SOUTH AFRICA'S
FIFTH NATIONAL REPORT
TO THE CONVENTION ON BIOLOGICAL DIVERSITY

March 2014

Republic of South Africa

Preface

South Africa's Fifth National Report to the Convention on Biological Diversity has been prepared in accordance with Article 26 of the Convention and decision X/10 of the Conference of the Parties. The structure of the report is based on the Guidelines for the Fifth National Report published by the Convention. The report was prepared by the South African National Biodiversity Institute at the request of the Department of Environmental Affairs, with contributions from the Department of Environmental Affairs and relevant stakeholders through a workshop, written submissions, and inputs on a draft of the report (see Appendix I for further information on the preparation of the report). Thanks go to all those who contributed.

In line with the Guidelines for the Fifth National Report, the report emphasises synthesis and analysis rather than detailed description, and does not repeat content that was covered in South Africa's Fourth National Report. Where appropriate, readers are referred to the Fourth National Report for additional background information.

Executive Summary

(Please note that references are not provided in the text of this executive summary. Please refer to the full report for the relevant references, as well as additional maps, graphs and tables.)

South Africa's Fifth National Report to the Convention on Biological Diversity (CBD) has been prepared in accordance with Article 26 of the Convention and decision X/10 of the Conference of the Parties, based on the Guidelines for the Fifth National Report published by the Convention.

South Africa is considered as one of the most biologically diverse countries in the world due to its species diversity and endemism as well as its diversity of ecosystems. These rich endowments of biodiversity assets provide immense opportunity to support the country's development path, especially as the knowledge base on the value of ecosystems and how to manage them effectively expands. An emerging focus on ecological infrastructure, defined as naturally functioning ecosystems that deliver valuable services to people, is helping to unlock investment in South Africa's ecosystems, with multiple social, environmental and economic benefits.

Status of South Africa's biodiversity

South Africa recently undertook a second national assessment of the country's biodiversity, the National Biodiversity Assessment (NBA), which was completed in 2011. This followed from the National Spatial Biodiversity Assessment (NSBA), undertaken in 2004. Two national ecosystem indicators are assessed in the NBA: ecosystem threat status and ecosystem protection level. Each indicator is assessed in a consistent way across all environments, enabling comparison between terrestrial, river, wetland, estuarine, coastal and marine ecosystems, as summarised in Figure A and Figure 6. Maps of these indicators are shown in the full report.

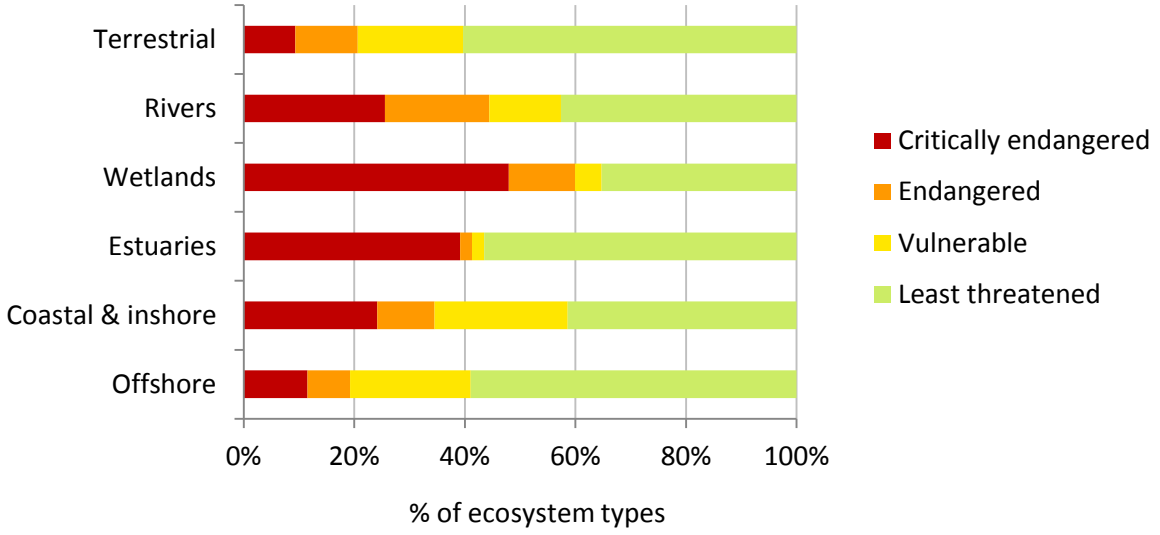

Figure A: Summary of ecosystem threat status across terrestrial and aquatic environments

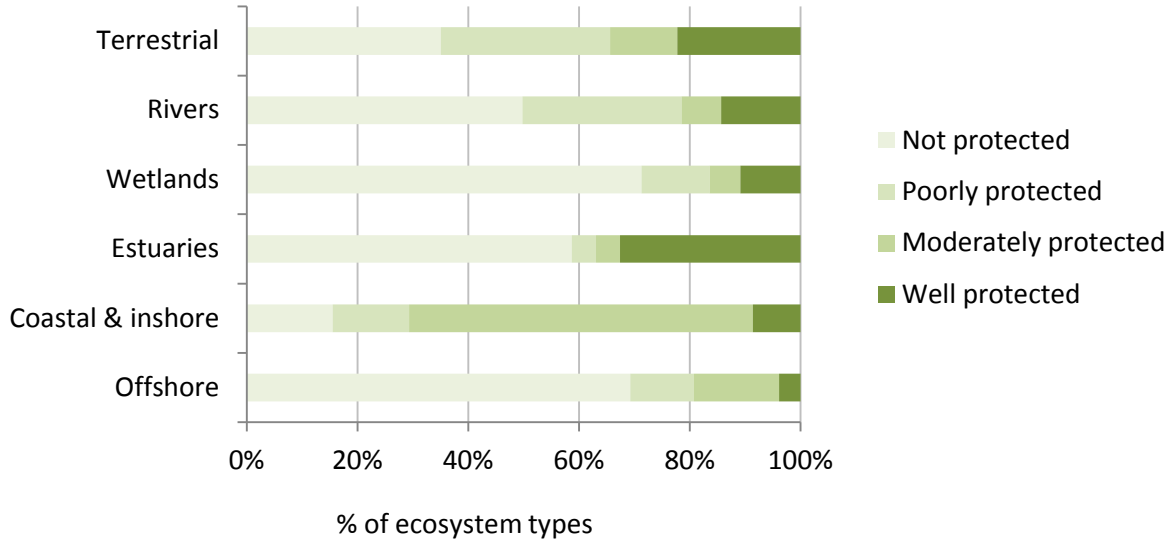

Figure B: Summary of ecosystem protection level across terrestrial and aquatic environments

Ecosystem threat status (Figure A) highlights that wetlands are the most threatened ecosystems in South Africa, while ecosystem protection level (Figure 6) shows clearly that offshore marine ecosystems are the country's least protected ecosystems.

Significant advances in mapping and classifying ecosystems, as well as refinement of the thresholds used in the assessment of ecosystem threat status, mean that is it not possible to report on trends in ecosystem threat status between 2004 and 2011. However, having achieved greater stability in ecosystem classification and in assessment methods, we are well positioned to assess trends going forward.

Each of these indicators has direct links to policy, for example through the listing of threatened ecosystems in terms of the Biodiversity Act, and the National Protected Area Expansion Strategy.

South Africa is home to over 95 000 known species, contributing a significant proportion to world plant species (6%), reptile species (5%), bird species (8%) and mammal species (6%), with more species regularly discovered and described. South Africa has comprehensively assessed a wider range of taxonomic groups than most countries, and is one of the few countries with a dedicated Threatened Species Programme.

Red List assessment results show that one in five inland mammal species is threatened; one in five freshwater fish species is threatened; one in seven frog species is threatened; one in seven bird species is threatened; one in eight plant species is threatened; one in twelve reptile species is threatened; and one in twelve butterfly species is threatened (Figure 20). The proportion of threatened species is highest for freshwater fish and inland mammals while the highest numbers of threatened species (over 2 500) are found among the plant group. There are still some knowledge gaps with respect to the conservation status of species in the country, particularly for marine species and invertebrates.

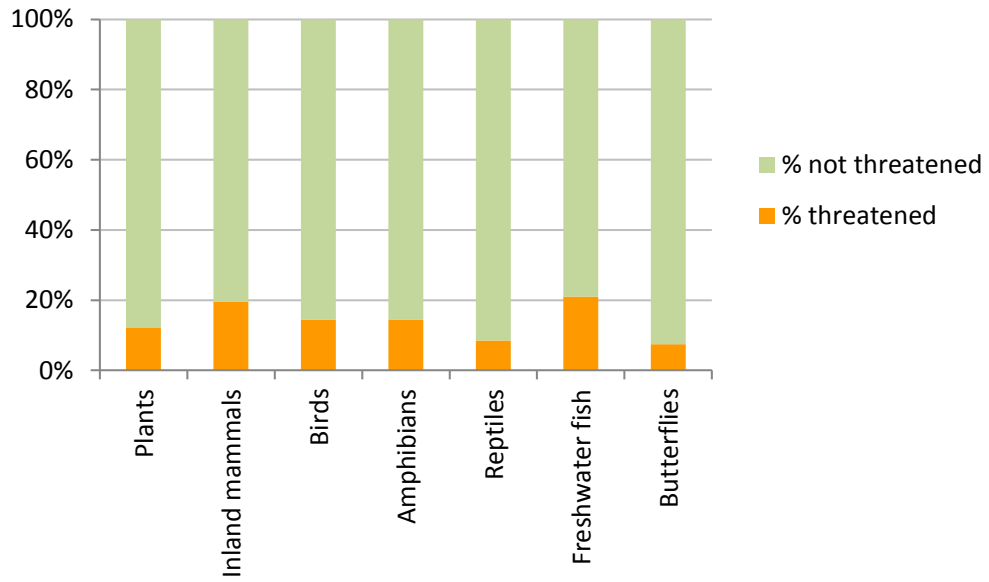

Figure C: Proportion of threatened species for those taxonomic groups that have been comprehensively assessed, based on the most recent available Red Lists

Key pressures on South Africa's biodiversity include:

- Loss and degradation of natural habitat, in terrestrial, freshwater and marine environments
- Alteration of flow, especially in the freshwater environment (for example as a result of damming and abstraction of water)
- Over-harvesting, especially in the marine environment
- Invasive alien species, in terrestrial, freshwater and marine environments
- Pollution, especially in the freshwater environment
- Climate change

The underlying drivers of these pressures are related chiefly to patterns of consumption and production, often for the benefit of the relatively wealthy, although it is frequently the poor who bear the brunt of declines in ecological condition.

Progress and achievements in implementation of national biodiversity policies and strategies, including mainstreaming

South Africa's **policy and legislative environment** for biodiversity is relatively strong. Central elements include:

- White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997)
- National Environmental Management Act (Act 107 of 1998)
- National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act)
- National Environmental Management: Biodiversity Act (Act 10 of 2004) (hereafter referred to as the Biodiversity Act)
- National Biodiversity Strategy and Action Plan (2005)

- National Biodiversity Framework (2008), which is required in terms of the Biodiversity Act and draws strongly on the NBSAP
- National Protected Area Expansion Strategy (2008)

Although there have not been fundamental changes in biodiversity policy in South Africa since 2009, some refinements and improvements have occurred to support implementation, including the publication of various norms and standards, regulations, guidelines and legislative amendments. A significant improvement in political will and commitment was signalled by the development of the **Presidential Delivery Agreement**, with 12 Outcomes, which was adopted by the Cabinet in 2010. **Outcome 10** of the Delivery Agreement deals with the environment sector including biodiversity, with the aim that "environmental assets and natural resources are well protected and continually enhanced", and formed the basis for a Performance Agreement between the President and the Minister of Water and Environmental Affairs for the period April 2010 to March 2014.

The **institutional environment** for managing and conserving biodiversity in South Africa has not changed substantially in the last five years. It includes national departments, public entities, provincial departments and agencies, municipalities, and a range of active NGOs. The Presidential Delivery Agreement has catalysed increased cross-sector collaboration between these various institutions.

Highlights in the implementation of the Convention in South Africa in the last five years fall into six broad areas, underpinned by work in a further three areas, each of which is summarised below.

- **Increased protection of biodiversity**, including the following highlights:
  - The **National Protected Area Expansion Strategy 2008**, which had been completed at the time of the Fourth National Report but not published, was published in 2010 and is being actively implemented by national and provincial conservation authorities.
  - There has been an overall **increase in extent of land-based protection** from 6.5% reported in NBA 2011 to 7.8% as at end of 2013 (although this includes some privately owned nature reserves that have not yet been verified, and that were not included in the 2011 figure).
  - **Biodiversity stewardship programmes** in provincial conservation authorities have made major strides since 2009 when they were still relatively new. Biodiversity stewardship involves contractual agreements with landowners who voluntarily put their land forward for formal declaration as a protected area in terms of the Protected Areas Act. These contract protected areas, owned and managed by private or communal landowners in production landscapes, are now making large contributions to meeting national protected area expansion targets, at a tiny fraction of the cost to the state of land acquisition. As of September 2013, 38 provincial protected areas had been declared through biodiversity stewardship, totalling 138 482 ha. Another 150 properties, totalling nearly 500 000 ha, were in negotiation.
  - The **Land Reform Biodiversity Stewardship Initiative**, initiated in 2009, is demonstrating that conservation can work hand in hand with land reform and support rural livelihoods, both major priorities of government. As of the end of 2013, more than 21 clusters of land reform biodiversity stewardship projects were active in six provinces between the relevant

authorities, organisations and land reform beneficiaries, and 53 383 ha of land reform sites had been declared as some form of protected areas in terms of the Protected Areas Act.
    - The **Prince Edward Islands Marine Protected Area**, South Africa's first major offshore MPA, was declared in 2013, providing protection for a third of the Prince Edward Islands Exclusive Economic Zone which forms part of South Africa's territory.
    - **Two new Ramsar sites** were designated – Ntsikeni Nature Reserve in 2010 and uMngeni Vlei Nature Reserve in 2013 – bringing the total number of Ramsar sites in South Africa to 21.
    - South Africa's **sixth biosphere reserve**, Vhembe Biosphere Reserve, was designated in 2009, and four additional Biosphere Reserves have been proposed.
    - The Sehlabathebe National Park in Lesotho was approved as an **extension of the uKhahlamba Drakensberg World Heritage Site** in 2013, the first transboundary World Heritage Site for South Africa.
    - **Two new National Botanical Gardens** are in process of being established, adding to the existing nine: Kwelera National Botanical Garden near the city of East London in the Eastern Cape Province; and another in Thohoyandou, in the north east of the Limpopo Province.
    - The **People and Parks Programme** has continued to focus on tangible benefits for communities linked to protected areas, including training on co-management agreements for 837 beneficiaries in 24 protected areas around the country.
    - The global **Management Effectiveness Tracking Tool** was adapted to South Africa and used to undertake the first national assessment of the management effectiveness of all state-owned protected areas in 2010.

- **Reducing loss of biodiversity**, including the following highlights:
    - Seven out of nine provinces have **provincial spatial biodiversity plans**, which identify biodiversity priority areas based on best available science, to inform land-use planning and decision-making in order to avoid loss and degradation of natural habitat in priority areas.
    - **Seventeen biodiversity sector plans and eight bioregional plans** have been or are being developed for municipalities in a range of provinces. They are based on provincial spatial biodiversity plans, and consist of maps of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) at municipal scale, with accompanying land-use guidelines (also see discussion below on mainstreaming in the municipal and urban sector).
    - Biodiversity priorities are increasingly routinely incorporated into **environmental authorisations** through the Environmental Impact Assessment (EIA) process. Developments that would result in the removal of indigenous vegetation in Critically Endangered or Endangered ecosystems require environmental authorisation. In addition, a range of other biodiversity features, including Critical Biodiversity Areas, trigger the need for an environmental authorisation.
    - A national **biodiversity offsets policy framework** is being developed, to guide biodiversity offsets which are implemented regularly in South Africa as part of the environmental authorisation process. South Africa's approach to biodiversity offsets is underpinned by ecosystem-level biodiversity targets and the identification of spatial biodiversity priorities through systematic biodiversity planning.
    - **Biodiversity Management Plans for Species** (BMP-S) have been published in terms of the Biodiversity Act for several species of special concern (including black rhinoceros, *Pelargonium sidoides* and *Encephalartos latifrons*), and are being developed for several more

species, following the publication of Norms and Standards for BMP-S in 2009. **Norms and Standards for Biodiversity Management Plans for Ecosystems (BMP-E)** have been finalised and will be published shortly.
    - The **Grasslands Programme**, funded through a Global Environment Facility (GEF) investment of $8.3 million, was in the early stages of implementation in 2009. It has now been successfully undertaken and will wrap up during 2014. The focus of the Grasslands Programme has been chiefly on mainstreaming biodiversity in key production sectors to reduce their footprint and prevent further loss of biodiversity priority areas in the grassland biome.
    - Also see mainstreaming highlights below, many of which relate to reducing loss of biodiversity, including substantial work with **local government** to integrate biodiversity into municipal planning and decision-making processes.

- **Restoration of biodiversity**, including the following highlights:
    - Ongoing work to restore priority ecosystems is undertaken through **natural resource management programmes** (such as Working for Water and Working for Wetlands), implemented as part of the government's Expanded Public Works Programme – including creating large numbers of work opportunities for previously unemployed people.
    - Major progress has been achieved in **restoring the health of St Lucia**, South Africa's flagship estuary and one of the most important nurseries for marine fish on the southeast African coast, based on a new management approach informed by science.
    - The **uMngeni Ecological Infrastructure Partnership** was launched in 2013. It is a multi-partner programme aimed at improving water security for Durban, one of South Africa's largest cities, through restoring and maintaining ecological infrastructure in the catchment that supplies most of the city's water.
    - Recently completed linefish profiles for 139 species show **some recovery in linefish status**, although this is off a low base.

- **Increased focus on inland water biodiversity**, including the following highlights:
    - Inland water ecosystems have become much more central to the work of the biodiversity sector in South Africa in the last five years.
    - Achievements include: publication of an **Atlas of Freshwater Ecosystem Priority Areas** in South Africa and accompanying Implementation Manual; use of maps of Freshwater Ecosystem Priority Areas (FEPAs) to inform decision-making that impacts on freshwater ecosystems; development of a **National Estuary Biodiversity Plan**, which identifies 120 national priority estuaries (out of approximately 300 estuaries; publication of **National Estuary Management Protocol** which will guide the development of Estuary Management Plans; establishment of an **Interdepartmental Committee on Inland Water Ecosystems** to bring together all organs of state relevant to the management of freshwater ecosystems; establishment of a **Freshwater Ecosystem Network** to serve as a co-ordination, learning and capacity building mechanism the freshwater ecosystem sector; successes in incorporating **ecological infrastructure for water security** in the revision of the National Water Resource Strategy and the Water Pricing Strategy.

- **Progress on access and benefit sharing relating to genetic resources**, including the following highlights:
  - South Africa is one of the few countries to put in place **national legislation** that gives effect to Articles 15 and 8(j) of the Convention, which recognise the importance of regulated access to genetic resources as well as their associated traditional knowledge by requiring the users of these resources to obtain prior informed consent and negotiate mutually agreed terms to share the benefits derived from commercial or non-commercial exploitation of such resources in a fair and equitable manner with the provider countries including indigenous and local communities.
  - To date, a total of 79 notifications for the discovery phase of bioprospecting have been registered. Fifteen **bioprospecting permits** have been approved and 69 **Material Transfer Agreements** and 19 **Benefit Sharing Agreements** have been approved by the Minister of Water and Environmental Affairs.

- **Communicating the benefits of biodiversity**, including the following highlights:
  - A project called "**Making the Case for Biodiversity**" was undertaken with help of marketing and communications experts. Two clear lessons emerged: first, the strongest value proposition for decision-makers in government is that biodiversity is a national asset that can contribute to the development priorities of the country; second, the "doom and gloom" message of impending extinctions and imminent collapse, which the biodiversity sector has tended to use for decades, not only has no traction but in fact elicits apathy. The Making the Case project highlighted the need to show how biodiversity is relevant to government's priority issues of the day – for South Africa these are job creation, poverty alleviation and rural development.
  - **LIFE: The State of South Africa's Biodiversity 2012** was published. It provides a summarised and simplified version of the NBA 2011, intended for a wide audience including politicians and the general public.
  - The publication of **Biodiversity for Development**, as part of the UNDP's primer series, was intended to capture and communicate some of the key elements of the landscape approach that South Africa has adopted in conserving biodiversity and promoting ecosystem resilience, highlighting the successes and lessons of this approach and emphasising how biodiversity can contribute to development.
  - In support of the United Nations Decade of Biodiversity, various biodiversity tools and products have been launched at events on **International Day for Biodiversity** and other recognised days, with considerable political presence and enhanced public awareness and engagement.

Successes in the six areas discussed above were underpinned by:

- **Advances in the science foundation and strengthening the science-policy interface**, including:
  - Completion and publication of the **NBA 2011**, which synthesises and adds to existing knowledge about ecosystems and species in South Africa. The NBA will be updated every five to seven years, with the next NBA planned for completion in 2018.
  - Progress in mapping and classifying ecosystems, as part of the **National Ecosystem Classification System**, which lays the foundation for assessment, planning and monitoring of

ecosystems. Progress has been especially rapid in aquatic environments, including the development of a set of national marine and coastal habitat types for the first time ever.
    - Progress in **Red List assessments of species**, including comprehensive assessment of several taxonomic groups, such as plants, amphibians, reptiles, butterflies and birds. South Africa is the only mega-diverse country to have comprehensively assessed its entire flora.
    - Further development of **spatial biodiversity planning** based on best available science. A consolidated national map of biodiversity priority areas was developed as part of the NBA 2011, bringing together Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs), Freshwater Ecosystem Priority Areas (FEPAs) and other biodiversity priority areas identified through systematic biodiversity plans at the national, provincial and metro scale. An annual Biodiversity Planning Forum has been held since 2004, contributing to progress and policy-relevance in this applied discipline.
    - Identification of **Ecologically and Biologically Significant Areas (EBSAs) in South Africa's marine environment**, as part of a regional process co-ordinated by the CBD Secretariat.
    - Development of the **National Biodiversity Research Strategy**, which is in the process of being finalised and will complement the Environmental Sector Research, Development and Evidence Framework finalised in 2012.
    - Further development of **National Biodiversity Monitoring Framework**, including refining core indicators and strengthening links with the NBA.
    - A range of **citizen science** projects, in which hundreds of volunteers have played a crucial role in gathering biodiversity data from the round of country, for example through atlassing projects and virtual museums that make use of modern technology platforms.

- **Biodiversity information management and information sharing**, including:
    - The **Biodiversity Advisor web portal** (http://biodiversityadvisor.sanbi.org), which draws together many individual biodiversity information websites with clear guidelines on how to use the information for biodiversity planning, research and land-use decision making. The website provides access to more than 14 million biodiversity records, hundreds of GIS maps and many biodiversity plans. It includes a land-use decision-support tool was developed to support EIA practitioners and government officials in using the best available biodiversity information in decision-making. The Biodiversity GIS (BGIS) website (http://bgis.sanbi.org) is one component of the Biodiversity Advisor.
    - Significant progress in developing national **biodiversity information management policies**, resulting in more data becoming available as data owners have confidence that they will have due acknowledgement, their rights will be protected and sensitive information will be protected.
    - Participation in the **Global Biodiversity Information Facility (GBIF)**, including playing a leadership role in coordinating the activities of the African GBIF members. In 2011 South Africa was the fourth largest contributor of biodiversity data to GBIF with making 14 million records available to the world.
    - **Training and capacity building in biodiversity information management**, including 24 biodiversity information-related training events attended by 415 people from a range of African countries.
    - Convening of the annual **Biodiversity Information Management Forum**, since 2007.

- **Human capital development**, including:
  - Initiating a systematic programme to build human capital and skills in the biodiversity sector, known as the **Biodiversity Human Capital Development Strategy** (BHCDS). The BHCDS led to the establishment of **GreenMatter**, a partnership initiative that drives transformation in graduate level skills for biodiversity (www.greenmatter.co.za), and well as to the **Groen Sebenza** ("Green Work") Programme, which aims to promote and retain racial and gender representation in the biodiversity sector by creating sustainable job opportunities for 500 graduates and 300 school leavers from previously disadvantaged backgrounds over a 2½ year period. By the end of 2013, all 800 youths had been placed in 33 different partner organisations including government, NGOs and the private sector.

In line with South Africa's NBSAP, **mainstreaming has been a major focus of the work of the biodiversity sector in the last five years**. While there is still much work to do, significant successes have been achieved. We note that outcomes of mainstreaming can be difficult to measure, particularly if the intended outcome is to avoid loss of biodiversity – avoided loss does not lend itself to measurement in the same way that increased protection or active restoration do.

Mainstreaming highlights include:

- Chapter 5 of the **National Development Plan** (NDP) 2030 recognises the importance of biodiversity and ecosystems, helping to lay the groundwork for further investment in South Africa's biodiversity assets and ecological infrastructure. The NDP was developed by the National Planning Commission established by the Presidency in 2009.
- One important way in which the NDP is being implemented is through the **National Infrastructure Plan**, which includes a series of **Strategic Integrated Projects** (SIPs) and is co-ordinated by a Presidential Infrastructure Co-ordinating Committee. R850 billion (approximately $100 billion) has been earmarked for infrastructure investment in South Africa over the period 2012-2015. Strategic Environmental Assessments (SEAs) are being led by DEA for all of the SIPs, and will draw on spatial information about biodiversity priority areas. The initial set of 18 SIPs may be augmented by a 19th SIP focused on investment in ecological infrastructure for water security – at the time of writing this was in the process of being finalised.
- The **National Strategy for Sustainable Development and Action Plan** (NSSDAP) includes three of five strategic priorities that reflect the need for sustaining healthy ecosystems, sustainable utilisation of natural resources and the role ecosystems in climate change adaptation.
- Recent revisions of the **National Water Resource Strategy** (NWRS) and **Water Pricing Strategy** have recognised the importance of freshwater ecosystems for water security, as a result of engagement by the biodiversity sector in these processes. The NWRS recognises that strategic water source areas form the foundational ecological infrastructure on which a great deal of built infrastructure for water services depends, and are thus strategic national assets that are vital for water security. The Water Pricing Strategy provides for investing part of the revenue derived from water sales in the maintenance and restoration of strategic catchments that supply water.
- Following extensive engagement with the mining sector, a **Mining and Biodiversity Guideline** was published jointly by the Minister of Water and Environmental Affairs and the Minister of Mineral Resources in 2013. This is a remarkable achievement, as the mining and environmental sectors have often had an adversarial relationship. The guideline deals with integrating biodiversity considerations into mining projects, from exploration through to mine closure. It

uses spatial information on biodiversity priority areas as a fundamental starting point, interpreting this information specifically for a mining audience to provide a detailed national map of four levels of risk for mining from a biodiversity perspective

- A significant number of biodiversity mainstreaming tools have been developed through the Grasslands Programme in consultation with the **plantation forestry sector** to enable improved decision-making over where future afforestation occurs and how open (natural) areas are managed within the forestry production landscape. These include Guidelines for Grasslands Management in the Forestry Sector, Environmental Guidelines for Commercial Forestry in South Africa, a Biodiversity Screening Tool and a Conservation Planning Tool.
- In addition to specific initiatives with the forestry and mining sectors, a range of **business and biodiversity initiatives** are underway in South Africa, many of which were discussed in the Fourth National Report. A new NGO-led initiative, the National Biodiversity and Business Network (NBBN) was launched in May 2013, to assist businesses from various sectors to integrate biodiversity issues into their strategies and operations, in line with the model of the Global Partnership for Business and Biodiversity of the CBD. Any company can become a member or partner of the Network at any time.
- Significant effort has gone into mainstreaming biodiversity in the **municipal and urban sector** over the last five years, especially as local government plays a key role in determining how biodiversity is managed and impacted in the landscape. All municipalities in South Africa are required to develop Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs), which provide potentially powerful mechanisms to mainstream biodiversity considerations into the core business of local government. A Local Government Support Strategy has been developed, identifying 108 municipalities across the country (out of a total of 234) where urgent intervention is needed. Support for municipalities includes provision of spatial biodiversity information, training and capacity building, and various interventions to strengthen biodiversity content in IDPs and SDFs.
- Biodiversity concerns are increasingly taken into account in **environmental authorisations** through the EIA process, as a result of engagement by the biodiversity sector – see discussion under highlights above.

Vital practical tools for the mainstreaming work described above include:

- Maps of biodiversity priority areas, based on best available science
- Guidelines to accompany and add value to maps of biodiversity priority areas
- Online access to this information

In addition to these practical tools that provide an essential foundation for mainstreaming, a range of less tangible factors are equally important for success. In South Africa's experience, **key success factors for mainstreaming include:**

- **Paying close attention to policy and institutional context.** Mainstreaming biodiversity into the policy, planning, decision-making or management processes in another sector requires an intimate understanding of the policy and institutional context in that sector, which can be developed only through substantial contact and careful listening.

- **Building ongoing relationships.** Mainstreaming is not a once-off event but a process, which can be achieved only through building ongoing long-term working relationships with key individuals in the receiving sector
- **Providing in situ support.** No matter how user-friendly the maps and guidelines are, mainstreaming can never be achieved simply by handing maps or guidelines over and expecting them to be used. Training workshops help with uptake, but are also not sufficient. Successful mainstreaming requires in situ support to users of the tools, usually over an extended period (for example several years).
- **Convening regular forums for co-ordination and sharing lessons** among those involved in mainstreaming in a particular sector, and strengthening networks of relationships between key individuals. These forums can take the form of, for example, task teams or learning networks. Although the immediate benefits of bringing people together to share, learn, and discuss are often hard to quantify, investing time and resources in such processes can be invaluable for developing shared objectives and understanding across sectors and disciplines, thereby helping to embed mainstreaming outcomes.

Analysis of implementation of the NBSAP

South Africa's **National Biodiversity Strategy and Action Plan** (NBSAP) was published in 2005 and is currently in the process of being updated. The NBSAP 2005 has five Strategic Objectives, each of which has a series of outcomes (27 altogether) and activities (122 altogether). In order to assess how fully the NBSAP has been implemented, an analysis was undertaken at the activity level. Each of the 122 activities was rated in one of four categories:

- Green – fully achieved
- Yellow – substantially achieved
- Orange – achieved to a limited extent
- Red – not achieved

The results are summarised in Figure 36. Overall, 27% of the activities in the NBSAP 2005 have been fully achieved, another 27% substantially achieved, 37% achieved to a limited extent, and 6% not achieved. Three percent of activities are no longer applicable, for example because they addressed a policy or institutional process that subsequently changed or fell away. Based on this analysis, the highest proportion of activities achieved and substantially achieved is for Strategic Objective 2 which deals with institutional effectiveness. However, this does not necessarily reflect the areas of greatest progress in implementing the NBSAP in practice, as many activities actually undertaken since the NBSAP was finalised in 2005 could not have been foreseen at that stage and were thus not included.

Lessons learnt from this analysis, which will inform the revision of the NBSAP, include: the need for greater realism about what is achievable in the time period between NBSAP reviews, particularly for mainstreaming activities; and the need in some cases to be less specific about particular policy and institutional processes or issues, as the policy and institutional environment is often characterised by substantial flux.

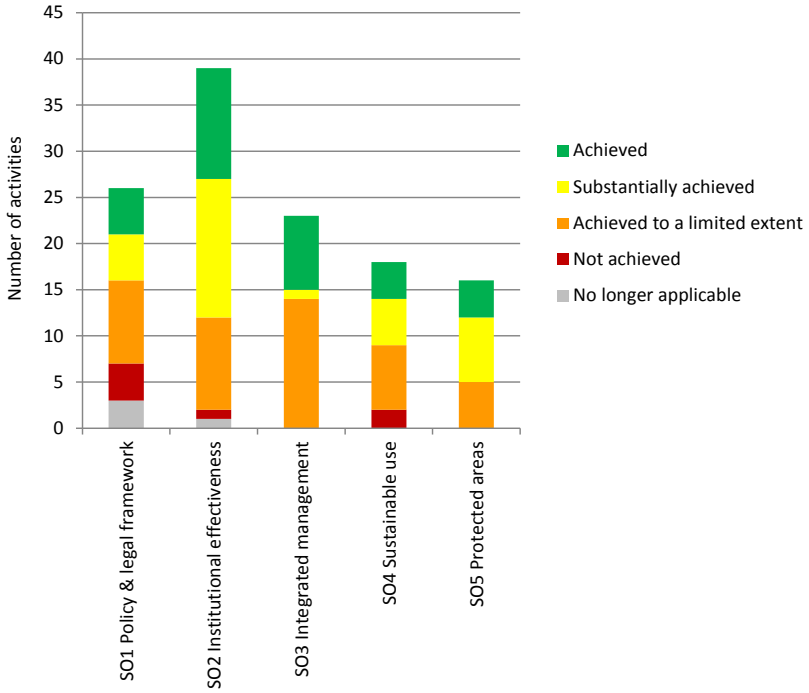

Figure D: Summary of extent to which NBSAP activities have been implemented, by strategic objective

Progress towards the Aichi targets and CBD Strategic Plan

In all cases the Aichi targets have been partially achieved in South Africa. Among the partially achieved targets, good progress has been made especially on targets 4, 11, 13, 16 and 19, with promising progress on targets 2 and 14. Of the five Strategic Goals of the CBD, South Africa has arguably made most progress towards Goal A (in relation to mainstreaming), Goal C (in relation to increased protection), and Goal E (in relation to knowledge management and capacity building).

