contingency and evacuation plans.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Chief Risk Officer</li> </ul>	Reduce risks and increased readiness and preparedness	Year 1-5	CapeNature Risk Management Policy and Strategy (2009)
2. Disaster response.	<ul style="list-style-type: none"> <li>Train staff and NGOs to ensure capacity to manage and mitigate the effects of disasters.</li> <li>Procure equipment for disaster response and mitigation.</li> <li>Participate and assist district municipality disaster management structure.</li> <li>Activate evacuation and contingency plans.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Chief Risk Officer</li> <li>Development and Training Manager</li> </ul>		Year 1-5	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R34 231

## **7.11 People and Conservation**

### **7.11.1 Legislation**

- Constitution of the Republic of South Africa, (Act No. 108 of 1996)
- National Environmental Management Act, (Act No. 107 of 1998)
- National Environmental Management Biodiversity Act, (Act No. 10 of 2004)
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)

### **7.11.2 Community Partnerships**

The long term success of the Kogelberg Nature Reserve Complex is dependent on developing a constructive, mutually beneficial relationship between the Reserve and communities resident close to or adjacent to the Reserve.

Various projects and programmes that enhance the relationship between the Reserve and the neighbouring communities are currently in progress. Expansion in partnerships with the surrounding communities of the Kogelberg Nature Reserve Complex is essential for the success of the Reserve.

### **7.11.3 Guiding Principles**

- The Kogelberg Nature Reserve Complex's contribution to the local and regional economy must be recognised and therefore will be seen as an important vehicle through which rural development and transformation is achieved.
- Promote the strong sense of ownership and empowerment amongst resident people and communities and ensure a strong supporting institutional base.
- The right to equality, a healthy environment and the right to information are to be guaranteed.
- Co-operative governance should take place between citizens and between different government departments.
- Benefits from biodiversity are to be fairly shared and the benefit flows to people in and around protected areas improved.
- The capacity of neighbouring communities should be developed in order to participate in protected area management.
- Equitable accessibility by all people to the Reserve is to be ensured.
- Community based initiatives and partnerships shall promote and support economic and employment opportunities, particularly for local disadvantaged persons and communities.

### **7.11.4 Management Actions**

Refer to Table 7.11.

7.11	<b>PEOPLE AND CONSERVATION</b>				
<b>Objective 4</b> <b>Objective 5</b>	<ul style="list-style-type: none"> <li>• To develop and maintain relevant functional partnerships for the KNRC.</li> <li>• To provide access to the KNRC for appropriate and sustainable activities.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Create access to the conservation economy through the implementation and management of appropriate initiatives and projects.	<ul style="list-style-type: none"> <li>• Create jobs through a range of projects: WfW, ICM, Rooisand and Betty's Bay MPA, fire fighting and tourism support services, (Gatekeeping, cleaning) projects.</li> <li>• Complete monthly reporting for EPWP database</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Number of EPWP job opportunities.</li> <li>• Number of EPWP full time equivalents.</li> <li>• Number of people directly benefitting from Sustainable Livelihood Programmes.</li> </ul>	Ongoing	Supply Chain Management Policy National EPWP guidelines.
2. The KNRC provides community development opportunities through various capacity building interventions, linked to job creation opportunities.	<ul style="list-style-type: none"> <li>• Provide related training.</li> <li>• Promote SMME's</li> <li>• Monitor success of interventions.</li> </ul>	<ul style="list-style-type: none"> <li>• Community Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Number of person days employment created.</li> </ul>	Ongoing	
3. Manage consumptive utilisation of biological resources.	<ul style="list-style-type: none"> <li>• Establish database indicating all utilised species and the extent of their use within the reserve.</li> <li>• All requests to utilise resources from the KNRC will be dealt with in terms of the CapeNature Policy on consumptive utilisation.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> <li>• Regional Ecologist</li> </ul>		Ongoing	CapeNature Policy on consumptive utilisation (2007). CapeNature Code of conduct for Natural Resource User Groups and western cape People and parks Steering Committee
4. The KNRC has spiritual or religious significance.	<ul style="list-style-type: none"> <li>• Access to the KNRC for spiritual, cultural and traditional purposes will be allowed subject to permit conditions and with prior approval.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Number of persons accessing CapeNature protected areas for cultural, traditional, spiritual, and sustainable harvesting activities (n).</li> </ul>	Ongoing	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R513 469

## **7.12 Awareness, Youth Development and Volunteers**

Environmental education should be actively encouraged especially in the context of developing knowledge in protected area management, especially for school children from the area. Where possible, partnerships should be established with role players and interested parties to ensure that this takes place.

Facilitate youth and community development through environmental awareness and assist in developing the knowledge, skills, values and commitment necessary to achieve sustainable development.

### **7.12.1 Legislation**

- Constitution of the Republic of South Africa, (Act No. 108 of 1996)
- National Environmental Management Act, (Act No. 107 of 1998)
- National Environmental Management Biodiversity Act, (Act No. 10 of 2004)
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)

### **7.12.2 Guiding Principles**

- Focus awareness on the protection of the natural environment and sustainable use of natural resources.
- Awareness raising tools to highlight how Natural resources inside and outside of protected areas should be sustainably used and awareness created on how to protect the environment.
- Awareness raising tools to highlight how natural resources inside and outside of protected areas should be sustainably used and awareness created on how to protect the environment.
- The image of CapeNature to be promoted among local communities, provincial and national politicians and the public.
- Reserve Management shall develop an interpretive and educational programme, which will provide each visitor with an interpretive experience that is enjoyable and inspirational, within the context of the Reserves tangible resources and the values they represent.
- Reserve Management shall provide both on- and off-site interpretive presentations and media, which facilitate a connection between the interests of the visitor and the meanings of the Reserve.
- Educational Programmes must align with the National School Curriculum.
- Opportunities to participate in National Environmental Initiatives such as Arbor Day, and Water Week should be taken where appropriate.
- Reserve Management will create an enabling environment that provides youth with opportunities for learning/training, personal growth and healing.
- The Kogelberg Nature Reserve Complex seeks to create an environment which contributes directly to the growth and development of responsible young citizens.
- Facilitate and promote the use of the natural environment for the development of youth.

- Environmental education activities will be restricted to peripheral / appropriate zones within the reserve.
- Promote the use of the Kogelberg Nature Reserve Complex as a place of self-discovery, personal growth, emotional healing, formal learning and adventure.
- Volunteers are encouraged to contribute to projects on the reserve.

