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## GOVERNMENT NOTICE

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### DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM

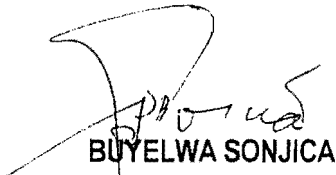
No. 813

3 August 2009

THE NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT 10 OF 2004)

#### NATIONAL BIODIVERSITY FRAMEWORK

I, Buyelwa Patience Sonjica, Minister of Water and Environmental Affairs, acting under section 38(2) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), hereby publish the National Biodiversity Framework, as contained in the Schedule below.



BUYELWA SONJICA

MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

# SCHEDULE

## SOUTH AFRICA'S NATIONAL BIODIVERSITY FRAMEWORK

2008



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## Acronyms

<b>ABS</b>	Access and benefit sharing
<b>AIS</b>	Alien and Invasive Species
<b>ASGISA</b>	Accelerated and Shared Growth Initiative of South Africa
<b>BMP-E</b>	Biodiversity Management Plans for Ecosystems
<b>BMP-S</b>	Biodiversity Management Plans for Species
<b>BSSA</b>	Biodiversity Stewardship South Africa
<b>C.A.P.E.</b>	Cape Action for People and the Environment
<b>CBD</b>	Convention on Biological Diversity
<b>CMA</b>	Catchment Management Agency
<b>DAEA</b>	KwaZulu-Natal Department of Agriculture and Environment Affairs
<b>DALA</b>	Mpumalanga Department of Agriculture and Land Administration
<b>DEA&amp;DP</b>	Western Cape Department of Environment Affairs and Development Planning
<b>DEAT</b>	Department of Environment Affairs and Tourism
<b>DEDEA</b>	Eastern Cape Department of Economic Development and Environmental Affairs
<b>DLA</b>	Department of Land Affairs
<b>DME</b>	Department of Minerals and Energy
<b>DoA</b>	Department of Agriculture
<b>DPLG</b>	Department of Provincial and Local Government
<b>DPW</b>	Department of Public Works
<b>DST</b>	Department of Science and Technology
<b>DTEC</b>	Northern Cape Department of Tourism, Environment and Conservation
<b>DTEEA</b>	Free State Department of Tourism, Economic and Environment Affairs
<b>DTI</b>	Department of Trade and Industry
<b>DWAF</b>	Department of Water Affairs and Forestry
<b>ECP</b>	Eastern Cape Parks
<b>EEZ</b>	Exclusive Economic Zone
<b>EKZNW</b>	Ezemvelo KwaZulu-Natal Wildlife
<b>EWT</b>	Endangered Wildlife Trust
<b>GDACE</b>	Gauteng Department of Agriculture, Conservation and Environment
<b>GMO</b>	Genetically modified organism
<b>IUCN</b>	World Conservation Union
<b>KZN</b>	KwaZulu-Natal
<b>LTPB</b>	Limpopo Tourism and Parks Board
<b>MCM</b>	Marine and Coastal Management
<b>MDTP</b>	Maloti-Drakensberg Transfrontier Project

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<b>MTPA</b>	Mpumalanga Tourism and Parks Agency
<b>NAP</b>	National Action Programme: Combating Land Degradation to Alleviate Rural Poverty
<b>NEMA</b>	National Environmental Management Act
<b>NEPAD</b>	New Partnership for Africa's Development
<b>NBF</b>	National Biodiversity Framework
<b>NBSAP</b>	National Biodiversity Strategy and Action Plan
<b>NFSD</b>	National Framework for Sustainable Development
<b>NSBA</b>	National Spatial Biodiversity Assessment
<b>NSDP</b>	National Spatial Development Perspective
<b>NPAES</b>	National Protected Area Expansion Strategy
<b>NWPTB</b>	North West Parks and Tourism Board
<b>SADC</b>	Southern African Development Community
<b>SANBI</b>	South African National Biodiversity Institute
<b>SANParks</b>	South African National Parks
<b>SKEP</b>	Succulent Karoo Ecosystem Programme
<b>STEP</b>	Subtropical Thicket Ecosystem Programme
<b>SO</b>	Strategic Objective
<b>TFCA</b>	Transfrontier Conservation Area
<b>TOPS</b>	Threatened or Protected Species
<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>WESSA</b>	Wildlife and Environment Society of South Africa
<b>WWF-SA</b>	World Wide Fund for Nature South Africa

## Executive Summary

### The purpose of the NBF

The purpose of the NBF is to provide a framework to co-ordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity, in support of sustainable development.

The NBF is a requirement of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). The NBF aims to:

- Focus attention on the most urgent strategies and actions required for conserving and managing South Africa's biodiversity
- Point to roles and responsibilities of key stakeholders, including key organs of state whose mandates impact directly on biodiversity conservation and management

*The heart of the NBF is a set of 33 Priority Actions, which provide an agreed set of priorities to guide the work of the biodiversity sector in South Africa for the next five years. These are summarised in Table 1 in this Executive Summary, and discussed in more detail in Section 4 of the main report.*

The purpose of the NBF is not to:

- Describe South Africa's biodiversity and its importance in detail
- Reiterate South Africa's commitments to conserving biodiversity as a signatory of the Convention on Biological Diversity
- Describe the policy and legislative framework for biodiversity conservation in South Africa
- Give a comprehensive review of work currently being undertaken in the biodiversity sector
- Give a comprehensive list of all actions required to conserve and manage South Africa's biodiversity

The NBF will be reviewed at least every five years, providing an opportunity to take stock of progress, review priorities, and realign efforts. The NBF is thus a short- to medium-term tool. Its aim is not to be comprehensive, but rather to focus collective attention and effort on the set of activities that will make the most difference.



The NBF provides a framework for conservation *and* development. Too often in South Africa conservation and development are seen as opposing or irreconcilable goals. As our economy moves towards 6% economic growth, we need to ensure that the way we achieve this growth allows for the continued functioning of ecosystems and the persistence of the natural resource base. This is possible, if care is taken over the location of development, the type of development, and the consumption of natural resources in the development process. Sustainable development depends on *where* and *how* development takes place.

### **Who should use the NBF?**

Key intended users of the NBF include:

- Organs of state whose core business includes biodiversity conservation
- Organs of state whose core business is not biodiversity conservation, but whose policies, programmes and decisions impact directly and substantially on how biodiversity is managed
- Government-led programmes
- NGOs wishing to make a contribution to biodiversity conservation in South Africa
- The private sector, particularly those production sectors whose activities contribute to the major pressures on South Africa's biodiversity, such as loss of natural habitat, over-abstraction of freshwater resources, and over-harvesting of marine resources

### **How does the NBF relate to the NBSAP and the NSBA?**

The NBF rests on two preceding documents, both of which were based on extensive stakeholder consultation: the National Biodiversity Strategy and Action Plan (NBSAP) and the National Spatial Biodiversity Assessment (NSBA).

The NBSAP, finalised in May 2005 after a two-year development process, sets out a comprehensive long-term strategy for the conservation and sustainable use of South Africa's biodiversity, including fifteen year targets. The NBSAP is a requirement in terms of South Africa's commitments to the Convention on Biological Diversity (CBD).

The NSBA provides a spatial picture of the location of South Africa's threatened and under-protected ecosystems, and focuses attention on geographic priority areas for biodiversity conservation. South Africa's first NSBA was undertaken in 2004, and published in April 2005. The NSBA will be updated every five years.

The NBF is informed by both the NBSAP and the NSBA, as shown in Figure 1. It draws together key elements of each, and focuses attention on the immediate priorities, both spatial and thematic, for the next five years.