South Africa has contributed particularly to the following thematic programmes and cross-cutting issues of the CBD:

- Programme of Work on Protected Areas
- Thematic programme on inland water biodiversity
- Thematic programme on marine and coastal biodiversity
- Cross-cutting work on impact assessment
- Cross-cutting work on invasive species
- Cross-cutting work on access and benefit sharing
- Cross-cutting work on communication, education and awareness

Links between particular achievements in South Africa and the CBD's thematic programmes and cross-cutting areas of work are highlighted in Question 7 in the main report.

Challenges and lessons

The achievements above notwithstanding, several **challenges and obstacles** remain. These include:

- Bringing the biodiversity sector as a whole along with the shift in messaging developed through the Making the Case project (discussed above). In many cases, organisations and individuals in the sector revert to **"doom and gloom" messaging**, which tends to result in apathy rather than action on the part of the target audience.
- **Limited human capacity**, for example to work more systematically with municipalities and the agricultural sector. As a range of key strategies and policy tools are due for revision, it also becomes a challenge to find sufficient human capacity and time to devote to these revisions (e.g. NBSAP, National Biodiversity Framework, National Protected Area Expansion Strategy, list of threatened ecosystems)
- **Limited financial resources**, for example for protected area management, integration of biodiversity in land use planning and decision making, mainstreaming of biodiversity in a wider range of sectors). The UNDP's recently initiated Biodiversity and Finance Initiative (BIOFIN), in which South Africa is participating, may help to quantify and address this issue.

Key high-level lessons learnt over the past five years, which will inform the revision of South Africa's NBSAP and our work for the next five years, include the following:

- **Reframing the message of the biodiversity sector**

The Making the Case project provided invaluable direction for reframing the central message of South Africa's biodiversity sector and shifting the way we communicate. The shift from focusing on fear of loss, or "doom and gloom", to presenting a compelling value proposition linked to our biodiversity assets and ecological infrastructure, is already bearing fruit with a range of non-traditional audiences, including National Treasury and municipal engineers. The concept of ecological infrastructure in particular is proving to be powerful in creating a shared language with other sectors and demonstrating how biodiversity links to the country's development agenda. This shift in messaging has not required expressing the value of biodiversity in monetary terms.

- **Influencing the policy environment requires flexibility and cannot be a tightly managed process**

Interventions to influence the national policy environment or policy in other sectors require an intimate understanding of the receiving environment, and the ability to identify keys that will unlock the right doors. This understanding takes time to develop and relies heavily on strong working relationships with the department or agency one is aiming to influence. Policy transitions are seldom rational or orderly and often evolve organically. This requires the biodiversity sector to be agile, flexible and responsive, in order to take advantage of opportunities for policy interventions when they arise.

- **Mainstreaming requires institutional changes which takes 7-10 years – beyond the lifetime of typical projects**

Mainstreaming biodiversity into other sectors requires institutional change, which usually takes at least 7 to 10 years. Long-term vision and persistence is required, generally beyond the lifetime of the

typical project or funding lifecycle. South Africa has benefitted from successive large donor investments in mainstreaming, for example through the GEF, which has enabled layering of effort over long periods. This has often been essential to successes that have been achieved.

- **Spatial assessment of biodiversity is an essential foundation for effective protected area expansion, mainstreaming and restoration**

South Africa's strong science base in spatial biodiversity assessment and planning has been foundational in effective mainstreaming interventions. Spatial assessment of biodiversity does not necessarily require vast amounts of data, and can be done at the ecosystem level, using ecosystem types as effective surrogates for biodiversity pattern. The identification of a clear set of spatial biodiversity priority areas at the landscape scale, based on science, provides a strategic starting point for protected area expansion and restoration of ecosystems, and as well as for engagements with a range of other sectors.

- **Partnerships between multiple stakeholders are key to achieving biodiversity goals at the landscape scale**

The biodiversity sector in South Africa has a substantial history of collaborative partnerships between multiple stakeholders, including government, NGOs, civil society and the private sector. This has been essential for implementing a landscape approach to managing and conserving biodiversity. Investing in building partnerships, and convening forums and structures through which these partnerships can be maintained, is most successful when the purpose of the partnership is clear and compelling, and is often a vital element for achievement of biodiversity goals.

- **Historic biodiversity mandates may need to be realigned with the CBD Strategic Goals and Aichi targets**

Implementing the Aichi targets may require a review of the biodiversity-related mandates of some organs of state, and may require broader mandates within biodiversity institutions that are already under capacitated. This has knock on effects in terms of increased budgetary requirements. There has in some cases been a slow uptake of certain "modern" aspects of the CBD Strategic goals and Aichi targets especially in contrast to traditional conservationist goals which were not yet concerned with poverty alleviation, benefit sharing and recognition of traditional knowledge. Biodiversity mandates of all levels of government and the resources required to fulfil these mandates should be reviewed, communicated and provided for.

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Acronyms and Abbreviations

BABS	Bioprospecting, Access and Benefit-Sharing
BGIS	Biodiversity Geographic Information System (website for spatial biodiversity information)
BHCDS	Biodiversity Human Capital Development Strategy
BIMF	Biodiversity Information Management Forum
BIOFIN	Biodiversity and Finance Initiative
BMP	Biodiversity Management Plan
BMP-E	Biodiversity Management Plan for Ecosystems
BMP-S	Biodiversity Management Plan for Species
CAPE	Cape Action for People and the Environment
CBD	Convention on Biological Diversity
CEPF	Critical Ecosystem Partnership Fund
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
CSIR	Council for Scientific and Industrial Research
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EBSA	Ecologically and Biologically Significant Area (in the marine environment)
EIA	Environmental Impact Assessment
EPWP	Expanded Public Works Programme
ESRDEF	Environmental Sector Research, Development and Evidence Framework
FSC	South African National Forestry Stewardship Council
GBIF	Global Biodiversity Information Facility
GEF	Global Environment Facility
ICLEI	Local Governments for Sustainability (previously the International Council for Local Environmental Initiatives)
IDP	Integrated Development Plan
IUCN	International Union for Conservation of Nature (World Conservation Union)
LRBSI	Land Reform Biodiversity Stewardship Initiative
LTAS	Long-Term Adaptation Scenarios
LTMS	Long-Term Mitigation Scenarios
MDG	Millennium Development Goals
METT	Management Effectiveness Tracking Tool for protected areas
METT-SA	Management Effectiveness Tracking Tool, adapted for South Africa
MoU	Memorandum of Understanding
MPA	Marine Protected Area

MPAH	Maputaland-Pondoland-Albany Hotspot
NAP	National Action Programme Combatting Land Degradation to Alleviate Rural Poverty
NBA	National Biodiversity Assessment
NBF	National Biodiversity Framework
NBSAP	National Biodiversity Strategy and Action Plan
NDP	National Development Plan
NFEPA	National Freshwater Ecosystem Priority Areas project
NGOs	Non-Governmental Organisations
NIE	National Implementing Entity
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NSSDAP	National Strategy for Sustainable Development and Action Plan
NWRS	National Water Resource Strategy
OMPA	Offshore Marine Protected Area project
ProEcoServ	Project for Ecosystem Services
Ramsar Convention	Convention on Wetlands of International Importance
SADC	Southern African Development Community
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SDF	Spatial Development Framework
SIP	Strategic Integrated Project
SKEP	Succulent Karoo Ecosystem Programme
TFCA	Transfrontier Conservation Area
TOPS	Threatened or Protected Species (listed in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004))
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WESSA	Wildlife and Environment Society of South Africa
WWF-SA	World Wide Fund for Nature South Africa

Part I: Update on biodiversity status and trends, and implications for human well-being

This part of the report provides a brief overview of the current status of South Africa's biodiversity, including ecosystems and species, and the role of biodiversity in human wellbeing, economic and social upliftment. It draws substantially on the National Biodiversity Assessment (NBA) 2011, which used two core indicators, ecosystem threat status and ecosystem protection level, to assess the state of terrestrial, freshwater, estuarine, coastal and marine ecosystems and associated species.

Question 1: Why is biodiversity important for South Africa?

As described in the Fourth National Report, South Africa is considered one of the most biologically diverse countries in the world due to its species diversity and endemism as well as its diversity of ecosystems. For example, the smallest, richest and most threatened of the world's six floral kingdoms, the Cape Floral Kingdom, falls entirely within South Africa. In addition there are three globally recognised biodiversity hotspots (areas with especially high concentrations of biodiversity which are under serious threat) in South Africa: the Cape Floristic Region; the Succulent Karoo, which is shared with Namibia; and the Maputaland-Pondoland-Albany hotspot, shared with Mozambique and Swaziland. Levels of species richness and endemism in South Africa, on land and in the ocean, are exceptional. Readers are referred to the Fourth National Report and the National Biodiversity Assessment 2011 for more detail.

These rich endowments of biodiversity assets provide immense opportunity to support the country's development path, especially as the knowledge base on the value of ecosystems and how to manage them effectively expands. An emerging focus on ecological infrastructure, defined as naturally functioning ecosystems that deliver valuable services to people, is helping to unlock investment in South Africa's ecosystems, with multiple social, environmental and economic benefits – see Questions 4 and 8 for more on this.

Question 2: What major changes have taken place in the status and trends of biodiversity in South Africa?

South Africa recently undertook a second national assessment of the country's biodiversity, completed in 2011 (NBA 2011).[1] This followed from the first assessment, undertaken in 2004 (NSBA 2004). Two national ecosystem indicators are assessed in the NBA: ecosystem threat status and ecosystem protection level.

Ecosystem threat status tells us about the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition. Ecosystem types are categorised as

[1] All of the maps and graphs in Question 2 come from the NBA 2011, available at http://bgis.sanbi.org.

critically endangered (CR), endangered (EN), vulnerable (VU) or least threatened (LT), based on the proportion of each ecosystem type that remains in good ecological condition relative to a series of thresholds. Ecosystem protection level tells us whether ecosystems are well represented in the protected area network. Ecosystem types are categorised as not protected, poorly protected, moderately protected or well protected, based on the proportion of each ecosystem type that occurs within a legally declared protected area.

Each of these indicators is assessed in a consistent way across all environments, enabling comparison between terrestrial, river, wetland, estuarine, coastal and marine ecosystems, as summarised in Figure 5 and Figure 6, and discussed further below.

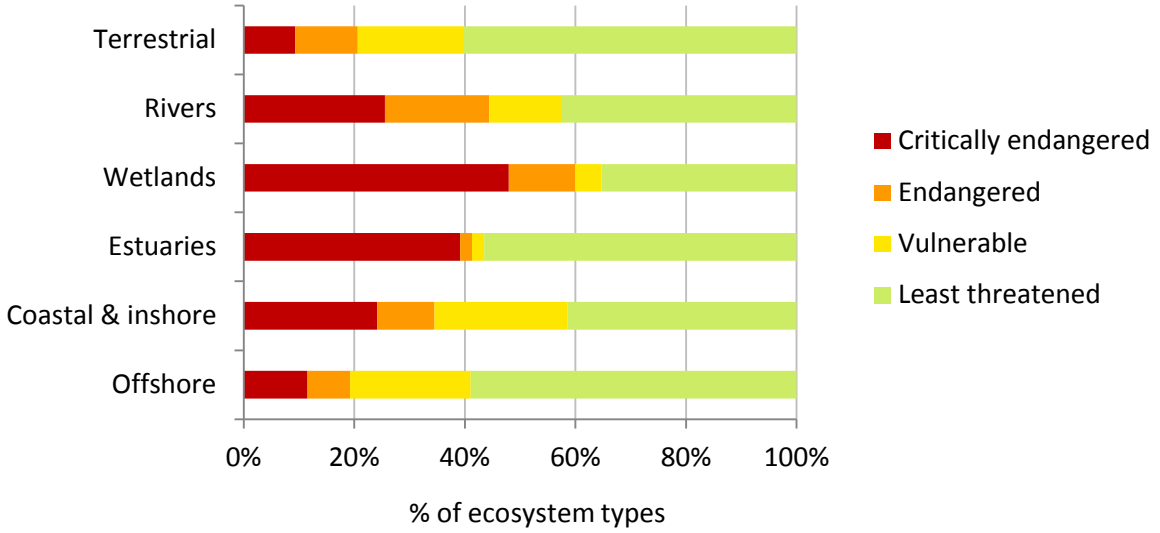


Figure 5: Summary of ecosystem threat status across terrestrial and aquatic environments

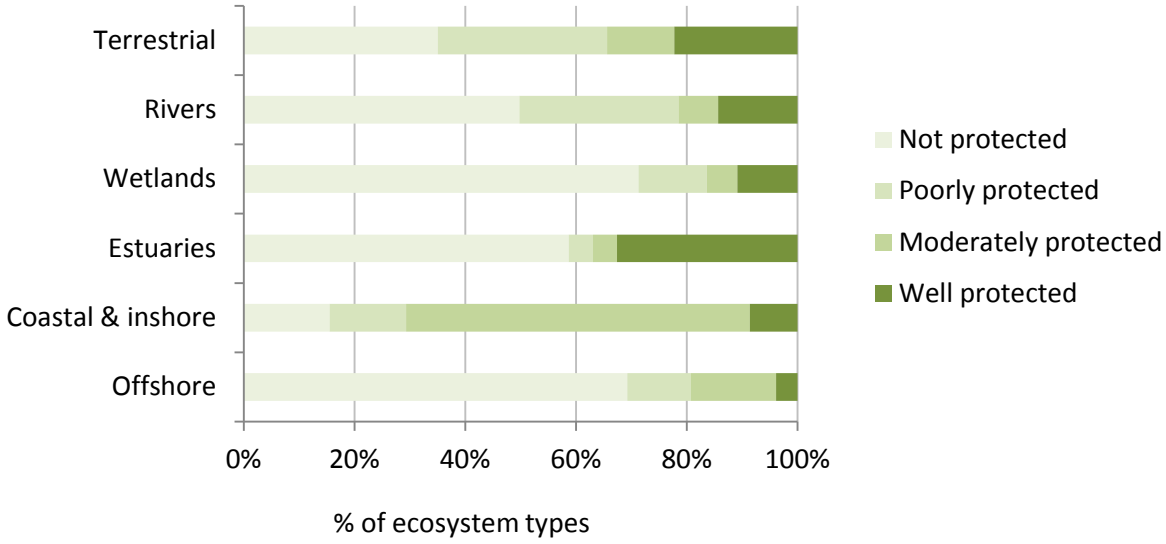


Figure 6: Summary of ecosystem protection level across terrestrial and aquatic environments

The ability to map and classify ecosystems into different ecosystem types is essential in order to assess threat status and protection levels and track trends over time. South Africa has an emerging National Ecosystem Classification System, including vegetation types, river ecosystem types, wetland ecosystem types, estuary ecosystem types, and marine and coastal habitat types, which provides an essential scientific basis for ecosystem-level monitoring, assessment and planning.

Significant advances in mapping and classifying ecosystems, as well as refinement of the thresholds used in the assessment of ecosystem threat status, mean that is it not possible to report on trends in ecosystem threat status between 2004 and 2011. However, having achieved greater stability in ecosystem classification and in assessment methods, we are well positioned to assess trends going forward.

Status of terrestrial ecosystems

Over 18% of South Africa's natural habitat has been lost, with major losses having taken place in the last century. Generally, over 40% of the country's terrestrial ecosystem types are threatened with 9% critically endangered, 11% endangered and 19% vulnerable (Figure 7). Of the threatened terrestrial ecosystem types; the Indian Ocean Coastal Belt, Grassland, Fynbos and Forest biomes are the worst hit.

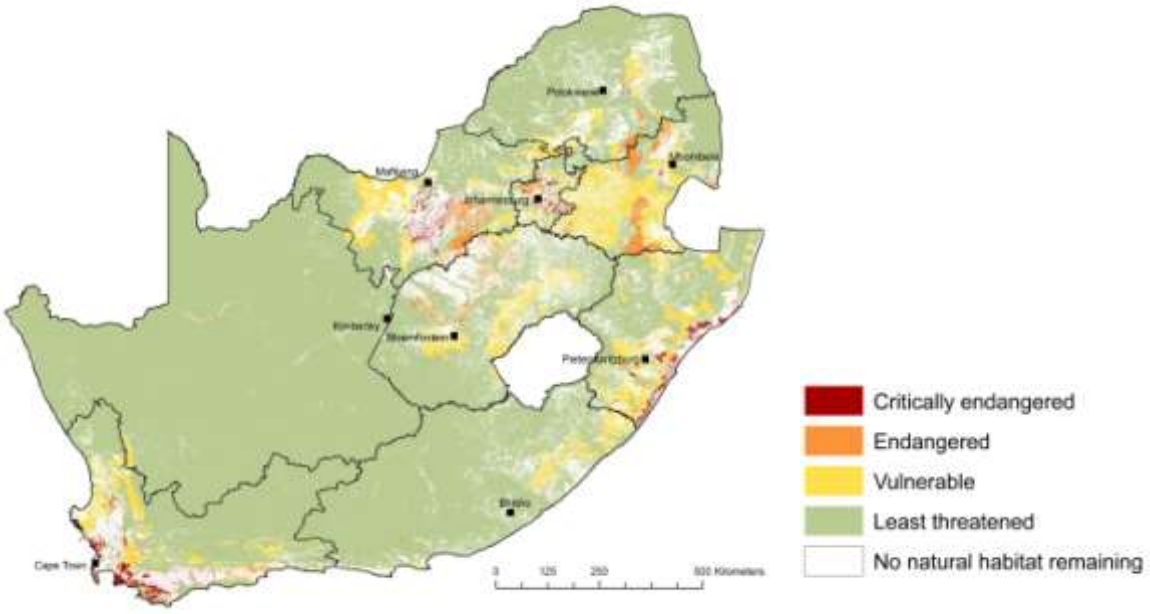


Figure 7: Map of ecosystem threat status for terrestrial ecosystems

In terms of protection level, only 22% of terrestrial ecosystem types are well protected and 35% remain unprotected (Figure 8). Grassland, Thicket and Nama-Karoo biomes are the least protected while Forest, Desert and Fynbos biomes are best protected. It's also clear that within the identified well protected biomes, there tend to be significant differences between ecosystem types. In addition, the Grassland biome, Indian Ocean Coastal Belt and the Fynbos lowlands have high proportions of under-protected ecosystem types.

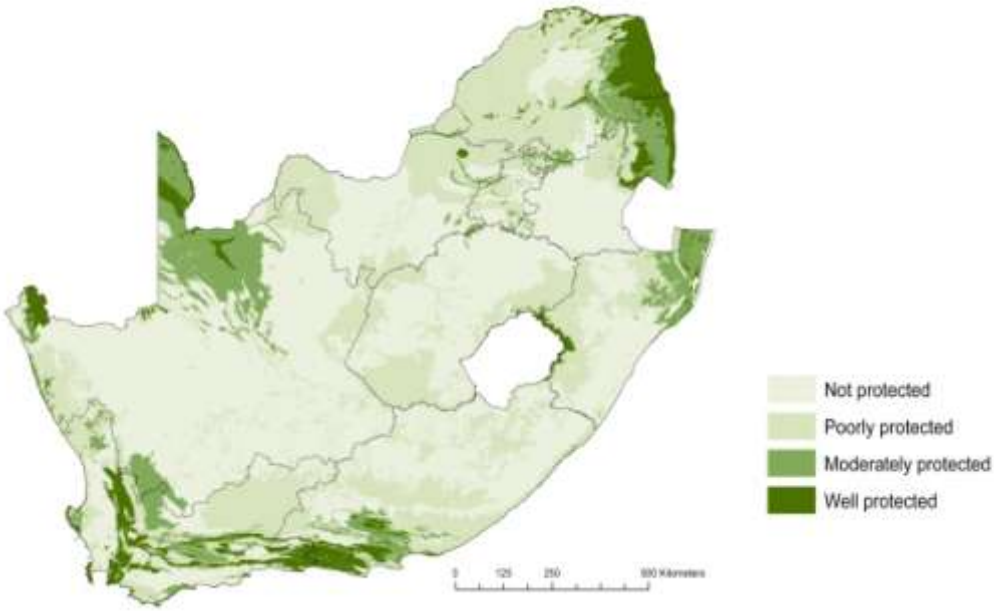


Figure 8: Map of ecosystem protection level for terrestrial ecosystems

Status of river ecosystems

There are 223 river ecosystem types in South Africa of which 26% are critically endangered, 19% endangered and 13% vulnerable (Figure 9). Tributaries are often in better ecological condition than main rivers, reflecting the fact that larger main rivers are often over-utilised and more heavily impacted than tributaries (Figure 10). Similarly, there are significant variations in the proportion of threatened river ecosystem types in lowland and lower foothill rivers (with 44% critically endangered), and upper foothills and mountain streams (13% critically endangered) (Figure 11). It is also evident that most of the critically endangered and endangered river ecosystem types are concentrated in and around major cities and economic and agricultural hubs, where pressures on water resources are highest.

Of the 223 river ecosystem types, half are not protected at all and only 14% are well protected (Figure 12). Mountain streams are the best protected ecosystem types relative to lowland rivers. The poor protection level of river ecosystem stems partly from the fact that land-based protected areas were generally not designed to protect rivers, and rivers are often used as boundaries for protected areas.

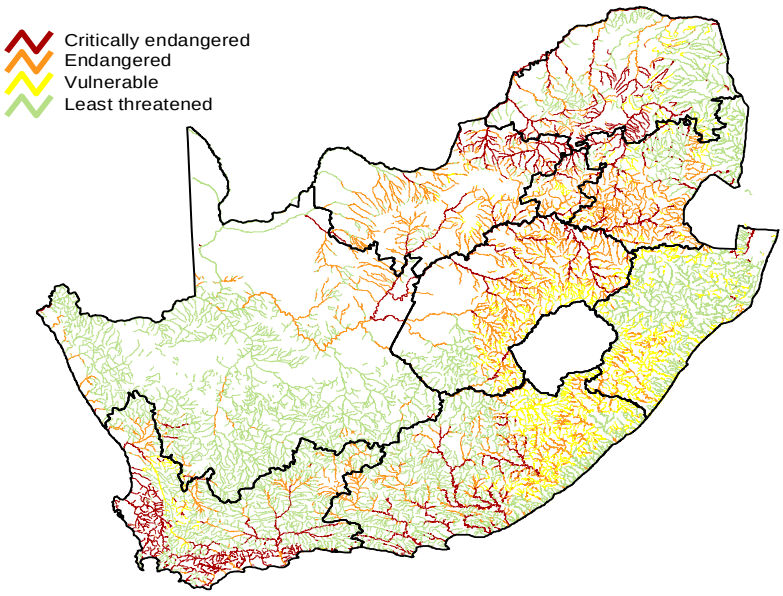


Figure 9: Map of ecosystem threat status for river ecosystem types

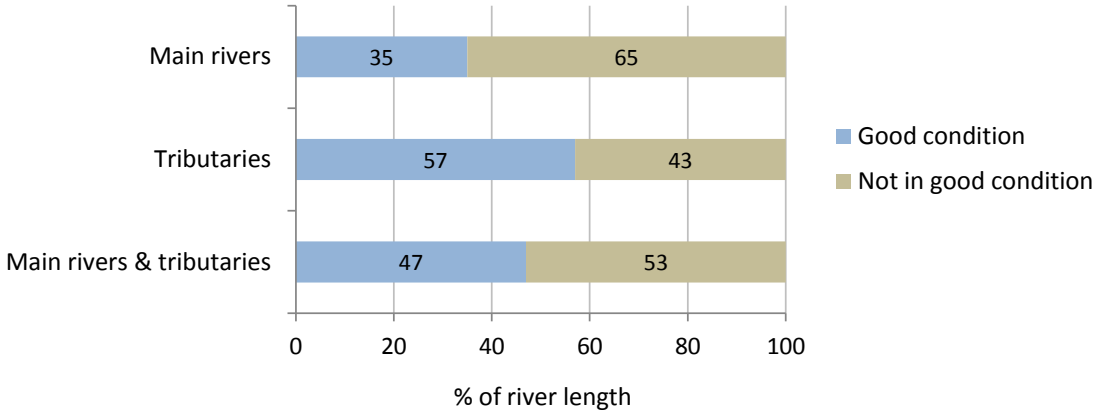


Figure 10: Percentage of river length in good ecological condition (natural or near-natural), for main rivers and tributaries

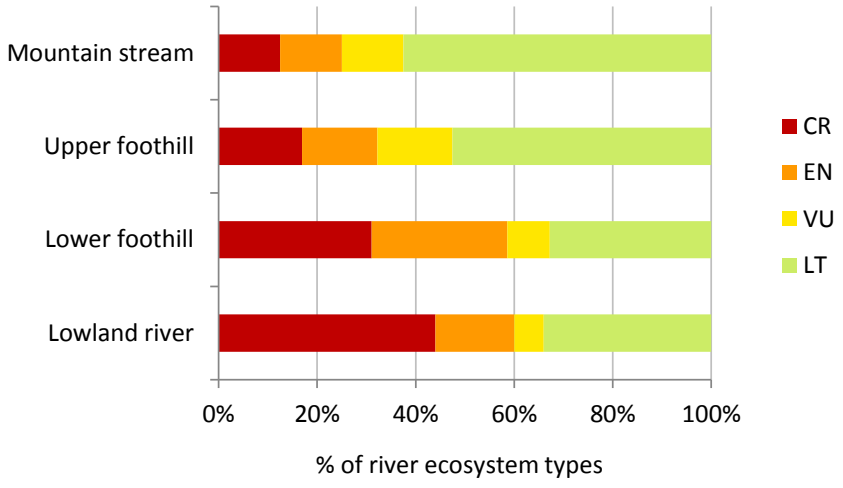


Figure 11: Ecosystem threat status for river ecosystem types, by river slope category

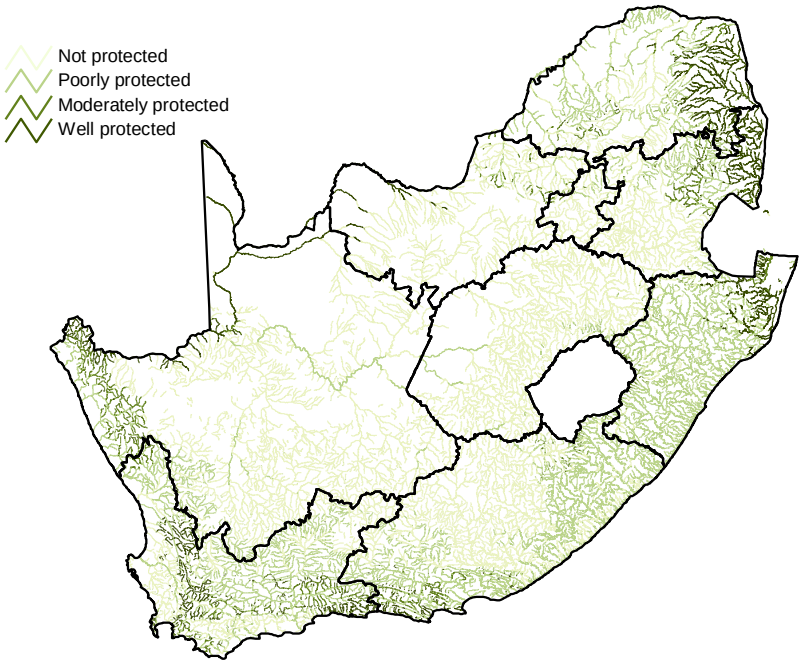


Figure 12: Map of ecosystem protection levels for river ecosystem types

Status of wetland ecosystems

Approximately 300 000 wetlands make up 2.4% of South Africa's surface area, not taking into account the many wetlands that have already been irreversibly lost to a range of other land uses. Of the nearly 800 wetland ecosystem types, a massive 65% are threatened with 48% critically endangered, 12% endangered and 5% vulnerable (Figure 13). Floodplain wetlands have the highest proportion of critically endangered types, particularly because of their agricultural and damming values. Overall, wetlands are the most threatened ecosystems in South Africa (Figure 5). This is of particular concern because of the important services that wetlands provide, including flood regulation and water purification.

With only 11% of wetland ecosystem types well protected and a significant 71% not under any form of protection (Figure 14), the country's wetland ecosystems are indeed in a crisis. Floodplain wetlands, the most critically endangered wetland types, are also the least protected wetland ecosystem types.

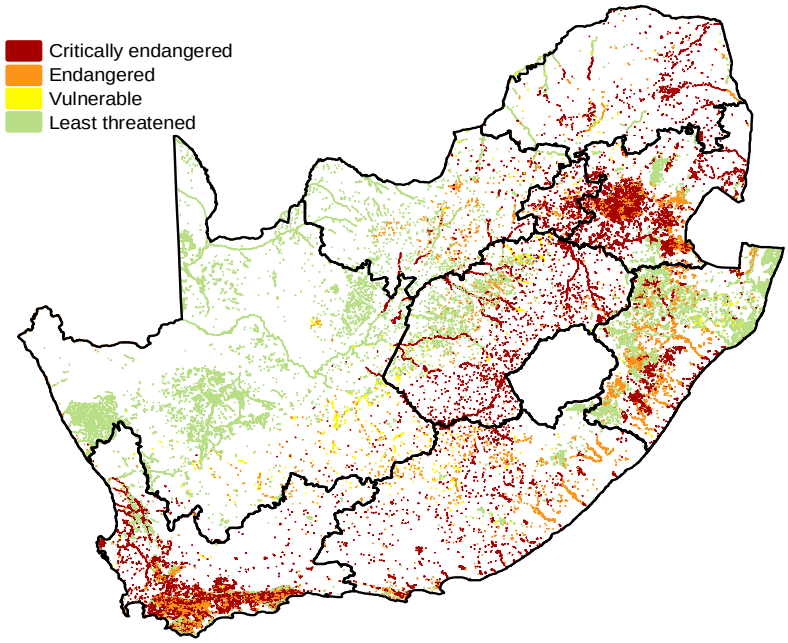


Figure 13: Map of ecosystem threat status for wetland ecosystem types

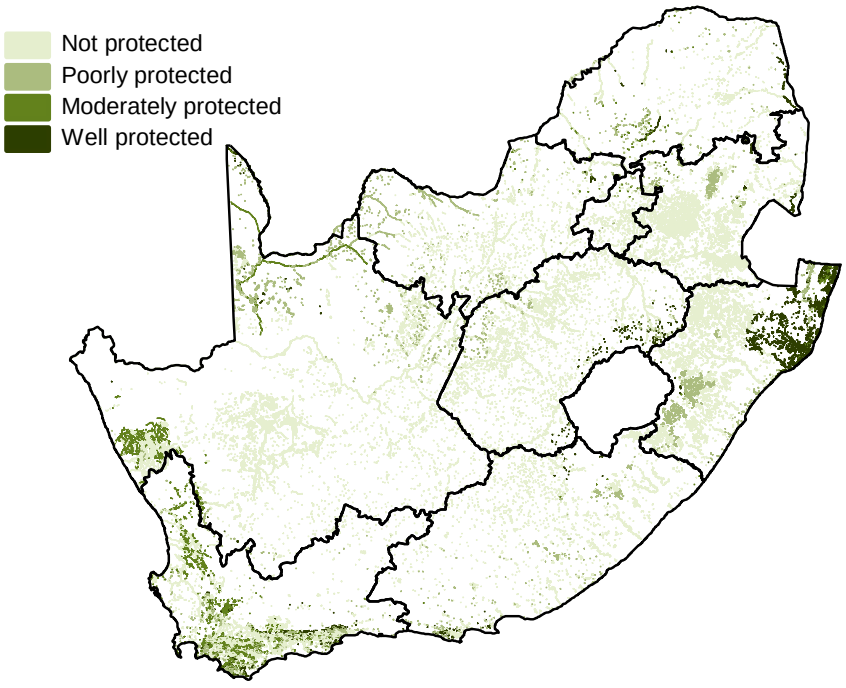


Figure 14: Map of ecosystem protection levels for wetland ecosystem types

Status of estuarine ecosystems

South Africa has nearly 300 estuaries classified into 46 estuarine ecosystem types, collectively covering an area of 90 000 ha including the open water area and adjacent habitats such as salt marshes and mangroves. Forty-three percent of South Africa's 46 estuary ecosystem types are threatened (39% critically endangered, 2% endangered and 2% vulnerable). The results are even worse when calculated by area rather than by number of estuary types, because St Lucia, the biggest estuary in South Africa at 50 000 ha, has been in poor ecological condition (see Question 8 for more on restoring the health of St Lucia, which forms part of the iSimangaliso Wetland Park, a World Heritage Site). Estuary ecosystem types in the cool temperate region (along the west coast) are more threatened than those in the warm temperate region (along the south and south-east coast). Moreover, the estuaries in good condition are often the smaller ones. Only two of the six estuaries designated as wetlands of international significance in terms of the Ramsar Convention (see Questions 7 and 8) are in good ecological condition.