### **7.12.3 Management Actions**

Refer to Table 7.12.

7.12	<b>AWARENESS, YOUTH DEVELOPMENT AND VOLUNTEERS</b>				
Objective 4 Objective 5	<ul style="list-style-type: none"> <li>• To develop and maintain relevant functional partnerships for the KNRC.</li> <li>• To provide access to the KNRC for appropriate and sustainable activities.</li> </ul>				
Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
1. Ensure awareness raising initiatives elevate awareness of the KNRC.	<ul style="list-style-type: none"> <li>• Compile information and material on KNRC for dissemination and presentation on Environmental Awareness calendar days (e.g. Heritage day, National Marine Week and Marine Protected Area Awareness, Arbour day).</li> <li>• Collaborate with partners to arrange events on Environmental Awareness events and scheduled school activities.</li> <li>• Facilitate production of media releases.</li> <li>• Present talks, presentations when requested.</li> <li>• Facilitate annual open day to promote awareness of the reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Community Conservation Manager</li> <li>• Conservation Manager</li> <li>• Programme Manager: Youth Development</li> </ul>	<ul style="list-style-type: none"> <li>• Number of learners provided with</li> <li>• environmental education opportunities (n).</li> </ul>	Ongoing	
2. Environmental education is provided to promote an understanding of biodiversity and the use of the natural environment as a vehicle for learning and development.	<ul style="list-style-type: none"> <li>• Facilitate NGO EE programmes conducted on the reserve.</li> <li>• Create awareness of World Heritage Site and Biosphere Reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Community Conservation Manager</li> <li>• Conservation Manager</li> </ul>		Ongoing	CAPE Conservation Education: Environment in the Curriculum  CAPE Conservation Education: Learning Opportunities for careers in Biodiversity Conservation
3. Volunteers actively assist in the management of the KNRC.	<ul style="list-style-type: none"> <li>• Promote volunteer initiative to support reserve management.</li> </ul>	<ul style="list-style-type: none"> <li>• Community Conservation Manager</li> <li>• Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Number of volunteer hours worked (n).</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>• Volunteer Policy</li> </ul>

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R684 626

## **7.13 Management Effectiveness**

### **7.13.1 Legislation**

- The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)
- Public Finance Management Act (PFMA), (Act No.1 of 1999).
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003)

Management effectiveness is further guided by the following documents:

- The White Paper on Transforming Public Service Delivery (Batho Pele White Paper) 1997
- Green Paper on National Performance Management (2009)
- Policy Framework for a Government-wide Monitoring and Evaluation System (2007)
- National Treasury Framework for Managing Programme Performance Information (2007)

### **7.13.2 Guiding Principals**

As a listed provincial public entity, CapeNature must comply with all the provisions of the PFMA, with particular reference to Chapter 6 thereof which deals with the responsibilities of public entities. CapeNature is subject to, and guided by, the provincial budget and strategic planning processes. In-year reporting from CapeNature comprises quarterly expenditure and revenue, earmarked funding, non-financial performance, financial normative and other reports as requested by either the Department and/or Provincial Treasury.

As Protected Area management in the Western Cape is a mandate of CapeNature, all activities in this regard are embedded into the organisation's planning and review mechanisms. CapeNature vision and value statements articulate the organisations aspirations as a quality driven public entity with of high levels of performance being a core value.

To monitor and evaluate non-financial performance of the organisation, CapeNature conforms to the following protocols: a strategic five-year plan; annual performance plan; quarterly reporting and the production of an annual report.

In addition to the above required protocols, CapeNature also implements a Performance Management System which ensures that organisational targets are embedded in individual performance contracts. This is essential as targets in the reserve management plan become specific measurable targets for individual staff members who are evaluated on them, ensuring accountability.

All monitoring and evaluation regarding Protected Area management is imbedded in CapeNature's current systems.

### **7.13.3 Management Actions**

Refer to Table 7.13.

<b>7.13</b>	<b>MANAGEMENT EFFECTIVENESS</b>				
<b>Objective 1</b>	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Implement and maintain the METT-SA	<ul style="list-style-type: none"> <li>Conduct annual METT-SA assessments.</li> <li>Monitor and improve METT-SA Score through the development of action plans and implementation thereof.</li> <li>Report to DEA as per requirement for national evaluation of METT-SA scores.</li> </ul>	<ul style="list-style-type: none"> <li>Area Manager</li> <li>Conservation Manager</li> <li>Programme Manager: Quality Management</li> </ul>	<ul style="list-style-type: none"> <li>The KNRC will annually indicate an upward trend in METT-SA score.</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>METT-SA</li> <li>CapeNature Intergrated Audited System (Draft)</li> </ul>
2. Auditing systems inform management.	<ul style="list-style-type: none"> <li>Conduct CapeNature integrated auditing system.</li> <li>Compile actions lists to address audit issues.</li> <li>Track action list for progress.</li> <li>Apply adaptive management strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Area Manager</li> <li>Conservation Manager</li> <li>Programme Manager: Quality Management</li> </ul>		<ul style="list-style-type: none"> <li>Year 1, Ongoing</li> </ul>	
3. A detailed work plan (APO) identifying specific targets for achieving management objectives is approved by CapeNature.	<ul style="list-style-type: none"> <li>Assess and prioritise actions from audit results into APO.</li> <li>Compile APO in terms of actions identified in the Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>		<ul style="list-style-type: none"> <li>Annually</li> </ul>	
4. Progress reports are compiled.	<ul style="list-style-type: none"> <li>Compile quarterly BMS progress reports.</li> <li>Progress reports as required.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> </ul>		<ul style="list-style-type: none"> <li>Quarterly</li> </ul>	
5. Implement and review the Management Plan for the KNRC.	<ul style="list-style-type: none"> <li>Assess all PAM audit results and ensure adaptive management strategies are implemented.</li> <li>Bi-annual assessment on progress of PAM actions.</li> <li>Compile annual report on the status of implementation of the PAMP and submit to the MEC.</li> </ul>	<ul style="list-style-type: none"> <li>Reserve Committee</li> <li>Programme Manager: Quality Management</li> </ul>		<ul style="list-style-type: none"> <li>Year 1, Ongoing</li> </ul>	

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R68 463



## **7.14 Administration**

### **7.14.1 Finance and Administration Management**

#### **7.14.1.1 Financial Sustainability**

Nature Reserves within South Africa are expected to provide a high level of internal and public accountability for the use of resources through the use of accounting systems. The Reserve will have to have the support of external funding from international and local authority sources over and above support received from the provincial body and the income it generates itself.