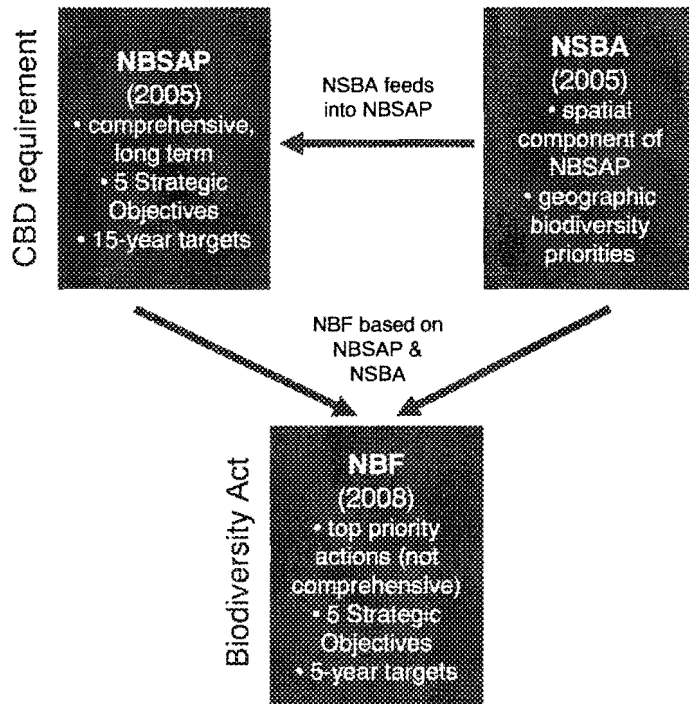


Figure 1: Relationship between the NBSAP, NSBA and NBF

### Major pressures on biodiversity in South Africa

Many people are not aware of the impact of ordinary day-to-day activities on the functioning of ecosystems, and often see biodiversity conservation as being about protecting individual rare or threatened species rather than maintaining the integrity of ecosystems on which we depend for survival.

The major pressures on South Africa's biodiversity are:

- loss and degradation of natural habitat, in terrestrial and aquatic ecosystems
- invasive alien species
- over-harvesting of species, especially in the marine environment
- over-abstraction of water, especially for irrigation
- climate change

### **The challenge: conservation AND development, not conservation OR development**

The challenge we face in addressing these pressures on biodiversity is not to conserve OR to develop, but rather how to conserve AND develop. The issue is not whether development takes place but rather *where* and *how* it takes place. The biodiversity sector is developing increasingly effective tools to support and streamline environmental decision-making and ensure that development is appropriate. Key among these are published bioregional plans in terms of the Biodiversity Act, which will identify critical biodiversity areas, including ecological corridors and important catchments, and give land-use planning and decision-making guidelines for these critical biodiversity areas.

### **Priority actions for conservation and management of South Africa's biodiversity**

The NBSAP is a long-term strategy which identifies five strategic objectives and a comprehensive set of outcomes for each. The NBF draws out immediate priorities for the next five years within each of the Strategic Objectives (SOs) of the NBSAP. The NBF Priority Actions, summarised in Table 1 below, are organised according to the five NBSAP SOs:

SO 1: An enabling **policy and legislative framework** integrates biodiversity management objectives into the economy

SO 2: Enhanced **institutional effectiveness and efficiency** ensures good governance in the biodiversity sector

SO 3: **Integrated management of terrestrial and aquatic ecosystems** minimizes the impacts of threatening processes on biodiversity, enhances ecosystem services and improves social and economic security

SO 4: Human development and well-being is enhanced through **sustainable use** of biological resources and equitable sharing of the benefits

SO 5: A system of **protected areas and conservation areas** conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape

Table 1: Summary of NBF Priority Actions

PRIORITY ACTION		LEAD AGENTS
<b>S01: Policy and legislative framework</b>		
1.	Make the case for the value of biodiversity as a cornerstone of sustainable development	DEAT, SANBI
2.	Integrate biodiversity considerations into fiscal policy through environmental fiscal reform	DEAT, SANBI, National Treasury, DWAF
3.	Integrate biodiversity considerations in land-use planning and decision-making, by developing tools for supporting and streamlining environmental decision-making	DEAT, SANBI, DWAF, provincial environment affairs departments
4.	Finalise the regulatory framework for the prevention, containment and eradication of alien and invasive species	DEAT
5.	Strengthen the regulatory framework for species of special concern	DEAT, SANBI
6.	Finalise the regulatory framework for bioprospecting, access and benefit sharing	DEAT
<b>S02: Institutional effectiveness</b>		
7.	Establish and implement a human capital development strategy for the biodiversity sector to address transformation and scarce skills	SANBI, DEAT, SANParks, provincial conservation authorities, tertiary education institutions, relevant SETAs
8.	Fill key biodiversity information gaps	SANBI
9.	Improve biodiversity information management and access	DEAT, SANBI
10.	Establish and implement a national biodiversity research strategy	SANBI, DST, DEAT (MCM), DWAF, Water Research Commission, National Research Foundation
11.	Establish and implement a national monitoring and reporting framework for biodiversity	SANBI, DEAT, DWAF, provincial conservation authorities, SANParks
12.	Establish a national programme to build the capacity of municipalities to include biodiversity opportunities and constraints in their planning and operations	SANBI, DPLG, DEAT, SALGA, NGOs, provincial conservation authorities
13.	Establish pilot projects to explore mechanisms for integrated natural resource management at the district level	SANBI, DPLG, SALGA, DEAT, provincial environment affairs departments
14.	Support the development and strengthening of bioregional and ecosystem programmes	SANBI, DEAT, NGOs
<b>S03: Integrated management of terrestrial and aquatic ecosystems</b>		
15.	Develop and implement an integrated programme for ecosystem adaptation to climate change, with an emphasis on ecosystems vulnerable to climate change impacts	DEAT, SANBI
16.	Develop provincial spatial biodiversity plans in additional provinces	Provincial conservation authorities, SANBI
17.	Publish bioregional plans in terms of the Biodiversity Act	Provincial conservation authorities, provincial environment affairs departments, SANBI, DEAT

PRIORITY ACTION		LEAD AGENTS
18.	List threatened or protected ecosystems in terms of the Biodiversity Act	DEAT, SANBI, provincial conservation authorities, DWAF
19.	Develop Biodiversity Management Plans for species of special concern and threatened ecosystems	NGOs, DEAT, SANBI
20.	Work with key production sectors to minimise loss and degradation of natural habitat in threatened ecosystems and critical biodiversity areas	NGOs, SANBI, provincial conservation authorities, relevant industry sector organisations, DEAT
21.	Implement the alien and invasive species regulations	DEAT (including MCM), DWAF, DoA, provincial conservation authorities, SANBI, SANParks, municipalities
22.	Implement the cross-sector policy objectives for conservation of inland water biodiversity	DWAF, DEAT (including MCM), SANBI, CMAs, SANParks, provincial conservation authorities, DoA, NGOs.
23.	Incorporate biodiversity conservation objectives in the work of Catchment Management Agencies	DWAF, CMAs, SANBI
24.	Develop and implement effective measures for management and control of activities relating to GMOs in order to manage their impact on the environment	DEAT, SANBI, DoA, DST, DTI, DWAF
<b>SO4: Sustainable use</b>		
25.	Address illegal and unregulated fishing and seafood trade, especially of line fish and abalone	DEAT (MCM), South African Sustainable Seafood Initiative (SASSI), relevant provincial conservation authorities, WWF-SA (Marine Programme), SANBI, other NGOs
26.	Develop an implementation strategy for bioprospecting, access and benefit sharing regulations	DEAT
27.	Facilitate the development of the natural products sector	DEAT, IUCN, SANBI, DWAF, DTI, DST, DoA, DAC, research institutions, NGOs
28.	Improve knowledge of sustainable extractive use of terrestrial resources	SANBI, research institutions, provincial conservation authorities, NGOs, traditional healer associations
<b>SO5: Protected areas and conservation areas</b>		
29.	Finalise the twenty-year National Protected Area Expansion Strategy, underpinned by national biodiversity targets	DEAT (including MCM), SANParks, provincial conservation authorities, SANBI
30.	Implement the National Protected Area Expansion Strategy	DEAT (including MCM), SANParks, provincial conservation authorities
31.	Establish and strengthen provincial stewardship programmes	DEAT, provincial conservation authorities, NGOs, SANBI
32.	Strengthen programmes that support the informal conservation area system	DEAT; provincial conservation authorities, SANParks, NGOs
33.	Develop and implement a National Botanical Gardens expansion strategy	SANBI