A third of estuary ecosystem types are well protected, either through land-based or marine protected areas or both, while 59% are not protected at all. Some estuaries that are included in protected areas are nevertheless in poor condition, partly because of catchment-wide impacts that originate beyond the boundary of the protected area. This highlights the fact that protecting an estuary involves not only ensuring that there is no inappropriate development in the estuarine functional zone and preventing unsustainable exploitation of estuarine species, but also meeting the freshwater flow requirements of the estuary in terms of water quality and quantity.

Status of marine and coastal ecosystems

South Africa has 136 marine and coastal habitat types,[2] of which 47% were found to be threatened with 17% critically endangered, 7% endangered and 23% vulnerable (Figure 15). The most threatened habitat types tend to be small in size and consequently large areas (70%) of marine territory remain least threatened. Fifty-eight percent of coastal and inshore habitat types are threatened (24% critically endangered, 10% endangered and 24% vulnerable), relative to 41% of offshore ecosystems types (11% critically endangered, 8% endangered and 22% vulnerable) (Figure 16). This is indicative of the fact that coastal and inshore ecosystem types are subject to higher levels of human pressures relative to offshore ecosystem types.

[2] The marine and coastal environment is divided into: the coastal environment, stretching from 500m inland to a depth of 5m; the inshore environment, stretching from a depth of 5m to a depth of 30m; and the offshore environment, stretching from a depth of 30m to 200 nautical miles offshore (the edge of South Africa's EEZ) (NBA, 2011).

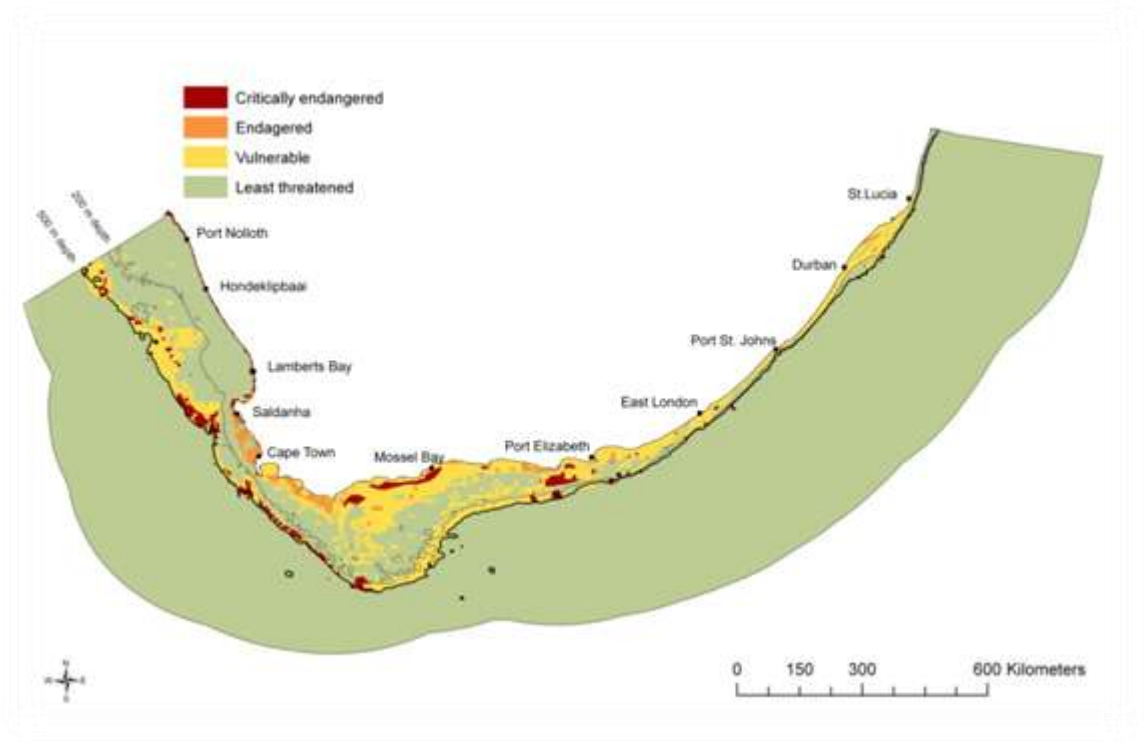


Figure 15: Map of ecosystem threat status for coastal, inshore and offshore benthic habitat types

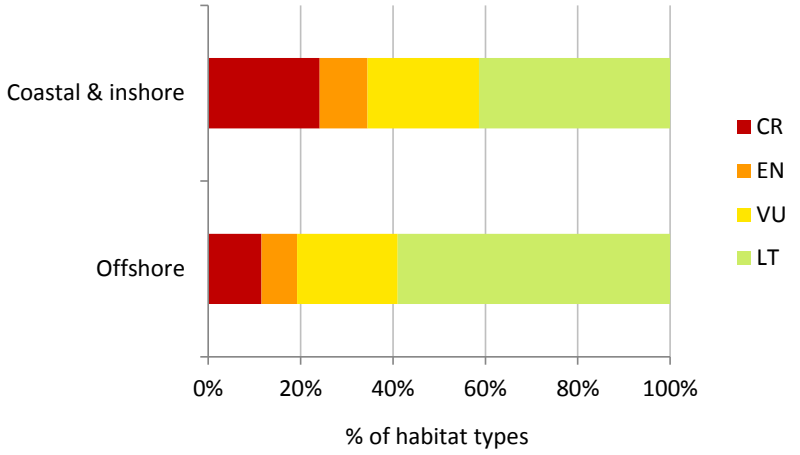


Figure 16: Ecosystem threat status by coastal and inshore vs. offshore habitat types

South Africa's marine protected areas are divided into zones, including no-take zones and extractive use zones. A protected area with strategically placed no-take zones provides full protection and one which permits extractive use provides only partial protection. Of the 136 marine and coastal habitat types, 45% are unprotected, and only 6% are regarded as well protected (Figure 17). Protection levels in the offshore environment are even lower than in the coastal and inshore environment (Figure 18), reflecting the fact that South Africa has almost no offshore marine protected areas (although see Question 8 for more on the recent declaration of the Prince Edward Islands MPA).

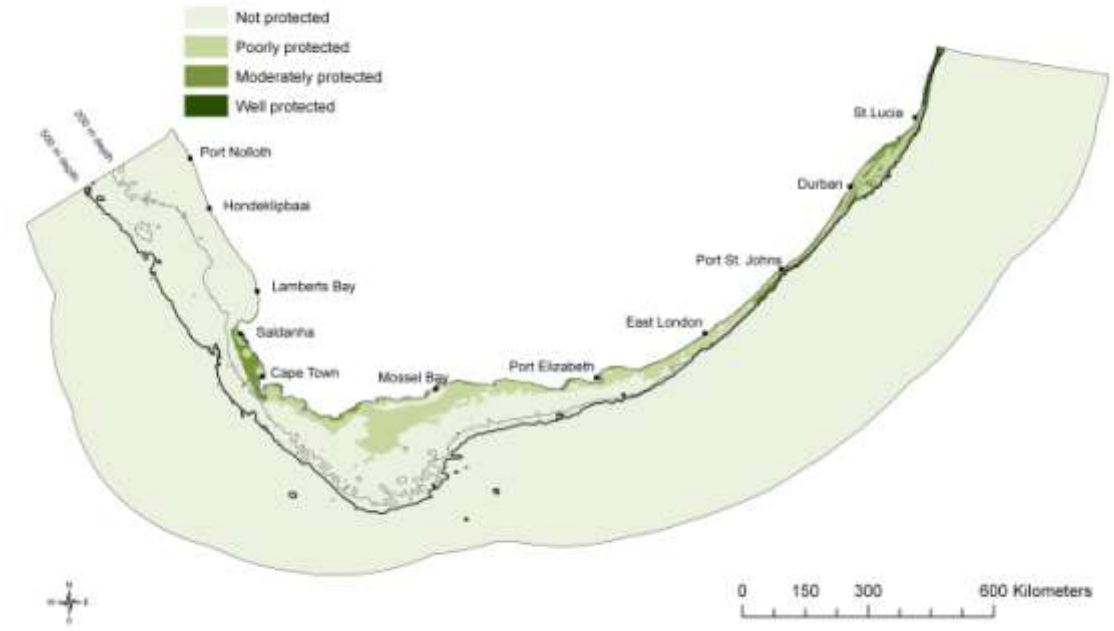


Figure 17: Map of ecosystem protection level for coastal, inshore and offshore benthic habitat types

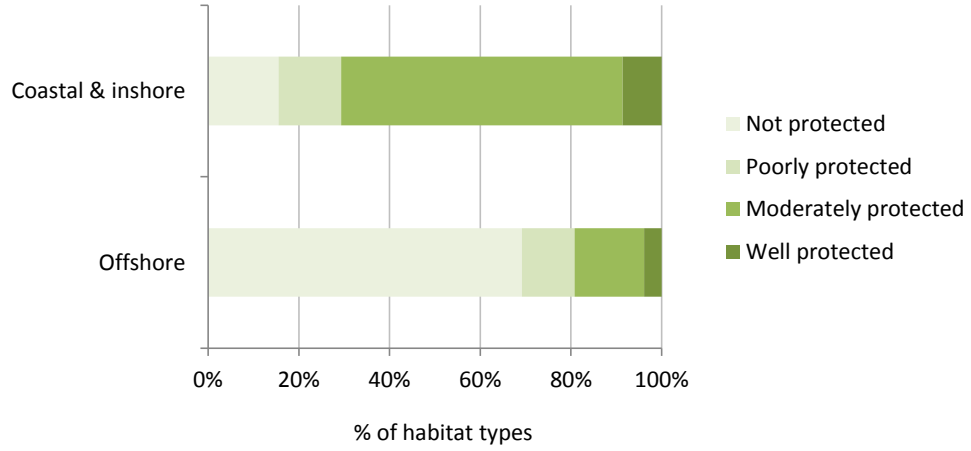


Figure 18: Ecosystem protection levels by coastal and inshore vs. offshore habitat types

Status of species

As one of the mega-diverse countries, South Africa is home to over 95 000 known species, contributing a significant proportion to world plant species (6%), reptile species (5%), bird species (8%) and mammal species (6%), with more species regularly discovered and described (Figure 19). South Africa has comprehensively assessed a wider range of taxonomic groups than most countries, and is one of the few countries with a dedicated Threatened Species Programme.

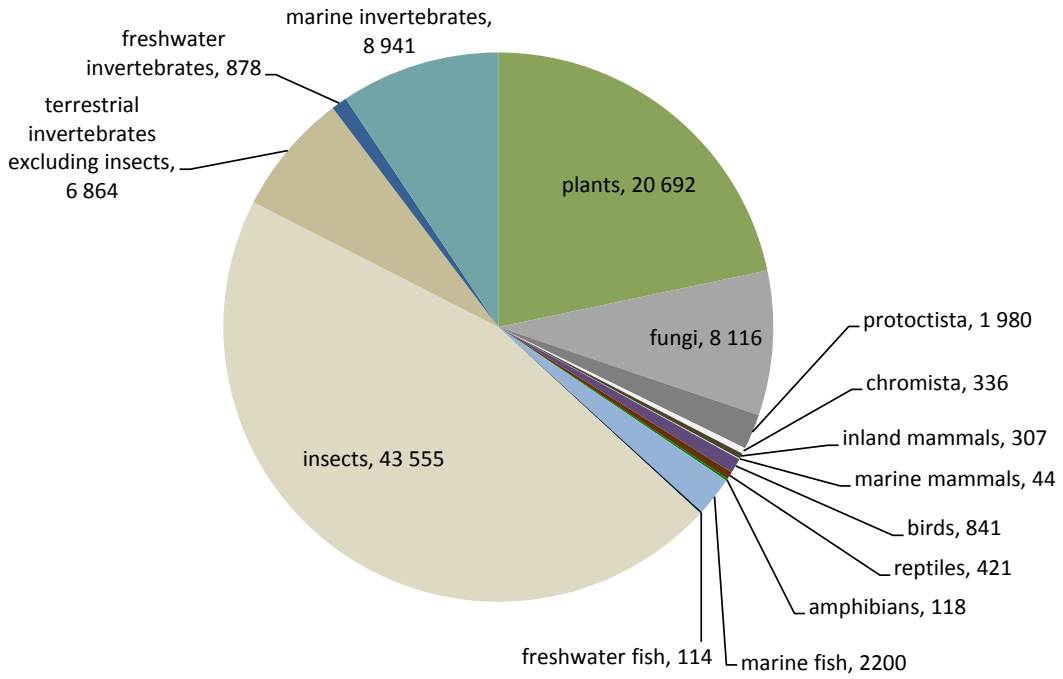


Figure 19: Numbers of known species in South Africa for major groupings of living organisms. Many more species have yet to be discovered and described, especially among insects, fungi and micro-organisms.

Red List assessment results show that one in five inland mammal species is threatened; one in five freshwater fish species is threatened; one in seven frog species is threatened; one in seven bird species is threatened; one in eight plant species is threatened; one in twelve reptile species is threatened; and one in twelve butterfly species is threatened (Table 1 and Figure 20). The proportion of threatened species is highest for freshwater fish and inland mammals while the highest numbers of threatened species (over 2 500) are found among the plant group. There are still some knowledge gaps with respect to the conservation status of species in the country, particularly for marine species and invertebrates.

Table 1: Summary of species status in South Africa, for those groups that have been comprehensively assessed

Taxonomic group	# described taxa*	# threatened	% threatened	# extinct	# endemic to SA	% endemic to SA	% of Earth's taxa	Most recent Red List
Plants	20 692	2 505	12%	40	13 203	64%	6%	2011
Inland mammals	307	60	20%	3	57	19%	6%	2004
Birds	851	133	16%	2	38	4.5%	8%	2014
Amphibians	118	17	14%	0	51	43%	2%	2010
Reptiles	421	36	9%	2	196	47%	5%	2011
Freshwater fish	114	24	21%	0	58	51%	1%	2007
Butterflies	793	59	7%	3	415	52%	?	2011

Table notes:

* A taxon (plural taxa) is usually a species but in some cases may be a subspecies or variety.

** Figures for birds are based on BirdLife South Africa's recently completed Red List for birds of South Africa (including the Prince Edward Islands), Lesotho and Swaziland, which will be published shortly.

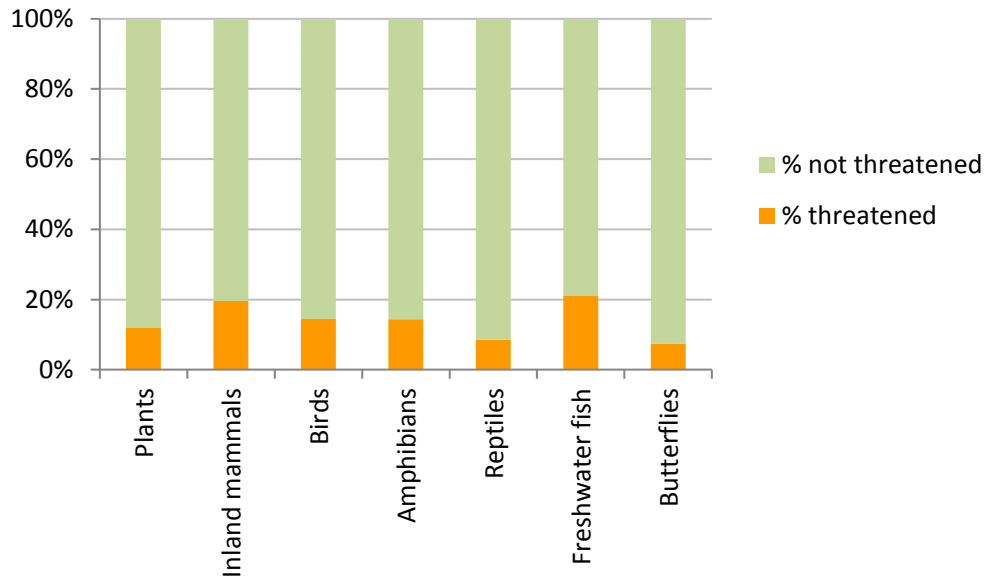


Figure 20: Proportion of threatened species for those taxonomic groups that have been comprehensively assessed, based on the most recent available Red Lists

Species of special concern are those species that are of particular ecological, economic or cultural significance. In the South African context, these include (but are not limited to):

- Rhinoceros, much in the news recently because of unprecedented levels of poaching (see Box 1);
- Cycads, the most threatened plant group in South Africa and globally;
- Medicinal plants, such as *Pelargonium sidoides* and *Aloe ferox*, upon which many people rely for primary health care and income. South Africa's wealth of medicinal plant species are mostly not threatened, with some important exceptions especially amongst heavily traded species (Williams *et al*., in review; Raimondo *et al*., 2009);
- Freshwater fish, one of the country's most threatened animal groups;
- Harvested marine species, which provide nutritious food and support a large industry and many jobs. Many of these species are in a poor state, raising concerns about the ongoing ability of this resource to provide ecosystem services.
- Species that provide the basis for non-consumptive ecotourism. For example, tourism based on non-consumptive use of marine species is rapidly expanding in value, and is currently on par with major fishery sectors in three coastal provinces. Key resources are whales, sharks, seabirds and turtles.

Box 1: White rhinoceros—a South African conservation success story under threat

(Source: adapted from NBA 2011)

In 1895 the southern white rhinoceros (*Ceratotherium simum simum*) was on the verge of extinction, with only a small population of 20 to 50 animals surviving in what is now the province of KwaZulu-Natal. Concerted conservation efforts by the state and the private sector resulted in a steady increase in numbers, to approximately 18 900 animals in 2012.*

Careful management and the creation of incentives for the private/communal sector in South Africa to conserve the species have resulted in an annual growth rate of approximately 6% for the southern white rhino population. This is a remarkable story of recovery of a species from critically low numbers a century ago to healthy population levels numbering ~20 500 animals worldwide.

The majority of southern white rhino (92%) occur in South Africa, with large populations in the Kruger National Park and Hluhluwe Imfolozi Park, while a quarter of the national population occurs on private and to a lesser extent on communal land. South Africa therefore bears most of the responsibility for the future of this species.

In 2008, poaching started to increase dramatically to meet the growing demand for rhino horn in Southeast Asia. The number of rhino deaths due to poaching in South Africa has risen sharply from only 13 rhinos (white and black) in 2007, to 333 animals in 2010, 448 in 2011, 668 in 2012, and 1 004 in 2013. The poaching rate continues to rise in 2014, threatening to exceed the growth rate of the rhino population. At the current rate it is predicted that the tipping point, when deaths exceed births, will be reached (depending upon the underlying growth rate) in the 2014-16 period. This highlights the urgency of finding sustainable solutions to the poaching crisis.

In addition to the direct loss of animals to poaching, the increased security risks have other impacts. In keeping with best management practices, limited numbers of animals are removed annually from established populations to keep these populations productive and to provide founder rhinos for new populations, ideally in more secure areas. The sale of these animals to and within the private sector generates important revenue for conservation authorities and the wildlife industry. Legal hunting on privately owned game farms and reserves also contributes to the economic viability of these enterprises and provides an economic incentive for the conservation of this species and its habitat. However, in the face of escalating poaching, and costs of protecting rhinos, an increasing number of rhino owners perceive their rhinos as an expensive liability and are seeking to sell them, with the result that live white rhino prices have started to decline and there are fewer homes in which to protect the rhino population

A Biodiversity Management Plan for southern white rhinoceros is in the process of being developed by the South African members of the SADC Rhino Management Group, following the publication of a Biodiversity Management Plan for black rhinoceros in January 2013. Biodiversity Management Plans for Species are developed and published in terms of the Biodiversity Act, and are aimed at ensuring the long-term survival in the wild of the species concerned (see Question 7).

* Another subspecies, the northern white rhino (*Ceratotherium simum cottoni*), numbered 2 230 animals in 1960 in central and east Africa, but is now listed by the IUCN as possibly extinct in the wild and is thought to exist only in captivity.

Question 3: What are the main pressures on biodiversity?[3]

Some of the key pressures on biodiversity in South Africa are summarised below. They vary between different broad classes of ecosystems.

Pressures on **terrestrial ecosystems** include loss and degradation of natural habitat, invasive alien species, pollution and waste, and climate change. However, outright loss of natural habitat resulting from conversion of natural vegetation for cultivation, mining, forest plantations and urban expansion is regarded as the main pressure. Rates of natural habitat loss are especially high in some parts of the country. The NBA 2011 reports that in the provinces of Gauteng, KwaZulu-Natal and Mpumalanga, if current rates of loss of natural habitat were to continue, there would be little natural habitat left outside protected areas by 2050. In addition to outright loss of natural habitat, degradation is also a problem in South Africa, especially in the more arid ecosystems of the western part of the country (Thompson *et al*., 2005). Various global and local climate change models have predicted significant climate change impacts on ecosystems, with some biomes likely to be more heavily impacted than others as a result of changes in temperature and rainfall patterns. However, it is the combined impacts of climate change and other pressures such as invasive alien species, habitat loss and fragmentation that are of greatest concern.

River ecosystems, due to their linear nature, are threatened by various activities including flow alteration (e.g. damming, irrigation), pollution, poor catchment management, invasive alien species and climate change. Amongst these pressures, flow alteration is regarded as the major threat to river ecosystems. However, flow alteration is felt more by larger main rivers than tributaries, because main large rivers are generally more heavily used than tributaries. The destruction of riparian vegetation which keeps the river bank intact further impacts on river health. Heavily impacted large rivers are put under further pressure by continuous and excessive amounts of pollutants from domestic, agricultural and industrial sources upslope, exacerbated by the poor ecological condition of many wetlands.

Many of South Africa's river habitats and strategic water source areas are infested by invasive alien plants estimated to consume 7% of total annual runoff water. If it were not for the Working for Water programme, tasked with clearing of invasive alien plants, the estimated water loss would be much higher than the estimated 7%. By disturbing the overall ecosystem functioning, climate change is expected to further increase the invasibility (invasive potential) of riverine habitats with severe ramifications for water sources. Invasive alien fish are also a pressure on river ecosystems (see discussion on freshwater fish species below).

Wetlands, due to their highly productive land value, are often ideal for intensive agriculture (crop farming and stock farming) and damming purposes. In other instances, road construction, mining, forestry plantations, urban development and dumping of solid and toxic waste further put pressure

[3] The term "pressures" is preferred to "threats", based on lessons from mainstreaming work in South Africa. Many pressures on biodiversity take the form of legitimate socio-economic activities, and the role of the biodiversity sector includes working with other sectors whose activities result in loss and degradation of biodiversity. Referring to these sectors as "threats" is not a helpful starting point for dialogue and successful mainstreaming.

on wetland ecosystems. Coal mining presents a major pressure on wetland ecosystems in some parts of the country where large deposits of coal occur beneath wetlands. Many of these wetlands are heavily mined, thereby compromising the wetland ecosystem functions and services.

Poor agricultural practices have large impacts on wetlands. Indeed, past agricultural policies and associated land-use planning and management actively encouraged draining and cultivation of wetlands and catchment areas, and are suspected to have been instrumental in the estimated total loss to date of 50% of South Africa's wetland area. The value of wetlands is now more widely recognised by government and other stakeholders. The Working for Wetlands programme directly seeks to prevent loss, rehabilitate and restore degraded wetlands.

Estuaries: Over exploitation of estuarine fish resources, invasive alien species, climate change and urban developments in the estuary vicinity coupled with cumulative impacts of land uses on the catchment feeding the estuary are problematic to estuary ecosystems. The greatest pressure arises from activities (i.e. damming) that can individually or synergistically alter the quantity and quality of freshwater flowing to the estuary. Indeed, water abstraction-causing-activities mean that approximately 40% of the flow from South Africa's 20 largest catchments no longer reaches the estuaries concerned, in some cases resulting in closure of the mouth of the estuary. In 2010, for examples, two estuaries closed for the first time ever: the Kobonqaba in the Eastern Cape and Uilkraals in the Western Cape. Reduced freshwater flow to an estuary can compromise the estuary's nursery functions, maintenance of coastal habitats, productivity and food webs over and above the estuary's existence (Van Ballegooyen *et al*., 2007; Harris *et al*., 2010).

Coastal, inshore and offshore ecosystems are most pressured by coastal development and extractive use of living marine resources, respectively. As the demand for fish increases globally and fishing technology advances, so does the fishing pressure on inshore and offshore ecosystems. Over time, extractive use of living marine resources has led to severe depletion of some targeted fish resources (e.g. rock lobster, abalone) and depletion of other resources may follow, disrupting food webs and impacting on dependent species. Furthermore, there has been substantial by-catch mortality of some non-target species. Climate may be altering the distributions of some forage fish species. Such altered distributions have led to mismatches in the distributions of prey and breeding localities of some predators – this has resulted in some seabird populations and may have exacerbated competition between fisheries and predators for food. At-sea pollution, especially oil spills and accumulation of plastic material, also is of concern. Substantial damage to bottom substrates may be caused by mining and fishing. Mining, mainly of diamond, titanium, oil and gas, impacts negatively on the marine and coastal environment in South Africa.

Development too close to the shoreline exerts the greatest pressure on coastal ecosystems causing habitat loss, interrupting physical and biological processes thereby compromising ecosystem resilience. In the last two decades South Africa has experienced a dramatic increase in coastal settlements and associated developments, a trend that is set to continue. Currently, over 17% of South Africa's coastline has some form of development within 100m of the shoreline (NBA 2011). Eight of the 84 alien marine species known to occur on South Africa's coast are invasive including the Mediterranean mussel (*Mytilus galloprovincialis*), which occupies nearly two-thirds of the coastline,

and the European shore crab (*Carcinus maenas*). Invasive species disrupt food webs and ecosystem dynamics.

Species: Apart from providing essential information on the number of species that are threatened, Red Lists also enable analysis of the factors that contribute to threat status. The most recent conservation assessments completed in South Africa (for amphibians in 2010, plants in 2011 and reptiles in 2011) show clearly that the primary threat to species, both plants and animals, comes from loss of natural habitat or land cover change. For example, data from the Red List of South African Plants shows clearly that habitat loss, which includes the irreversible conversion of natural vegetation for cultivation of crops, infrastructure development, urban expansion, timber plantations and mines, is by far the most severe threat to South African plants, affecting more than 1 600 taxa (Figure 21).

The issue is not simply the loss of individual patches of natural vegetation but also the resulting fragmentation of the remaining natural vegetation, which is a problem especially for species that need large areas of natural habitat to survive and species that cannot move easily between remaining patches of habitat. Fragmentation also prevents landscape-scale ecological processes, such as fire, from functioning effectively. Invasive alien species are another severe threat to indigenous species in the terrestrial and freshwater environments.

In addition to the pervasive threat of habitat loss, illegal harvesting or collecting, illegal hunting or poaching and illegal trade are key threats for some species. These include several cycad species, rhinoceros (seeBox 1), leopard, some reptiles, birds and invertebtrates, and some medicinal plant species (also see Question 2).

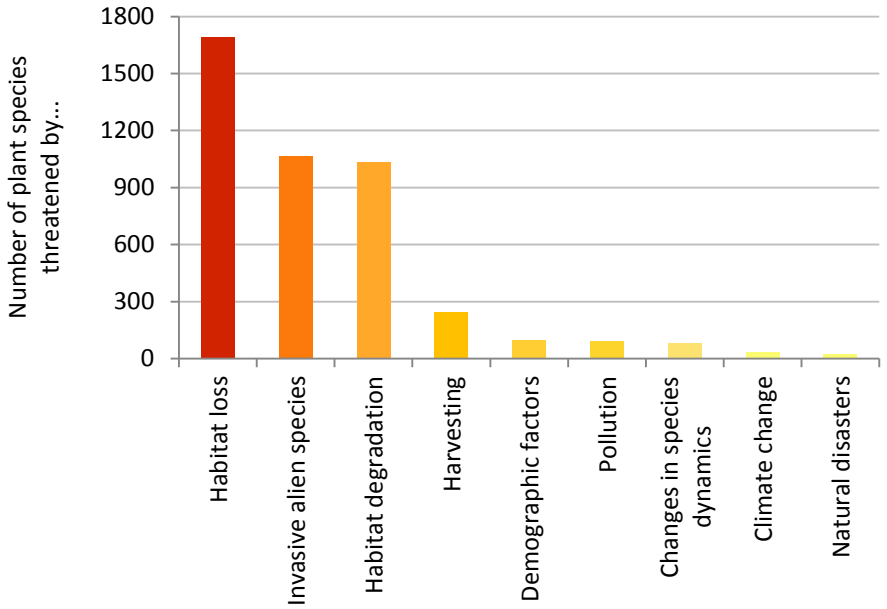


Figure 21: Analysis of threats facing plant species in South Africa, based on the Red List of South African Plants. Loss of natural habitat, the most severe threat, occurs for example as a result of cultivation, mining, urban expansion or timber plantations.

Question 4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

As mentioned in Question 1, South Africa has exceptional biodiversity assets that have the potential to contribute to the economy and to support human wellbeing. The loss and degradation of biodiversity therefore has serious implications for society and the economy. The relationship between biodiversity and ecosystem services is complex. At this stage South Africa has not done a systematic quantitative assessment of how changes in biodiversity have impacted on the provision of ecosystem services, or how the production of ecosystem services has impacted on biodiversity. Nevertheless, some examples of impacts and issues are discussed below.

Ecological infrastructure – such as healthy mountain catchments, rivers, wetlands, estuaries, marine and coastal ecosystems – provides services that are essential for supporting built infrastructure, contributing to water security and food security, and reducing the risk of disasters such as floods and droughts. By posing a threat to the ability of ecological infrastructure to provide essential ecosystem services, invasive alien species pose a challenge to human welfare. It is estimated that a massive R6.5 billion worth of ecosystem services is lost annually as a result of woody invasive plants. If it was not for the effectiveness and successes of the Working for Water Programme which clears these invasive species, the value of lost ecosystem services per year would be six times higher (Van Wilgen *et al*., 2008).

Intact ecosystems (i.e. ecosystems which are in a natural or near-natural state or retain at least some of their natural ecological functioning) are also likely to play an important role in providing cost-effective resilience to the impacts of **climate change**, including buffering human settlements and activities from the impacts of extreme climate events.

The loss of biodiversity will impact severely on the livelihoods of the many South Africans who directly or indirectly **depend on natural resources**, be it for production, trade or consumption. For example, it is estimated that between 9 and 12 million people in impoverished rural areas directly use natural resources such as fuel wood, wild fruits and wooden utensils as a source of energy, food and building material respectively (Shackleton, 2004). Disruption in the provision of these ecosystem services can have dire implications for the poorest and most vulnerable sectors of the population.

Of more than 20 000 plant species occurring in South Africa, over 2000 are used for **traditional medicinal** purpose generating R2.9 billion a year and estimated to employ over 133 000 people, many of whom come from marginalised communities (Mander *et al*., 2007). An estimated 27 million South Africans (more than half the population) use traditional medicine as a form of health care. Out of the 2000 known medicinal plant species, a third (656 species) are actively traded in medicinal markets. Of this third, 9% (56 species) are threatened (Williams *et al*., in review; Raimondo *et al*., 2009). The consequences of loss of these medicinal species could be severe for the health care of future generations, and urgent action is required to address their threat status.

Indigenous plants species are actively traded in South Africa on formal and informal markets. Trade is predominantly for traditional medicinal use, personal hygiene products, cosmetics, complementary medicines, food flavourants and essential oils. The estimated size of wild harvesting and the cultivation industry for use in the formal market is between 2 000 and 2 800 tons per year and the average weighted price for material is R50 per kg. The value of the use of indigenous plants species in personal hygiene products, cosmetics, complementary medicines, food flavourants and essential oil products is therefore between R41 million and R57 million per year. The most utilised indigenous plants species in this sector are rooibos (*Aspalathus linearus*), bitter aloe (*Aloe ferox*), kalwerbossie or rabassam (*Pelargonium sidoides*) and honeybush (*Cyclopia spp*.) (DEA, 2012b).

The reliance of **agriculture** on biodiversity cannot be ignored. Primary agriculture consumes over 60% of South African freshwater for irrigation and processing purposes, and is said to contribute 8% to the total employment particularly to the most vulnerable in the society. Moreover, the productivity of some cultivated crops is highly reliant on wild pollinators, an ecosystem service worth between US$49-US$311 million per year to the Western Cape Province deciduous fruit industry (Allsopp *et al*., 2008). In addition, by serving as a natural grazing source, the grassland biome is an asset for the livestock farming industry.