#### **7.14.1.2 Legislation**

- Public Finance Management Act, (Act No.1 of 1999).

#### **7.14.1.3 Guiding Principles**

- Ensure that the Reserve continually seeks improvements in the management of its financial resources and operations.
- Strive to develop a robust income base for the Reserve from diverse sources, while conserving the integrity of its ecological, cultural, and scenic resources.
- Support initiatives aimed at increasing grant funding and donations to the Reserve.
- Assess opportunities for donor funding within the reserve, evaluate appropriate donor funding organisations for projects, establish and manage contacts with such organisations and maintain relationships with potential and existing donor organisations.
- Seek, and where possible create, opportunities for economic empowerment and the involvement of Small, Medium and Micro Enterprises (SMMEs) in developing public private partnerships in commercial activities.
- Apply, and be subject to, sound and transparent financial policies and practices, and make available detailed information about its income, expenditure and budgets, as well as about the assumptions upon which such budgets are based.
- Financial management will be within the parameters of the PFMA, Treasury regulations and internal policies of CapeNature e.g. Supply Chain Management, delegation of powers, etc.
- Charge appropriate fees for the use of the reserve's utilisable zones by tourists and operators.

#### **7.14.1.4 Management Actions**

Refer to Table 7.14.1.

7.14.1	<b>FINANCE AND ADMINISTRATION MANAGEMENT</b>				
Objective 1	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
1. To ensure financial accountability in terms of the PFMA and the Treasury Regulations.	<ul style="list-style-type: none"> <li>Facilitate an annual internal audit of the nature reserve financial records. Internal audit report with findings and recommendations is tabled.</li> <li>External audit report with findings and recommendations communicated.</li> <li>Provide relevant financial information to reserve management.</li> <li>An operational budget is allocated to fund the critical management needs of the nature reserve.</li> <li>Cash flow management</li> <li>Supply Chain Management</li> <li>Relevant SCM reports.</li> <li>Financial management practice enables efficient and effective protected area management.</li> <li>Monthly management reports submitted to reserve management.</li> <li>Acknowledgement of report by Conservation Manager.</li> <li>Variance report signed and returned.</li> <li>Reserve Management provide input to monthly cash flow forecast.</li> <li>Signed and approved budget provided by 1 April.</li> </ul>	<ul style="list-style-type: none"> <li>Financial &amp; Admin Manager</li> <li>Conservation Manager</li> </ul>	<ul style="list-style-type: none"> <li>Percentage increase shown on revenue as a result of additional funding sourced.</li> <li>Annual increase in visitor numbers.</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>Budgeting process; APO. SAP system; Supply Chain Management Policy. Statements of GRAP.</li> </ul>
2. Identify opportunities that are robust to create a diverse income base.	<ul style="list-style-type: none"> <li>Identify sources of potential income.</li> <li>Maintain new and existing partnerships with external funders / stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Ecological Planner</li> <li>Tourism Officer</li> </ul>		Annually	<ul style="list-style-type: none"> <li>National Treasury Regulations with regard to Donations, Sponsorships.</li> </ul>
3. Fixed Asset Management	<ul style="list-style-type: none"> <li>Manage the assets of the reserve in accordance with the relevant legislation.</li> <li>Ensure that all reserve assets are bar coded.</li> <li>Ensure that all reserve assets are verified bi-annually.</li> <li>Provide input into infrastructure asset management plan annually.</li> </ul>	<ul style="list-style-type: none"> <li>Financial &amp; Admin Manager</li> <li>Conservation Manager</li> </ul>		Bi-annually / monthly	<ul style="list-style-type: none"> <li>SOG's and policies. Statement of GRAP, UAMP guidelines.</li> </ul>

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	<ul style="list-style-type: none"> <li>Fixed Asset Register is approved by the Conservation Manager.</li> <li>Verification Report is approved by the reserve management.</li> <li>Disposal of assets in line with policies.</li> <li>GIAMA requirement is met annually.</li> <li>Trip authorisation forms in place.</li> <li>Manage CapeNature and Government Motor Transport assets in accordance with policy.</li> </ul>				
4. Capacity Building among staff.	<ul style="list-style-type: none"> <li>Provide relevant financial and Administrative training to reserve staff.</li> </ul>	<ul style="list-style-type: none"> <li>Financial &amp; Admin Manager</li> <li>Conservation Manager</li> <li>Development and Training Manager</li> </ul>		Annually	<ul style="list-style-type: none"> <li>SOP's and policies</li> <li>PFMA</li> </ul>

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R684 626

## **7.14.2 Human Resource Management**

### **7.14.2.1 Legislation**

Cape Nature's Human Resources and Labour Relations Practices are primarily based on the following legislation:

- The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)
- The Western Cape Nature Conservation Board Act, (Act No.15 of 1998)
- Labour Relations Act, (Act No. 66 of 1995)
- Basic Conditions of Employment Act, (Act No. 75 of 1997)
- Employment Equity Act, (Act No 55 of 1998).
- Occupational Health and Safety Act, (Act No. 85 of 1993)
- Skills Development Act, (Act No. 97 of 1998)
- The Protected Disclosures Act, (Act No. 26 of 2000)
- The Promotion of Access to Information Act, (Act No. 2 of 2000)
- The Promotion of Administrative Justice Act, (Act No. 3 of 2000)
- Our policies are further shaped by the Public Service Act, (Act No. 38 of 2008) and the Regulations thereto, the collective agreements entered into in the public service bargaining chambers as well as the Public Finance Management Act, (Act No. 1 of 1999) and Treasury Regulations issued in terms thereof.

### **7.14.2.2 Guiding Principals**

- (1) Cape Nature commits itself to the principles enshrined in the Labour Relations Act (Act No. 66 of 1995), these being:
  - (a) to give effect to the right to fair labour practices and those further rights enshrined in section 23 of the Constitution of the Republic of South Africa;
  - (b) to give effect to obligations incurred by the Republic as a member state of the International Labour Organisation;
  - (c) to provide a framework within which employees and their trade unions, employers and employers' organisations can-
    - (i) collectively bargain to determine wages, terms and conditions of employment and other matters of mutual interest; and
    - (ii) formulate industrial policy.
  - (d) to promote-
    - (i) orderly collective bargaining;
    - (ii) collective bargaining at sectorial level;
    - (iii) employee participation in decision-making in the workplace; and
    - (iv) the effective resolution of labour disputes.
- (2) Cape Nature will interact with its employees or its representatives in a manner which fosters transparent, respectful and harmonious working relationships between management and employees and between employers and employees.
- (3) Cape Nature is an equal opportunities employer that is committed to using its recruitment and selection processes to address, in a fair manner, all workplace injustices caused by Apartheid policies.
- (4) We are committed to growing our human capital by providing appropriate training and development initiatives for our employees.