### **Regional co-operation**

Priorities for co-operation between South Africa and other Southern African countries in relation to biodiversity are:

- Strengthen and improve the development of integrated management and tourism plans of the Transfrontier Conservation Areas and Transboundary World Heritage Sites.
- Develop and implement appropriate incentives for biodiversity conservation and its sustainable use in cooperation with our neighbouring countries
- Develop, implement and strengthen programmes for international scientific collaboration, sharing of information and technology transfer
- Develop and implement a coordinated regional programme to increase awareness, knowledge and appreciation of biological resources at various levels
- Strengthen the research and development capacity of the protected area system

### **Implementation, monitoring and review of the NBF**

The NBF is the joint responsibility of a range of lead agents and supporting partners, with DEAT and SANBI playing a co-ordinating, catalysing role in addition to implementing specific Priority Actions.

The NBF must be reviewed every five years. The review will be led by DEAT in collaboration with all lead agents and other key stakeholders, and will involve:

- Assessing progress towards implementing Priority Actions identified in the current NBF
- Assessing progress towards achievement of the NBSAP strategic objectives
- Reviewing and revising Priority Actions for the following five-year period, and compiling these into an updated NBF
- Publishing the updated NBF

### **The Biodiversity Act toolbox**

The Biodiversity Act provides for a range of mechanisms for sustainable use and conservation of biodiversity, in addition to the NBF. These other mechanisms include:

- A guideline for publishing bioregional plans (expected to be published in 2008)
- Regulations on alien and invasive species (draft expected to be published in 2009)

- Regulations on bio-prospecting, access and benefit sharing (expected to be published in 2008)
- Norms and standards on hunting (expected to be published in 2008)
- Regulations on threatened or protected species (published in 2007)
- Listing of threatened or protected species (national list published in 2007)
- Listing of threatened or protected ecosystems (first national list expected to be published in 2008)
- Norms and standards for biodiversity management plans for species (expected to be published in 2008)
- Norms and standards for biodiversity management plans for ecosystems (expected to be published in 2010)

## 1 Introduction to the NBF

The National Biodiversity Framework (NBF) is required in terms of the National Environmental Management: Biodiversity Act (Act No.10 of 2004) (hereafter referred to as the Biodiversity Act).

This introduction to the NBF explains:

- the purpose of the NBF (including what the NBF is not)
- its intended users
- its relationship with the National Biodiversity Strategy and Action Plan (NBSAP) and the National Spatial Biodiversity Assessment (NSBA)
- its relationship with other national policies and strategies

### 1.1 What is the purpose of the NBF?

The purpose of the NBF is to provide a framework to co-ordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity, in support of sustainable development.

*The heart of the NBF is a set of 33 Priority Actions, which provide an agreed set of priorities to guide the work of the biodiversity sector in South Africa for the next five years. These are summarised Table 1 on page x of the Executive Summary, and discussed in more detail in Section 4 of this report.*

The NBF provides a framework for conservation *and* development. Too often in South Africa conservation and development are seen as opposing or irreconcilable goals. As our economy moves towards 6% economic growth, we need to ensure that the way we achieve this growth allows for the continued functioning of ecosystems and the persistence of the natural resource base. This is possible, if care is taken over the location of development, the type of development, and the consumption of natural resources in the development process. Sustainable development depends on *where* and *how* development takes place.

Development is not sustainable if it results in:

- loss and degradation of habitat in threatened ecosystems and critical biodiversity areas
- further introduction or spread of invasive alien species



- over-abstraction of water beyond the limits of the ecological reserve
- over-harvesting of species
- further contributions to climate change

There are many opportunities for development that is consistent with building on and maintaining our extraordinary natural resource base, so that the socio-economic options of future generations are not compromised.

We are fortunate in South Africa to have an excellent base of biodiversity science that can provide tools for streamlining environmental decision-making and ensuring that development is appropriately located and managed. The NBF hopes to contribute to making such tools accessible and useful to a range of socio-economic sectors.

Sustainable use and conservation of biodiversity is a multi-sectoral effort that requires co-ordination and alignment of the efforts of many different organisations and individuals, inside and outside government.

The NBF sets out a framework for achieving this co-ordination and alignment. It does this by:

- highlighting the major pressures on biodiversity in South Africa
- identifying Priority Actions for the next five years for conserving biodiversity (these are a subset of the activities identified in the twenty-year National Biodiversity Strategy and Action Plan)
- setting out the implications of these Priority Actions for agents that will lead their implementation

According to the Biodiversity Act, the NBF must be reviewed at least every five years, providing an opportunity to take stock of progress, review priorities, and realign efforts. The NBF is thus a short- to medium-term tool. Its aim is not to be comprehensive, but rather to focus collective attention and effort on the set of activities that will make the most difference.

According to the Biodiversity Act, the NBF must:

- Provide for integrated, co-ordinated and uniform approach to biodiversity management
- Identify priority areas for conservation action
- Identify priority areas for establishment of protected areas
- Reflect regional co-operation issues concerning biodiversity management in southern Africa

In addition, the NBF aims to:

- Focus attention on the most urgent strategies and actions required for biodiversity management
- Point to roles and responsibilities of key stakeholders, including key organs of state whose mandates impact directly on biodiversity management

The purpose of the NBF is not to:

- Describe South Africa's biodiversity and its importance in detail
- Reiterate South Africa's commitments to conserving biodiversity as a signatory of the Convention on Biodiversity
- Describe the policy and legislative framework for biodiversity conservation in South Africa
- Give a comprehensive review of work currently being undertaken in the biodiversity sector
- Give a comprehensive list of all actions required to conserve and manage South Africa's biodiversity

For more on these topics see the following documents:

- The National Biodiversity Strategy and Action Plan (NBSAP) Country Study (DEAT 2005a)
- The NBSAP (DEAT 2005b)
- The National Spatial Biodiversity Assessment (NSBA) (Driver et al. 2005)
- The Biodiversity of South Africa 2002: Indicators, trends and human impacts (Endangered Wildlife Trust 2002)

## **1.2 Who should use the NBF?**

This section points to the key intended users of the NBF, without whose collaboration effective conservation and sustainable use of South Africa's biodiversity will not be possible. The list of users of the NBF in this section is not comprehensive – there are likely to be additional users not mentioned here.