Tourism, an important contributor to South Africa's Gross Domestic Product (GDP) and one of the fastest growing sectors in South Africa and globally, relies significantly on the country's natural assets. Our rich biodiversity status and protected area networks make South Africa one of the best tourism destinations in Africa (Du Plessis *et al*., 2012), thus contributing billions of Rands to the economy. In the 2011/2012 financial year, 4 704 023 people visited South Africa's National Parks (3.6% increase from the previous year) (SANParks, 2011), thereby generating numerous employment opportunities (Saayman *et al*., 2009; Oberholzer *et al*., 2010). An emerging wildlife industry, game ranching including hunting, is estimated to generate a further R7.7 billion a year and creates 100 000 jobs (Dry, 2009; Agricultural Research Council IV, 2010; Steyn, 2012).

The loss and degradation of estuaries, coastal and marine ecosystems has large implications for human welfare. For instance, local communities in areas surrounding the great St Lucia Lake system harvest reeds and sedges worth over R4.7 million every year (Collings, 2009). The total value of estuary fisheries and the contribution of estuary fish to the inshore marine fisheries was estimated to be R1.2 billion per year in 2011 (Van Niekerk & Turpie, 2012). Similarly, in 2010 **commercial fisheries** in marine habitats was valued at approximately R6 billion and employed about 27 000 people. A further 28 000 households were estimated to be practising **subsistence fishing** (DAFF, 2010). Although there has been some recovery in linefish status in South Africa (see Question 7), fishing remains the main pressure on marine ecosystems, and the resources on which fisheries ultimately depend—the species that are harvested—are in many cases in decline. The current situation does not bode well for long-term food and job security.

As will be discussed later in the report, South Africa has maps of biodiversity priority areas in most parts of the country. It is especially important that loss or degradation of natural habitat is avoided in these priority areas, in order to support well-functioning landscapes and seascapes in the long term, which in turn are able to support a range of social and economic activity.

Part II: The NBSAP, its implementation, and the mainstreaming of biodiversity

Question 5: What biodiversity targets are set by South Africa?

South Africa has three different but related sets of targets that guide the work of the biodiversity sector:

- Biodiversity targets
- Protected area targets
- Targets in the National Biodiversity Strategy and Action Plan (NBSAP) and National Biodiversity Framework (NBF)

Biodiversity targets for ecosystems and species

The term "biodiversity targets" is used in South Africa to mean science-based targets that are set for ecosystems and species, to ensure that a representative sample of all ecosystems and species is conserved.

Biodiversity targets for ecosystems are set for national ecosystem types, which are identified in terms of the National Ecosystem Classification System. The National Ecosystem Classification System maps and classifies ecosystem types in terrestrial and aquatic environments, and is in the process of being formalised as a key part of the science foundation for biodiversity planning, monitoring and management (SANBI, 2013a).

The biodiversity target is the proportion of the original extent of each ecosystem type that should remain in good ecological condition in order to conserve a representative sample of ecosystem types. If suitable data is available, the biodiversity target for an ecosystem type is set based on the species-area relationship, and is the area required to represent the majority of species associated with that ecosystem type. In the absence of sufficient data to set species-area targets, a flat target of 20% of each ecosystem type is used. Biodiversity targets for ecosystems underpin the NBA, and are further explained in Chapter 3 of the NBA 2011 Synthesis Report. They also underpin the identification of spatial biodiversity priority areas through systematic biodiversity planning.

Biodiversity targets for species are set with the objective of preventing non-threatened species from becoming threatened, and preventing further deterioration in the threat status of those species that are already threatened. Guidelines on development of biodiversity targets for species are set out in Pfab *et al.* (2011), with targets based on the quantitative thresholds developed for the vulnerable category of the IUCN Red List system. As with targets for ecosystems, biodiversity targets for species feed into the identification of spatial biodiversity priority areas through systematic biodiversity planning. Biodiversity targets have not yet been set for all species in the country, but for a subset of species of special concern that have been incorporated in provincial spatial biodiversity plans.

Protected area targets

The fact that biodiversity targets have been set for national ecosystem types means that South Africa can also set protected area targets for ecosystem types. The protected area target for each ecosystem type, for a particular timeframe, is a portion of the biodiversity target for that ecosystem type. The National Protected Area Expansion Strategy 2008 (NPAES) set 20-year protected area targets at just more than half of the biodiversity target for each ecosystem type (Government of South Africa, 2010). This means that national protected area targets are built from the bottom up, based on ecosystem-level targets, and that protected area targets will be met only by expanding protection of ecosystems that are currently under-protected. Expanding protection of ecosystems that are already well protected will increase the total amount of land or sea under protection, but will not contribute to meeting ecosystem-level protected area targets.

Protected area targets at the ecosystem level are used to identify spatial priorities for protected area expansion. For land-based protected areas (which should provide protection for both terrestrial and freshwater ecosystems), focus areas for protected area expansion are presented in the National Protected Area Expansion Strategy 2008 (Figure 22). For offshore marine protected areas, focus areas for protection are presented in the Offshore Marine Protected Areas report (Sink *et al*., 2011) (Figure 23). In addition to these land-based and marine focus areas, threatened ecosystems are important for protected area expansion.

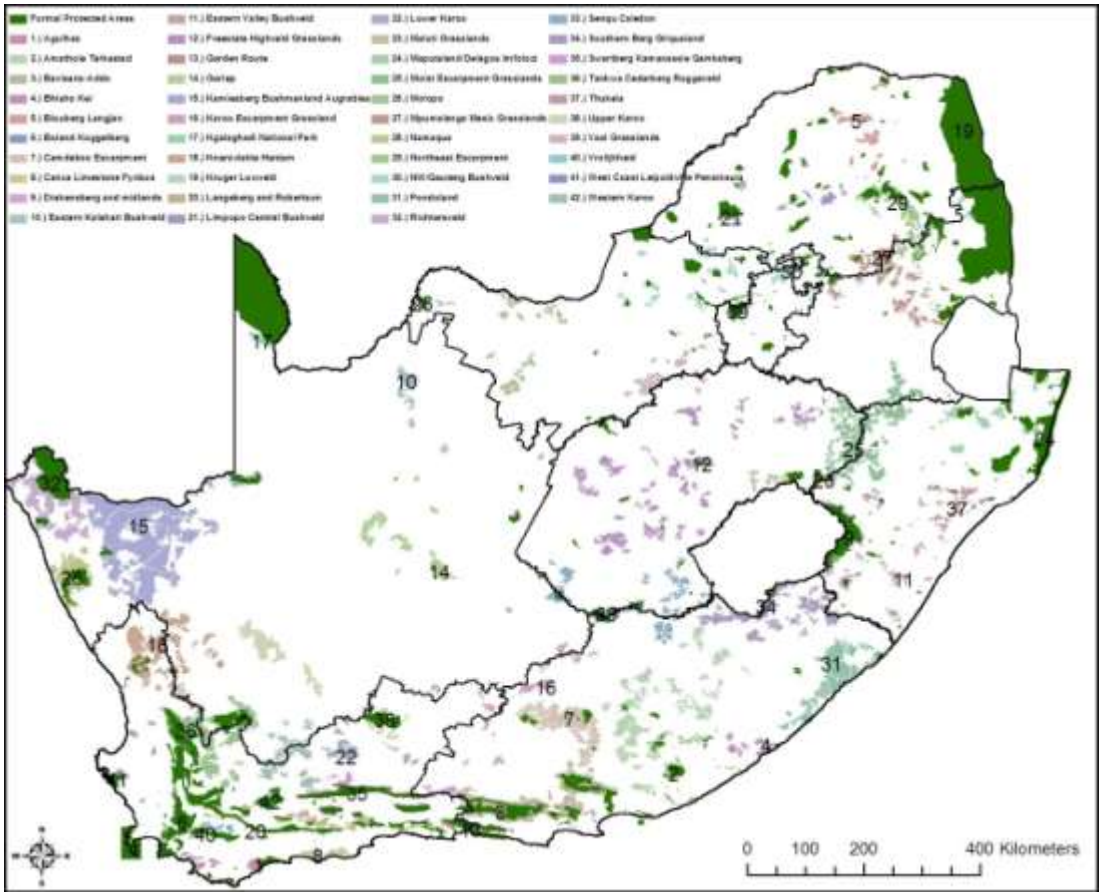


Figure 22: Focus areas for land-based protected area expansion (large, intact and unfragmented areas of high importance, suitable for the creation or expansion of large protected areas), from the NPAES 2008

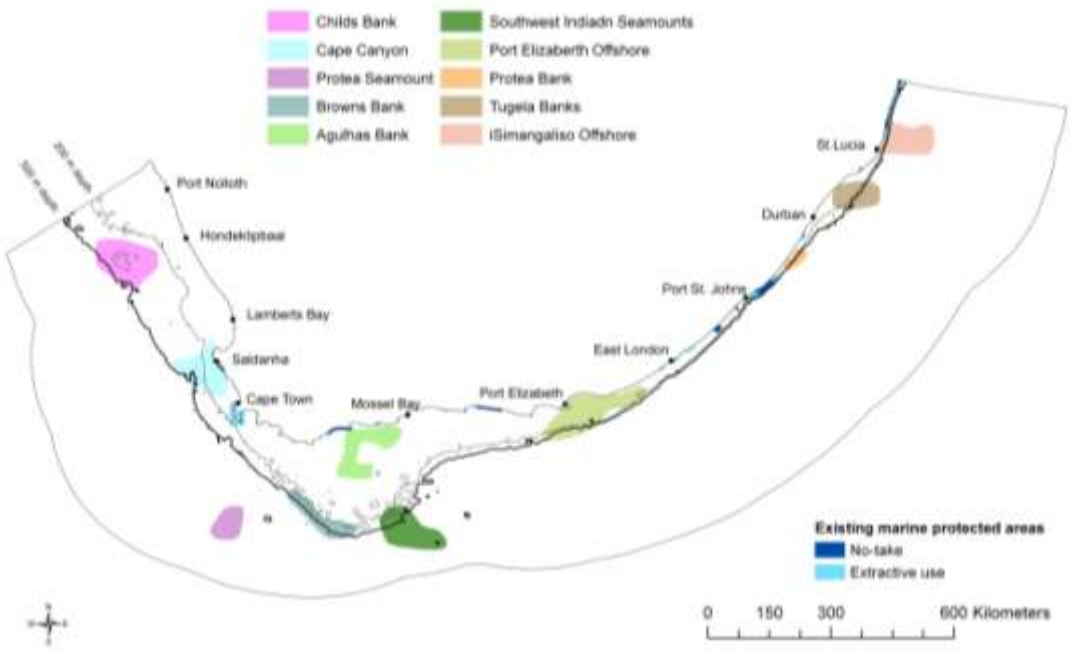


Figure 23: Focus areas for offshore marine protection

Table 2 summarises the protected area targets (20-year and 5-year targets) in South Africa's National Protected Area Expansion Strategy 2008. The NPAES is due to be revised, and the revision process will consider the alignment of South Africa's national protected area targets with Aichi Target 11.

Table 2: Extent of protection provided by land-based and marine protected areas in South Africa, in 2008 and 2013

	Protection extent in 2008	Protection extent in 2013	20-year (2028) protected area target in NPAES 2008*
Land-based	6.5%	7.8%**	12% of each ecosystem type***
Marine inshore**	No-take: 9.1%	No-take: 9.3%	No-take: 15% of each ecosystem type
	Total: 21.5%	Total: 23.2%	Total:25% of each ecosystem type
Marine offshore: mainland EEZ	No-take: 0.16%	No-take: 0.16%	No-take: 15% of each ecosystem type
	Total: 0.4%	Total: 0.4%	Total: 20% of each ecosystem type
Marine offshore: Prince Edward Islands EEZ	No-take: 0%	No-take: 3.4%	No-take: 15% of each ecosystem type
	Total: 0%	Total: 34.2%	Total: 20% of each ecosystem type

Table notes:
* Protected area targets are set for ecosystem types as defined in the National Ecosystem Classification System, in order to ensure that the protected area network includes a representative sample of all ecosystem types. The National Protected Area Expansion Strategy 2008 is due to be revised, including systematic analysis of which ecosystems remain under-protected, the area still required to meet these protected area targets for ecosystem types.
** This includes approximately 1.8m hectares of privately owned nature reserves, some of which have yet to be verified.
*** The extent of land-based protection required to meet a protected area target of 12% for each ecosystem type is more than 12% of South Africa's area. The same applies for marine protection.
**** Inshore marine protection has been measured in kilometres of coastline because of the varying distances which inshore MPAs extend from the coastline. Inshore is considered to mean from the high water mark to the 30m depth contour. All inshore MPAs extend at least this far. In future a more accurate area-based measure for inshore marine protection will be used, which may alter the percentages reported here.

Targets in the NBSAP and National Biodiversity Framework

As discussed in Question 6 below, South Africa is in the process of revising the country's NBSAP 2005, which set 15 year targets and 5 year targets (DEAT, 2005b). As explained in Question 7, the NSBAP 2005 provided the basis for the development of South Africa's first National Biodiversity Framework 2008, which was published in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) in August 2009. The National Biodiversity Framework 2008 (DEAT, 2009c) identifies 33 top priority actions, and sets one or more targets for each of these actions. The NBSAP 15-year targets and the National Biodiversity Framework 5-year targets are summarised in Table 3 in Question 10.

Question 6: How has the NBSAP been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

South Africa's NBSAP 2005 was developed through a comprehensive two-year consultative process, as described in the Fourth National Report. The process of revising and updating the NBSAP was underway at the time of writing this Fifth National Report. The updated NBSAP will draw on the science base provided by the National Biodiversity Assessment 2011, which incorporated biodiversity targets (see Question 5) as a key aspect of the analysis of ecosystem threat status and ecosystem protection levels (see Question 2). The NBSAP 2005 includes significant emphasis on mainstreaming biodiversity priorities in a range of sectors, and as discussed in Question 8, South Africa has had considerable success in mainstreaming over the last five years. The updated NBSAP is likely to continue to place strong emphasis on mainstreaming.

Question 7: What actions has South Africa taken to implement the Convention since the last report and what have been the outcomes of these actions?

South Africa has made significant progress towards implementing the Convention, the NBSAP and the National Biodiversity Framework in the five-year period since the last report (April 2009 – March 2014). The discussion below does not aim to describe every action taken, but rather to highlight key achievements and outcomes. Several of the achievements relate to mainstreaming, which is picked up again in Question 8.

Relevant policy, legislation, institutions, funding and programmes

South Africa has a strong policy and legislative framework for the conservation, management and sustainable use of biodiversity. This was described in some detail in the Fourth National Report, and is thus not repeated here. The policy and legal framework includes the following key elements:

- The Constitution (Act 108 of 1996)
- White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997)
- National Environmental Management Act (Act 107 of 1998)
- National Environmental Management: Biodiversity Act (Act 10 of 2004) (hereafter referred to as the Biodiversity Act)
- National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act)
- Marine Living Resources Act (Act 18 of 1998)
- National Forest Act (Act 84 of 1998)
- Provincial biodiversity legislation – this differs from province to province
- National Biodiversity Strategy and Action Plan (2005)
- National Biodiversity Framework (2008)
- National Protected Area Expansion Strategy (2008)
- Provincial biodiversity strategies, and provincial protected area expansion strategies, which have been developed by some provinces

Although there have not been fundamental changes in biodiversity policy in South Africa since 2009, some changes or improvements have occurred to strengthen implementation. Key achievements or changes relating to **policy and legislation** in the last five years include:

- A significant improvement in political will and commitment, signalled by the development of the **Presidential Delivery Agreement**, with 12 Outcomes, which was adopted by the Cabinet in 2010. **Outcome 10** of the Delivery Agreement deals with the environment sector including biodiversity, with the aim that "environmental assets and natural resources are well protected and continually enhanced", and formed the basis for a Performance Agreement between the President and the Minister of Water and Environmental Affairs[4] for the period April 2010 to March 2014.
- The publication of **National Biodiversity Framework** in August 2009 by the Minister of Environmental Affairs and Tourism in terms of the Biodiversity Act (DEAT 2009a). The National Biodiversity Framework had been developed when South Africa's Fourth National Report was submitted, but had not yet been published by the Minister. The cost of implementing the National Biodiversity Framework was estimated to be R7.6 billion in 2008 (Coetzee & Bouwer, 2008).
- **Regulations for the Convention on International Trade in Endangered Species (CITES)** were published for implementation in terms of the Biodiversity Act in March 2010, just prior to the CITES 15th Conference of the Parties held in Doha Qatar from 13 to 25 March 2010.
- A **National Moratorium on Trade of Individual Rhinoceros Horns** was published and implemented in terms of the Biodiversity Act in February 2009, to prohibit the selling of individual rhinoceros horn or any derivatives or products thereof within the country (DEAT, 2009d). In addition, amendments to the **Norms and Standards for the Marking of Rhinoceros**

[4] The Ministries of Water and Environmental Affairs were combined to form a single ministry in July 2009. The national Departments of Water Affairs and Environmental Affairs remain two separate departments.

and Rhinoceros Horn, and for the Hunting of Rhinoceros for Trophy Hunting Purposes were published in terms of the Biodiversity Act in April 2012 (DEA, 2012c).

- The **Prohibition of Trade in Certain *Encephalartos* (Cycad) Species** was published and implemented in terms of the Biodiversity Act, in May 2012 (DEA, 2012d). Various activities involving wild specimens of threatened or protected cycad species are prohibited, including collection, trade, and possession without a permit. The export of artificially propagated specimens of threatened or protected cycads from South Africa is also prohibited.
- Substantial amendments to the **Threatened or Protected Species (TOPS) Regulations** and review of the species list were published for public comment in April 2013. The review of the species list was done in collaboration with SANBI and the process was based on the Red List assessment process.
- The first **List of Threatened Terrestrial Ecosystems** was published in terms of the Biodiversity Act, in December 2011 (DEA, 2011).
- **Regulations for Alien and Invasive Species** were published in July 2013 in terms of the Biodiversity Act (DEA, 2013a). These regulations took many years to develop, and are critical for the effective management, control and monitoring of invasive species in South Africa. A national strategy for invasive species will be developed to include risk assessment, prevention of introduction, management plans (including eradication, containment and control plans), human capital development and research. The regulations also provide an enabling environment for Natural Resource Management Programmes in DEA, including Working for Water, to continue creating jobs and contributing to poverty alleviation while protecting ecological infrastructure from the impact of invasive alien species.
- **Biodiversity Management Plans for Species** (BMP-S) have been published in terms of the Biodiversity Act for at least four species, including black rhino (DEA, 2013b), *Pelargonium sidoides* (Newton *et al.*, 2013) and *Encephalartos latifrons*. Biodiversity Management Plans for eleven more species, including white rhino, are at various stages of development. The primary objective of BMP-S is to ensure the long-term survival in the wild of the species concerned, including facilitating the management and recovery plans of species. The Norms and Standards for BMP-S were developed and published with the involvement of a range of partners such as government, business and civil society, and were published in March 2009 (DEAT, 2009a).
- **Norms and Standards for Biodiversity Management Plans for Ecosystems** (BMP-E) have been finalised and will shortly be published for implementation in terms of the Biodiversity Act in order to ensure long term survival of ecosystems amongst other objectives (DEA, 2013d).
- **Revision of the Regulations for Bio-prospecting, Access and Benefit Sharing (BABS)** is underway owing to lesson learnt and challenges identified in the past five years of implementing the Bio-prospecting Access and Benefit Sharing Regulations published for implementation in 2008. **Bio-prospecting, Access and Benefit Sharing Regulatory Framework: Guidelines for Providers, Users and Regulators** were published in July 2012, particularly to promote compliance and facilitate practical implementation of the Bio-prospecting, Access and Benefit Sharing Regulations.
- Development of a **National Coastal Management Programme** in terms of the Integrated Coastal Management Act (Act 24 of 2008) is underway.
- Several **amendments** have been made to the Biodiversity Act and the Protected Areas Act to clarify certain issues and facilitate implementation, and some provinces have revised or are in

the process of revising their biodiversity legislation. For example, amendments to the Biodiversity Act were published for implementation in May 2009, among others to increase the maximum penalties for contraventions in terms of the Biodiversity Act. Further amendments to the Biodiversity Act were published for implementation in July 2013, among others to expand the scope of the regulatory provisions relating to alien and listed invasive species, and to enhance the circumstances in which issuing authorities may refuse, cancel or suspend permits in order to limit abuse of the permit system.

The **institutional environment** for biodiversity was described in the Fourth National Report, and has not changed substantially in the last five years. South Africa has a set of public sector institutions that are mandated with the conservation and management of biodiversity, including:

- The **Department of Environmental Affairs (DEA)**, which is guided by its mandate to ensure the protection of the environment and conservation of natural resources, balanced with sustainable development and the equitable distribution of the benefits derived from natural resources. It fulfils its mandate through formulating, coordinating and monitoring the implementation of national environmental policies, programmes and legislation, and through undertaking appropriate research. DEA also has a series of **Environmental Programmes**, including Working for Water, Working for Wetlands,[5] Working for Land, Working for Energy and others, which play an important role in the management of natural resources and biodiversity (see DEA, 2013e for more information).
- **South African National Biodiversity Institute (SANBI)**, established in terms of the Biodiversity Act, is a public entity falling under the Minister of Environmental Affairs, with the mandate to play a leading role in South Africa's national commitment to biodiversity management particularly in relation to the biodiversity research agenda, provision of knowledge and information, policy support and advice, monitoring and reporting on the state of biodiversity, and managing botanical gardens (see SANBI, 2013b).
- **South African National Parks (SANParks)**, which was established in terms of the Protected Areas Act as a conservation authority mandated to conserve, protect, control and manage a system of national parks and other defined protected areas and their biodiversity (see SANParks, 2013).
- **Provincial departments of environmental affairs and provincial conservation authorities**, for each of South Africa's nine provinces**.** In some cases the provincial conservation authority forms part of the provincial department of environmental affairs; in other cases it is a separate agency. In some cases the provincial conservation authority has a mandate to work throughout the province concerned, both inside and outside protected areas, while in other cases it has a mandate to work only within protected areas (including the development and promotion of ecotourism facilities within protected areas). For example, see CapeNature (2012) and GDARD, 2013).

In addition, a number of other organs of state have a direct role in managing natural resources, and thus impact on biodiversity, including:

- **Department of Water Affairs (DWA)**, which shares the mandate for managing freshwater ecosystems with DEA, is primarily responsible for the formulation and implementation of policy

[5] The Working for Wetlands Programme has been hosted by SANBI for the last decade but will transition to DEA's Environmental Programmes branch in April 2014.

governing the water sector and has overriding responsibility for water services provided by local government (see DWA, 2013a).

- **Department of Agriculture, Forestry and Fisheries (DAFF)**, which draws its legislative mandate from section 27(1)(b) of the Constitution of South Africa, is primarily responsible for Acts related to the agriculture, forestry and fisheries value chains from inputs, production and value adding to retailing (see DAFF, 2013).
- **Provincial departments of agriculture**, which in some cases include a mandate for land affairs or rural development.
- **Local government (municipalities)**, which are "wall-to-wall" in South Africa and thus have jurisdiction over significant natural resources in urban and rural areas (for example, see City of Ekurhuleni, 2012).

Key **intergovernmental structures** relevant to biodiversity include:

- **MINMEC** is a forum that meets quarterly to promote co-operative governance between the national ministers and their respective counterparts at provincial level. The environmental MINMEC comprises the Minister of Environmental Affairs, the Director-General of DEA and the provincial Members of Executive Councils (MECs) for Environmental Affairs (as mandated by Intergovernmental Relations Framework Act (Act 13 of 2005)).
- **Ministerial Technical Committees (MINTECH)** is a forum that meets quarterly to facilitate co-ordination between DEA and the provincial environmental departments. It comprises the Director-General of DEA, representatives of public entities including SANBI and SANParks, and the heads of the provincial departments responsible for environmental management and biodiversity conservation in the relevant province (as mandated by Intergovernmental Relations Framework Act of 2005).
- A series of **MINTECH Working Groups** which bring together senior officials in national and provincial government, including Working Group 1 that deals with biodiversity conservation, Working Group 5 that deals with water, Working Group 7 that deals with environmental management (including EIAs), Working Group 8 that deals with marine and coastal issues, Working Group 10 that deals with climate change, and Working Group 11 that deals with law reform.
- **Interdepartmental Committee on Inland Water Ecosystems**, which was established in 2011 and brings together all organs of state relevant to the management of freshwater ecosystems, including DEA, DWA, SANBI and SANParks. This committee is a new development since the previous report, and is proving to be a useful structure for increasing the focus of government on freshwater ecosystems and clarifying roles and responsibilities in relation to their management.
- **Interdepartmental Project Implementation Committee (IPIC),** which was established with representation of DEA, DWA and the Department of Mineral Resources (DMR), with the aim of ensuring aligned implementation of the three Acts from which these departments draw their mandates, i.e. the National Environmental Management Act of 1998, the National Water Act of 1998 and the Mineral and Petroleum Resources Development Act of 2002.
- In addition, the Presidential Delivery Agreement mentioned above has catalysed increased cross-sector collaboration between various institutions.

Non-Governmental Organisation (NGOs) play a vital role in the biodiversity sector in South Africa, including through corporate funding which would not be possible for government to access. NGOs are able to innovate and be flexible, and often work in partnership with the public sector. Some of the key biodiversity-related NGOs active in South Africa include:

- Birdlife South Africa
- Botanical Society of South Africa
- Conservation South Africa, affiliated with Conservation International
- Endangered Wildlife Trust (EWT)
- IUCN (International Union for Conservation of Nature) South Africa
- Peace Parks Foundation (PPF)
- Southern African National Foundation for the Conservation of Coastal Birds
- Wildlife and Environment Society of South Africa (WESSA)
- World Wide Fund for Nature South Africa (WWF-SA)
- Wilderness Foundation (WF)

Government expenditure on biodiversity in South Africa was assessed as part of the process of developing the NBSAP 2005. Total government expenditure on biodiversity conservation-related matters in 2001/2002 was R728 million, of which national government spent R301 million (this included allocations to the national departments of environment, water affairs and agriculture) and provinces the remainder. If one includes programmes such as Working for Water, Land Care and certain functions of the National Research Foundation, the total biodiversity expenditure was around R1.7 billion in 2001/2002 (NBSAP Country Study, DEAT, 2005c). There has not been a subsequent assessment of government expenditure on biodiversity – this is a gap in knowledge that should be addressed.

In addition to core government funding allocated to managing and conserving biodiversity, South Africa has received substantial **donor investment** in the biodiversity sector, including but not only through the Global Environment Facility (GEF), the Critical Ecosystem Partnership Fund (CEPF), Danish Cooperation For Environment and Development (DANCED), German Technical Corporation (GTZ), Norwegian Agency For Development Cooperation (NORAD), United State Agency For International Development (USAID), World-Wide Fund for Nature (WWF), International Union for Conservation of Nature (IUCN), Fauna and Flora International, and the International Fund for Animal Welfare.

Some of the major donor-funded biodiversity programmes in South Africa were described in the Fourth National Report and are not repeated here. Significant developments in **donor-funded programmes** in the last five years include:

- **Cape Action for People and the Environment (CAPE)** – the major GEF investment in the CAPE Biodiversity Conservation and Sustainable Development project was concluded. Co-ordination of CAPE partners continues through the CAPE Implementation Committee, and the CAPE partnership remains vibrant and effective although no longer funded through the GEF.
- The successful undertaking of the **Grasslands Programme**, funded by the GEF, which was in its final year at the time of writing.

- The **Maputaland-Pondoland-Albany Hotspot (MPAH)** is part of the Critical Ecosystem Partnership Fund's (CEPF) investment in the region. The project is focusing on developing civil society capacity to improve conservation and management of Maputaland-Pondoland-Albany priority sites. The overall aim of the project is to provide opportunities for civil society to come together, share lessons, build capacity and to develop learning network across the Hotspot.
- The **Wild Coast Project**, a GEF-funded initiative, is administered by the Eastern Cape Parks and Tourism Agency and aims to establish a representative network of co-managed protected areas in the Pondoland region.
- South Africa is one of four countries participating in **ProEcoServ**, a GEF-funded multi-country project dealing with mainstreaming of ecosystem services, led by the CSIR in partnership with SANBI.
- South Africa is in the process of designing projects for the fifth cycle of the GEF (**GEF5**), with implementation to commence in 2015.

Areas of significant progress in the last five years

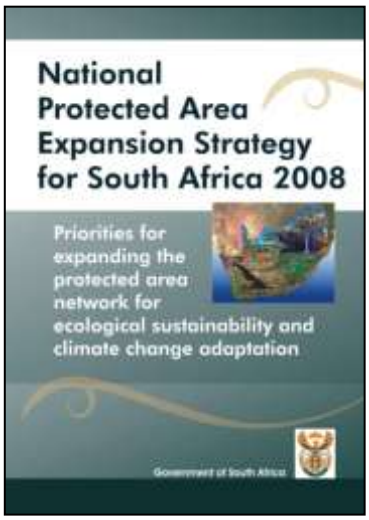
Major highlights in the implementation of the Convention in South Africa in the last five years are outlined below. They fall into six broad areas:

- Increasing protection of biodiversity
- Reducing loss of biodiversity
- Restoration of biodiversity
- Increased focus on inland water biodiversity
- Progress on access and benefit sharing relating to genetic resources
- Communicating the benefits of biodiversity

Successes in these areas are underpinned by:

- Advances in the science foundation and strengthening the science-policy interface
- Biodiversity information management and information sharing
- Human capital development

These nine areas of progress are discussed below. Work in many of these areas involves mainstreaming, so this section should be read in conjunction with Question 8.



Increased protection for biodiversity

At the time of the Fourth National Report in 2009, the National Protected Area Expansion Strategy (NPAES) 2008 had been finalised but not yet published. The NPAES, which sets 20-year and 5-year targets for protected area expansion as discussed in Question 5, was published in 2010 (Government of South Africa, 2010). In addition to setting ecosystem-specific protected area targets, it identifies important geographic areas for protected area expansion

and makes recommendations about mechanisms for protected area expansion (such as biodiversity stewardship – see discussion below).

Increased protection for biodiversity in South Africa has been achieved through expanding the protected area network as well as the network of conservation areas, and related actions such as improving management effectiveness of protected areas. A clear distinction is made in South Africa between **protected areas**, which are formally protected by law in terms of the Protected Areas Act, and **conservation areas**, which have conservation-related goals but are not formally declared in terms of the Protected Areas Act. A map of both protected areas and conservation areas is shown in Figure 24 and more detail about key achievements in the last five years is given below.

The actions and outcomes discussed here support the CBD Programme of Work on Protected Areas.

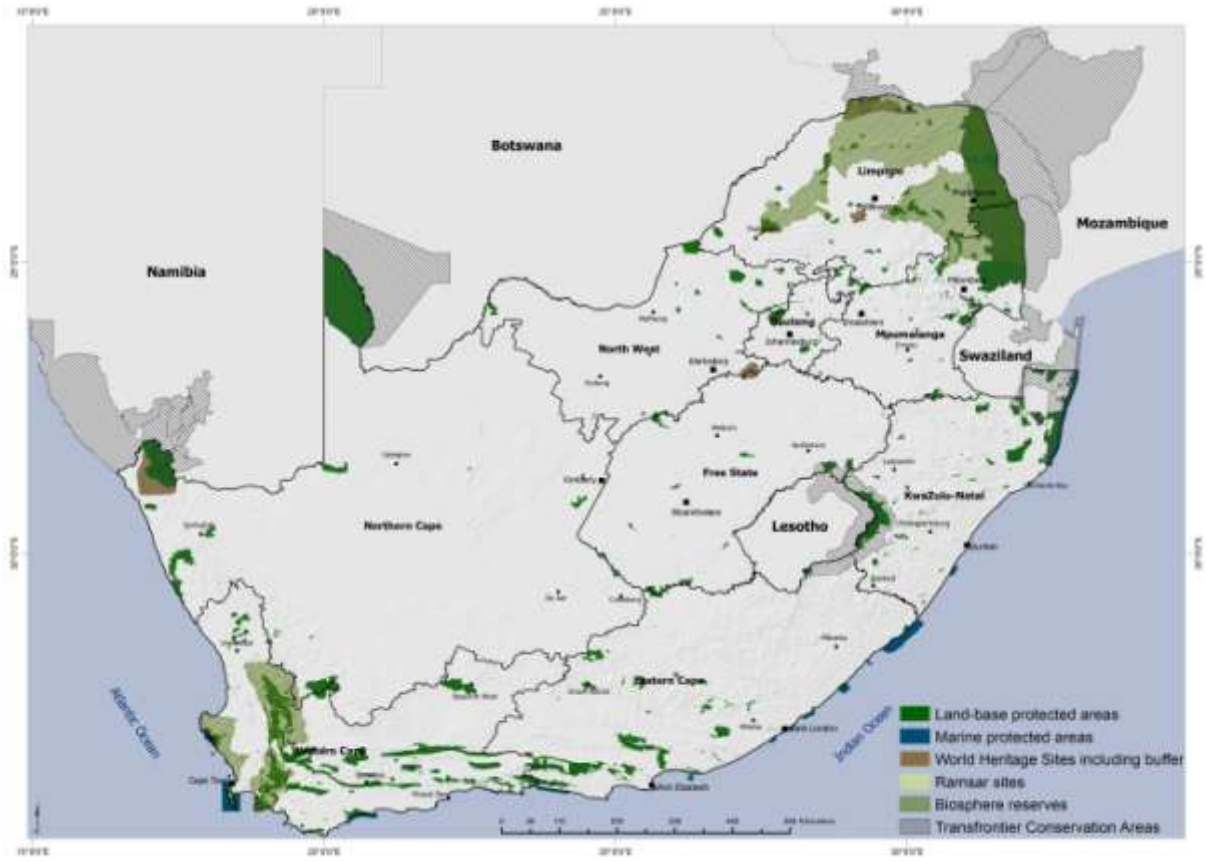


Figure 24: Protected areas and conservation areas in South Africa, including Transfrontier Conservation Areas with neighbouring countries

- **Biodiversity stewardship programmes**

Biodiversity stewardship is a programmatic approach to engaging with private and communal landowners to conserve and manage biodiversity priority areas, and is implemented by conservation authorities with the coordination and support of DEA, SANBI and NGOs. Biodiversity stewardship allows landowners to contract their land into the protected area estate, while retaining ownership and management of the land. It is a voluntary, partnership-based mechanism that builds collaboration between communities, state and private land owners under a shared vision and goal, which is protection and management of biodiversity (SANBI, 2013c).