- (5) We are further committed to maximising career-pathing to ensure that employees are constantly growing and that the workplace remains challenging and stimulating.

### **7.14.2.3 Management Actions**

See Table 7.14.2.

7.14.2	HUMAN RESOURCE MANAGEMENT				
Objective 1	To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.				
Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
1. Ensure an adequately resourced staff complement on the reserve.	<ul style="list-style-type: none"> <li>Ensure current posts are filled and appointment of additional staff (subject to funding).</li> <li>Ensure resourced (tools and skills) staff in line with approved budget to manage the nature reserve effectively (subject to funding).</li> <li>Prioritise all critical posts for filling and develop a phased implementation plan in line with approved personnel budget.</li> <li>Ensure on-going assessment of workloads (volumetric analysis) through interventions in consultation with the Organisational Development Unit of the Department of the Premier.</li> <li>Employment relationship is in line with employment contract commitments.</li> <li>Implement an Employment Well-being Programme</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Area Manager</li> <li>Executive Director: Conservation Management</li> <li>Executive Director HRM</li> <li>Human Resource Manager</li> </ul>	<ul style="list-style-type: none"> <li>Human resource capacity is adequate to manage the protected area effectively subject to funding</li> </ul>	On-going	<ul style="list-style-type: none"> <li>Recruitment and Selection Policy; Standard Operating Procedures for Recruitment and Selection</li> <li>SA Constitution</li> <li>Labour Relations Act</li> <li>Basic Conditions of Employment Act</li> <li>Employment Equity Act</li> <li>Occupational Health &amp; Safety Act</li> <li>Overtime Policy</li> <li>Equate System for Job Evaluation</li> <li>Leave Policy</li> </ul>
2. Integrate and align organisational and employee performance.	<ul style="list-style-type: none"> <li>Performance Management System implemented.</li> <li>Ensure compliance with Code of Conduct.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>Area Manager</li> <li>Human Resource Manager</li> </ul>	<ul style="list-style-type: none"> <li>Performance agreements completed and signed for all employees.</li> <li>Performance appraisals completed for all employees.</li> </ul>	Annually	<ul style="list-style-type: none"> <li>Performance Management Handbook</li> <li>Annual Plan of Operations</li> <li>Rewards Foundation Policy</li> <li>Disciplinary Code and Procedures</li> <li>(Managing poor performance)</li> <li>Code of Conduct</li> </ul>
3. Skilled employees on the reserve	<ul style="list-style-type: none"> <li>All staff are skilled to perform according to job specification in the roles they occupy in line with mandatory legislative requirements.</li> <li>Develop personal development plan for all staff on the reserve.</li> <li>Roll out of personal development plan for all staff on the reserve.</li> <li>Reflect capacity development</li> </ul>	<ul style="list-style-type: none"> <li>Development and Training Manager</li> <li>Conservation Manager</li> <li>Area Manager</li> <li>Human Resource Manager</li> <li>Integrated Employment Equity and Training Committee</li> </ul>	<ul style="list-style-type: none"> <li>Develop personal development plan for all staff on the reserve.</li> <li>Mentorship and coaching agreements in place.</li> <li>Implement Skills Plan according to priorities and budget availability</li> </ul>	Annually	<ul style="list-style-type: none"> <li>Individual PDPs</li> <li>Mentorship strategy and toolbox</li> <li>Skills Development Act</li> <li>Training Policy</li> <li>Bursary Policy</li> <li>Internship Policy</li> </ul>

Key Deliverables	Management/Monitoring Activities	Responsibility	Indicators	Timeframe	Reference to Existing Procedures
	interventions which are supported by mentorship and coaching agreements. <ul style="list-style-type: none"> <li>• Conduct annual Skills audit.</li> </ul>				

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R1 711 564

### **7.14.3 Occupational Health and Safety Management**

#### **7.14.3.1 Legislation**

- The Occupational Health and Safety Act, (Act No. 85 of 1993), as amended, with reference to:
  1. The Regulations which fall within the ambit of the Act;
  2. Standards and Approved Codes of Practice under the Act.
- Compensation for Occupational Injuries and Diseases Act (Act No. 130 of 1993)

#### **7.14.3.2 Guiding Principals**

- Reserve Management must bring about and maintain, as far as reasonably practicable, the safety of workers, contractors, volunteers, students and the public.
- Reserve Management must bring about and maintain, as far as reasonably practicable, a work environment that is safe and without risk to the health of the staff members.
- Where this is not possible, Reserve Management must inform staff of these dangers, how they may be prevented, and how to work safely, and provide other protective measures for a safe workplace.
- The staff member must also take care of his or her own health and safety, as well as that of other persons who may be affected by his or her actions or negligence to act.
- Appropriate training, awareness, education on the use of universal infection control measures so as to identify, deal with and reduce the risk of HIV transmission in the workplace will be provided.

#### **7.14.3.3 Management Actions**

Refer to Table 7.14.3.