The intended users of the NBF include the following groups, each of which is expanded on below:

1. Organs of state whose core business includes biodiversity conservation

2. Organs of state whose core business is not biodiversity conservation, but whose policies, programmes and decisions impact directly and substantially on how biodiversity is managed
3. Government-led programmes
4. NGOs wishing to make a contribution to biodiversity conservation in South Africa
5. The private sector, particularly those production sectors whose activities contribute to the major pressures on South Africa's biodiversity, such as loss of natural habitat, over-abstraction of freshwater resources, and over-harvesting of marine resources

**1. Organs of state whose core business includes biodiversity conservation include:**

- Department of Environmental Affairs and Tourism (DEAT)
- South African National Biodiversity Institute (SANBI)
- South African National Parks (SANParks)
- World Heritage Site Authorities
- Department of Water Affairs & Forestry (DWAF)
- Provincial conservation authorities

Provincial conservation authorities include:

- Provincial conservation agencies or parks boards:
  - CapeNature (Western Cape)
  - Eastern Cape Parks (ECP)
  - Ezemvelo KwaZulu-Natal Wildlife (EKZNW)
  - Mpumalanga Tourism and Parks Agency (MTPA)
  - North West Parks and Tourism Board (NWPTB)
  - Limpopo Tourism and Parks Board (LTPB)(Of these six, CapeNature and EKZNW have a mandate to work throughout the province concerned, inside and outside protected areas. The other four have a mandate to work only within protected areas.)
- Provincial environment affairs and/or conservation departments:
  - Eastern Cape Department of Economic Development and Environmental Affairs (DEDEA)
  - Free State Department of Tourism, Economic and Environment Affairs (DTEEA)
  - Gauteng Department of Agriculture, Conservation and Environment (GDACE)
  - KwaZulu-Natal Department of Agriculture and Environment Affairs (DAEA)

- Limpopo Department of Economic Development, Environment and Tourism (DEDET)
- Mpumalanga Department of Agriculture and Land Administration (DALA)
- North West Department of Agriculture, Conservation and Environment (NWDACE)
- Northern Cape Department of Tourism, Environment and Conservation (DTEC)
- Western Cape Department of Environment Affairs and Development Planning (DEA&DP)

**2. Organs of state whose core business is not biodiversity conservation, but whose policies, programmes and decisions impact directly and substantially on how South Africa's biodiversity is managed, include:**

- National Department of Agriculture (DoA)
- Provincial departments of agriculture
- Department of Minerals and Energy (DME)
- Department of Land Affairs (DLA)
- Department of Public Works (DPW)
- Municipalities
- South African Heritage Resources Agency and provincial Heritage Resources Authorities.

These organs of state play a key role in managing natural resources, and are required to take biodiversity into account in terms of the Constitution and NEMA.

In addition, the following national departments, while not directly responsible for managing natural resources, play a role in establishing policy and implementation frameworks that impact on biodiversity conservation:

- The Presidency
- Department of Provincial and Local Government (DPLG)
- Department of Science and Technology (DST)
- Department of Arts and Culture (DAC)
- Department of Trade and Industry (DTI)
- National Treasury

The local sphere of government deserves particular mention. Day-to-day decisions about how land and other natural resources are used at the local level ultimately determine whether

development is sustainable. While local government does not make all these decisions itself (many of them are made by provincial or national departments, or by individual landowners or resource users), it has a key role to play in ensuring co-ordination and integrated management of natural resources. The South African Local Government Association (SALGA) has an important role to play in building the capacity of local government to do this.

### **3. Government-led programmes include:**

- Working for Water
- Working for Wetlands
- Working on Fire
- LandCare
- CoastCare
- Community Based Natural Resource Management

### **4. NGOs in the conservation sector**

The biodiversity sector in South Africa includes a range of international, national and local NGOs that make significant contributions to achieving the objectives of the NBSAP, including through mobilising civil society involvement in the conservation and sustainable use of biodiversity, through fundraising, and through piloting innovative approaches to conserving biodiversity.

Examples of national NGOs in the biodiversity sector include:

- Birdlife South Africa
- Botanical Society of South Africa, including its Conservation Unit
- Conservation International (CI)
- Endangered Wildlife Trust (EWT)
- IUCN (World Conservation Union) South Africa
- Peace Parks Foundation (PPF)
- Wildlife and Environment Society of South Africa (WESSA)
- World Wide Fund for Nature South Africa (WWF-SA)
- Wilderness Foundation (WF)

5. **Production sectors whose activities contribute substantially to the major pressures on South Africa's biodiversity, and which thus have an important role to play in contributing positively to biodiversity conservation, include, amongst others:**

- Cultivation, including biofuels
- Plantation forestry
- Mining
- Commercial fishing
- Property development, especially coastal property development
- Energy production
- Construction and infrastructure development
- Livestock farming

6. **Production sectors whose activities can be compatible with biodiversity management objectives, include, amongst others:**

- Livestock and game farming
- Wildlife tourism and hunting
- Indigenous forest management

### **1.3 Relationship between the NBF, the NBSAP and the NSBA**

The NBF rests on two preceding documents, both of which were based on extensive stakeholder consultation: the National Biodiversity Strategy and Action Plan (NBSAP) and the National Spatial Biodiversity Assessment (NSBA).

#### **Overview of the NBSAP**

The NBSAP sets out a comprehensive long-term strategy for the conservation and sustainable use of South Africa's biodiversity, including medium- and long-term targets. It was finalised in May 2005, after a two-year development process. The NBSAP is a twenty-year strategy, developed as part of South Africa's commitments to the Convention on Biological Diversity (CBD).

The overall goal of the NBSAP is: To conserve and manage terrestrial and aquatic biodiversity to ensure sustainable and equitable benefits to the people of South Africa, now and in the future

The NBSAP identifies five strategic objectives (SOs) that are required to achieve this goal:

- SO 1: An enabling policy and legislative framework integrates biodiversity management objectives into the economy
- SO 2: Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector
- SO 3: Integrated terrestrial and aquatic management minimizes the impacts of threatening processes on biodiversity, enhances ecosystem services and improves social and economic security
- SO 4: Human development and well-being is enhanced through sustainable use of biological resources and equitable sharing of the benefits
- SO 5: A network of conservation areas<sup>1</sup> conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape

For each of these strategic objectives, the NBSAP identifies outcomes, activities, targets and indicators.

### **Overview of the NSBA**

The NSBA provides a spatial picture of the location of South Africa's threatened and under-protected ecosystems, and focuses attention on geographic priority areas for biodiversity conservation. South Africa's first NSBA was undertaken in 2004, and published in April 2005. The NSBA will be updated every five years, in time to feed into the review of the NBF.

The NSBA is based on the systematic approach to biodiversity planning, which is driven by two principles:

---

<sup>1</sup> The NBSAP uses the term "conservation areas" as an umbrella term that refers both to formal protected areas and to informal conservation areas. However, in the development of the National Protected Area Expansion Strategy (underway at the time of writing) the decision was made to use the term "protected areas" to refer to formal protected areas recognised in terms of the Protected Areas Act, and the term "conservation areas" to refer to areas that receive some level of informal protection but are not recognised in terms of the Protected Areas Act. The NBF uses the terms "protected areas" and "conservation areas" in the same way they are used in the National Protected Area Expansion Strategy.

- The principle of representation, or the need to conserve a representative sample of biodiversity pattern, including ecosystems, habitats and species
- The principle of persistence, or need to conserve ecological and evolutionary processes that allow biodiversity to persist over time

The NSBA 2004 found that 82% of South Africa's main river ecosystems are threatened compared with 34% of our terrestrial ecosystems, highlighting the fact that South Africa is a water-scarce country in which freshwater ecosystems are under great pressure.

Our protected area network is biased towards particular ecosystems and species. It does not conserve a representative sample of biodiversity, and excludes key ecological processes. This means that appropriate management of land and natural resources outside protected areas, especially in threatened ecosystems, is crucial for conserving biodiversity.

### How the NBF fits in

The NBF is informed by both the NBSAP and the NSBA, as shown in Figure 1. It draws together key elements of each, and focuses attention on the immediate priorities, both spatial and thematic, for the next five years.