In South Africa biodiversity stewardship has proved to be the most viable and feasible way of expanding and consolidating protected area network. The first biodiversity stewardship pilot project was initiated only a decade ago in the Western Cape province. Six provinces now have established biodiversity stewardship programmes, with programmes in the remaining three provinces under development. As of September 2013, 38 provincial protected areas had been declared through biodiversity stewardship, totalling 138 482 ha. Another 150 properties, totalling nearly 500 000 ha, were in negotiation (SANBI, 2013c). This will make a significant contribution to the National Protected Area Expansion Strategy target of expanding the land-based protected area network by 2.7 million by 2013.

- **Land Reform Biodiversity Stewardship Initiative**

A Land Reform Biodiversity Stewardship Initiative (LRBSI) was initiated in 2008 aimed at establishing a network of learning and community of practice regarding land reform/communal lands and biodiversity stewardship between the land and conservation sectors across the country; and to demonstrate the successful delivery of both socio-economic and conservation benefits at a project level. As of the end of 2013, more than 21 clusters of land reform biodiversity stewardship projects were active in six provinces between the relevant responsible authorities, organisations and land reform beneficiaries. Since the inception of LRBSI in 2009, 53 383 ha of land reform sites have been declared as some form of protected areas in terms of the Protected Areas Act, with a further 51 513 ha still in the negotiation process (as of end of 2013). A reference group has been established and operational since November 2009 comprising of government (including the Department of Rural Development and Land Reform) and NGOs, to help guide the strategic direction of the LRBSI, and significant strides have been made towards building a solid culture of learning and lesson sharing among LRBSI projects and relevant institutions.

- **Marine protected areas**

The Prince Edward Islands MPA was declared in 2013, as South Africa's first major offshore MPA. The Prince Edward Islands are two sub-antarctic islands that form part of South Africa's territory (Figure 25). The Prince Edward Islands MPA provides protection for 34% of the Prince Edward Islands EEZ, of which just over 3% is a no-take sanctuary (see Table 2). The Amathole MPA, an inshore MPA, was declared in 2011, formalising protection for three former "closed areas" along the Eastern Cape coast, and contributing to coastal and inshore protection.

As noted in Question 2, offshore marine ecosystems are the least protected of all South Africa's ecosystems. An Offshore Marine Protected Area project (OMPA) was completed in 2010, in order to give further guidance to the establishment of offshore MPAs. This four-year collaborative project identified ten focus areas for offshore protection, shown in Figure 23 (see Question 5) (Sink *et al.,* 2011).

In addition to contributing to the Programme of Work on Protected Areas, these actions and outcomes support the CBD's thematic programme on marine and coastal biodiversity.

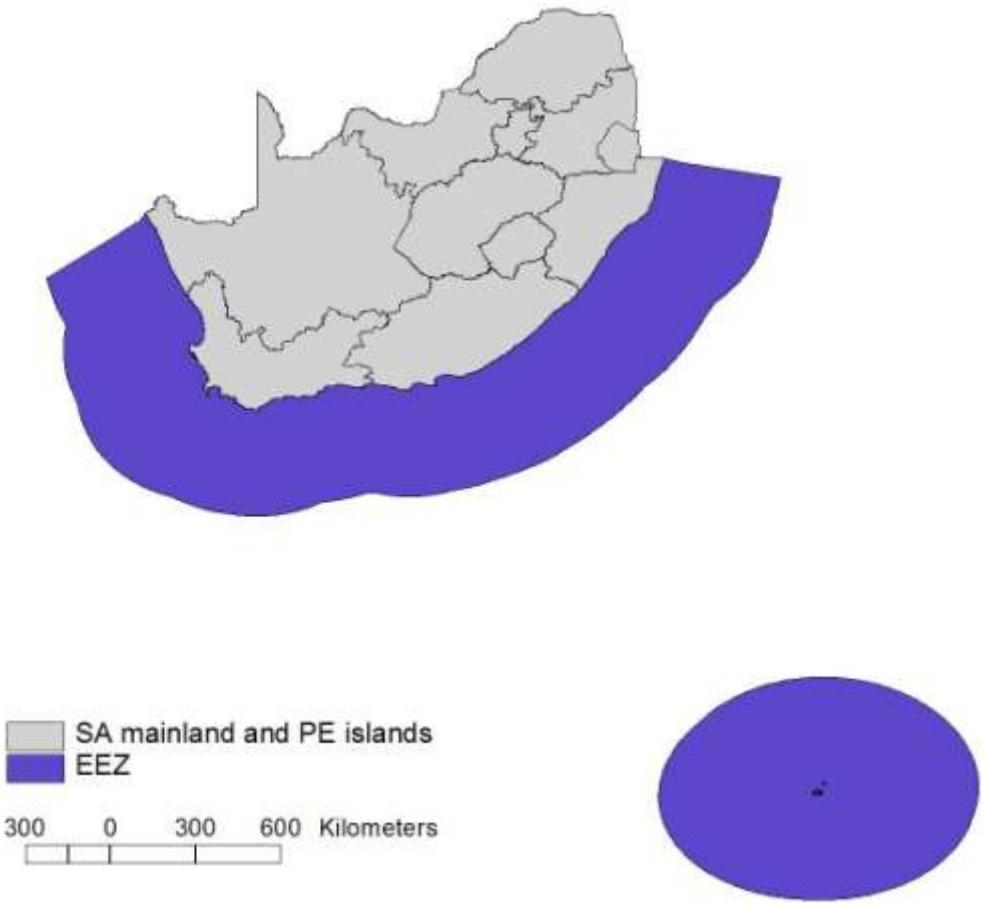


Figure 25: South Africa's territory includes the mainland and associated EEZ as well as the Prince Edward Islands in the sub-antarctic Indian Ocean and their associated EEZ

- **Ramsar sites**

During the last five years South Africa has designated two new Ramsar sites: Ntsikeni Nature Reserve in February 2010 and uMngeni Vlei Nature Reserve in March 2013, bringing the total number of Ramsar sites in South Africa to 21 (see Figure 26). Management plans were developed and implemented for 16 Ramsar sites in accordance with the Ramsar Convention guidelines. Development of a SADC Regional Initiative under the Ramsar Convention on Wetlands is in process. A process to remove Blesbokspruit and Orange River Mouth Ramsar sites from the Montreux Record was initiated. (See Question 8 for more on the Ramsar Convention.)

In addition to contributing to the Programme of Work on Protected Areas, these actions and outcomes support the CBD's thematic programme on inland water biodiversity.

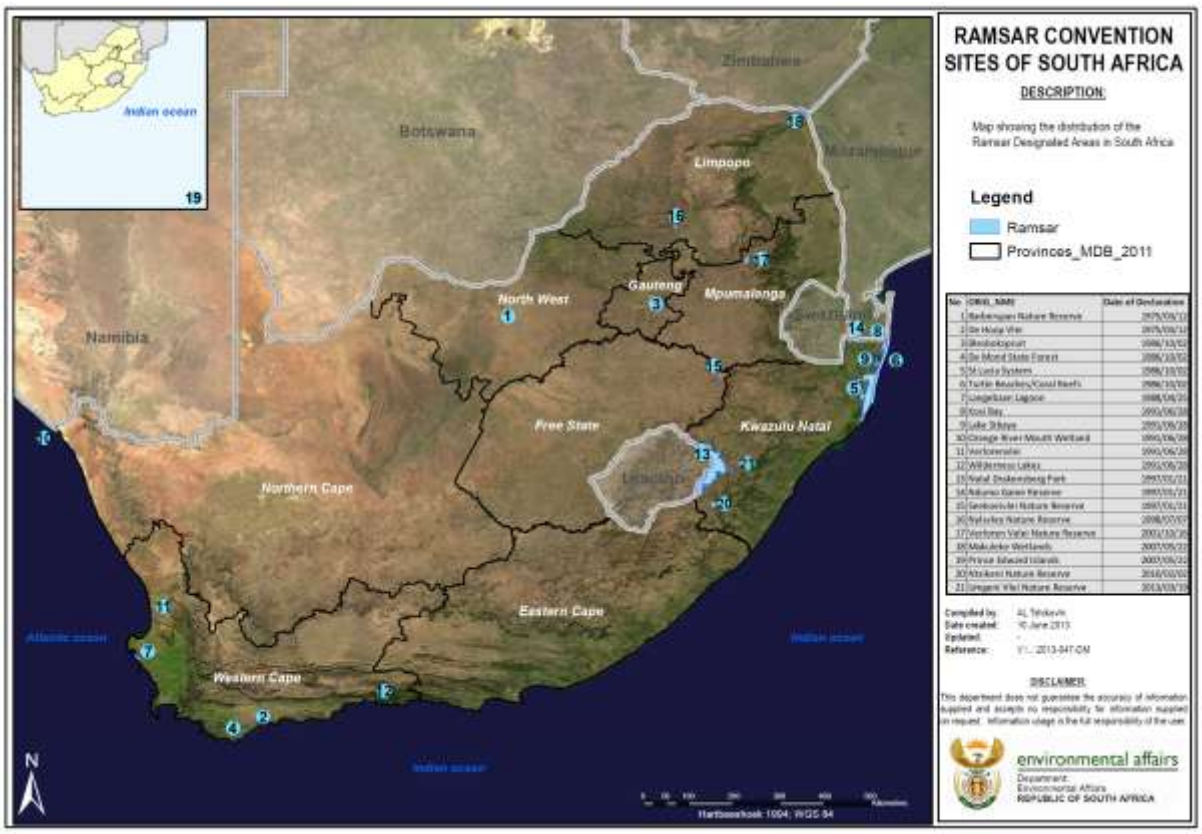


Figure 26: Ramsar sites in South Africa

- **Biosphere Reserves**

Six UNESCO designated biosphere reserves exist in South Africa: Kogelberg (108 290 ha), Cape West Coast (378 090 ha), Kruger to Canyon (2 874 810 ha), Waterberg (652 258 ha), Cape Winelands (322 028 ha) and Vhembe (3 037 590 ha). Vhembe Biosphere Reserve, designated in 2009, is the country's most recent and also largest biosphere reserve. Four other biosphere reserves have been proposed and these include the Gouritz Cluster, Magaliesburg, Marico and Amathole Biosphere Reserves, with some proposals at early stages of development and some having been deferred by UNESCO. For example, the Magaliesberg Biosphere Steering Committee is in the process of preparing a re-submission to UNESCO after UNESCO deferred the nomination.

- **World Heritage Sites**

South Africa's equally rich heritage both naturally and culturally is of global significance, with eight listed World Heritage Sites and 13 additional sites on a tentative list (http://whc.unesco.org). In the period 2009 to 2013, South Africa has not nominated any new World Heritage Sites; instead, significant efforts were put towards the extension of the uKhahlamba Drakensberg World Heritage Site into the Kingdom of Lesotho, promoting conservation and sustainable development in and around World Heritage Sites, and improving management effectiveness of the existing listed World Heritage Sites. This culminated in the approval of the Sehlabathebe National Park in Lesotho as an extension of the uKhahlamba Drakensberg World Heritage Site by the 37th Session of the World Heritage Committee in June 2013, the first transboundary World Heritage Site for South Africa and the first ever World Heritage Site for the Kingdom of Lesotho which was named the Maloti Drakensberg World Heritage Site. Integrated management plans for the iSimangaliso Wetland Park,

Mapungubwe Cultural Landscape and the Maloti Drakensberg Park were approved by the Minister of Environmental Affairs, and those for Robben Island Museum, Richtersveldt Cultural and Botanical Landscape, Cape Floral Region and the Fossil Hominid Sites are at an advanced stage.

- **National Botanical Gardens**

South Africa has nine established National Botanical Gardens, managed by SANBI. Two new gardens are in the process of being established: Kwelera National Botanical Garden near the city of East London in the Eastern Cape Province, which is adjacent to two estuaries and includes 160 ha of pristine coastal dune forest; and a National Botanical Garden in Thohoyandou, in the north east of the Limpopo Province. The area is included in the Vhembe Biosphere Reserve and forms part of the Soutpansberg Centre of Plant Endemism.

- **People and Parks Programme**

The overall aim of the People and Parks Programme is to address issues at the interface between conservation and communities in particular the realisation of tangible benefits by communities who were previously displaced to make way for the establishment of protected areas. To date eight co-management agreements have been signed between different conservation agencies and local communities, and an annual plan of operation has been developed. A good example of a co-management agreement is that of iSimangaliso Wetland Park and local communities where signatory communities to the agreement receive a share of 8% of the gross revenue generated by the Park. Fifty students from these communities are currently at university through the iSimangaliso fundraising programme. In addition 83 permanent jobs and 2269 temporary jobs have been created in 2012, whilst more people have been trained in coastal management, infrastructure, art (2241), craft (20 groups), tourism (42), and hospitality (44). In an attempt to ensure that communities understand co-management agreements, DEA in partnership with Resource Africa has trained 837 beneficiaries on co-management in 24 protected areas around the country.

- **Management Effectiveness Tracking Tool**

Protected areas need to be well managed in order to conserve ecosystems and species effectively and deliver a range of benefits. South Africa has adapted the global Management Effectiveness Tracking Tool (METT) to South Africa, known as the METT-SA. METT-SA is intended to track progress over time rather than to compare protected areas or conservation authorities. In 2010 the first national assessment of the management effectiveness of state-owned land-based protected areas was undertaken by DEA (Cowan *et al*., 2010) and the intention is to repeat the assessment every five years. As only land-based protected areas were assessed in 2010, it was recommended that marine protected areas should be included in the next assessment. (Marine protected areas were separately assessed in a 2009 study undertaken by WWF-SA (Tunley, 2009).) The 2010 assessment highlighted significant management challenges and pointed to the importance of adequate infrastructure, equipment and facilities as determinants of management effectiveness. Invasive alien plants and poaching emerged as the top two threats faced by land-based protected areas. In general, National Parks and World Heritage Sites appeared to be on a more sound management footing than state-owned provincial Nature Reserves.

Reduced loss of biodiversity

As discussed in Question 2, loss of natural habitat is one of the biggest pressures on South Africa's biodiversity. Although there are many ways of reducing biodiversity loss and degradation of natural habitat, key actions in South Africa included the following: streamlining environmental decision-making process and planning; providing the foundation for land-use decision support; listing of threatened ecosystems; publishing bioregional plans; taking early action to eradicate invasive species and exploring methods and potential for eradication.

- **Use of provincial spatial biodiversity plans to inform land-use planning and decision-making**

A systematic approach to biodiversity planning is the standard approach to spatial biodiversity planning in South Africa, and applies the best available science to identifying geographic priority areas for biodiversity conservation. Seven of South Africa's nine provinces have provincial spatial biodiversity plans, with the remaining two provinces in the process of developing these plans. For example, see Gauteng Provincial Government Spatial Biodiversity Plan (2011). Provincial spatial biodiversity plans are used to inform land-use planning and decision-making, through the development of biodiversity sector plans/bioregional plans and through EIAs, as discussed further in the next two paragraphs.

- **Biodiversity sector plans and bioregional plans**

A bioregional plan is a map of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) with accompanying land-use guidelines, published in terms of the Biodiversity Act to guide land-use planning and decision-making by a range of sectors. A biodiversity sector plan may be developed as a precursor to a bioregional plan, and can be thought of as an unpublished bioregional plan. Biodiversity sector plans and bioregional plans align with municipal boundaries for ease of implementation, and their development is usually led by the relevant provincial conservation authority based on the province's spatial biodiversity plan. Although no bioregional plans have yet been published in terms of the Biodiversity Act (for a range of reasons related to administrative and political processes as well as capacity constraints), a number of biodiversity sector plans and draft bioregional plans have been developed since the Guideline for Bioregional Plans was published in 2009 (DEAT, 2009b). Five metro and three district municipalities have developed bioregional plans and a further 17 biodiversity sector plans have been developed or are under development at the district municipal level.

- **Incorporating biodiversity into Environmental Impact Assessments (EIAs)**

Biodiversity is increasingly routinely incorporated into environmental authorisations through the EIA process, which is governed by the National Environmental Management Act (NEMA) (Act 107 of 1998) and associated EIA regulations (most recently updated in 2010). In terms of the EIA regulations, developments that would result in the removal of indigenous vegetation in Critically Endangered or Endangered ecosystems require environmental authorisation (DEA, 2010). In addition, a range of other biodiversity features trigger the need for an environmental authorisation, ranging from Critical Biodiversity Areas identified through spatial biodiversity plans at the landscape scale, to fine-scale features including 5-10km buffers around protected areas, 100m or closer to any wetlands, within 32m of any rivers, Ramsar sites and natural World Heritage Sites, and any areas zoned for conservation purposes in terms of land-use schemes.

Most provinces have policies containing criteria (qualifications and expertise) required for biodiversity specialists as part of the EIA process, as well as on issues to be assessed in every EIA, which promotes consistency and quality control in EIAs. Gauteng Province, for example, requires a specialist to be a registered scientific professional in terms of the South African Council for Natural Scientific Professions Act (27 of 2003), as well as having published at least three peer-reviewed papers on their area of specialisation. Failure to meet these requirements results in a rejected EIA report.

The South African chapter of the International Association of Impact Assessment (IAIA-SA) holds an annual conference, at which the incorporation of biodiversity consideration in EIAs and environmental assessment more broadly often features prominently in the presentations and discussions.

These actions and outcomes support the CBD's cross-cutting work on impact assessment.

- **Biodiversity offsets policy framework**

A policy framework to guide the implementation of biodiversity offsets has been developed and is in the process of being finalised. South Africa's approach to biodiversity offsets involves trading loss of biodiversity in one place for securing additional equivalent biodiversity in another place, along with financial provision for the appropriate management of the area secured. This approach is underpinned by biodiversity targets (see Question 5), and the identification of spatial biodiversity priorities through systematic biodiversity planning. Biodiversity offsets are actioned only after all options to avoid, minimise and rehabilitate impacts of development activities have been exhausted, and a significant residual negative impact still remains. Biodiversity offsets are implemented regularly in South Africa as part of the environmental authorisation process, and although some provinces have policies or guidelines relating to biodiversity offsets, to date there has not been a national policy on biodiversity offsets. South Africa is contributing actively to global debates on the philosophy and implementation of biodiversity offsets.

Biodiversity offsets have seen increasing use in EIAs, as well as other natural resource use permitting processes, such as water use license applications and permits to clear natural forests. Biodiversity offsets have been required for a wide range of development activities, as offsets are related to the significance of the impact, and not specific to types of development, but the predominant types of development that have triggered biodiversity offsets are mining, infrastructure (specifically dams, power lines and major roads), urban expansion and resort development. A few biodiversity offsets have also been required for agricultural expansion. The total number of biodiversity offsets implemented in South Africa is estimated at <50 to date. There is not yet a national register of biodiversity offsets, and administration of biodiversity offsets is generally still weak.

- **Biodiversity Management Plans (BMPs)**

As discussed in the section on biodiversity policy and legislation above, BMPs may be developed and published in terms of the Biodiversity Act, for species (BMP-S) or for ecosystems (BMP-E). BMPs are aimed at the long-term survival in the wild of the species or ecosystem concerned, and can thus involve a combination of protection, reducing loss and restoration. Several BMP-S have been

published or are in the process of being developed, and Norms and Standards for BMP-E have been finalised and will shortly be published.

- **Grasslands Programme**

The Grasslands Programme, funded through a GEF investment of $8.3 million, was in the early stages of implementation in 2009. It has now been successfully undertaken and will wrap up during 2014. The focus of the Grasslands Programme has been chiefly on mainstreaming biodiversity in key production sectors, including mining, forestry and urban development, to reduce their footprint and prevent further loss of biodiversity priority areas in the grassland biome. For more on this and other mainstreaming successes, see Question 8.

Restoration of biodiversity

It is almost always more cost effective to avoid loss or degradation of biodiversity priority areas than to restore them once damage has been done. However, in some cases active restoration or rehabilitation is warranted and required.

- **Natural resource management programmes**

Several multi-sectoral programmes that integrate biodiversity conservation with government's socio-economic priorities are implemented as part of the government's Expanded Public Works Programme (EPWP). There are several of these EPWP programmes in the environmental sector, which seek to secure South Africa's natural heritage while creating immediate and long-term jobs and social benefits (see DPW, 2012). Several of these programmes are housed in DEA's Environmental Programmes branch.

The flagship programme, Working for Water, focuses on the control of invasive alien plants using an approach that creates jobs, develops skills and creates secondary industries. This includes preventing the introduction of new invasive species, early detection of and rapid response to emerging invasive alien species and management of the impact of established invasive alien species. The programme has been consolidated within the Environmental Programmes Branch of the Department of Environmental Affairs, together with a range of related initiatives. In the period covered by this report, the budget of Working for Water grew by 151% from R477 million in 2009 to R1.196 billion in 2013. The cumulative expenditure of R3.675 billion during this period allowed Working for Water to control invasive alien plants on 832 416 ha of land around the country. In the process, 9.8 million person days of work were created, equivalent to 8 810 full-time jobs over the reporting period. Biological control agents were also released over 136 000 hectares of land infested with invasive alien plants.

Related initiatives underway during the reporting period include Working for Wetlands (92 030 ha of wetlands rehabilitated) and Working on Fire (215 940 ha of prescribed burning completed). New initiatives launched since 2009 include Working for Land, which aims to restore the composition, structure and function of degraded dryland environments; Working for Forests, which promotes the conversion of invading alien plant stands into utilizable resources for meeting basic community

needs; and Working for Energy and Eco-Furniture Factories, which respectively use biomass cleared by Working for Water to generate energy and manufacture low cost furniture and coffins.

Some of these actions and outcomes support the CBD's cross-cutting work on invasive species.

- **Restoring the health of St Lucia, South Africa's flagship estuary**

The Lake St Lucia system in the iSimangaliso World Heritage Site is South Africa's most important estuary and a key nursery for fish on the southeast African coast. For six decades the uMfolozi River, the largest river catchment feeding Lake St Lucia, was separated from it. Not only did this result in the loss of fresh water but the system lost an important driving force that interacted with the sea to open and close the mouth and remove sediments. Coupled with this human interference, a drought resulted in the estuary mouth remaining closed to the sea for ten years, ending in September 2012.

The iSimangaliso Wetland Park Authority prioritised the restoration of St Lucia, with assistance from the GEF, including investing in extensive research to find a long-term solution to the hydrological and ecological issues facing the St Lucia system. As part of the restoration efforts the uMfolozi River was linked to Lake St Lucia in July 2012 leading to an open mouth for the Lake St Lucia system – a highly significant step in the ongoing process of restoring the health of this national asset. These efforts have already borne fruit; natural processes are being reinstated and the estuarine system is on the road to recovery. The salinity gradient of the Lake is more typical of an estuarine system with salinities highest at the mouth and lowest in its northern reaches. The open mouth has allowed for the migration of fish and prawn species using the Lake system as a nursery (iSimangaliso Wetland Park Authority, 2013; SANBI, 2013d; NBA, 2011).

These actions and outcomes support the CBD's thematic programme on inland water biodiversity.

- **Launch of uMngeni Ecological Infrastructure Partnership**

South Africa's second largest city, Durban, faces major water security challenges, related to both quantity and quality of water. Durban's water comes mainly from the greater uMngeni catchment, a hard-working catchment in which industry and intensive agriculture combine with challenges such as failing waste water treatment works and water-thirsty invasive plants to compromise the quantity and quality of water that is delivered to Durban.

The eThekwini Municipality's Water and Sanitation Department together with the KZN Regional Office of DWA, Umgeni Water, the uMgungundlovu District Municipality, the Msunduzi Local Municipality and SANBI, have spearheaded the establishment of a partnership to foster better collaboration and coordination of ecological infrastructure investments aimed at improving water security in the greater uMngeni catchment. The partnership is comprised of 36 government and civil society organisations, 17 of which signed a memorandum of understanding for the establishment of the uMngeni Ecological Infrastructure Partnership on 20 November 2013. On the same day of MoU signing, three pilot projects on restoring ecological infrastructure were launched (Palmiet River Rehabilitation Project, Bayne's Spruit Rehabilitation Project, and Save the Midmar Dam Project).

It is hoped that lessons from the uMngeni Ecological Infrastructure Partnership will inform investment in the maintenance and restoration of ecological infrastructure in other parts of South Africa, through partnerships at the landscape scale.

- **Updated linefish profiles show some recovery in linefish status**

In 2000 a "state of emergency" was declared in South Africa's linefishery following concern regarding the stock status of linefish species. The recent completion of linefish profiles for 139 species (Mann, 2013) updates the Southern African Marine Linefish Status Reports, last published in 2000. These profiles reflect some improvement in the status of some species. However, it should be emphasised that these increases come from a very low starting level, because most linefish stocks are currently in a collapsed state. Management measures need to remain in place for sufficient time to allow the stocks to rebuild to levels that will allow for sustainable catches at a higher level than at present. Should this be achieved, the potential of this sector to become one of the most ecologically and economically viable fisheries in South Africa may be realised (DAFF, 2012).

Increased focus on inland water ecosystems in the work of the biodiversity sector

Since 2009 there has been significant progress in relation to work on inland water ecosystems in South Africa. At the time of the Fourth National Report, a major partnership project on National Freshwater Ecosystem Priority Areas (NFEPA) was underway. The project aimed to identify a national network of freshwater ecosystem priority areas, including rivers, wetlands and estuaries, using systematic biodiversity planning techniques; and to develop an institutional basis for implementing the freshwater ecosystem priority areas through engaging with key stakeholders.

Achievements since 2009 include:

- Publication of an Atlas of Freshwater Ecosystem Priority Areas in South Africa (Nel *et al*., 2011), accompanied by an Implementation Manual (Driver *et al*., 2011) and a set of GIS files that are publically available (Figure 27).
- Use of maps of Freshwater Ecosystem Priority Areas (FEPAs) to inform decision-making that impacts on freshwater ecosystems, including the classification of water resources in terms of the National Water Act into one of three management classes (minimally used, moderately used or heavily used).
- Development of a National Estuary Biodiversity Plan, which identifies 120 national priority estuaries (out of approximately 300 estuaries), 58 of which require full protection and 62 of which require only partial protection (Turpie *et al*., 2012) (Figure 28).
- Publication of National Estuary Management Protocol (DEA, 2013f), which will guide the development of Estuary Management Plans in terms of the Integrated Coastal Management Act
- Establishment of the Interdepartmental Committee on Inland Water Ecosystems in 2011, which is convened by DWA and meets twice a year to bring together all organs of state relevant to the management of freshwater ecosystems, including DEA, DWA, SANBI and SANParks.
- Establishment of a Freshwater Ecosystem Network, convened by SANBI, to serve as a co-ordination, learning and capacity building mechanism for provincial conservation authorities, DWA, DEA, SANBI, SANParks and relevant NGOs. The first workshop of the network was held in September 2013.

- Successes in incorporating ecological infrastructure for water security in the National Water Resource Strategy and the Water Pricing Strategy – see Question 8 for more on this.

Overall, inland water ecosystems have become much more central to the work of the biodiversity sector in South Africa in the last five years.

These actions and outcomes support the CBD's thematic programme on inland water biodiversity.

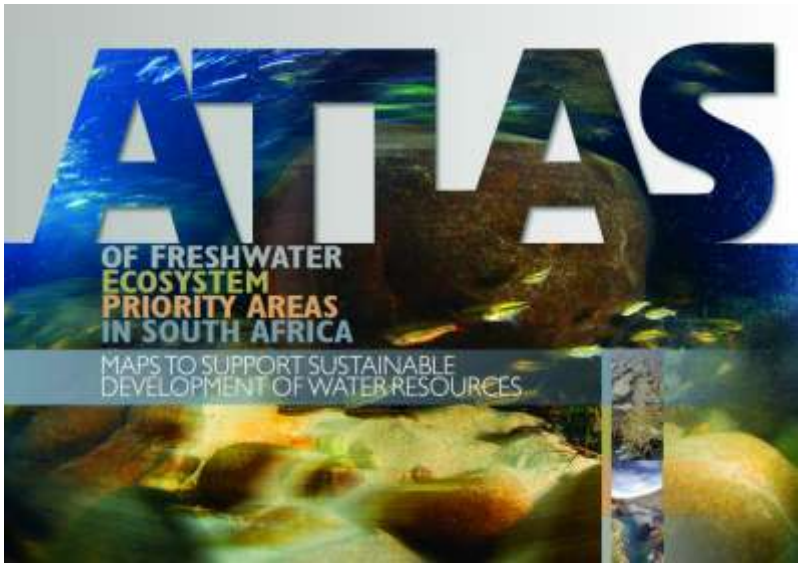


Figure 27: An Atlas of Freshwater Ecosystem Priority Areas in South Africa was published in 2011, with an accompanying implementation manual

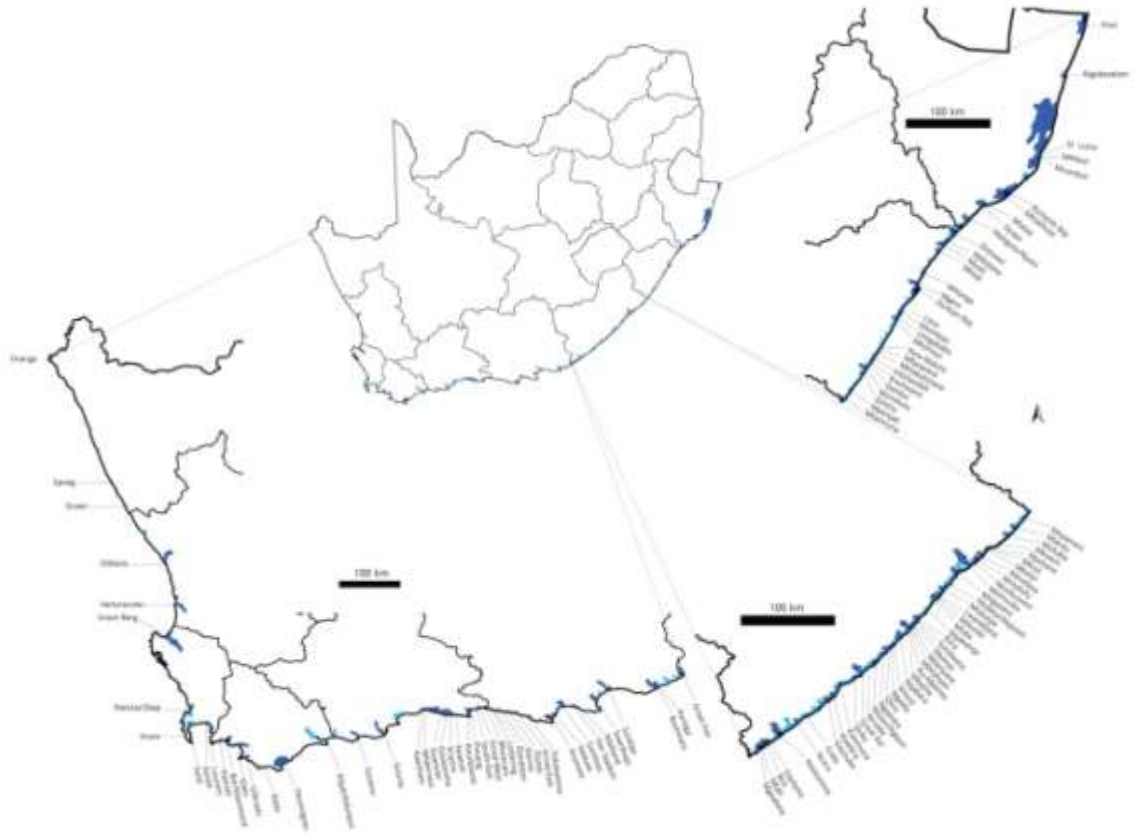


Figure 28: The National Estuary Biodiversity Plan identifies 120 national priority estuaries, shown in dark blue

Progress on access and benefit sharing relating to genetic resources

- **Bioprospecting, Access and Benefit Sharing (BABS) Programme**

South Africa is one of the few countries to put in place national legislation that gives effect to Articles 15 and 8(j) of the Convention, which recognise the importance of regulated access to genetic resources as well as their associated traditional knowledge by requiring the users of these resources to obtain prior informed consent and negotiate mutually agreed terms to share the benefits derived from commercial or non-commercial exploitation of such resources in a fair and equitable manner with the provider countries including indigenous and local communities. To date, a total of 79 notifications for the discovery phase of bioprospecting have been registered. Fifteen bioprospecting permits have been approved and 69 Material Transfer Agreements and 19 Benefit Sharing Agreements have been approved by the Minister of Environmental Affairs. See Box 2 for more information about one of these Benefit Sharing Agreements.