<b>7.14.3</b>	<b>OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT</b>				
<b>Objective 1</b>	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. To implement policies, procedures and systems to ensure compliance to the Occupational Health and Safety Act. (OS4909H Act).	<ul style="list-style-type: none"> <li>Implement Occupational Health and Safety System.</li> </ul>	<ul style="list-style-type: none"> <li>Area Manager</li> <li>Conservation Manager</li> <li>OHS Manager</li> </ul>	<ul style="list-style-type: none"> <li>No disabling injuries occur.</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>OHS Act, Internal Health and Safety System</li> </ul>
2. To inform the workers, contractors, volunteers, students and the public of these dangers, how exposure could be prevented, and how to work safely.	<ul style="list-style-type: none"> <li>Attend Accredited OHS Training: (HIRA)</li> <li>Attend Accredited OHS Training to renew certificates (OHS Reps &amp; First Aid Officers).</li> <li>Attend in-house OHS Training Workshops.</li> <li>Provide monthly Toolbox Talks.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>OHS Reps</li> <li>OHS Officer</li> <li>OHS Manager</li> </ul>			<ul style="list-style-type: none"> <li>OHS Training Needs Analysis (conducted annually and aligned with available legislative requirements and available resources)</li> </ul>
3. Hazard Identification, Risk Assessment and Risk Management and Risk Control are implemented on the KNRC.	<ul style="list-style-type: none"> <li>Conduct regular HIRA processes to determine key risks with highest impact potential.</li> <li>Recommend remedial action plans to address key risks.</li> <li>Follow-up to ensure effective implementation.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>OHS Reps</li> <li>OHS Officer</li> <li>OHS Manager</li> </ul>			<ul style="list-style-type: none"> <li>HIRA Report</li> <li>Safe Operating Procedure</li> </ul>
4. Monitor and review to ensure adaptive management strategies are applied to improve health and safety on the KNRC.	<ul style="list-style-type: none"> <li>Assist in conducting of internal Audit Process to determine effectiveness and level of compliance of implementation of OHS Management Control System.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation Manager</li> <li>OHS Reps</li> <li>OHS Officer</li> <li>OHS Manager</li> </ul>			<ul style="list-style-type: none"> <li>Worksite Audit Report</li> </ul>

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R513 469

## **7.14.4 Risk Management**

### **7.14.4.1 Legislation**

Risk Management is based on the requirements of the Public Finance Management Act, (Act No. 1 of 1999) which requires the Accounting Authority to implement systems of financial management, risk management and internal control.

### **7.14.4.2 Guiding Principals**

- To promote the highest standards of corporate governance in providing assurance to stakeholders that organisational goals and objectives are achieved in an effective and efficient manner and within an ethical environment.
- Ensure the implementation of risk management systems and procedures for the identification, assessment and monitoring of risks. All risks are to be documented and controls identified to mitigate these risks.
- Ensure the development and implementation of standard operating procedures for all relevant business processes.

### **7.14.4.3 Management Actions**

Refer to Table 7.14.4.

<b>7.14.4</b>	<b>RISK MANAGEMENT</b>				
<b>Objective 1</b>	<b>To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</b>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. Ensure effective and integrated risk management within a framework of sound corporate governance.	<ul style="list-style-type: none"> <li>Documenting of business processes.</li> <li>On site risk identification and analysis.</li> <li>On site identification of controls/mitigations.</li> <li>Monitoring of risks.</li> </ul>	<ul style="list-style-type: none"> <li>Area Manager</li> <li>Conservation Manager</li> <li>Chief Risk Officer</li> <li>OHS Officer</li> </ul>	<ul style="list-style-type: none"> <li>Risks in the Risk Register mitigated in a cost effective manner and to an acceptable level.</li> </ul>	Ongoing	<ul style="list-style-type: none"> <li>PFMA Section 38.</li> <li>CapeNature Risk Management Policy and Strategy (2009).</li> </ul>

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R34 231

## **7.15 Visitor Management and Services**

### **7.15.1 Legislation**

- Tourism Act, (Act No. 72 of 1993)

### **7.15.2 Guiding Principles**

- Acknowledgement of the areas diverse natural heritage and a commitment to ensuring the safeguarding thereof for future generations.
- The responsible and sustainable development of tourism facilities compatible with the nature reserve's zonation policy.

### **7.15.3 Visitor management and services**

The short to medium-term strategic focus for tourism and recreation in the Kogelberg Nature Reserve Complex is:

- The development of a middle -market visitor accommodation facilities;
- The maintenance of a range of low impact recreational adventure activities;
- Access control at entry points
- The maintenance of key information on visitor profiles and their needs.

### **7.15.4 Concessionaries**

- No existing concessions are currently in place however compatible concessions may be considered to complement reserve tourism initiatives.

### **7.15.5 Public Private Partnerships**

- No tourism related public private partnerships currently neither exist nor are considered for the period.

### **7.15.6 Management Actions**

Refer to Table 7.15.

<b>7.15</b>	<b>VISITOR MANAGEMENT AND SERVICES</b>				
<b>Objective 1</b> <b>Objective 4</b> <b>Objective 5</b>	<ul style="list-style-type: none"> <li>• To implement effective management systems through corporate governance, legislative compliance and the implementation of policies, plans, strategies, procedures and agreements in the KNRC.</li> <li>• To develop and maintain relevant functional partnerships for the KNRC.</li> <li>• To provide access to the KNRC for appropriate and sustainable activities.</li> </ul>				
<b>Key Deliverables</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. To plan for and manage visitor facilities.	<ul style="list-style-type: none"> <li>• Monitor and manage visitor numbers and their environmental impact.</li> <li>• Plan for and develop visitor facilities within CDF and local area plans.</li> <li>• Monitor visitor numbers.</li> <li>• Survey visitor opinions.</li> <li>• Ensure tourism facilities are accessible for disabled persons where possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Planner</li> <li>• Tourism Officer</li> <li>• Tourism Manager</li> <li>• Executive Director: Marketing and Tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Annual increase in visitor numbers.</li> <li>• Annual increase in tourism income.</li> </ul>	Year 1-5	•
2. To strive to ensure visitor safety.	<ul style="list-style-type: none"> <li>• Establish collaborative relationships with policing authorities.</li> <li>• Appropriate gate control to ensure safety and compliance</li> <li>• Maintenance of recreational facilities including footpaths and trails.</li> <li>• Safety signage maintained</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Tourism Officer</li> <li>• OHS Rep.</li> </ul>		Ongoing	CapeNature Health and Safety System
3. To promote and manage access to the Reserve.	<ul style="list-style-type: none"> <li>• Set management guidelines for different use zones.</li> <li>• Implement zonation management guidelines access.</li> <li>• Facilitate access for spiritual, cultural and educational groups on request</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> <li>• Tourism Officer</li> </ul>		Ongoing	CapeNature Policy on consumptive utilisation (2007).

<b>Budget Allocation</b>	<b>Development</b>	R0
	<b>Operation (5 Year Forecast)</b>	R2 053 877

## 7.16 Tourism Development Framework

### 7.16.1 Legislation

Key areas of legislation relevant to infrastructure use and development on Nature Reserves and conservation management. Please refer to the CapeNature guidelines.