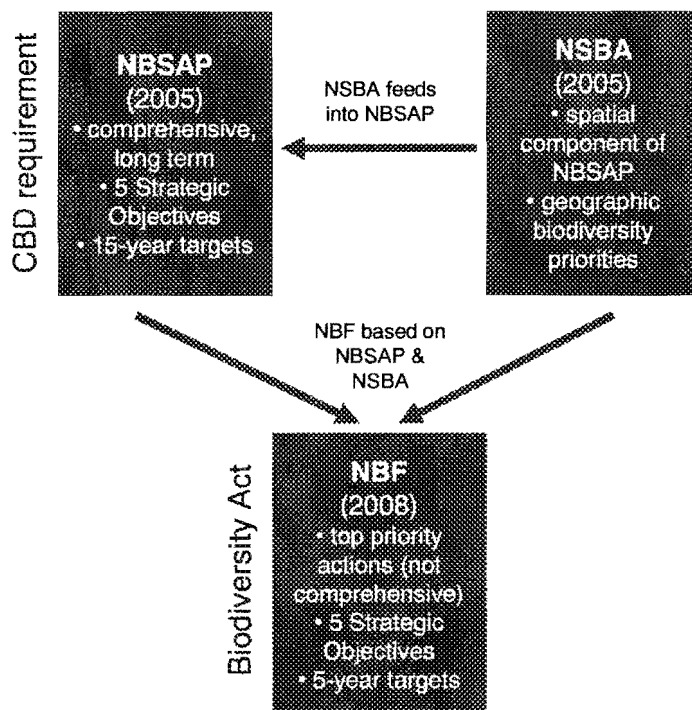


Figure 1: Relationship between the NBSAP, NSBA and NBF



## **1.4 Relationship between the NBF and other national policies and strategies**

### **Strategic Plan for the Environmental Sector**

DEAT has led the development of a draft Strategic Plan for the Environmental Sector, for 2008 to 2013. The purpose of this strategic plan is to develop a common sector-wide strategic implementation plan for the environmental sector in South Africa, and to maximise efficient use of the limited resources available for achieving environmental sustainability. The plan should be read as a forward looking common perspective for the sector by government under the custodianship of DEAT, the provincial departments responsible for the environment, and the public entities at both national and provincial level.

The Strategic Plan for the Environmental Sector deals with the same time period as the NBF (2008 – 2013) but has a much wider ambit, covering the following core focus areas:

- air quality management
- waste and chemicals management
- pollution incident management and response
- environmental impact management
- conservation and sustainable use of biodiversity
- marine and coastal management

The draft of the NBF which published for public comment in June 2007 fed directly into the development of the Strategic Plan for the Environmental Sector, forming the basis for the core focus area on biodiversity.

### **Accelerated and Shared Growth Initiative for South Africa (ASGISA)**

As the South African economy moves towards the 6% growth rate targeted by national economic policy, the prospect of achieving major social goals such as halving poverty and unemployment by 2014 becomes real. A sustained 6% growth rate also means that the size of the economy will double approximately every 11 years, with major implications for the use of natural resources, especially water and natural habitat. We need to ensure that the way we achieve 6% growth allows for the continued functioning of ecosystems and the persistence of the natural resource base. This is possible, if care is taken over the location of

development, the type of development, and the consumption of natural resources in the development process.

Sustainable development means avoiding development that results in:

- loss and degradation of natural habitat in threatened ecosystems or critical biodiversity areas
- further introduction or spread of invasive alien species
- over-abstraction of water beyond the limits of the ecological reserve
- over-harvesting of species
- further contributions to climate change

The NSBA, together with finer scale biodiversity plans for various parts of the country, points to ecosystems and locations where particular caution is needed before decisions are made to destroy or disturb natural habitat. Published bioregional plans in terms of the Biodiversity Act, based on systematic biodiversity plans, will provide a mechanism for streamlining environmental decision-making, contributing directly to achieving one of the objectives of ASGISA by reducing the regulatory hurdles to development, and helping to ensure that 6% growth does not compromise our natural resource base.

The NBF highlights the need to use spatial biodiversity plans to streamline environmental decision-making, and to develop the ability of the ecotourism sector and the natural products sector to contribute directly to job-creating growth.

### **National Framework for Sustainable Development (NFSD)**

South Africa's NFSD highlights the need for maintaining the health and integrity of terrestrial and aquatic ecosystems as an underpinning of sustainable development. Strategic interventions for biodiversity conservation identified in the NFSD are consistent with those identified in the NBF. The NBF provides more detail than the NFSD, in which biodiversity was one of many priorities addressed.

The NFSD highlights the following opportunities and key challenges for sustainable development with respect to biodiversity, each of which is addressed in one or more of the Priority Actions discussed in Section 4:

- |  |                                 |
|--|---------------------------------|
|  | Reflected in NBF                |
| • Making the case for the value of biodiversity  | Priority Action 1               |
| • Minimising loss and degradation of natural habitat, especially in threatened ecosystems  | Priority Actions 18,19, 20      |
| • Preventing and controlling impacts of alien and invasive species   | Priority Actions 4, 21          |
| • Making sure that extractive use of our natural resources is sustainable, especially in marine environment  | Priority Actions 5, 19, 25      |
| • Building the capacity of local government to include biodiversity opportunities and constraints in integrated development planning and other municipal functions | Priority Action 12              |
| • Unlocking a mechanism for integrated natural resources management at local level   | Priority Action 13              |
| • Expanding the protected area network through innovative mechanisms   | Priority Actions 29, 30, 31, 32 |

### **National Action Programme: Combating Land Degradation to Alleviate Rural Poverty (NAP)**

In 1997 South Africa ratified the United Nations Convention to Combat Desertification (UNCCD), which provides a framework for countries affected by desertification to address the problem of land degradation effectively at a national level. DEAT is the focal point of the UNCCD in South Africa, and has in collaboration with other relevant departments (including DoA, DWAF, DME, DLA) and other key partners (including NGOs and the DBSA), developed a National Action Programme Combating Land Degradation to Alleviate Rural Poverty (NAP) (DEAT 2004a) as part of the country's commitments under the UNCCD.

As will be discussed in Section 3.1, degradation of natural habitat in terrestrial and aquatic ecosystems is an important cause of biodiversity loss. The NAP addresses a wide range of issues related to desertification, land degradation, and the effects of drought, some of which have strong links with biodiversity. The NAP proposes the development of a sustainable land management framework, which should include biodiversity objectives.

The implementation of several of the Priority Actions in the NBF, discussed in Section 4, will directly support the achievement of several of the priority activities identified in the NAP, as summarised below. There is scope in future revisions of the NAP and NBF to improve alignment and synergy between the two.

**NAP Strategic Objectives and Activities**

**Supported by NBF Priority Actions**

*NAP Strategic Objective 1: Strengthened governance in the national and provincial spheres for an integrated and co-ordinated thrust in the NAP*

NAP Activity 1.6 The National Water Resource Strategy and catchment management

NBF Priority Action 22. Implement the cross-sector policy objectives for conservation of inland water biodiversity

NBF Priority Action 23. Incorporate biodiversity conservation objectives in the work of Catchment Management Agencies

NAP Activity 1.7 The National Sustainable Land Management Framework

NBF Priority Action 16. Develop provincial spatial biodiversity plans in additional provinces (these should inform biodiversity objectives in the National Sustainable Land Management Framework)

NBF Priority Action 18. List threatened or protected ecosystems in terms of the Biodiversity Act

NAP Activity 1.9 Achieve synergy between the relevant Conventions: CCD, FCCC, CBD, Ramsar, and the forest agreements

NBF Priority Action 14. Support the development and strengthening of bioregional and ecosystem programmes (these are specifically mentioned in the outcomes for this NAP activity)

NBF Priority Action 15. Develop and implement an integrated programme for ecosystem adaptation to climate change, with an emphasis on ecosystems vulnerable to climate change impacts

*NAP Strategic Objective 2: Strengthened local institutions and instruments for sustainable land management and project that contribute to substantial eradication of rural poverty*