These actions and outcomes support the CBD's cross-cutting work on access and benefit-sharing.

Box 2: Case study on access and benefit sharing with an indigenous community – commercialising *Sceletium tortuosum* (Kanna)

Kanna is a small genus of low growing succulent shrubs endemic to the Western, Eastern and Northen Cape provinces of South Africa. The San and the Khoi people have long used this plant for its mood enhancing properties, with records of its use dating back as far as 1662. A South African pharmaceutical company interested in this plant and its associated traditional knowledge for commercial exploitation has concluded a Benefit Sharing Agreement with the South African San Council which includes Paulshoek and Nourivier communities for the utilisation of their traditional knowledge in accordance with the provisions of the Bioprospecting, Access and Benefit Sharing Regulations of 2008. This agreement provides for the sharing of benefits in monetary terms. This company was awarded the first integrated and bioprospecting permit by DEA in December 2009. The sustainable utilisation of Kanna in this bioprospecting project is achieved through cultivation which in turn contributes to job creation and poverty alleviation.

A final commercial product called Elev8 was launched on South African market in 2012, for mood elevation, stress reduction and improved concentration. This product received approval from the Medicines Control Council of South Africa. Partners in the United States of America and Australia have been identified to assist in the marketing and distribution of the final product. Hence, sales are expected to increase in the future.

Source : BABS Guidelines, 2012

Communicating the benefits of biodiversity

These actions and outcomes support the CBD's cross-cutting work on communication, education and awareness

- **Making the case for biodiversity**

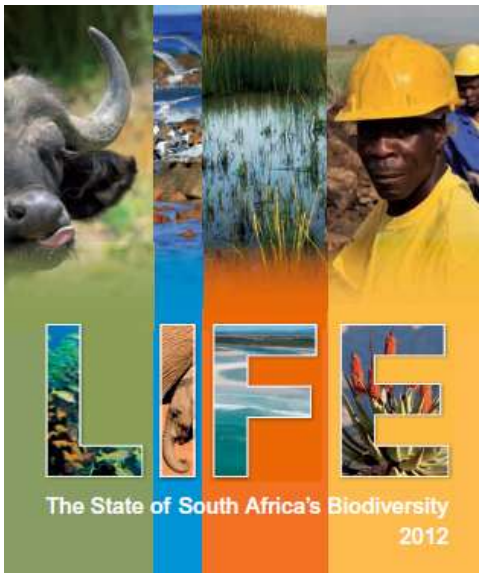
Until recently there has been relatively little success in mainstreaming biodiversity in the heart of South Africa's economic policy and national planning, where it is still often seen as peripheral or a nice-to-have, at worst as a brake on development. This prompted the sector in 2010 to undertake a concerted exploration of why or how we were failing in communicating our message, through a project referred to as "Making the Case" (DEA & SANBI, 2011). With the help of marketing experts, a suite of eight "value propositions" for biodiversity were developed, which were then tested systematically with key audiences. Two clear lessons emerged: first, the strongest value proposition for decision-makers in government is that biodiversity is a national asset that can contribute to the development priorities of the country; second, the "doom and gloom" message of impending extinctions and imminent collapse, which the biodiversity sector has tended to use for decades, not only has no traction but in fact elicits apathy.

The Making the Case Project highlighted the need to show how biodiversity is relevant to government's priority issues of the day – for South Africa these are job creation, poverty alleviation and rural development. This message has resonated strongly with key mainstreaming targets; thus the biodiversity sector has used the concept of investing in ecological infrastructure to frame its engagements with a range of other sectors, including National Treasury, Development Bank of Southern Africa, Department of Water Affairs, National Disaster Management Centre, the Presidency and municipalities. This approach is opening doors that were previously closed.

One of the outputs for Making the Case for Biodiversity Project is the development of a biodiversity brand and a communications strategy built around a narrative that describes the importance and value of biodiversity to society (SANBI, 2012). The strategy, which is in the process of being finalised, is intended to communicate the biodiversity brand to various stakeholders including government and civil society.

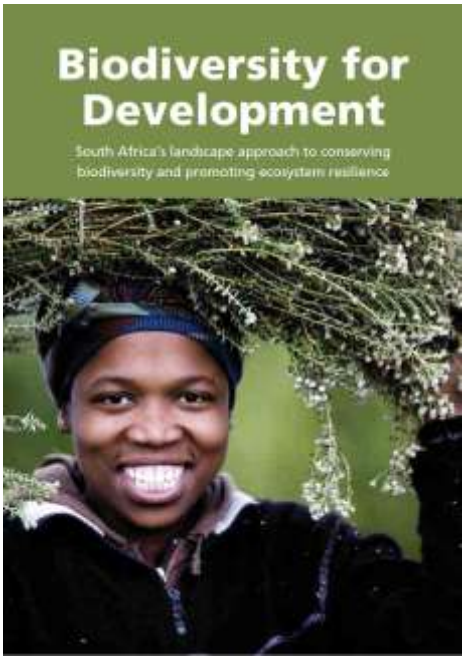
- **LIFE: The State of South Africa's Biodiversity 2012**

LIFE: The State of South Africa's Biodiversity 2012 (SANBI, 2013d) is a summarised and simplified version of the National Biodiversity Assessment 2011, intended for a wide audience including politicians and the general public. It introduces the concept of ecological infrastructure and its associated benefits by comparing it to built infrastructure. The LIFE book sends the message that the country's vast wealth of biodiversity offers us natural solutions that can support development and help us respond to the pressing problems of unemployment, poverty and climate change, and that we need to care for these assets because every



South African – rural and urban, rich and poor – needs them in order to live a full, rich and abundant life.

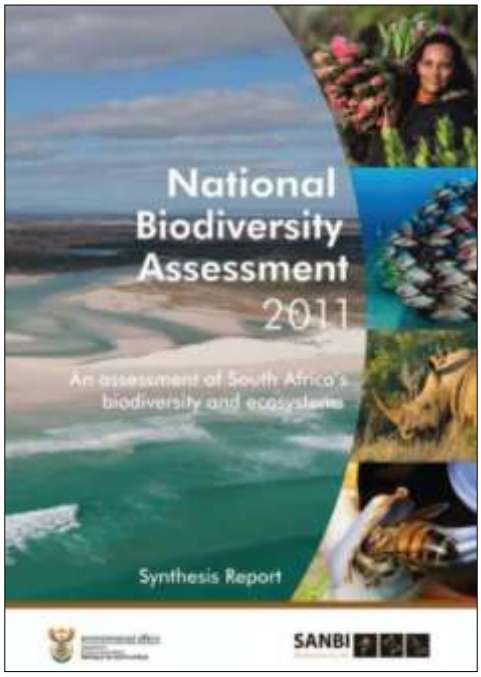
- **Biodiversity for Development book**



The publication of "Biodiversity for Development" (Cadman *et al*., 2010) was intended to capture and communicate some of the key elements of the landscape approach that South Africa has adopted in conserving biodiversity and promoting ecosystem resilience, highlighting the successes and lessons of this approach and emphasising how biodiversity can contribute to development. The book forms part of the United Nations Development Programme's (UNDP) primer series.

"The **landscape approach** to biodiversity conservation involves working both within and beyond the boundaries of protected areas, to manage a mosaic of land uses including protection, restoration, production and subsistence use, in order to deliver ecological, economic and social benefits. Partnerships between diverse role-players, effective mainstreaming of biodiversity considerations in land-use planning and the operations of multiple sectors are critical elements of the landscape approach" (Cadman *et al*., 2010, p12).

- In support of the United Nations Decade of Biodiversity, various biodiversity tools and products have been launched at events on **International Day for Biodiversity** and other recognised days, with considerable political presence and enhanced public awareness and engagement.



Advances in the science foundation and strengthening the science-policy interface

Many of the achievements discussed above have been underpinned by science, information management, and human capital development. Each of these underpinning factors is discussed briefly below. The interface between science and policy in the South African biodiversity sector is aided by the existence of SANBI as a knowledge institution in government with an explicit mandate to advise other organs of state on biodiversity-related matters. DEA, responding to the IPBES outcomes, has established a Directorate for the science policy interface, which will respond to the programme of work on IPBES and serve as a portal for science and evidence based decision making and policy development.

- **National Biodiversity Assessment (NBA) 2011**

The NBA was completed in 2011, following its predecessor the National Spatial Biodiversity Assessment (NSBA) 2004. Its scope was broadened relative to that of the NSBA, to include non-spatial thematic issues, hence the name change to NBA. The NBA 2011 assessed the state of South Africa's biodiversity, across terrestrial, freshwater, estuarine and marine environments, emphasising spatial (mapped) information for both ecosystems and species. It synthesises key aspects of South Africa's biodiversity science, making it available in a useful form to policymakers, decision-makers and practitioners in a range of sectors. The core national ecosystem indicators reported on in the NBA (ecosystem threat status and ecosystem protection level) link directly to policy and legislation (e.g. listing of threatened ecosystems, expansion of protected areas). The NBA will be updated every five to seven years, with the next NBA planned for completion in 2018.

- **National Ecosystem Classification System**

The National Ecosystem Classification System that underpins the NBA is in the process of being strengthened and formalised (SANBI, 2013a). Formalisation of the National Ecosystem Classification System over the coming years will result in a set of agreed national ecosystem types for rivers, wetlands, estuaries, and coastal and marine ecosystems, vital for assessing and monitoring ecosystems over time. In the terrestrial environment, the science of mapping and classifying ecosystems has been well established in South Africa for decades, in contrast with aquatic environments where progress is more recent. There has been tremendous progress in the last five years in mapping and classifying ecosystems in the marine and coastal environment in particular, with the development of a set of national marine and coastal habitat types for the first time ever. These national ecosystem types also underpin the development of protected area targets, to ensure that the protected area network is comprehensive and representative.

- **Spatial biodiversity planning**

South Africa has well-established capacity for producing spatial biodiversity plans that are based on best available science and relate directly to policy and legislative tools. These maps and accompanying data are a valuable information resource to assist with planning and decision-making in the biodiversity sector and beyond. They help to focus the limited resources available for conserving and managing biodiversity on geographic areas that will make the most difference, and can inform planning and decision-making in a range of sectors, especially those that impact directly on biodiversity.

Spatial biodiversity plans identify biodiversity priority areas that are important for conserving a representative sample of ecosystems and species, for maintaining ecological processes, or for the provision of ecosystem services. Spatial biodiversity plans based on systematic biodiversity planning methods have now been developed in seven out of nine provinces and are underway in the remaining two provinces. In addition, through forums such as the Biodiversity Planning Forum (see below), agreement has been reached on standardising maps of biodiversity priority areas so that they are equivalent across provinces and can be interpreted by officials and consultants working in any province.

A consolidated map of biodiversity priority areas for South Africa has been produced, bringing together Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs), Freshwater Ecosystem Priority Areas (FEPAs), and other biodiversity priority areas identified through systematic biodiversity plans at the national, provincial and metro scale (Figure 30). This map is used as the basis for a range of planning and decision-making tools, including municipal biodiversity summaries (see Question 8).

The Biodiversity Planning Forum, convened annually by SANBI in partnership with DEA and one of the provincial conservation authorities, brings together the community of practice in spatial biodiversity planning as well as key users of biodiversity plans, and plays a key role in advancing biodiversity planning as an applied discipline with policy relevance in South Africa. The Biodiversity Planning Forum was held for the tenth time in 2013 (Figure 29).

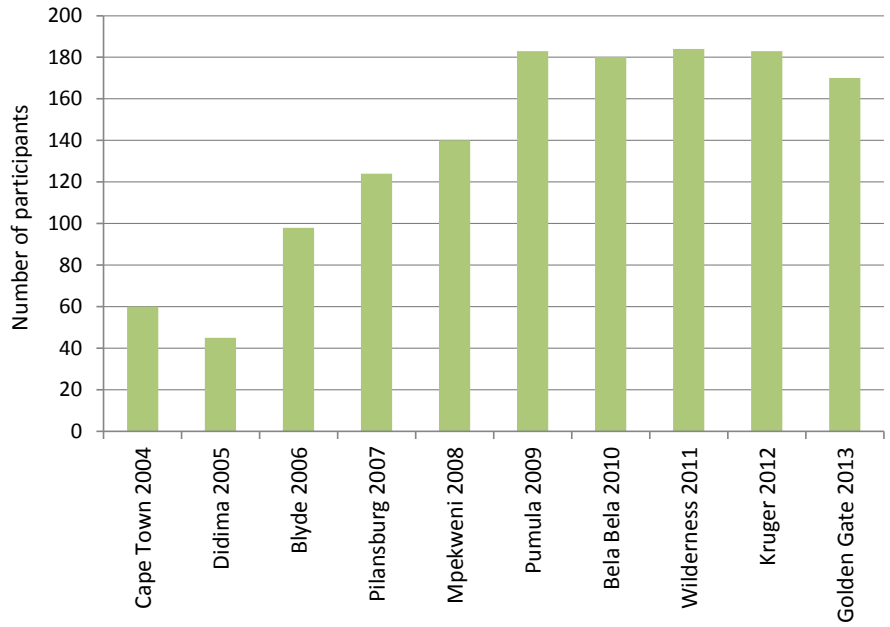


Figure 29: Participation in the annual Biodiversity Planning Forum

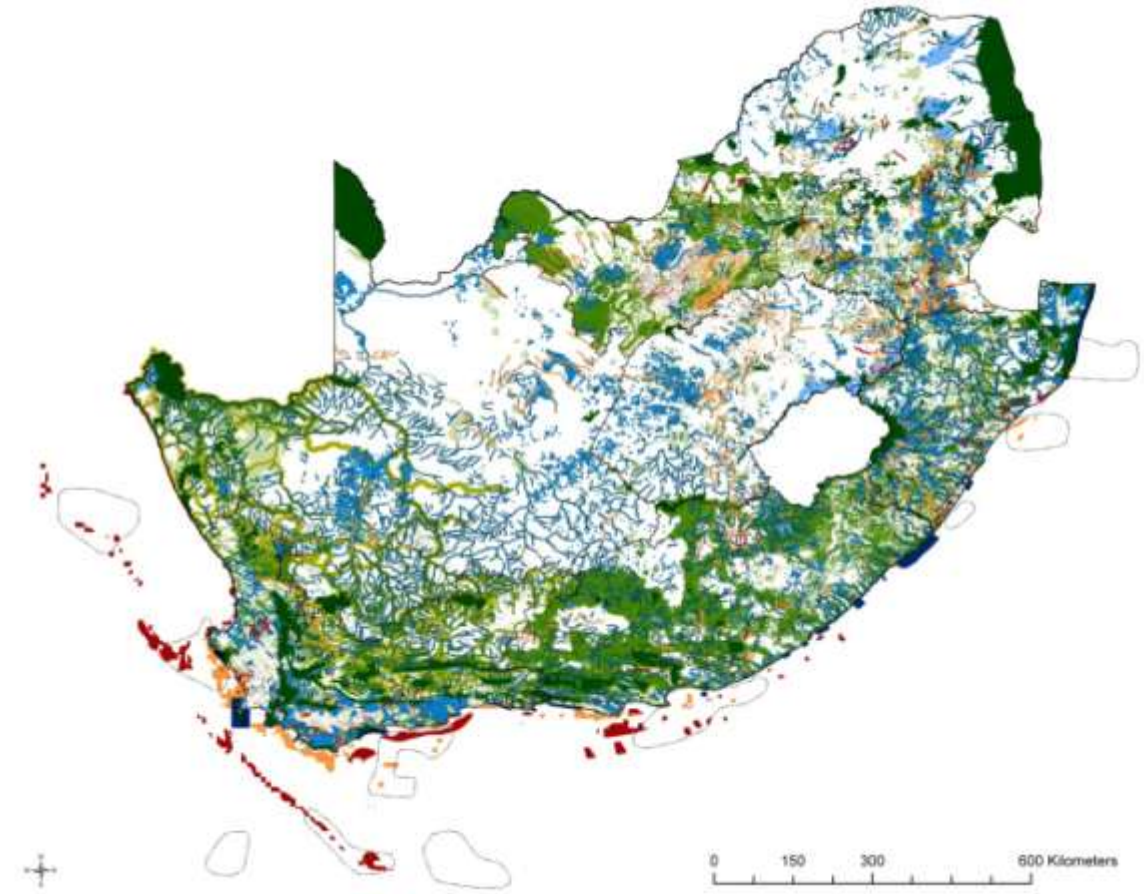


Figure 30: Biodiversity priority areas in South Africa. The different categories are not mutually exclusive and in many cases overlap, often because a particular area or site is important for more than one reason. The categories are complementary, with overlaps reinforcing the significance of an area from a biodiversity point of view.

- **Ecologically and Biologically Significant Areas (EBSAs) in the marine environment**

EBSAs are important places in the ocean from a biodiversity and ecosystem perspective, including sites with unique features, special importance for ecological processes and threatened biodiversity, sensitive sites and areas of high biodiversity, naturalness or productivity. They are defined by experts at regional workshops organised by the Secretariat of the CBD and are developed using seven criteria that require supporting data and information. South Africa participated in two regional

workshops, one for the South Indian Ocean (Mauritius, July- August 2012) and one in the South Eastern Atlantic (Namibia, April 2013) and 16 sites that meet the EBSA criteria include South African territory (Figure 31). The information collated as part of the EBSA process is useful for planning and management to ensure the key biodiversity or ecological features within each area are maintained. Several sites meeting the EBSA criteria in South Africa are also Focus Areas for Offshore Protection as identified by systematic biodiversity planning (see Figure 30).

These actions and outcomes support the CBD's thematic programme on marine and coastal biodiversity

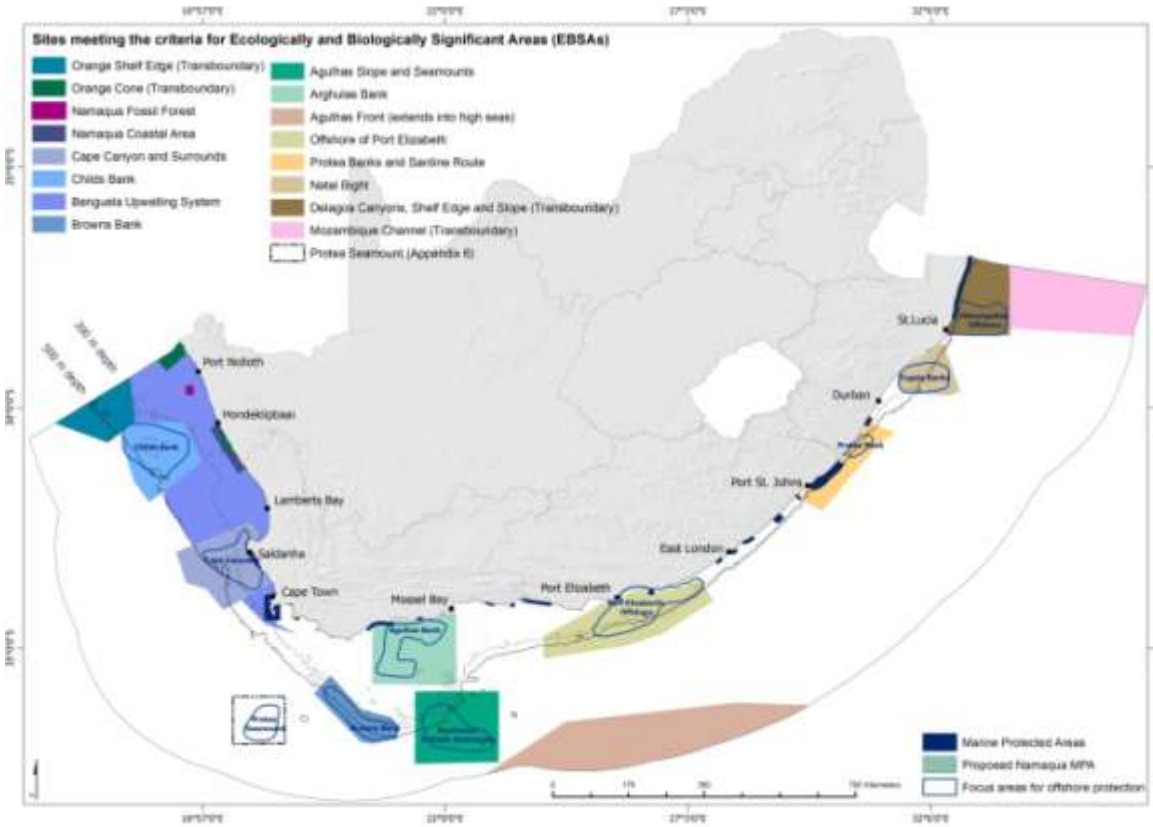
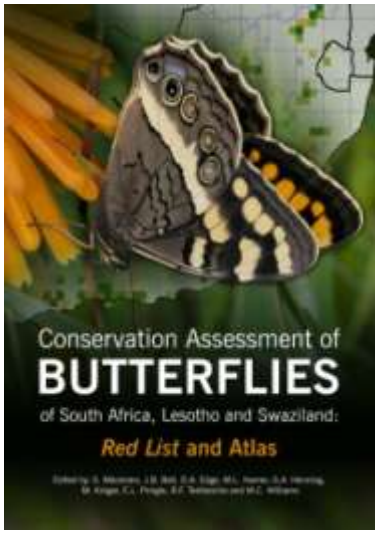


Figure 31: Ecologically and Biologically Significant Areas (EBSAs) in South Africa's marine environment



- **Red Lists of Species**

The ongoing process of updating the Red List of species is coordinated by SANBI's Threatened Species Programme. South Africa is a world leader in Red Listing, and one of the few countries with a dedicated Threatened Species Programme that promotes Red Listing of a wide range of taxonomic groups. Comprehensive conservation assessments (in which every species in a particular taxonomic group is assessed) enable a much more accurate understanding of the status of species. The most recent conservation assessments completed in South Africa are for amphibians (2010), plants (2011), reptiles (2011) and butterflies (2011), while the assessments for birds is soon to be published and

the assessment for mammals is underway. It is important to note that South Africa is the only mega-diverse country to have comprehensively assessed its entire flora. Additionally, work to prioritise taxonomic groups for monitoring is underway. (Also see Question 2.)

- **National Biodiversity Research Strategy**

Development of the National Biodiversity Research Strategy is underway. The National Biodiversity Research Strategy aims to provide direction on the future biodiversity research by a range of stakeholders, and is almost finalised. The Environmental Sector Research, Development and Evidence Framework (ESRDEF) (DEA, 2012a) complements the National Biodiversity Research Strategy by providing an overall framework.

- **Further development of the National Biodiversity Monitoring Framework**

A National Biodiversity Monitoring Framework was developed previously and reported on in the Fourth National Report. The core indicators in this framework are now in the process of being streamlined, with close links to the National Biodiversity Assessment which will be updated every five to seven years. Indicators in the National Biodiversity Monitoring Framework should inform environmental performance indicators used at national, provincial and local level.

- **Citizen science**

Keeping track of the status of species and ecosystems and gathering the required data for assessing their status is a daunting task, especially in a mega-diverse country. Hundreds of volunteers, or citizen scientists, have played a crucial role in the process and continue to do so through a range of atlassing projects and virtual museums that make use of modern technology to enable amateurs to contribute data from around the country. An example is iSpot (www.ispot.org.za), a website that allows anyone with a cell phone or computer to contribute to, exchange biodiversity data, or obtain an identification of animals, plants or fungi in southern Africa. South Africa is the first mega-diverse country to use iSpot, initially developed in the United Kingdom, and following its launch in 2012 was set to reach 100 000 observations in early 2014. Another example is miniSASS (www.minisass.org), a community river health monitoring programme which gives users a simple method for collecting samples of macroinvertebrates from a river as an indicator of water quality and river health, and then allows them to upload their results through an interactive Google Earth map. It is the first global project to apply bio-monitoring through a Google Earth platform.

Biodiversity information management and information sharing

South Africa has made significant progress in biodiversity information management since 2009. Key achievements are summarised below.

- **Biodiversity Advisor web portal and Biodiversity GIS (BGIS) website**

The Biodiversity Advisor web portal (http://biodiversityadvisor.sanbi.org/) was launched in January 2010 at the start of the international year of biodiversity. This portal draws together many individual biodiversity information websites with clear guidelines on how to use the information inter alia for biodiversity planning, research and land-use decision making. The website provides access to more than 14 million biodiversity records, hundreds of GIS maps and many biodiversity plans. It also

provides information on the conservation status of many species, with maps, images and descriptions to augment the data. The intention is to ensure that everyone from world class scientists to municipal managers is using the available biodiversity information to support research, planning, decision-making, policy formulation, monitoring and reporting.

The BGIS website is one component of the Biodiversity Advisor, serving maps and spatial biodiversity plans with accompanying documentation and guidelines. In 2012, BGIS had nearly 800 visitors per day, who each spent an average of 25 minutes on the site.

- **Land-use decision support tool**

A key user community is the land-use decision makers. The land-use decision-support tool was developed to support EIA practitioners and government officials in using the best available biodiversity information in decision-making. The tool simplifies the process of selecting a parcel of land and generating a report on available biodiversity information, which includes maps to be included into the official documentation. The success of this initiative is reflected in the nearly 1 000 000 users of the website during 2012.

- **Biodiversity information management policies**

Significant progress was made in developing relevant policies for the effective management of biodiversity information at a national level. During 2010 the National Biodiversity Information Policy Framework, the Sensitive Taxa (SANBI, 2010a) and Intellectual Property Rights Policies (SANBI, 2010b) were developed. The framework and associated policies enable free and open access of sharing of biodiversity whilst protecting sensitive information and intellectual property rights. The impact of implementing these policies has resulted in more data becoming available as data owners have a sense that they will have due acknowledgement, their rights will be protected and that sensitive information will be protected.

- **Participation in the Global Biodiversity Information Facility (GBIF)**

South Africa is a member country to GBIF. The intention of the membership is to ensure that all biodiversity information is universally accessible. In 2011 South Africa was the fourth largest contributor of biodiversity data to GBIF with making 14 million records available to the world. Part of South Africa's engagement with GBIF is strengthening the participation of all African members in this global body. South Africa played a leadership role in coordinating the activities of the African GBIF members with the aim of improving capacity building, accessing funding, strengthening governance and demonstrating the impact of publishing biodiversity data.

- **Training and capacity building related to biodiversity information management and use**

Since 2010, SANBI has held 24 biodiversity information-related training events attended by 415 people from South Africa, Cameroon, Madagascar, Benin, Ghana, Kenya, DRC, Uganda, Senegal, Egypt, Ethiopia, Rwanda, Zimbabwe, Nigeria, Mauritania, Tanzania.

In 2012 SANBI, with the support of the Department of Science & Technology (DST), signed a MoU with the University of the Western Cape to develop skills in the biodiversity informatics and information management fields. The outcome of this agreement has resulted in a post-graduate

programme in biodiversity information management as well as the approval for the appointment of two post-doctoral fellows in biodiversity informatics.

- **Biodiversity Information Management Forum (BIMF)**

The biodiversity information management community gathers on an annual basis at the national Biodiversity Information Management Forum since 2007, convened by SANBI. The attendance at the Forum has increased from 64 participants in 2007 to over 120 in 2012 (Figure 32). The major achievements since 2009 are the development of national job profiles for biodiversity information practitioners, the national and international expansion of participants, raising the profile of this area of work, the sharing of data, development of biodiversity informatics infrastructure and capacity building. During 2012 Forum South Africa became a member of the Biodiversity Heritage Library which will ensure that all available literature on biodiversity becomes accessible on the Internet.

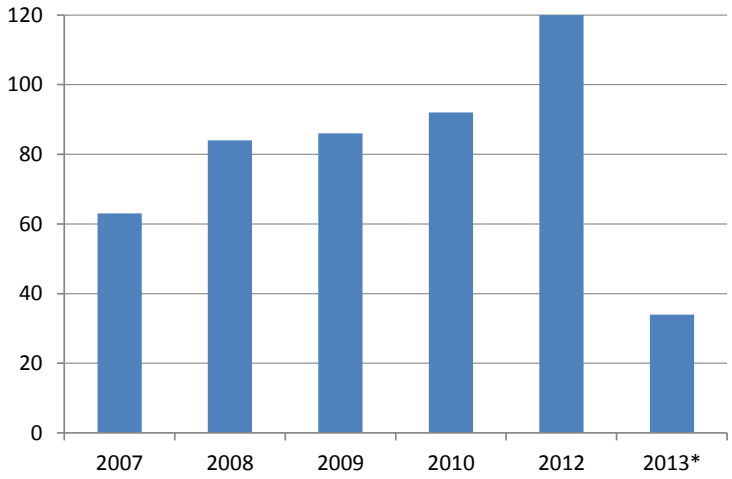


Figure 32: Participation in the annual Biodiversity Information Management Forum
* In 2013 the number of participants was kept deliberately small to enable more focused discussion.

Human Capital Development

These actions and outcomes support the CBD's cross-cutting work on communication, education and awareness

- **Development of a Biodiversity Human Capital Development Strategy (BHCDS)**

The need to strategically and comprehensively strengthen and diversify the human capital of South Africa's biodiversity sector is indicated in the National Biodiversity Strategy and Action Plan (2005) and the National Biodiversity Framework (2007). As a response, SANBI in partnership with the Lewis Foundation commissioned a biodiversity sector-wide analysis of skills shortage undertaken by the Human Sciences Research Council (Vass *et al*., 2009). The report confirmed that there is a shortage of necessary skills in the biodiversity sector, which is unable to attract and retain suitably skilled individuals and is not representative of South Africa's diverse society (see also Turpie & de Wet, 2008). This laid a strong foundation for the development of a Human Capital Development Strategy (2010) for the biodiversity sector (SANBI & Lewis Foundation, 2010). In particular, the BHCDS aims to

contribute to the growth of an equitable and skilled workforce of biodiversity professionals and technicians. The BHCDS led to the establishment of GreenMatter, a partnership initiative that drives transformation in graduate level skills for biodiversity (www.greenmatter.co.za).

- **Groen Sebenza skills development programme**

One of the significant outputs of the BHCDS has been the initiation and implementation of Groen Sebenza ("Green Work") Programme in 2013, through the Jobs Fund established by the National Treasury. The Groen Sebenza Programme is a skills development programme aimed at promoting and retaining racial and gender representation in the sector particularly by creating sustainable job opportunities for 500 graduates and 300 school leavers (matriculants) from previously disadvantaged backgrounds over a 2½ year period. By the end of 2013, all 800 youths had been placed in 33 different partner organisations including government, NGOs and the private sector. As the implementing programme, GreenMatter also puts the BHCDS into action through range of implementation activities which include attraction, facilitating access to study, up-skilling and retention. However, all these efforts put into the development of human capital in the biodiversity sector are hindered by ongoing poor education for the majority of South Africans, especially poor maths and science education at school level, which limits the number of school leavers who are eligible to enrol for natural science degrees at university.

Obstacles to implementation

The achievements above notwithstanding, several challenges and obstacles remain. These include:

- Bringing the biodiversity sector as a whole along with the shift in messaging developed through the Making the Case project (see earlier discussion on communicating the benefits of biodiversity). In many cases, organisations and individuals in the sector revert to **"doom and gloom" messaging**, which tends to result in apathy rather than action on the part of the target audience.
- **Limited human capacity**, for example to work more systematically with municipalities and the agricultural sector. As a range of key strategies and policy tools are due for revision, it also becomes a challenge to find sufficient human capacity and time to devote to these revisions (e.g. NBSAP, National Biodiversity Framework, National Protected Area Expansion Strategy, list of threatened ecosystems)
- **Limited financial resources**, for example for protected area management, integration of biodiversity in land-use planning and decision making, mainstreaming of biodiversity in a wider range of sectors). The UNDP's recently initiated Biodiversity and Finance Initiative (BIOFIN), in which South Africa is participating, may help to quantify and address this issue.

Question 8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

In line with South Africa's NBSAP, mainstreaming has been a major focus of the work of the biodiversity sector in the last five years. While there is still much work to do, significant successes have been achieved. We note that outcomes of mainstreaming can be difficult to measure,

particularly if the intended outcome is to avoid loss of biodiversity – avoided loss does not lend itself to measurement in the same way that increased protection or active restoration do. This challenge has been recognised by the GEF, which is grappling with the challenge of developing indicators to measure the impact of funding provided for mainstreaming work.