- National Environmental Management Act, (Act No. 107 of 1998) - provides a framework for environmental governance and decision making.
- National Environmental Management: Protected Areas Act, (Act No. 57 of 2003) as amended 2009 – regulates development, use and management of all protected areas.
- National Environmental Management Act, (Act No. 107 of 1998) NEMA Environmental Impact Assessment Regulations (Government Notice No. R. 543 of June 2010 as corrected by Correction Notices 1 (Government Notice No. R. 660 of July 2010) and 2 (Government Notice R. 1159 of December 2010) - stipulates environmental authorisation process for a wide range of activities.
- National Water Act (Act 36 of 1998, as amended by Act 45 of 1999) – controls use of ground and surface water, and sets standards for wastewater quality.
- National Heritage Resources Act, (Act No. 25 of 1999) – protects and provides for authorisation relating to heritage features including buildings, archaeological and paleontological sites, and landscape character.
- The National Waste Act, (Act No. 59 of 2008) – controls disposal of waste.
- Tourism Act, (Act No. 72 of 1993) – provides a grading and classification scheme for tourism accommodation.
- Occupational Health and Safety Act, (Act No 85 of 1993) – specifies requirements for a safe and healthy working environment for all employees.

### 7.16.2 Guiding Principles

- Before any significant infrastructure development, reserves must have:
  - a zoning scheme based on a defensible environmental analysis of sensitivity and opportunities, proper internal consultation, and CapeNature regional strategy ;
  - an infrastructure development plan that specifies the type and location of all new infrastructure;
- Any infrastructure or activity, including change of use, must comply with all legislated licencing and authorisation requirements.
- Roads and tracks have the highest environmental and cost impact – planning should focus on providing efficient, lowest-impact road and trail networks.
- Layout of existing infrastructure and operations should be re-evaluated.
- Development Zones and Access Zones should be peripheral to nature reserve, and easily accessible to staff and visitors.
- Viewshed impacts of new infrastructure should be considered, especially any that might impact Wilderness Areas.
- Development Zones should be as tightly clustered as possible.
- All planning must explicitly avoid, minimise and mitigate fire risk.
- Management versus. tourism infrastructure should be close but separate.

- Tourism products should be located to balance visitor experience against environmental impact and access.
- Development Zones should utilise existing degraded or transformed habitat, although road access must be factored into the overall impact footprint.
- All new development or expansion must be informed by a financial feasibility study, reserve sensitivity analysis, and if appropriate specialist assessment of impact.
- New building infrastructure, especially in remote or sensitive locations, must consider total lifespan impact including decommissioning and removal.
- Green building techniques must be implemented to reduce carbon emissions, energy and water use, and waste contamination associated with construction and operation, although the primary consideration must be reducing local impact.

### **7.16.3 Management Actions**

Refer to Table 7.16.

<b>7.16</b>	<b>TOURISM DEVELOPMENT FRAMEWORK</b>				
<b>Objective 4 Objective 5</b>	<ul style="list-style-type: none"> <li>• To develop and maintain relevant functional partnerships for the KNRC.</li> <li>• To provide access to the KNRC for appropriate and sustainable activities.</li> </ul>				
<b>Action plans</b>	<b>Management/Monitoring Activities</b>	<b>Responsibility</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Reference to Existing Procedures</b>
1. To provide nature and cultural tourism and recreational opportunities within the Reserve without affecting the ecological processes negatively.	<ul style="list-style-type: none"> <li>• Consider concessionaire process when applicable.</li> <li>• Identify compatible tourism development within the Reserve according to zonation</li> <li>• Monitor tourism related impacts and implement corrective management where necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Ecological Planner</li> <li>• Tourism Officer</li> </ul>	<ul style="list-style-type: none"> <li>• Adherence to zonation guidelines.</li> </ul>	Year 1 Ongoing	<ul style="list-style-type: none"> <li>• Reserve Zonation</li> <li>• CapeNature Tourism Strategy</li> </ul>
2. Promote Community-Based Tourism and SMME initiatives in and around the Reserve	<ul style="list-style-type: none"> <li>• Facilitate private / community sector involvement in the servicing minor maintenance of tourist facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Community Conservation Manager</li> <li>• Tourism Officer</li> </ul>	<ul style="list-style-type: none"> <li>• Successful operation of SMMEs and community-based tourist facilities.</li> </ul>	Year 1	
3. Ensure tourism contributes to conservation through the Reserve	<ul style="list-style-type: none"> <li>• Monitor Tourist use and interest within the Reserve, including negative impacts, adapt where necessary</li> <li>• Identify the potential for negative consequences and their adverse effects on tourism (Risk assessment)</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation Manager</li> <li>• Tourism Officer</li> <li>• Finance &amp; Admin Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Increased profitability.</li> </ul>	Year 5	

<b>Budget Allocation</b>	<b>Development</b>	R11 000 000
	<b>Operation (5 Year Forecast)</b>	R102 694



## PART 4

### SECTION 8: REFERENCES

#### 8.1 References

- BAARD, E.H.W., BRANCH, W.R., CHANNING, A.C., DE VILLIERS, A.L., LE ROUX, A. & MOUTON, P. leF.N. 1999. A review of the amphibians and reptiles of the Cape Floristic Kingdom as indicators of centres of biodiversity, sensitive habitats and sites of special interest. Internal Report contributing to the C.A.P.E Project, February 1999.
- BARNES, K.N. 2000. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. BirdLife South Africa, Johannesburg.
- BATISSE, M. 1982. The Biosphere Reserve: A tool for Environmental Conservation and Management. *Env. Cons.* 9(2): 101-111.
- BIRP. 2011. Bird in Reserve Project – Kogelbaai Nature Reserve Checklist. <http://birp.adu.org.za/index.php>. Downloaded on 07 November 2011.
- BIRP. 2011. Bird in Reserve Project – Kogelberg Nature Reserve Checklist. <http://birp.adu.org.za/index.php>. Downloaded on 07 November 2011.
- BIRP. 2011. Bird in Reserve Project – Rooisand Nature Reserve Checklist. <http://birp.adu.org.za/index.php>. Downloaded on 07 November 2011.
- BOUCHER, C. 1978. Cape Hangklip area II. The vegetation. *Bothalia* 12: 455-497.
- CAPE NATURE BIODIVERSITY DATABASE. 2011. Kogelberg Nature Reserve Checklist. Referenced 07 November 2011.
- COOMBES, P.J. & MENTIS, M.T. 1992. A Procedure for Defining Conservation Management Objectives and Goals. In: *Wildlife Ranching: A Celebration of Diversity*. Eds W. van Hoven, H. Ebedes and A. Conroy, pp. 270-273. Promedia, Pretoria.
- CORPORATE NORMS AND STANDARDS FOR THE DEVELOPMENT OF INTEGRATED RESERVE MANAGEMENT PLANS. 2007.
- COWAN, G.I. & MPONGOMA, N. 2010. Guidelines for the development of a management plan for a protected area in terms of the National Environmental Management: Protected Areas Act, 2003. Unpublished document, Department of Environmental Affairs, Pretoria. 17pp.
- COWLING, R. M. 1992. The ecology of Fynbos: Nutrients, fire and diversity. Oxford University Press, Cape Town.
- COWLING, R.M. & RICHARDSON, D.M. 1995 (first edition), 1998. *Fynbos - South Africa's unique floral kingdom*. Fernwood Press, Vlaeberg.
- CSIRO Marine and Atmospheric Research, 2012. Management Strategy Evaluation. <http://www.cmar.csiro.au/research/mse/>. Downloaded on 18 October 2012.