NAP Activity 2.2 Finalising the standards for the integrated planning package: CBNRM principles, DPLG community-based planning process, local area plans and land degradation risk management

NBF Priority Action 12. Establish a national programme to build the capacity of municipalities to include biodiversity opportunities and constraints in their planning and operations

NBF Priority Action 13. Establish pilot projects to explore mechanisms for integrated natural resource management at the district level

NAP Activity 2.3 Building land management institutions in municipalities located in areas with predominantly communal land

NBF Priority Action 12. Establish a national programme to build the capacity of municipalities to include biodiversity opportunities and constraints in their planning and operations

NBF Priority Action 13. Establish pilot projects to explore mechanisms for integrated natural resource management at the district level

**NAP Strategic Objectives and Activities**

**Supported by NBF Priority Actions**

*NAP Strategic Objective 4: Effective mobilisation, generation and delivery of the knowledge and information required to support sustainable land management*

NAP Activity 4.2 Building and retaining the capacity among institutions, people and communities to conduct sustainable land management

NBF Priority Action 7. Establish and implement a human capital development strategy for the biodiversity sector to address transformation and scarce skills

NAP Activity 4.4 National priorities in research and the development of sustainable land management policy and practice

NBF Priority Action 10. Establish and implement a national biodiversity research strategy

NAP Activity 4.5 Global change and land degradation

NBF Priority Action 15. Develop and implement an integrated programme for ecosystem adaptation to climate change, with an emphasis on ecosystems vulnerable to climate change impacts

NAP Activity 4.10 Systems to deliver information to the local development plans

NBF Priority Action 9. Improve biodiversity information management and access

*NAP Strategic Objective 5: Assessment of and improvement to policies that impact on land management*

NAP Activity 5.1 Regulations and incentives for the promotion of the combating of land degradation

NBF Priority Action 2. Integrate biodiversity considerations into fiscal policy through environmental fiscal reform.

NBF Priority Action 3. Integrate biodiversity considerations into land-use planning and decision-making, by developing tools for supporting and streamlining environmental decision-making

NBF Priority Action 20. Work with key production sectors to minimise loss and degradation of natural habitat in threatened ecosystems and critical biodiversity areas

*NAP Strategic Objective 7: Monitoring, evaluation and continuous improvement*

NAP Activity 7.1 A system of indicators against which land degradation and NAP implementation is monitored must be established, and these must be co-ordinated with current reporting processes

NBF Priority Action 11. Establish and implement a national monitoring and reporting framework for biodiversity

## **National Spatial Development Perspective (NSDP)**

The NSDP establishes principles for the spatial location and alignment of infrastructure investment in South Africa, in order to maximise the impact of scarce resources. It is designed to act as an indicative planning tool for all spheres of government with emphasis on the spatial implications for infrastructure and development policy and programmes in all three tiers of government.

The principles of the NSDP are consistent with biodiversity conservation objectives, especially to the extent that they encourage compact, nodal urban development and discourage investment in fixed infrastructure in marginal areas of limited economic potential.

Direct links between the NBF and the NSDP are limited, but no direct conflicts between the two are evident. The set of maps included in the NSDP includes a map of environmentally sensitive areas, but not a map of threatened ecosystems or biodiversity priority areas. Biodiversity maps and information could be included in any future revisions of the NSDP.

### **1.5 Structure of the NBF**

The NBF is structured as follows:

- Section 1 has introduced the NBF, including its purpose, intended users, and relationship to the NBSAP and the NSBA
- Section 2 summarises why South Africa's biodiversity is important
- Section 3 briefly discusses the major pressures on South Africa's biodiversity
- Section 4 is the heart of the NBF: it outlines the priority strategies and actions for conserving South Africa's biodiversity, drawing directly on the NBSAP and the NSBA
- Section 5 deals with priority actions for regional (Southern African) co-operation
- Section 6 discusses the implementation, monitoring and review process envisaged for the NBF
- Section 7 outlines additional mechanisms for implementing the Biodiversity Act, over and above the NBF

## 2 Why South Africa's Biodiversity Matters

It is well known and well documented that South Africa's biodiversity is globally unique (see for example DEAT 2005a). Perhaps less recognised and appreciated in the socio-economic importance of our country's biodiversity resources.

South Africa's biodiversity provides an important basis for economic growth and development, in obvious ways such as providing a basis for our fishing industry, rangelands that support commercial and subsistence farming, horticultural and agricultural industry based on indigenous species, our tourism industry, aspects of our film industry, and commercial and non-commercial medicinal applications of indigenous resources. Keeping our biodiversity intact is also vital for ensuring ongoing provision of ecosystem services such as production of clean water through good catchment management, prevention of erosion, carbon storage (to counteract climate change) and clean air. Loss of biodiversity puts aspects of our economy and quality of life at risk, and reduces socio-economic options for future generations

People are ultimately fully dependent on living, functional ecosystems and their services they provide. The rural poor are more directly affected – poor people have limited assets and are more dependent on common property resources for their livelihoods, whilst the wealthy are buffered against loss of ecosystem services by being able to purchase basic necessities and scarce commodities. Our path towards sustainable development, poverty reduction and enhanced human well-being is therefore dependent on how effectively we conserve biodiversity.

Natural assets in most instances are harvested as part of an informal or second economy or cannot be traded. The benefits of South Africa's biodiversity stock and the flow of goods and services it generates therefore generally do not accrue through the market system and therefore does not generate sufficient private investment and institutions for its conservation and restoration. It also has limited potential for commercialisation. However, the social impacts and economic costs of not managing ecosystems in a sustainable manner is high, as is demonstrated through land degradation, loss of ecosystem resilience, loss of freshwater resources, the intensification of the global carbon cycle and resulting climate change, the loss of fishing stock and the deterioration of air quality. Based on several South African case studies, the average rural person who has open access to mostly communal lands derived a largely unaccounted value of R800 -

R1 000 per year from wild products and ecosystem grazing services to support their livestock, translating into an average value of R6 000 per household per year (De Wit 2006).

For the whole of South Africa, the added value of ecosystems in the production of biological resources as well as the final consumption of ecosystems was recently conservatively estimated at a baseline reference value of R27 billion per annum, or R20 000 per terrestrial km<sup>2</sup>, with a spread of around R30 000/km<sup>2</sup> for savannas and grasslands to R5 500/km<sup>2</sup> for the Karoo. Indirect use values (mostly notably grazing and pollination inputs) account for two thirds of this value, while direct consumptive use values (nature's share of timber resources, aquatic resources, crops and plant resources and animal resources) account for 28% and non-consumptive use (nature based tourism) for 6% of total value (De Wit 2006).