Mainstreaming into national policy

- **National Development Plan (NDP)**

The biodiversity sector through engagements with National Planning Commission ensured that biodiversity and ecosystems issues are reflected in Chapter 5 of the NDP 2030. The NDP was developed by the National Planning Commission established by the Presidency in 2009, and is aimed at eliminating poverty and reducing inequality by 2030. It is regarded as a step in the process of charting new path for South Africa (NDP, 2012). The recognition of biodiversity and ecosystems in the NDP as a public good and an integral part of the solution in eliminating poverty and reducing inequality is an important achievement for the biodiversity sector as it helps to lay the groundwork for further investment in South Africa's biodiversity assets and ecological infrastructure.

One important way in which the NDP is being implemented is through the **National Infrastructure Plan (PICC, 2012)**, which includes a series of **Strategic Integrated Projects** (SIPs) and is co-ordinated by a Presidential Infrastructure Co-ordinating Committee. R850 billion (approximately $100 billion) has been earmarked for infrastructure investment in South Africa over the period 2012-2015. Strategic Environmental Assessments (SEAs) are being led by DEA for all of the SIPs, and will draw on spatial information about biodiversity priority areas. The initial set of 18 SIPs may be augmented by a 19th SIP focused on investment in ecological infrastructure for water security – at the time of writing this was in the process of being finalised.

- **National Strategy for Sustainable Development and Action Plan (NSSDAP)**

At the time of the Fourth National Report, a National Framework for Sustainable Development had been published (DEAT, 2008a), with sustaining ecosystems and using natural resources efficiently as one of five key strategic priority areas for action and intervention. This was followed by the development of a National Strategy for Sustainable Development and Action Plan, which was approved by cabinet in 2011 (NSSDAP, 2011). Three of the five strategic priorities of the strategy reflect the need for sustaining healthy ecosystems, sustainable utilisation of natural resources and the role ecosystems in climate change adaptation.

Mainstreaming into various sectors

- **National Water Resource Strategy (NWRS)**

The first edition of South Africa's National Water Resource Strategy (NWRS) was published in 2004 (DWAF, 2004). The strategy describes how the water resources of South Africa will be protected, used, developed, conserved, managed and controlled, with the central objective of ensuring that water is used to support equitable and sustainable social and economic transformation and development.

In 2011 the Department of Water Affairs (DWA) began a process of revising and updating the NWRS. The revised strategy is known as **NWRS2**. Key stakeholders in the freshwater ecosystem community, including SANBI, SANParks, CSIR and WWF-SA worked closely with DWA to provide inputs into the chapter of the strategy that deals with water resource protection, to ensure that this chapter includes a strong focus on well-functioning ecosystems that underpin the provision of water resources. In addition to referring to the need to maintain Freshwater Ecosystem Priority Areas in good ecological condition, the NWRS2 places emphasis on strategic water source areas that were mapped by the biodiversity sector (Nel *et al*., 2013) building on the NFEPA project (see Question 7). The NWRS2 recognises that strategic water source areas "form the foundational ecological infrastructure on which a great deal of built infrastructure for water services depends. They are thus strategic national assets that are vital for water security, and need to be acknowledged as such at the highest level across all sectors" (DWA, 2013b, p42). This is of major significance, as land use decisions and management practices in some of these areas is currently not compatible with maintaining their ecological functioning, and only a small proportion have any form of formal protection. The recognition of strategic water source areas in the NRWS2 lays the basis for more effective management and protection of ecosystems in these areas.

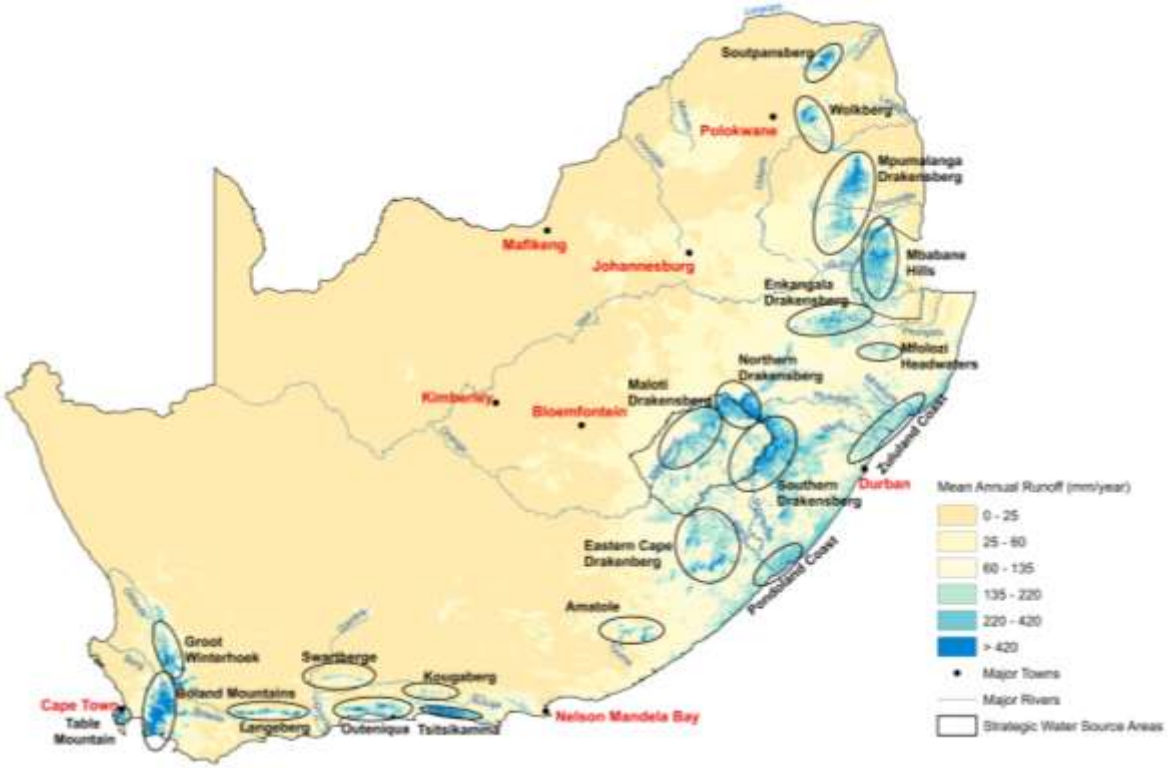
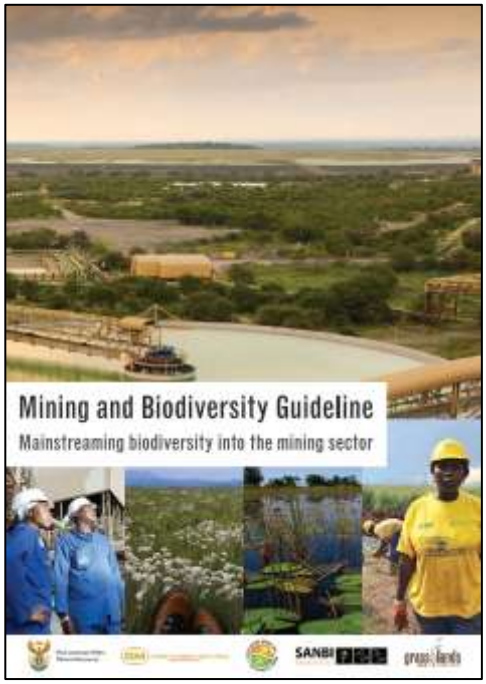


Figure 33: Strategic water source areas are recognised in the National Water Resource Strategy as national assets that are vital for water security

- **Water Pricing Strategy**

Following the revision of the National Water Resource Strategy, DWA has embarked on a revision of the Water Pricing Strategy, which determines how water tariffs are set and how revenues from water are allocated. Through the Grasslands Programme, the biodiversity sector has engaged with

the revision of the water pricing strategy to ensure that it supports investment in ecological infrastructure for water security. For example, it is important to be able to invest part of the revenue derived from water sales in the maintenance and restoration of strategic catchments that supply water. The draft Water Pricing Strategy published in late 2013 includes substantial provisions for investment in ecological infrastructure, including a minimum levy charged across all raw water for restoration and maintenance of relevant ecosystems, and a dedicated "natural infrastructure" component of the charge for building future water infrastructure, for investments in wetlands, riparian zones and erosion rehabilitation, fire management and clearing of invasive alien plants. As with the inclusion of strategic water source areas in the NRWS2, this is a significant mainstreaming achievement that lays the basis for further investment in maintaining and restoring ecosystems important for water security.



- **Mining sector**

The last five year period has seen extensive engagement with the mining sector, as one of the key sectors that impacts on biodiversity in the South African context. The South African Mining and Biodiversity Forum (SAMBF) brings together stakeholders from industry, conservation organisations and government, and has provided a platform for this engagement.

A guideline document, “Mining and Biodiversity Guideline: Mainstreaming Biodiversity into the Mining Sector” (DEA *et al*., 2013), was developed through the Grasslands Programme and signed-off by both the Minister of Water and Environmental Affairs and Minister of Mineral Resources in 2013 – to have both Ministers jointly owning the guideline is quite a remarkable achievement, as the mining and environmental sectors have often had an adversarial relationship. The guideline deals with integrating biodiversity considerations into mine planning processes and managing biodiversity during the developmental and operational phases of a mine, from exploration through to closure. The publication was followed by a series of training workshops on the use of the guideline particularly targeting officials from implementing departments and/or agencies. The guideline has been widely accepted by the community and is currently in implementation.

The Mining and Biodiversity Guideline uses spatial information on biodiversity priority areas as a fundamental starting point, and interprets the consolidated map of biodiversity priority areas (Figure 30) specifically for a mining audience, identifying four levels of risk for mining from a biodiversity perspective (Figure 34). More detailed, higher resolution maps and underlying data are available to the public through the BGIS website.

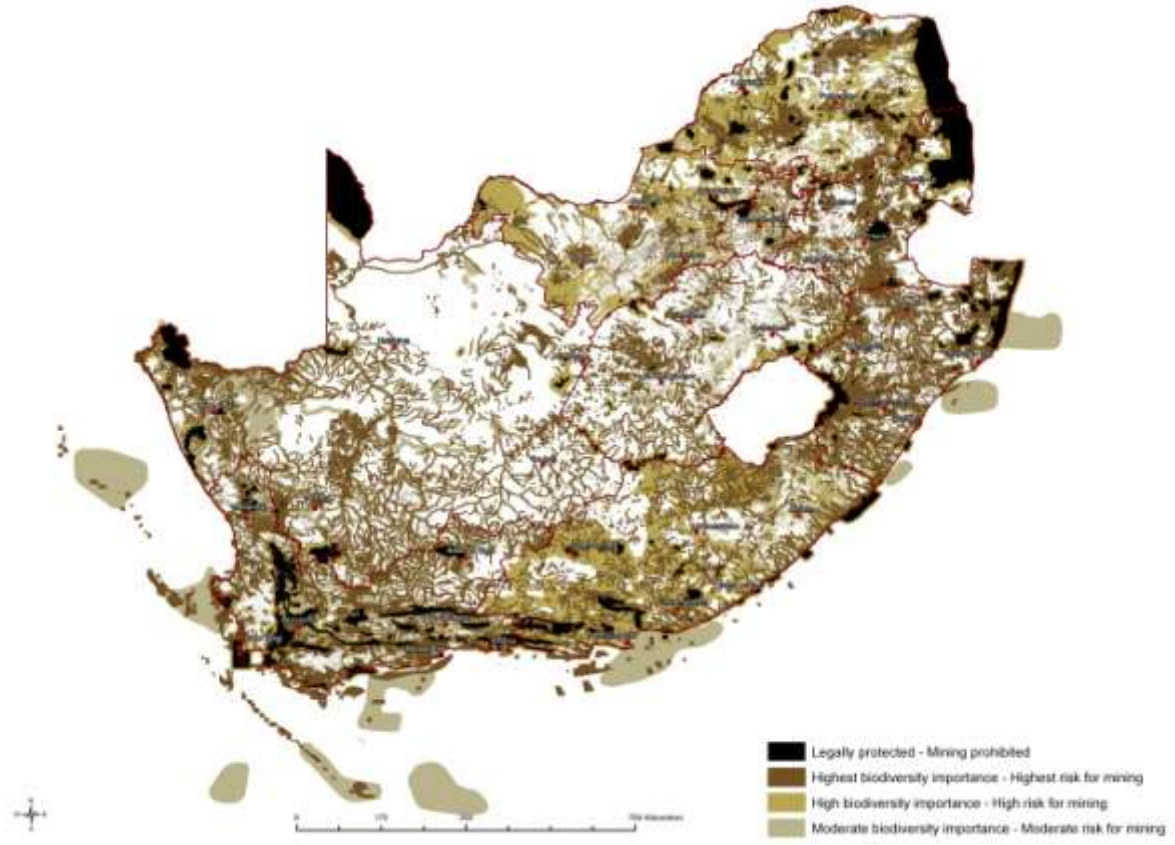


Figure 34: Biodiversity priority areas sensitive to the impacts of mining, categorised into four categories to guide planning and decision-making in the mining sector

- **Forestry sector**

A significant number of biodiversity mainstreaming tools have been developed through the Grasslands Programme in consultation with the plantation forestry sector to enable improved decision-making over where future afforestation occurs and how open (natural) areas are managed within the forestry production landscape. Amongst others, these include the Guidelines for Grasslands Management in the Forestry Sector, Environmental Guidelines for Commercial Forestry in South Africa, Biodiversity Screening Tool and a Conservation Planning Tool. The South African National Forestry Stewardship Council (FSC) Standards exist and are awaiting ratification by the FSC. The Standards, one for indigenous forests, one for large plantations and one for small and medium scale plantations, help to ensure that improved policy foundations for forestry management create an enabling environment for integrating biodiversity-friendly practices into production processes. In many ways, this has resulted in the forestry practices that considers biodiversity objectives either through proper management or expansions that avoids biodiversity priority areas. As a result of these mainstreaming efforts, an estimated 331 437 ha of grassland within the forestry plantation landscape are under better management practices through the use of improved decision-making tools. In addition, 20 866 ha have been contributed towards formal protection through biodiversity stewardship contracts (see Question 7), with another 38 135 ha in the process of being negotiated and declared.

- **Business and biodiversity initiatives**

In addition to the specific initiatives with the forestry and mining sectors discussed above, a range of business and biodiversity initiatives are underway in South Africa. Readers are referred to the Fourth National Report where many of these were discussed (p70-74). A new initiative, the National Biodiversity and Business Network (NBBN) was launched in May 2013 by the Endangered Wildlife Trust (EWT), in collaboration with DEA and several companies (Nedbank Limited, Hatch Goba, De Beers, Transnet, Pam Golding Properties and Pick n Pay). The aim of the Network is to assist businesses from various sectors to integrate and mainstream biodiversity issues into their strategies and operations, and to raise awareness of, and stimulate conversation about, biodiversity issues amongst the business community. This is in line with the model of the Global Partnership for Business and Biodiversity of the CBD. Any company can become a member or partner of the Network at any time.

- **Municipal and urban sector**

Local government plays a key role in determining how biodiversity is managed and impacted in the landscape. All municipalities in South Africa are required to develop **Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs)**, which provide potentially powerful mechanisms to mainstream biodiversity considerations into the core business of the local government sector. However, municipalities face many pressing demands, for example related to delivery of basic services, which means that in practice environmental management and biodiversity conservation are often far down in their list of priorities and not recognised as potential means to enhance quality of life. The new Spatial Planning and Land Use Management Act (Act 16 of 2013) delegates additional decision-making power to municipalities, providing both opportunities and challenges for mainstreaming biodiversity in municipal planning and decision-making.

DEA developed a framework for mainstreaming biodiversity into local government in 2011, which informed the development of a **Local Government Support Strategy** (DEA, 2013g) in consultation with stakeholders, identifying 108 municipalities across the country (out of a total of 234) where urgent intervention is needed. Within the context of this support strategy, SANBI has a programme to provide targeted capacity building for municipalities to incorporate spatial biodiversity priorities in their planning and decision-making. In particular a number of engagements have been held with district Municipal Managers and other decision-making platforms to incentivise the uptake of biodiversity considerations into municipal planning and decision-making with an emphasis in strengthening biodiversity content in IDPs and SDFs.

Provincial departments have a key role to play in supporting mainstreaming of biodiversity in municipal decision processes, especially their IDPs and SDFs. This can include, for example, reviewing municipal SDFs and providing comments to strengthen the inclusion of biodiversity priorities, and assisting with spatial biodiversity planning tools and raising awareness through capacity building sessions with municipal officials (see discussion on maps of biodiversity priority areas below).

NGOs can play a key role in supporting municipalities. For example, WESSA has developed **accredited training programmes** to strengthen environmental practice, including a focus on biodiversity. In 2013, over 1 200 supervisors, managers and workers from municipalities across

South Africa successfully completed environmental practices training through WESSA's Sustain Ed programme.

Through the Grasslands Programme in collaboration with ICLEI, a **biodiversity mainstreaming toolbox** for land-use planning and development is being developed for municipalities in Gauteng Province. The toolbox has been designed to strengthen biodiversity mainstreaming in the urban sector specifically. It is a synopsis of policy, guidelines and decision-support tools that are used by provincial and municipal government, and private sector associations such as environmental impact assessors, estate agents etc. The toolbox makes it easy for officials and other urban sector stakeholders to use biodiversity information and regulatory tools for executing their mandates. The main aim of the toolbox is to strengthen the authorisations and instructions issued by planning authorities on development applications and assist them to better integrate biodiversity management and priorities into urban development planning and decision-making

DEA and SANBI have a **Municipal Biodiversity Summaries** project aimed at providing biodiversity summaries for all 234 municipalities in the country. The project aims to make science-based biodiversity information, including spatial data, available to municipalities to support them in their reporting responsibilities (such as the drafting of State of Environment Reports) and generic land-use planning and decision making tools. The latest update of the summaries, based on the consolidated map of biodiversity priority areas in South Africa (Figure 30), was underway at the time of writing and will be freely available on BGIS. An example of the map component of a municipal biodiversity summary is shown in Figure 35. (Also see discussion below on maps of biodiversity priority areas.)

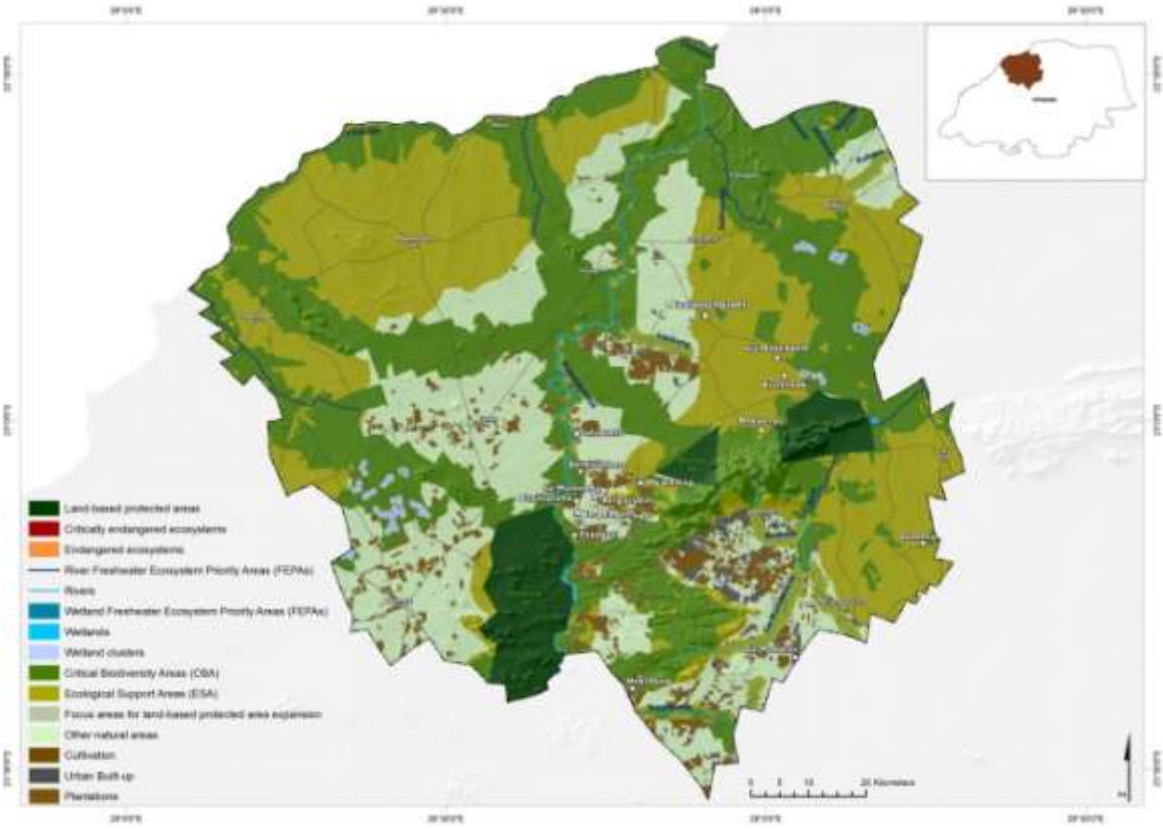


Figure 35: An example of a municipal biodiversity summary map, for the Blouberg Local Municipality in Limpopo Province

Tools used for mainstreaming

Several practical tools have supported South Africa's mainstreaming work discussed above. The following ones stand out in particular:

- **Maps of biodiversity priority areas, based on best available science**

Maps of biodiversity priority areas based on systematic biodiversity planning underpin much of South Africa's biodiversity mainstreaming work. Biodiversity priority areas include Critical Biodiversity Areas (CBAs), which should be maintained in natural or near-natural ecological condition, and Ecological Support Areas (ESAs), in which at least basic ecological functioning should be maintained. Key characteristics of the maps include that they are based on best available science, providing the most effective and efficient configuration of spatial biodiversity priorities that support long-term persistence and functioning of the landscape. The receiving environment for these maps is often in flux, as policies, laws and institutional arrangements in various sectors change and evolve. It has proved tremendously powerful to have a stable, agreed map of biodiversity priority areas that the biodiversity sector can feed into a range of multi-sectoral planning and decision-making processes.

- **Guidelines to accompany and add value to maps of biodiversity priority areas**

Maps of biodiversity priority areas are made more useful if they are accompanied by clear guidelines. These include land-use guidelines for appropriate or compatible land uses in biodiversity priority areas, such as those included in biodiversity sector plans and bioregional plans (see Question 7). They also include guideline documents that build on and add value to the map products, such as the Mining and Biodiversity Guideline discussed above (DEA *et al*. 2013) and the Grasslands Ecosystem Guidelines (SANBI, 2013e).

- **Online access to information**

Making the maps and guidelines freely available online is essential for facilitating their use and uptake. The Biodiversity Advisor web portal and the Biodiversity GIS (BGIS) website provide this access, and are well used (see Question 7). BGIS provides a one-stop-shop for credible spatial biodiversity info and accompanying non-spatial information. In 2012, BGIS had nearly 800 visitors per day, who each spent an average of 25 minutes on the site.

- **Offline access to information**

Many municipalities and other government officials do not have the facilities or available bandwidth to log onto the Internet whenever needed, or have problems obtaining the necessary information technology infrastructure. BGIS is able to make information available on CD, and some provinces such as the Western Cape have developed CDs with ArcReader and all the relevant maps of Critical Biodiversity Areas and other planning tools for municipalities.

Key success factors for mainstreaming

The maps and guidelines discussed above provide an essential foundation for mainstreaming biodiversity in other sectors. However, they are not the whole story. In South Africa's experience a range of "soft" factors are equally important for success. Some of these less tangible aspects include:

- **Paying close attention to policy and institutional context**

Mainstreaming biodiversity into the policy, planning, decision-making or management processes in another sector requires an intimate understanding of the policy and institutional context in that sector. This can be developed only through substantial contact and careful listening. It requires understanding the worldview of the receiving sector, as well as its terminology, jargon and institutional culture. Mainstreamers must be able to immerse themselves in the context of another sector and make explicit links between biodiversity priorities and the priorities of the other sector.

- **Building ongoing relationships**

Mainstreaming is not a once-off event but a process, which can be achieved only through building ongoing long-term working relationships with key individuals in the receiving sector. This takes time, and can be challenging when some of these key individuals leave their jobs or take on new roles, requiring new relationships to be built.

- **Providing in situ support**

No matter how user-friendly the maps and guidelines are, mainstreaming can never be achieved simply by handing maps or guidelines over and expecting them to be used. Training workshops help with uptake, but are also not sufficient. In South Africa's experience, successful mainstreaming requires in situ support to users of the tools, usually over an extended period (for example several years). This can take the form of a person from the biodiversity sector who has in-depth knowledge of the tools being seconded to the receiving organisation, or it can take the form of one or more people who have in-depth knowledge of the tools working systematically over time with one or more people in the receiving organisation who are applying the tools in their work.

- **Convening forums for co-ordination and sharing lessons**

Convening regular forums where those involved in mainstreaming in a particular sector can co-ordinate their efforts and share lessons can provide a significant boost to mainstreaming, including through thickening the network of relationships between key individuals. These forums can take the form of, for example, task teams or learning networks. Although the immediate benefits of bringing people together to share, learn, and discuss are often hard to quantify, investing time and resources in such processes can be invaluable for developing shared objectives and understanding across sectors and disciplines, thereby helping to embed mainstreaming outcomes.

Synergies with other conventions

- **United Nations Framework Convention on Climate Change (UNFCCC)**

South Africa became a signatory to the UNFCCC in 1997 and since then has participated actively in the UNFCCC and the Kyoto Protocol. Since 2009 there has been a substantial increase in South

Africa's focus on climate change adaptation in general, and ecosystem based adaptation in particular. As summarised in the **National Climate Change Response White Paper** (Government of South Africa, 2011), climate change is already a measurable reality and, along with other developing countries, South Africa is especially vulnerable to its impacts. Even under emission scenarios that are optimistic given current international emission trends, it has been predicted that by 2050 the South African coast will warm by around 1 to 2°C and the interior by around 2 to 3°C. By 2100, warming is projected to reach around 3 to 4°C along the coast, and 6 to 7°C in the interior. With such temperature increases, parts of the country will be much drier and increased evaporation will ensure an overall decrease in water availability. Increased occurrence and severity of veld and forest fires, storms, floods and droughts will also have significant impacts. Sea-level rise will negatively impact the coast and coastal infrastructure. The National Climate Change Response White Paper explicitly recognises the integral role of healthy ecosystems in responding effectively to these risks, and the need to conserve, rehabilitate and restore natural ecosystems that improve resilience to climate change impacts or reduce impacts.

Biome vulnerability assessments have been undertaken for all biomes in the country, and the development of biome response strategies and adaptation plans is now underway. Following the development of Long-Term Mitigation Scenarios (LTMS) for South Africa in 2007-2009, the focus has now shifted to **Long-Term Adaptation Scenarios** (LTAS). Phase 1 of LTAS was recently completed, and phase 2 is now underway. The LTAS process is placing strong emphasis on ecosystem-based adaptation and the role of ecological infrastructure in helping society adapt to the impacts of climate change.

The Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries that are parties to the Kyoto Protocol and are particularly vulnerable to the adverse effects of climate change. Funds are accessed via implementing entities, who are responsible for endorsing project and programme proposals. SANBI was accredited as South Africa's **National Implementing Entity** (NIE) to the Adaptation Fund in September 2011. The NIE has established an Investment Framework to guide its work, recognising that the Adaptation Fund provides a key opportunity for South Africa to learn how to develop, resource and implement adaptation projects, gear up for scaled up implementation, and demonstrate how investments in climate change adaptation can deliver tangible and lasting benefits to those who are most vulnerable to climate change. The NIE issued a call for proposals in November 2012. Of many project concepts that were submitted, two were selected for further development. The first project, entitled "Building resilience in the greater uMngeni catchment, South Africa", focuses on building resilience for vulnerable communities in a catchment that provides water to two of South Africa's large cities, and it will focus on climate smart agriculture, climate proofing settlements with built and ecological infrastructure, and early warning systems using near real time weather stations and community monitors. The second, entitled "Taking adaptation to the ground: a small grants facility for enabling local level responses to climate change in South Africa", covering the Namakwa and Mopani Districts", will be a small grant facility that contracts interface agencies to work with vulnerable communities and support them to develop small projects in two diverse areas. Both projects were endorsed for further development at the 21st Adaptation Fund Board meeting in July 2013. At the time of writing the projects were in detailed project design. If they meet the requirements of the Adaptation Fund, implementation of the $10 million investment will begin in early 2015.

- **United Nations Convention to Combat Desertification (UNCCD)**

South Africa ratified the United Nations Convention to Combat Desertification (UNCCD) in September 1997. As an obligation to convention signatories, South Africa developed a National Action Programme (NAP) aimed at combating land degradation and alleviating rural poverty (DEAT, 2005a). Moreover, the action plan clearly recognises and responds to the strong linkages between desertification, biodiversity and climate change, noting that South Africa should co-ordinate and have a synergistic approach to implementation of the UNCCD, CBD and UNFCCC. In South Africa, the NAP is implemented through various programmes and projects such as Working for Water, LandCare, Community Based Natural Resource Management, Working on Fire, Working for Wetlands, etc. and this has proved to be a success in many ways. South Africa is currently in a process of reviewing and aligning the NAP with the UNCCD ten-year strategic plan and framework to further improve implementation of the convention.

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**

South Africa was a founding member of CITES, which came into force in 1975 with the aim of protecting rare and endangered (threatened) species through regulating international trade in these species. The Minister of Water and Environmental Affairs published national CITES Regulations in terms of the Biodiversity Act on 5 March 2010 for implementation, and amendments to these regulations in July 2011. South Africa will host CITES CoP17 in 2016 and work on the preparation for hosting of this big event will commence later this year.

SANBI convenes the Scientific Authority, which has been established in terms of the Biodiversity Act, and is responsible for among others, providing scientific assessments on species in international trade, including national non-detriment findings to determine whether the international trade in particular species will not be detrimental to the survival of the species in the wild. So far 14 non-detriment findings (NDFs) have been published for public comment, and will be finalized and formally published in 2014. They include non-detriment findings for 12 cycad species, white rhino and hippopotamus (DEA, 2013c).The work of the Scientific Authority plays a key role in supporting the wildlife economy in South Africa, which includes a range of activities related to trade in species.

- **Convention on Wetlands of International Importance (Ramsar Convention)**

South Africa is a contracting party to the Ramsar Convention. Twenty-one Ramsar sites have been designated in South Africa, two of them in the last five years. Nineteen of these Ramsar sites are formally protected in terms of the Protected Areas Act, mostly in provincial nature reserves. The two that are not formally protected are the Orange river Mouth and Verlorenvlei. Of the 21 Ramsar sites, seven are estuaries. See Question 7 for more on the management of South Africa's Ramsar sites.

Transboundary co-operation

South Africa has entered into agreements with all six neighbouring countries (Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe) on the establishment, development and management of six Transfrontier Conservation Areas (TFCAs) (see Figure 24).

South Africa is also coordinating the implementation of the TFCA Development Strategy for 2010 and beyond, commonly referred to as Boundless Southern Africa Initiative. The objective of the strategy is to position TFCAs as preferred tourist and investment destinations in Southern Africa. South Africa was further instrumental in the development and approval of the SADC Programme for TFCAs as well as the Tourism Chapter of SADC Regional Infrastructure Development Master Plan which focuses on infrastructure development in TFCAs (SADC, 2012). Both programmes are coordinated by the SADC Secretariat.

Question 9: How fully has the NBSAP been implemented?

South Africa's NBSAP has five Strategic Objectives, each of which has a series of outcomes (27 altogether) and activities (122 altogether). The strategic objectives and outcomes are summarised in the box below.