- DAVIES D.M. 1988a. Leafhoppers (Homoptera: Cicadellidae) associated with the Restionaceae. I. The tribe Cephalelini (Ulipinae). *J. Entomol. Soc. S. Afr.* 51: 31–64.
- DAVIES D.M. 1988b Leafhoppers (Homoptera: Cicadellidae) associated with the Restionaceae. II. The tribes Athysanini and Paralimini (Enscelinae). *J. Entomol. Soc. S. Afr.* 51:65–80.
- DEA. (in prep). Extension nomination for the Cape Floral Region Protected Areas World Heritage Site. Compiled for Department of Environmental Affairs, South African National Parks, Western Cape Nature Conservation Board and the Eastern Cape Parks and Tourism Agency. For submission to UNESCO.
- DRIVER *et al.* (in prep) National Biodiversity Assessment 2011: An assessment of South Africa's biodiversity and ecosystems. SANBI, Pretoria
- DU TOIT, J & ATTWOOD, C. 2008. Management Plan for the Betty's Bay Marine Protected Area (Draft).
- ERASMUS. 2010. Fire Management Policy and Guidelines Version 6. CapeNature internal document.
- GATEHOUSE, R. 1954. A Prehistoric site at Cape Hangklip. *Transactions of the Royal Society of South Africa* 34: 84-89.
- GILIOMEE J.H. 2003. Insect diversity in the Cape Floristic Region. *Afr. J. Ecol.* 41: 237–44.
- GOLDBLATT, P. & MANNING, J.C. 2000. Cape Flora - A Conspectus of the Cape Flora of South Africa. *Strelitzia* 9. National Botanical Institute, Pretoria & Missouri Botanic Gardens.
- GOVERNMENT OF SOUTH AFRICA. 2010. National Protected Area Expansion Strategy for South Africa 2008. Priorities for expanding the protected area network for ecological sustainability and climate change adaptation. <[bgis.sanbi.org/protectedareas/National\\_Protected\\_Area\\_Expansion\\_Strategy.pdf](http://bgis.sanbi.org/protectedareas/National_Protected_Area_Expansion_Strategy.pdf)> Downloaded on 23 November 2011.
- GRANT, P.B.C. & SAMWAYS, M.J. 2007. Montane refugia for endemic and Red Listed dragonflies in the Cape Floristic Region biodiversity hotspot. *Biodiversity & Conservation*: 16 (3), 787-805. Guidelines for the Development of a Management Plan for the Protected Area in terms of the National Environmental Management: Protected Areas Act.
- HOLNESS, S. & SKOWNO, A. 2008. Report on Sensitivity Value Analysis and Zonation Process for the Boland Reserve Complex. Internal report for CapeNature.
- IUCN. 2011. IUCN Red List of Threatened Species. Version 2011.1. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 02 November 2011
- JOHNSON, S.D. 1992. Plant–animal relationships. In: R.M. Cowling (ed.), *Fynbos Ecology: Nutrients, Fire and Diversity*, pp.175–205. Oxford University Press, Cape Town.
- KRUGER, F.J. 1983. Plant community diversity and dynamics in relation to fire. In: F.J. Kruger, D.T. Mitchell, D.T. & J.U.M. Jarvis (eds.), *Mediterranean-type Ecosystems - the role of nutrients*. Springer Verlag, Berlin.
- LOMBARD, A.T., STRAUSS, T., HARRIS, J., SINK, K., ATTWOOD, C. & HUTCHINGS, L. 2004: *South African National Spatial Biodiversity Assessment 2004: Technical Report. Volume 4: Marine Component*. Pretoria: South African National Biodiversity Institute.
- MINTER, L.R., BURGER, M., HARRISON, J.A., BRAACK, H.H., BISHOP, P.J., & KLOEPFER, D. (eds.) 2004. Atlas and Red Data Book of the Frogs of South Africa,