Even if values are assumed unrealistically low, biodiversity still plays a significant role in the South African economy. If it is assumed under an arbitrary 10% scenario that:

- only 10% of the value of nature-based tourism is directly dependent on ecosystems
- pollination services are only 10% of the value measured in the fynbos biome
- and that value of the sequestered carbon is only R6.50/ton CO<sub>2</sub>,

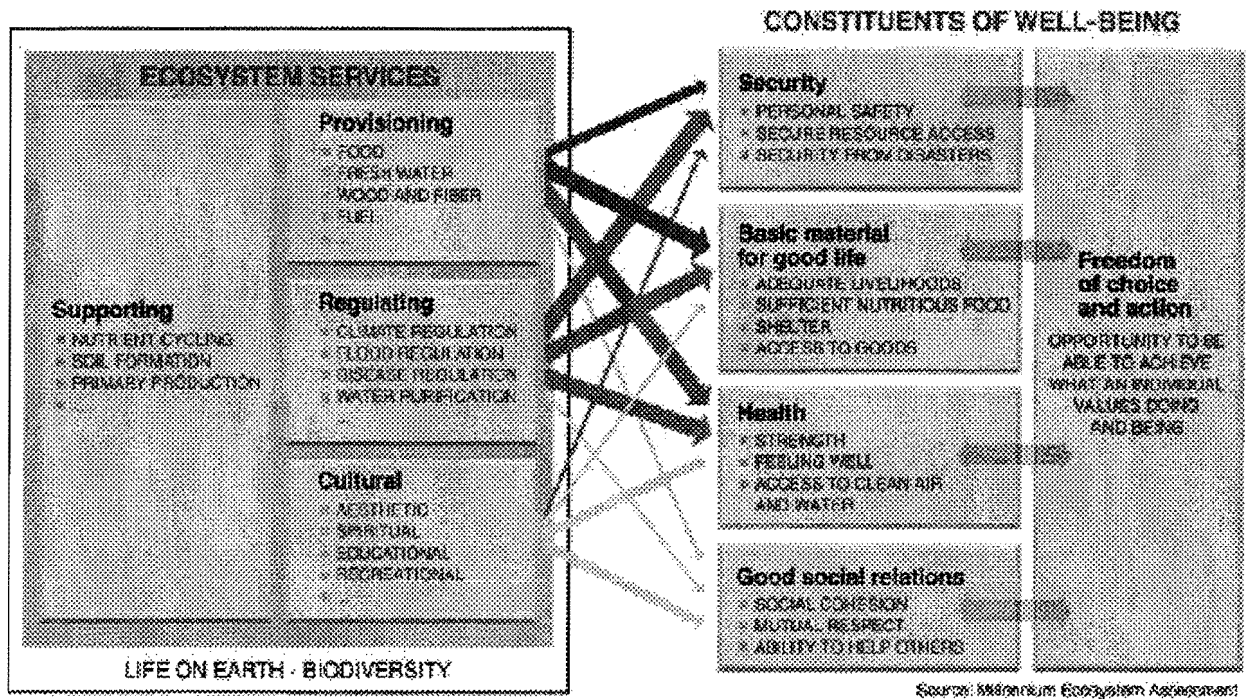
the added value of ecosystems in the production of biological resources as well as the final consumption of ecosystems is still estimated at a value of more than R10 billion/year (De Wit 2006).

It is obvious that economic valuation of biodiversity is needed and can help in better informing decision-making processes. If the economic value of biodiversity is not included in decision making processes, sustainable development will not be achieved. With ecosystems that provide a list of goods and services that play an important role in formal economic activities, as well as contributing in a substantial way to the rural poor, it is imperative to have an estimate on the extent of these economic values and a way to communicate this message to decision makers in fields such as public and private finance, socio-economic development, industrial policy, fiscal policy, environmental protection and restoration, and poverty alleviation.

The linkages between ecosystem services and human well-being, as identified by the Millennium Ecosystem Assessment, are depicted in the diagram below.



### Linkages between ecosystem services and human well-being



**ARROW'S COLOR:**  
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

**ARROW'S WIDTH:**  
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Figure SDM - A - The MA framework.

### 3 Major Pressures on South Africa's Biodiversity

Many people are not aware of the impact of ordinary day-to-day activities on the functioning of ecosystems, and often see biodiversity conservation as being about protecting individual rare or threatened species rather than maintaining the integrity of ecosystems on which we depend for survival.

The major pressures on South Africa's biodiversity are:

- loss and degradation of natural habitat, in terrestrial and aquatic ecosystems
- invasive alien species
- over-harvesting of species, especially in the marine environment
- over-abstraction of water, especially for irrigation
- climate change

There are of course many other pressures on biodiversity, but these ones account for the majority of the damage to ecosystems, and are thus the most urgent ones to address. Each of these is briefly explained below.

#### 3.1 Loss and degradation of natural habitat

Loss of natural habitat occurs when natural ecosystems are disturbed to the extent that they cannot recover. This occurs especially through:

- cultivation
- plantation forestry
- mining
- urban sprawl (as opposed to compact urban development)
- ribbon development along the coast
- trawl fisheries (that damage the ocean bed)

Loss of natural habitat, and the fragmentation of the remaining habitat that goes with it, is the single biggest cause of biodiversity loss in South Africa. In almost all cases it is irreversible. Degradation (as opposed to loss) of natural habitat occurs when natural ecosystems are disturbed, but may still be able to recover. Overgrazing is a major cause of degradation. Some ecosystems recover more easily from degradation than others, with more arid ecosystems generally taking longer to recover.

Loss and degradation of natural habitat affect both terrestrial and aquatic ecosystems. For example, when riparian habitat (river banks) and wetlands are disturbed, not only is the terrestrial habitat itself affected, but the health of the river, wetland system and estuary is compromised.

Pollution causes degradation and in some cases outright loss of natural habitat, especially in aquatic environments. Examples include oil spills in marine and coastal environments, point-source industrial and agricultural pollution into rivers and wetlands, and agricultural pesticides that impact on pollinators and ecosystem functioning.

Not all loss of natural habitat is a problem. It is crucial to avoid loss and degradation of natural habitat in critical biodiversity areas. Critical biodiversity areas include:

- critically endangered ecosystems
- endangered ecosystems
- ecological corridors
- river corridors
- critical wetlands and estuaries
- special habitats

Bioregional plans published in terms of the Biodiversity Act will identify critical biodiversity areas on a map, and will provide guidelines for land-use planning and decision-making in these critical biodiversity areas.

### **3.2 Invasive alien species**

Invasive alien species, both plants and animals, are a major problem in terrestrial, freshwater and marine environments. They displace indigenous species, disturb habitats, and disrupt ecosystem functioning.

The problem is two-fold:

- It is difficult to manage and control invasive alien species that are already present in South Africa
- It is difficult to prevent entry of new invasive alien species

In the terrestrial environment, the major invasive alien species are woody plants. In addition to disrupting terrestrial ecosystem functioning, they use much more water than indigenous vegetation, and therefore disrupt freshwater ecosystems as well, especially when the invasive alien plants occur in riparian zones (along river banks).

In the freshwater environment, the major invasive alien species are fish, such as bass, which eat indigenous fish and damage habitats, and weeds such as the water hyacinth which disrupt ecosystem functioning.

In the marine environment, major invasive alien species include the blue mussel, which cannot be eradicated, and the European shore crab which can and should be eradicated. The aquaculture industry, if not carefully managed, is likely to result in new invasive alien species problems in the marine environment.

The Alien and Invasive Species Regulations that will be published in terms of the Biodiversity Act cater for a range of measures to address the problems associated with invasive alien species.

### **3.3 Over-abstraction of freshwater, especially for irrigation**

Freshwater ecosystems in South Africa are under even more pressure than terrestrial ecosystems, reflecting the fact that we are a water-scarce country. According to the NBSA, 44% of our main river ecosystems were critically endangered in 2004, compared with 5% of terrestrial ecosystems.

Freshwater ecosystems include rivers, wetlands and groundwater. The biggest pressure on freshwater ecosystems is flow modification, which occurs as a result of building dams and weirs, extracting water for agricultural, industrial and human use, and changing the course of a river.

The next biggest pressures on freshwater ecosystems are loss of natural habitat in the riparian zone and further away in the catchment, and invasive alien species in the riparian zone and in the river.

All of these pressures in freshwater ecosystems apply equally to estuaries, and can also impact on near-shore marine habitats.

The National Water Act provides for an ecological reserve – an amount of water that “belongs” to the river and is needed to maintain its ecological functioning. However, the implementation of the ecological reserve is complex, especially in cases where it involves retracting existing water rights. Catchment Management Agencies (CMAs), currently being established by DWAF, will play a major role in rolling out the implementation and enforcement of the ecological reserve.