Box 3: Strategic objectives and outcomes of South Africa's NBSAP

Strategic Objective 1
An enabling policy and legislative framework integrates biodiversity management objectives into the economy.
Outcomes
1.1 The value of biodiversity to the economy and to people's lives is quantified and monitored to inform policy, strategy and action
1.2 Biodiversity considerations are integrated into macro-economic, trade, industrial and fiscal policy
1.3 Biodiversity considerations are integrated into resource management policy and legislation
1.4 A national biodiversity planning and assessment framework informs all decisions regarding land and resource use and spatial development

Strategic Objective 2
Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector
Outcomes
2.1 The biodiversity sector is transformed and representative of South Africa
2.2 Co-operative governance at all levels results in improved biodiversity management
2.3 Institutions with biodiversity-related responsibilities are effective, efficient and adequately capacitated
2.4 Financial resources for biodiversity management are adequate, and effectively and efficiently used
2.5 Information management systems, research priorities and monitoring and evaluation frameworks are in place and effectively supporting biodiversity management
2.6 A comprehensive and proactive national communication, awareness raising and advocacy strategy reaches targeted sectors and facilitates conservation and wise use of biodiversity
2.7 Proactive engagement and co-operation with the international community enhances conservation and sustainable use of shared resources and globally important biodiversity in South Africa

Strategic Objective 3
Integrated terrestrial and aquatic management across the country minimises the impacts of threatening processes of biodiversity, enhances ecosystem services and improves social and economic security
Outcomes
3.1 National initiatives to manage terrestrial and aquatic ecosystems are co-ordinated, developed and implemented with full stakeholder participation to contribute to the sustainable socio-economic development
3.2 Key production sectors and industries integrate biodiversity into their products and services
3.3 A multi-agency national programme deals with the full suite of impacts posed by invasive species across the landscape and seascape
3.4 An integrated national programme facilitates adaptation to the predicted impacts of climate change on biodiversity across the landscape and seascape

3.5 Effective management and control measures to minimise the potential risks to biodiversity posed by Genetically Modified Organisms (GMOs)
3.6 Effective waste management and pollution control measures limit the impacts of pollution on biodiversity management
3.7 Research and monitoring programmes support integrated management of terrestrial and aquatic ecosystems

Strategic objective 4
Human development and well-being is enhanced through the sustainable use of biological resources and equitable sharing of benefits
Outcomes
4.1 An equitable access, rights and responsibilities regime promotes sustainable use of biological resources
4.2 Partnerships between government, the private sector, organised civil society and communities encourage entrepreneurship, innovation, investment and action at local level
4.3 The ecological and social sustainability of extractive use of biological resources is researched, assessed and monitored, and opportunities for improvement are identified and implemented
4.4 Use of biological resources is well managed to maximise sustainable benefits

Strategic Objective 5
A network of protected areas and conservation areas[6] conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape
Outcomes
5.1 Biodiversity priority areas identified in the NSBA are refined in provincial, regional and local systematic biodiversity plans
5.2 The protected area network is secured, expanded and managed to ensure that a representative sample of biodiversity and key ecological processes are conserved
5.3 Biodiversity is effectively managed in key ecological and high priority fragments of natural habitat across the landscape and seascape
5.4 Management plans for species of special concern ensure their long term survival in the wild
5.5 Research and monitoring programmes support the establishment and effective management of protected areas and conservation areas

In order to assess how fully the NBSAP has been implemented, an analysis was undertaken at the activity level. Each of the 122 activities was rated in one of four categories:

- Green – fully achieved
- Yellow – substantially achieved
- Orange – achieved to a limited extent
- Red – not achieved

In a few cases there were activities that were no longer relevant or applicable, for example because they addressed a policy or institutional process that subsequently changed or fell away.

The graph below summarises the results (Figure 36). Overall, 27% of the activities in the NBSAP 2005 have been fully achieved, another 27% substantially achieved, 37% achieved to a limited extent, and

[6] The NBSAP originally used the term "conservation areas" as an umbrella term referring both to formal protected areas and to informal conservation areas. However, in the development of the National Protected Area Expansion Strategy 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. This report uses the terms "protected areas" and "conservation areas" in the same way they are used in the National Protected Area Expansion Strategy.

6% not achieved. Three percent of activities are no longer applicable. Based on this analysis, the highest proportion of activities achieved and substantially achieved is for Strategic Objective 2 which deals with institutional effectiveness. However, this does not necessarily reflect the areas of greatest progress in implementing the NBSAP in practice, as many activities actually undertaken since the NBSAP was finalised in 2005 could not have been foreseen at that stage and were thus not included. Also, not all of the activities are necessarily placed under the correct strategic objective, for example some activities under strategic objective 5 which deals with protected areas actually fit more appropriately under strategic objective 3.

Lessons learnt from this analysis, which will inform the revision of the NBSAP underway at the time of writing, include: the need for greater realism about what is achievable in the time period between NBSAP reviews, particularly for mainstreaming activities; and the need in some cases to be less specific about particular policy and institutional processes or issues, as the policy and institutional environment is often characterised by substantial flux.

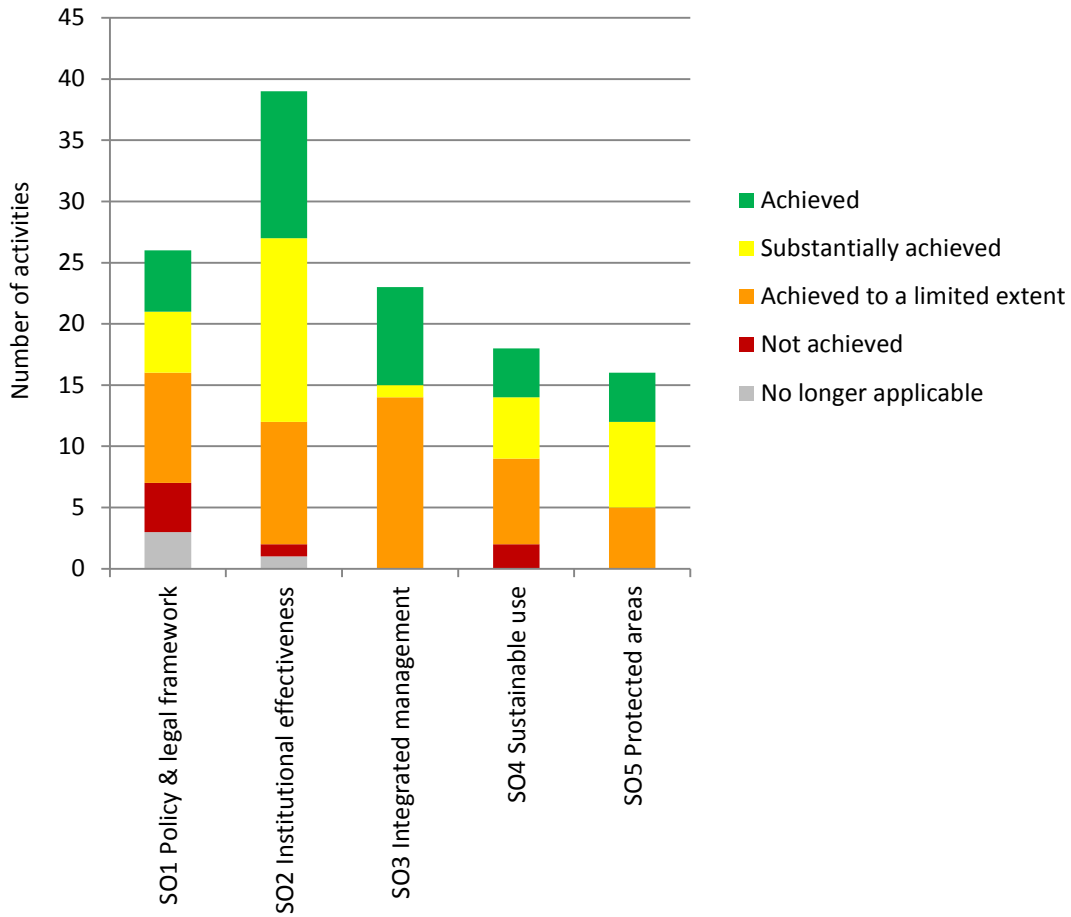


Figure 36: Summary of extent to which NBSAP activities have been implemented, by strategic objective

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 targets of the Millennium Development Goals

Question 10: What progress has South Africa made towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

South Africa's progress towards implementation of the Aichi targets is summarised in Table 3 below, with cross references to discussion in other questions where appropriate. The table draws together targets from the NBSAP and National Biodiversity Framework, and cross-walks them to the Aichi targets. This serves to highlight areas of contribution, as well as gaps in the NBSAP which will be addressed in the revision of the NBSAP currently underway (see Question 6).

The last column in Table 3 reflects an overall assessment of the extent to which the Aichi target concerned has been achieved in South Africa, using a "traffic light" scheme as suggested in the CBD's Resource Manual for 5th National Reports:

- Green – fully achieved
- Orange – partially achieved
- Red – not achieved

In all cases the Aichi targets have been partially achieved in South Africa. Among the partially achieved targets, good progress has been made especially on targets 4, 11, 13, 16 and 19, with promising progress on targets 2 and 14. **Note that the assessment of implementation in the last column is of the Aichi target in the second column, not the related South African NBSAP and NBF targets in the third and fourth columns, several of which have been fully achieved.**

Of the five Strategic Goals of the CBD, South Africa has arguably made most progress towards Goal A (in relation to mainstreaming), Goal C (in relation to increased protection), and Goal E (in relation to knowledge management and capacity building).

Note that references are not provided in the table – please refer to the discussion under the relevant cross-referenced questions for references.

Table 3: Summary of South Africa's progress towards the Aichi targets

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	Target 1 - By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	Biodiversity concerns occupy a significant place on the national agenda. All organs of state in all spheres of government, and all stakeholders and role players, co-operate and work effectively and efficiently to achieve biodiversity management objectives.		Making the Case project – reframing the messaging of the biodiversity sector (Questions 7 and 12). Key early successes in mainstreaming ecological infrastructure in national policy (Question 8). Public awareness campaigns undertaken by a range of NGOs.	Orange
	Target 2 - By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Biodiversity values are fully integrated into the macro-economy, informing policy, planning, budgeting and decision-making processes at all levels and all sectors. Poverty is alleviated through more equitable and effective resource use.	Partial economic valuation of South Africa's biodiversity has been completed, and presented effectively to key decision-makers and the public.	National Biodiversity Framework published in terms of the Biodiversity Act (Question 7). Biodiversity included in the National Development Plan and the National Strategy for Sustainable Development (Question 8).	Orange (promising progress)
	Target 3 - By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable	NBSAP 5-year target: Opportunities for economic instruments that encourage activities enhancing biodiversity and discouraging activities that impact negatively on biodiversity have been identified, and implementation is underway.	At least two fiscal instruments and/or market mechanisms for biodiversity conservation have been developed, and pilots are underway.	Tax incentives available to landowners who enter into contractual arrangements to formally protect their land, including income tax incentives and property rates incentives – these could be further strengthened.	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
	use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.			Some perverse incentives discouraging biodiversity-friendly land use remain – further work required.	
	Target 4 - By 2020, at the latest, governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	All sectors that impact on biodiversity are making a significant contribution towards biodiversity management and consider biodiversity in all decisions regarding resource use.	At least six provinces have spatial provincial biodiversity plans in place, with the necessary in-house capacity to maintain and update them. A national programme to build municipal capacity has been established and is underway, focusing initially on municipalities with, for example, high numbers of threatened ecosystems. Pilots for district natural resource co-ordinators and/or other mechanisms for integrated natural resource management are underway in at least four districts. A portfolio of freshwater and estuarine conservation areas has been identified, and mechanisms for implementing appropriate management of these areas are being piloted in at least	Maps of biodiversity priority areas, including freshwater priority areas, widely available to inform decisions about land use and production (Question 7). Key mainstreaming successes with mining and forestry sectors (Question 8). Programmes in place to mainstream biodiversity in municipalities (Question 8.) Human capital development strategy for the biodiversity sector developed and being implemented (Question 7).	Orange (good progress)

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			three Water Management Areas. A national human capital development strategy for the biodiversity sector, reflecting specific employment equity targets for all key research and implementing agencies in the sector, has been developed and is being implemented.		
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	Target 5 - By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	There is no further loss of endangered and critically endangered ecosystems and no attrition of ecosystem functioning in priority areas.	Threatened or protected ecosystems have been identified and listed, and the list has been updated at least once. Appropriate supporting material is available, and listed ecosystems are routinely taken into account in land-use planning and decision-making. Norms and Standards for Biodiversity Management Plans for Ecosystems have been developed. Ecosystem guidelines for environmental assessment, generic terms of reference for biodiversity specialist studies in EIAs, a decision-making framework to guide trade-offs where these are unavoidable, and a policy framework for	List of threatened ecosystems published in terms of the Biodiversity Act. Biodiversity increasingly routinely incorporated into EIAs (Question 7). Norms and Standards for Biodiversity Management Plans for Ecosystems have been finalised (Question 7). Grasslands Ecosystem Guidelines published (Question 8). Several biodiversity sector plans and bioregional plans developed to inform land-use planning and environmental authorisations (Question 7).	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			biodiversity offsets have been developed and are being applied nationally. At least seven bioregional plans have been published and are being used routinely to inform land-use planning and decision-making.		
	Target 6 - By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	Priority fish stocks recover to sustainable levels.	Linefish status reports have been updated, recovery plans are being implemented for six species and the ecosystem approach is being implemented in all major commercial fisheries. Monitoring and enforcement capacities (related to illegal seafood harvesting and trade) among regional and local authorities and other role players are strengthened, especially in regions of high priority, such as Gauteng, a hub for seafood trade. A regional network of relevant institutions and organisations for monitoring the illegal trade in seafood/threatened species has been developed. Consumer demand for threatened or protected	Linefish profiles for 139 species recently completed (Mann, 2013) to update the Southern African Marine Linefish Status Reports (last published in 2000), showing some improvement in linefish status albeit it off a low base (Question 7). South African Sustainable Seafood Initiative (SASSI) continues to provide consumers with instant information via text message about fish status. However, fishing remains the main pressure on marine ecosystems.	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			marine species has been reduced through increased awareness.		
	Target 7 - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	All sectors that impact on biodiversity are making a significant contribution towards biodiversity management and consider biodiversity in all decisions regarding resource use.	At least three production sectors have developed wise practice guidelines to minimise their impact on biodiversity.	Living Farms Reference developed by GreenChoice Alliance provides guidance on sustainable farming practices and is used as the source for codes of conduct in several agriculture sectors. Guidelines for red meat produced, as well as grazing guidelines for the grasslands biome.	Orange
	Target 8 - By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	All sectors that impact on biodiversity are making a significant contribution towards biodiversity management and consider biodiversity in all decisions regarding resource use.	At least three production sectors have developed wise practice guidelines to minimise their impact on biodiversity.	See target 7 – pollution issues addressed to some extent in existing guidelines for some production sectors. However, pollution remains a significant pressure especially in aquatic ecosystems.	Orange
	Target 9 - By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	Effective control of known priority invasive species is achieved, primarily through programmes focused on poverty relief.	Regulations for invasive alien species have been finalised and published. Control, monitoring and eradication plans are in place for priority alien invasive species that threaten ecosystems, habitats or indigenous species. A system to monitor implementation in place.	Regulations on invasive alien species finalised (Question 7). Working for Water programme continues to clear invasive plants in priority catchments, creating significant employment. Budget of Working for Water grew by 151% from R477 million in 2009 to R1 196 million in 2013. Early detection programme established to identify	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
				emerging invasives and enable rapid response. (Question 7)	
	Target 10 - By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.		National programme dealing with ecosystem adaptation to climate change has been developed and is accepted by all stakeholders.	National Climate Change Response White Paper (2011) recognises the importance of healthy ecosystems in adapting to climate change (Question 8). Ecologically and Biologically Sensitive Areas (EBSAs) identified in South Africa's marine territory based on best available science, and proposal submitted to the UN.	Orange
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	Target 11 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	The protected area network covers 12% of the terrestrial and 20% of the marine environment thereby contributing to representation targets in priority areas. At least two entire 'watershed to coast' protected environments are established and effectively managed.	National Protected Area Expansion Strategy has been finalised and is supported by all key implementing agencies. An additional 2.2% (2.7 million hectares) of the country has been included in the land-based protected area network. An additional 2.4% (88km) of the coastline has been included in the inshore marine protected area network. An additional 4.9% (52	Significant progress made in expanding the protected area network, especially through biodiversity stewardship programmes in which landowners enter into contractual agreements to formally protect their land. As at the end of 2012, 130 000 ha had been formally declared through this mechanism, with an additional 550 000 ha either awaiting declaration or in negotiation. Six provinces have biodiversity stewardship programmes, with the remaining three in early stages of establishment.	Orange (good progress)

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			500km2) of the mainland exclusive economic zone (EEZ) and an additional 5% (23 300km2) of the Prince Edward Islands EEZ has been included in the offshore marine protected area network. At least six provinces have active stewardship programmes. National guidelines for incentives for stewardship sites have been developed, and implementation on provincial level has been negotiated. National guidelines and minimum standards for assessing candidate sites have been developed, and a toolbox to assist provincial implementation has been finalised. Two additional Biosphere Reserves have been designated by UNESCO. Two additional wetland sites have been designated as Ramsar sites. An investigation of possible means of protection for Ramsar sites	(Question 7) Prince Edward Island MPA declared in 2013 – South Africa's first offshore MPA (Question 7). Two additional Ramsar sites designated, bringing the total to twenty-one (Question 7). Four additional biosphere reserves in the process of being proposed (adding to the six existing biosphere reserves) (Question 7). Two additional National Botanical Gardens in the process of being established (one in Eastern Cape, one in Limpopo).	

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			has been initiated. A National Botanical Gardens expansion strategy has been developed, and at least one new National Botanical Garden has been established. Complete up-to-date map of protected areas is widely available. Protected area register is populated and maintained.		
	Target 12 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	No species status declines	Three Biodiversity Management Plans for Species have been developed and are being successfully implemented. Regulations for species listed in terms of CITES have been developed and published and the Scientific Authority has been established. Development of trophy hunting regulations has commenced. Norms and standards for regulation of the hunting industry, for elephant management, and for control of wildlife/human conflict have been finalised and published.	Comprehensive Red List completed for plant and underway for several other taxonomic groups (Question 7). CITES regulations published in 2010. Scientific Authority established (Question 8). Norms and standards developed for elephant management and for damage-causing animals. Hunting regulations developed. List of Threatened or Protected Species revised, along with supporting regulations (Question 7). Several Biodiversity	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			The list of Threatened or Protected Species (TOPS list) has been revised. Preliminary synthesis and assessment of the available information on sustainable extractive use for species listed in the TOPS regulations has been completed. Knowledge of the extent of harvesting and limits to sustainable extractive use has been developed for at least ten priority species on the TOPS list as well as for at least ten medicinal plants.	Management Plans for Species developed (Question 7).	
	Target 13 - By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	No genetically modified organisms posing a threat to biodiversity are released into the environment	Environmental Risk Assessment Framework for GMOs has been developed and is routinely used.	Environmental Risk Assessment Framework for GMOs developed and is routinely used in the assessment of GMO permit applications (DEAT, 2008b). Guidance document on Risk analysis of contained use research and development activities with genetically modified aquatic organisms in South Africa finalised.	Orange (good progress)
Strategic Goal D: Enhance the	Target 14 - By 2020, ecosystems that provide	Catchment Management Agencies are established in all	All Catchment Management Agencies that are established	Strategic Water Source Areas mapped and included in	Orange (promising progress)

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
benefits to all from biodiversity and ecosystem services	essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	biodiversity priority areas, are effectively achieving integrated resource management and are meeting biodiversity objectives. Disaster prevention and management plans (including climate change impacts) incorporate wise ecosystem management principles and practices, especially for water, fire and coastal processes	and operational have integrated quantitative freshwater biodiversity targets and national freshwater biodiversity priority areas into their Catchment Management Strategies.	National Water Resource Strategy (Question 8). Atlas of Freshwater Ecosystem Priority Areas published, and being used to inform management of water resources (Question 7). Active engagement with National Disaster Management Centre, including on the revision of the Disaster Management Act, to include reference to the role of ecological infrastructure in disaster risk reduction.	
	Target 15 - By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.		National programme dealing with ecosystem adaptation to climate change has been developed and is accepted by all stakeholders.	National Climate Change Response White Paper published in 2011. Long-Term Adaptation Scenarios in the process of being developed. SANBI accredited at the National Implementing Entity of the Adaptation Fund; development of two major projects underway. (Question 8)	Orange
	Target 16 - By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their	NBSAP 5-year target: Bioprospecting framework and regulations are developed and implemented (and other related 5-year	Bioprospecting, access and benefit sharing regulations have been finalised and published.	South Africa acceded to the Nagoya Protocol. Revision of biospropecting, access and benefit sharing	Orange (good progress)

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
	Utilization is in force and operational, consistent with national legislation.	targets).	Implementation strategy for bioprospecting, access and benefit sharing regulations has been developed, and milestones or targets identified in the strategy are being reached.	regulations (2008) underway to refine them. Guidelines for Providers, Users and Regulators on Bioprospecting, Access and Benefit Sharing developed. Since 2008, 77 Notifications for Discovery Phase of Bioprospecting registered; 15 Bioprospecting and Biotrade permits approved and issued; 2 Benefit Sharing Agreements and 72 Material Transfer agreements concluded with access providers and traditional knowledge holders, providing for monetary and non-monetary benefits for communities; over 450 community members are involved in harvesting and cultivation of indigenous biological resources, processing and packaging of products	
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building	Target 17 - By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	South Africa fully and consistently meets international obligations regarding biodiversity in the context of national priorities	N/A	Revision of NBSAP underway (Question 6).	Orange
	Target 18 - By 2020, the	Economies based on use of	Knowledge of sustainable	Biodiversity Management	Orange

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
	traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	species and genetic resources are optimised and sustainably managed and contribute significantly to livelihoods and equity.	extractive use of terrestrial resources informs the development and implementation of community-based natural resource management programmes.	Plan for *Pelargonium Sidoides* developed (Question 7). Community-based project on sustainable harvesting of *Aloe ferox* for bioprospecting and biotrade initiated in the Eastern Cape Province. Also see Target 16.	
	Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	Comprehensive biodiversity monitoring systems inform planning.	National biodiversity research strategy has been developed, is recognised by all key stakeholders, and is used as a basis for the allocation of research efforts and funding. Institutional arrangements for biodiversity research are co-ordinated and strengthened. Taxonomic and biosystematic assessments have been completed for at least ten identified priority groups. Red Lists have been completed for five priority animal groups.	National Biodiversity Assessment 2011 completed, published and widely used (Question 2, Question 7) Significant advances in science base to inform conservation and management of biodiversity strengthened (Question 7). Development of National Biodiversity Research Strategy underway (Question 7). Red Lists underway for priority groups (Question 2).	Orange (good progress)

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			Marine ecosystem map has been developed, wetland ecosystem map has been completed, up-to-date national land cover is available, and a national land degradation map has been completed. Web-enabled one-stop-shop for biodiversity information established, recognised and extensively used by managers and professionals. Institutional model for management of biodiversity collections has been developed and is being implemented. The national biodiversity monitoring and reporting framework has been established, is being used as the basis for annual reports to parliament and is informing policy direction and implementation. Monitoring and evaluation frameworks for provincial conservation authorities and bioregional and ecosystem programmes feed into the national monitoring and reporting	Marine and coastal habitat map and classification developed (Question 7). Biodiversity Advisor portal established on one-stop-shop for biodiversity data (Question 7). National biodiversity monitoring framework aligned with National Biodiversity Assessment (Question 7).	

CBD Goal	Aichi Target	Relevant national 15-year target(s) from NBSAP 2005	Relevant national 5-year target(s) from NBF 2008	Key national actions and outcomes 2009-2013	Overall assessment (green/orange/red)
			framework.		
	Target 20 - By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.			South Africa to participate in UNDP's BIOFIN project.	Orange

Question 11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in the country?

South Africa has adopted the Millennium Development Goals (MDGs). A full review of progress towards meeting these goals is provided in South Africa's Country Reports on the MDGs, compiled by DEA (Statistics South Africa, 2013). Goal 7 of the MDGs deals with ensuring environmental sustainability. Target 9 of Goal 7 of the MDGs is relevant to biodiversity as it requires integration of the principles of sustainable development into policies and programmes and reversing the loss of environmental resources. The indicators for environmental sustainability include the proportion of land area covered by forest, and the percentage of area protected to maintain biodiversity.

Elsewhere in this report, the extent to which biodiversity and ecological infrastructure have been incorporated into policies and programmes is highlighted. A general observation is that progress is being made in this regard in South Africa, and that this contributes towards environmental sustainability.

With respect to the quantitative indicators, the following observations are made:

- The proportion of South Africa's surface area that is formally protected was 7.8% as of December 2013 (Table 2), while the MDG goal is 10% by 2015. South Africa's National Protected Area Expansion Strategy 2008 sets a target for land-based protected areas of 15.3% by 2028.
- The proportion of land area covered by forest in South Africa is naturally very small, with the indigenous forest biome (as opposed to forestry plantations) making up less than one percent of the country's surface area (Mucina & Rutherford 2006). Despite their small surface area, forests make a disproportionably high contribution to the conservation of South Africa's biodiversity. The forest biome in South Africa is relatively well protected (NBA 2011).

Question 12: What lessons have been learned from the implementation of the Convention in South Africa?

South Africa has made significant progress in implementing the Convention, as highlighted in previous questions, particularly in the following areas:

- Strengthening and refining policy and legislation, including strengthening the interface between science and policy
- Strengthening the science base for biodiversity conservation and management, including mapping and classifying ecosystems, Red Listing and spatial biodiversity planning
- Strengthening biodiversity information management
- Mainstreaming biodiversity in a range of sectors, including but not limited to land-use planning, environmental authorisations, mining and forestry
- Increasing protection of biodiversity, including through contractual agreements with landowners
- Ongoing work to restore priority ecosystems through environmental public works programmes
- Initiating a systematic programme to build human capital and skills in the biodiversity sector

Notwithstanding this progress, challenges remain in every one of these areas, some of which are discussed in Questions 7 and 8. Key high-level lessons learnt over the past five years, which will inform the revision of South Africa's NBSAP and our work for the next five years, include the following:

- **Reframing the message of the biodiversity sector**

The Making the Case project discussed in Question 7 provided invaluable direction for reframing the central message of South Africa's biodiversity sector and shifting the way we communicate. The shift from focusing on fear of loss, or "doom and gloom", to presenting a compelling value proposition linked to our biodiversity assets and ecological infrastructure, is already bearing fruit with a range of non-traditional audiences, including National Treasury and municipal engineers. The concept of ecological infrastructure in particular is proving to be powerful in creating a shared language with other sectors and demonstrating how biodiversity links to the country's development agenda. This shift in messaging has not required expressing the value of biodiversity in monetary terms.

- **Influencing the policy environment requires flexibility and cannot be a tightly managed process**

Interventions to influence the national policy environment or policy in other sectors require an intimate understanding of the receiving environment, and the ability to identify keys that will unlock the right doors. This understanding takes time to develop and relies heavily on strong working relationships with the department or agency one is aiming to influence. Policy transitions are seldom rational or orderly and often evolve organically. This requires the biodiversity sector to be agile, flexible and responsive, in order to take advantage of opportunities for policy interventions when they arise.

- **Mainstreaming requires institutional changes which takes 7-10 years – beyond the lifetime of typical projects**

Mainstreaming biodiversity into other sectors requires institutional change, which usually takes at least 7 to 10 years. Long-term vision and persistence is required, generally beyond the lifetime of the typical project or funding lifecycle. South Africa has benefitted from successive large donor investments in mainstreaming, for example through the GEF, which has enabled layering of effort over long periods. This has often been essential to successes that have been achieved.

- **Spatial assessment of biodiversity is an essential foundation for effective protected area expansion, mainstreaming and restoration**

South Africa's strong science base in spatial biodiversity assessment and planning has been foundational in effective mainstreaming interventions. Spatial assessment of biodiversity does not necessarily require vast amounts of data, and can be done at the ecosystem level, using ecosystem types as effective surrogates for biodiversity pattern. The identification of a clear set of spatial biodiversity priority areas at the landscape scale, based on science, provides a strategic starting point for protected area expansion and restoration of ecosystems, and as well as for engagements with a range of other sectors.

- **Partnerships between multiple stakeholders are key to achieving biodiversity goals at the landscape scale**

The biodiversity sector in South Africa has a substantial history of collaborative partnerships between multiple stakeholders, including government, NGOs, civil society and the private sector. This has been essential for implementing a landscape approach to managing and conserving biodiversity, as discussed at greater length in *Biodiversity for Development* (Cadman *et al*., 2010). Investing in building partnerships, and convening forums and structures through which these partnerships can be maintained, is most successful when the purpose of the partnership is clear and compelling, and is often a vital element for achievement of biodiversity goals.

- **Historic biodiversity mandates may need to be realigned with the CBD Strategic Goals and Aichi targets**

Implementing the Aichi targets may require a review of the biodiversity-related mandates of some organs of state, and may require broader mandates within biodiversity institutions that are already under capacitated. This has knock on effects in terms of increased budgetary requirements. There has in some cases been a slow uptake of certain "modern" aspects of the CBD Strategic goals and Aichi targets especially in contrast to traditional conservationist goals which were not yet concerned with poverty alleviation, benefit sharing and recognition of traditional knowledge. Biodiversity mandates of all levels of government and the resources required to fulfil these mandates should be reviewed, communicated and provided for.

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Appendix I

Contact information for reporting party

Contracting party	**SOUTH AFRICA**
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Signature of officer responsible for submitting national report	
Date of submission	28/02/2014

Process of preparing the national report

The Fifth National Report to the Convention on Biological Diversity was prepared during the period July 2013 to February 2014. The South African National Biodiversity Institute (SANBI) drafted the report at the request of the Department of Environmental Affairs (DEA), in close collaboration with DEA.

A two-day workshop was convened by DEA on 22-23 July 2013, at which stakeholders were introduced to the format of the Fifth National Report and invited to give input on key issues related to South Africa's implementation of the Convention and the NBSAP 2005. The workshop also served as a starting point for the review of South Africa's NBSAP. Stakeholders were invited to provide further written input for the Fifth National Report following the workshop.

The drafters of the report gathered further information as required by way of semi-structured interviews with key government and non-government stakeholders and informants, in many cases with follow-up requests for additional information via email.

Key documents used as sources during the preparation of the report were:

- National Biodiversity Strategy and Action Plan (NBSAP)
- National Biodiversity Framework (NBF)
- National Biodiversity Assessment (NBA) 2011
- National Protected Area Expansion Strategy (NPAES)
- Millennium Development Goals reports

A range of other policies, regulations, norms and standards, guidelines, strategies and reports were drawn on, as reflected in the reference list.

A draft of the report was reviewed by relevant officials within DEA and SANBI as well as by key stakeholders.

Appendix II: Further sources of information

For readers who would like further information, a list of publications and websites is provided below.

Publications

Below is a short list of publications that provide an overview of the work of the biodiversity sector in South Africa. Note that this is not intended to be a comprehensive list of all biodiversity-related publications. The list is divided into publications that pre-date the Fourth National Report, and newer ones that have been published in the five years between the Fourth and Fifth National Reports. Full citations can be found in the reference list.

Selected publications older than 2009

- White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997)
- National Spatial Biodiversity Assessment 2004
- National Biodiversity Framework 2008
- South Africa's Fourth National Report to the CBD (2009)

Selected publications since 2009

- National Biodiversity Assessment 2011 Synthesis Report (NBA, 2011)
- National Protected Area Expansion Strategy (NPAES) (Government of South Africa, 2010)
- List of threatened terrestrial ecosystems (DEA, 2011)
- Biodiversity for Development – South Africa's landscape approach to conserving biodiversity and promoting ecosystem resilience (Cadman *et al*., 2010)
- Atlas of Freshwater Ecosystem Priority Areas for South Africa (Nel *et al*., 2011)
- South Africa's Bioprospecting, Access and Benefit Sharing Regulatory Framework: Guidelines for Providers, Users and Regulators

Useful websites

Information	Organisation	Website address
General information	DEA	www.environment.gov.za
	SANBI	www.sanbi.org.za
	Agricultural Research Council (ARC)	www.arc.agric.za
	South African Institute for Aquatic Biodiversity (SAIAB)	www.saiab.ac.za
	Council for Scientific and Industrial Research (CSIR)	www.csir.co.za
	South African Environmental Observation Network (SAEON)	www.saeon.ac.za
	Water Research Commission (WRC)	www.wrc.org.za
National government departments	Department of Water Affairs	www.dwa.gov.za
	Department of Agriculture, Forestry and Fisheries	www.daff.gov.za
Human Capital Development Strategy for the Biodiversity Sector	GreenMatter	www.greenmatter.co.za
Protected areas	SANParks	www.sanparks.org
Bioregional programmes	CAPE	www.capeaction.org.za
	SKEP	www.skep.org
	Grasslands	www.grasslands.org.za
Business and biodiversity	GreenChoice	www.conservation.org
Portal for biodiversity-related data	SANBI Biodiversity Advisor	http://biodiversityadvisor.sanbi.org
Spatial biodiversity information and maps	SANBI Biodiversity GIS (BGIS)	http://bgis.sanbi.org
Red List of South African Plants online	SANBI – Threatened Species Programme	http://redlist.sanbi.org
Biodiversity-related NGOs in South Africa	Birdlife South Africa	www.birdlife.org.za
	Botanical Society of South Africa (BotSoc)	www.botanicalsociety.org.za
	Conservation South Africa (CSA)	www.conservation.org/global/ci_south_africa/
	Endangered Wildlife Trust (EWT)	www.ewt.org.za
	Peace Parks Foundation (PPF)	www.peaceparks.co.za
	United Nation Development Programme South Africa (UNDP-SA)	www.undp.org.za
	Wildlife and Environment Society of South Africa (WESSA)	www.wessa.org.za
	World Wide Fund for Nature South Africa (WWF-SA)	www.wwf.org.za
	Wilderness Foundation (WF)	www.wildernessfoundation.co.za