- Lesotho and Swaziland. SI/MAB Series #9. Smithsonian Institution, Washington, DC and Avian Demography Unit, University of Cape Town, Cape Town.
- MUCINA, L. & RUTHERFORD, M.C. (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- NEL J.L., DRIVER A., STRYDOM W., MAHERRY A., PETERSEN C., HILL, L., ROUX D.J., NIENABER S., VAN DEVENTER H, SWARTZ, E., & SMITH-ADAO. 2011. Atlas of Freshwater Ecosystem Priority Areas in South Africa: Maps to support sustainable development of water resources. WRC Report No.TT 500/11, Water Research Commission, Pretoria.
- NEL, J.L., MURRAY, K.M., MAHERRY, A.M., PETERSEN, C.P., ROUX, D.J., DRIVER, A., HILL, L., VAN DEVENTER, H.1, FUNKE, N., SWARTZ, E.R., SMITH-ADAO, L.B., MBONA, N., DOWNSBOROUGH, L., & NIENABER, S. 2011. Technical Report: National Freshwater Ecosystem Priority Areas project. WRC Report No. 1801/2/11, WRC, Pretoria.
- OLIVER, E.G.H, LINDER, H.P. & ROURKE, J.P. 1983. Geographical distribution of present-day Cape taxa and their phytogeographical significance. *Bothalia* 14: 427-440.
- PALMIET RIVER CATCHMENT MANAGEMENT PLAN. August 2000, Palmiet River Steering Committee.
- PURNELL, K., KIRKWOOD, D. & MAREE, K. 2010. CapeNature Protected Area Expansion Strategy and Implementation Plan 2010-2015. September 2010. CapeNature.
- REBELO, A.G. & SIEGFRIED, W.R. 1990. Protection of Fynbos vegetation: ideal and real-world options. *Biol. Cons.* 54: 15-31.
- REYNECKE P.J. 1975. Kogelberg Bestuursplan, Cape Town: Dept. of Environmental Affairs.
- South African National Biodiversity Institute and Department of Environmental Affairs. 2010. National Protected Areas Expansion Strategy for South Africa; Priorities for expanding the protected area network for ecological sustainability and climate change adaptation. Government of South Africa, Pretoria, ISBN 978-1-919976-55-6.
- SMITHERS, R.H.N. 1986. South African Red Data Book – Terrestrial Mammals. South African National Scientific Programmes Report 125. CSIR, Pretoria.
- SOUTH AFRICAN NATIONAL PARKS. 2011. Stakeholder Participation in Developing Park Management Plans.
- SPIES, A. & SYMONDS, A. 2011. Stakeholder Participation in Developing Park management Plans.
- TWEDDLE, D., BILLS, R., SWARTZ, E., COETZER, W., DA COSTA, L., ENGELBRECHT, J., CAMBRAY, J., MARSHALL, B., IMPSON, D., SKELTON, P. H., DARWALL, W.R.T. & SMITH, K.S. 2009. The status and distribution of freshwater fishes. In: W.R.T. Darwall, K.G. Smith, D. Tweddle, and P.H. Skelton (eds.), The status and distribution of freshwater biodiversity in southern Africa, pp. 21-37. Gland (Switzerland) and Grahamstown (South Africa): IUCN and South African Institute for Aquatic Biodiversity.
- UNESCO. 1996. Biosphere Reserves: The Seville Strategy and the Statutory Framework of the World Network. UNESCO, Paris.

- VELDTMAN, A. 2012. Western Cape Nature Conservation State of Biodiversity Program: Baseline data collection on nature reserves and Monitoring manual. Internal Report.
- WRIGHT, M.G. & SAMWAYS, M.J. 1998. Insect species richness tracking plant species richness in a diverse flora: gall insects in the Cape Floristic Region, South Africa. *Oecologia* 115: 427-433.

## 8.2 List of Acronyms and Abbreviations

AIS	Alien Invasive Species
APO	Annual Plan of Operations
APP	Annual Performance Plan
AVM	Alien Vegetation Management
BABS	Bio-prospecting, Access and Benefit Sharing
BBMPA	Betty's Bay Marine Protected Area
BCU	Biodiversity Crime Unit
BMS	Biodiversity Monitoring System
C.A.P.E.	Cape Action for People and the Environment
CAP	Conservation Action Plan
CBA	Critical Biodiversity Area
CBD	Convention on Biological Diversity
CDF	Conservation Development Framework
CDP	Concept Development Plan
CEO	Chief Executive Officer
CFK	Cape Floral Kingdom
CFR	Cape Floristic Region
CITES	Convention on International Trade in Endangered Species
CMP	Catchment Management Plan
CMS	Bonn Convention on the Conservation of Migratory Species of Wild Animals
CNPAES	CapeNature Protected Area Expansion Strategy
DEA	Department of Environmental Affairs
DMC	Declared Mountain Catchment
DWA	Department of Water Affairs
EKZNW	Ezemvelo KwaZulu Natal Wildlife
EMF	Environmental Management Framework
EMP	Environmental Management Plan
FEPA	Freshwater Ecosystem Priority Area
FPA	Fire Protection Association
GIAMA	Government Immovable Asset Management Act
GIS	Geographical Information System
GWUA	Groenwater User Association
HRD	Human Resource Development
IAP	Invasive Alien Plants
IAS	Invasive Alien Species
IBL	Important Biodiversity Layers
ICM	Integrated Catchment Management
IDP	Integrated Development Plan
IRMP	Integrated Reserve Management Plan
IT	Information Technology
IUCN	International Union for Conservation of Nature and Natural Resources
KBR	Kogelberg Biosphere Reserve
KBRC	Kogelberg Biosphere Reserve Company
KNRC	Kogelberg Nature Reserve Complex
KOBIO	Kogelberg Biosphere Association
LNRC	Limietberg Nature Reserve Complex

MAB	Man and Biosphere
MCA	Mountain Catchment Area
MEC	Member of Executive Councils
METT-SA	Management Effectiveness Tracking Tool-South Africa
MRLA	Marine Living Resources Act
MOU	Memorandum of Understanding
MP	Management Plan
MPA	Marine Protected Area
MTEF	Medium Term Expenditure Framework
NBA	National Biodiversity Assessment
NBF	National Biodiversity Framework
NEM: BA	National Environmental Management: Biodiversity Act, 10 of 2004
NEM: PAA	National Environmental Management: Protected Areas Act, 57 of 2003
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Area Process
NGO	Non-Governmental Organisation
NSBA	National Spatial Biodiversity Assessment
OHS	Occupational Health and Safety
OUV	Outstanding Universal Value
PAAC	Protected Area Advisory Committee
PAMP	Protected Area Management Plan
PFMA	Public Finance Management Act
RAMSAR	The Ramsar Convention on Wetlands
REST	Regional Ecological Support Team
RMC	Reserve Management Committee
RSMP	Reserve Strategic Management Plan
SAHRA	South African Heritage Resources Agency
SANDF	South African Defence Force
SANParks	South African National Parks
SARCA	Southern African Reptile Conservation Assessment
SASS	South African Scoring System
SDF	Spatial Development Framework
SKEP	Succulent Karoo Ecosystem Programme
SMME	Small, Medium and Micro Enterprises
SOB	State of Biodiversity
SOG	Strategic Operational Guidelines
STEP	Subtropical Thicket Ecosystem Planning Project
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBD	To be Determined
TMG	Table Mountain Group
ToPS	Threatened or Protected Species
ToR	Terms of Reference
TPC	Threshold of Potential Concern
U-AMP	User Asset Management Plan
UNESCO	United Nations Educational, Scientific and Cultural Organisation
GTUP	Game Translocation and Utilization Policy
WCNCB	Western Cape Nature Conservation Board
WfW	Working for Water

WHS	World Heritage Site
WMA	Water Management Areas
WOF	Working on Fire
WWF-SA	World Wide Fund for Nature-South Africa

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