### **3.4 Over-harvesting of marine species**

Over-harvesting occurs in some terrestrial ecosystems (for example, over-harvesting of some medicinal species), but is not a major pressure compared to loss of natural habitat and invasive alien species. However, in the marine environment, over-harvesting of marine living resources especially through commercial and recreational fishing is by far the single biggest pressure on biodiversity.

We do not have current stock assessments for many important commercial marine species, so the full extent of the problem may not be appreciated. However, we do know that the stock status of eleven of our line fish species is considered collapsed. “Collapsed” means that less than 20% of the breeding stock remains, and the species is in danger of commercial extinction. These line fish species include ones that are still commonly served in restaurants all over the country, such as kob, certain rockcods and slinger.

Depletion of fish stocks themselves is not the only problem. Often commercial and recreational fishing results in by-catch and accidental death of other species such as seabirds and turtles, to the extent that they also become threatened. Some types of fishing damage the seabed or other habitat that supports marine resources.

### **3.5 Climate change**

Global climate change, caused by increasing levels of greenhouse gases in the atmosphere as a result of human activities, is no longer disputed. Although uncertainties exist about the extent of the changes and the scope and depth of economic impacts, it is accepted that climatic changes are underway and are leading to ecological changes. Climate change is likely to impact on the economy and society at large. It is the poor and

marginalized who are most likely to be exposed to these impacts, and least able to cope due to lack of access to both resources and social services.

The projected decline in South Africa's biodiversity that is noted in climate change assessment reports is especially worrying. Climate change modelling suggests a reduction of the area covered by the current biomes by up to 55% in the next 50 years. The largest losses are predicted to occur in the western, central and northern parts of the country. Species composition is expected to change, which may also lead to significant changes in the vegetation structure in some biomes, and, in some extreme cases, even leading to total species loss. Climate modelling predicts that most animal species will become increasingly concentrated in the proximity of the higher altitude eastern escarpment regions, with significant losses in the arid regions of the country (DEAT 2004b).

Five major ecosystem processes that may be affected through changes in biodiversity have been identified as community respiration, decomposition, nutrient retention, plant productivity and water retention. There is strong evidence that biodiversity, including the number, abundance and composition of genotypes, populations, species, functional units and landscape units, significantly influences the provision of ecosystem services and therefore human well being (Diaz & Tilman 2004). The reduction in the number of species, especially rare species, may only have subtle effects on ecosystem services in the short term, but can compromise the capacity of ecosystems to adjust in the face of a changing climate. By affecting processes such as primary production, nutrient and water cycling, and soil formation and retention, biodiversity indirectly supports the production of food, potable water and other natural products. Fragmentation of habitats also affects carbon cycling processes and reduces carbon storage.

The predicted rise in sea surface temperature will result in the migration of coastal species. Further, changes in sea temperature may increase the intensity and frequency of upwelling events. This would cause alterations of near-shore currents, which can be expected to have significant impacts on rocky shore ecosystems in South Africa. The nutrient and larval supply to the coast would be affected, thus influencing the community structures. In addition, studies have indicated that there would be an increase in the occurrences of the harmful 'red tide' events on the west coast which cause mass mortalities of fish, shellfish, marine mammals, seabirds and other animals, and can result in illness and death in persons who eat contaminated seafood (DEAT 2004b).

With regard to water resources, South Africa's rainfall is already highly variable in spatial distribution and unpredictable, both within and between years. Much of the country is arid or semi-arid and the whole country is subject to droughts and floods. A reduction in the amount or reliability of rainfall, or an increase in evaporation, would exacerbate the already serious lack of surface water and groundwater resources. Water availability in the arid and semi-arid regions, which cover nearly half of South Africa, is particularly sensitive to changes in precipitation. Desertification, which is already a problem in South Africa, could be exacerbated by climate change. Furthermore, climate change may alter the magnitude, timing and distribution of storms that produce flood events (DEAT 2004b).

### **3.6 The challenge is how to conserve AND develop (vs conserve OR develop)**

The challenge we face in addressing these pressures on biodiversity is not to conserve OR to develop, but rather how to conserve AND develop. The issue is not whether development takes place but rather *where* and *how* it takes place. The biodiversity sector is developing increasingly effective tools to support and streamline environmental decision-making and ensure that development is appropriate. Key among these are published bioregional plans in terms of the Biodiversity Act, which will identify critical biodiversity areas, including ecological corridors and important catchments, and give land-use planning and decision-making guidelines for these critical biodiversity areas.

Sustainable development is development that avoids:

- loss and degradation of natural habitat in threatened ecosystems and critical biodiversity areas
- further introduction or spread of invasive alien species
- over-abstraction of water beyond the limits of the ecological reserve
- over-harvesting of species
- further contributions to climate change

## 4 Priority Actions for Conserving and Managing South Africa's Biodiversity

This section identifies 33 Priority Actions for conserving and managing South Africa's biodiversity, and highlights spatial priorities for biodiversity conservation. As explained in Section 1.3, the NBSAP is a twenty-year strategy which identifies five strategic objectives and a comprehensive set of outcomes for each. The NBF draws out immediate priorities for the next five years within each of the Strategic Objectives (SOs) of the NBSAP. This section is organised according to the Strategic Objectives of the NBSAP.

South Africa has good policy and legislation for the wise use and management of biodiversity, notwithstanding some gaps (see SO1 below). Much of it is relatively new. The overall challenge for the next five years is to implement existing policy and legislation effectively.

A theme that runs through many of the Priority Actions discussed below is mainstreaming biodiversity, which means integrating biodiversity considerations in the policies, strategies and day-to-day operations of a range of sectors whose core business is not biodiversity conservation. Mainstreaming biodiversity is essential for overcoming the "conservation vs. development" mindset, and for ensuring sustainable development.

### 4.1 SO 1: Enabling policy and legislative framework

**Twenty-year objective:** An enabling policy and legislative framework integrates biodiversity management objectives into the economy.

#### Top Priority Actions for 2008 to 2013:

1. Make the case for the value of biodiversity as a cornerstone of sustainable development
2. Integrate biodiversity considerations into fiscal policy through environmental fiscal reform
3. Integrate biodiversity considerations in land-use planning and decision-making, by developing tools for supporting and streamlining environmental decision-making
4. Finalise the regulatory framework for the prevention, containment and eradication of alien and invasive species (AIS)



5. Strengthen the regulatory framework for species of special concern
6. Finalise the regulatory framework for bioprospecting, access and benefit sharing

## **1. Make the case for the value of biodiversity as a cornerstone of sustainable development**

The biodiversity sector has not made an effective case for the role of biodiversity in sustainable development, and for the links between biodiversity and socio-economic development. There is an urgent need to make the case for biodiversity, and to disseminate it among decision-makers and the public, if we are to address the major causes of biodiversity loss discussed in Section 3.

This includes working with Statistics South Africa to further develop tools for valuing biodiversity and to reflect the value of biodiversity in South Africa's national resource accounts.

**Lead agents:** DEAT, SANBI

### **2013 target:**

- Partial economic valuation of South Africa's biodiversity has been completed, and presented effectively to key decision-makers and the public.

## **2. Integrate biodiversity considerations into fiscal policy through environmental fiscal reform**

This involves developing fiscal instruments for improved biodiversity management, as part of the National Treasury's environmental fiscal reform initiative.

### *a. Fiscal instruments that encourage private landowners to contribute their own resources to effective biodiversity management*

Most of South Africa's biodiversity is in private hands, and private landowners (individuals or companies) are often willing to contribute their own resources to maintaining biodiversity and ecosystem functioning on their land. Incentives such as income tax or rates deductions for expenditure on controlling invasive alien species or on rehabilitating ecosystems, and estate duty provisions that encourage philanthropy