



# Biodiversity

## *and conservation*

In terms of its biodiversity, South Africa ranks third in the world (behind Brazil and Indonesia). Its incredibly rich biodiversity has earned it the status of being a 'mega-diverse' country. It is one of only 17 countries that collectively contain two-thirds of the world's biodiversity.

Although South Africa's surface area (122 million hectares) represents only 2% of the land surface of the world, it is home to 7.5% of the planet's plants, 5.8% of its mammals, 8% of its bird species, 4.6% of its reptiles and 5.5% of its insects. The Cape Floral Kingdom is one of the earth's six floral kingdoms, and the only one to be found entirely within the borders of one country. It covers only 4% of the area of southern Africa, but is home to 45% of the subcontinent's plant species. Its rich biodiversity is due, largely, to the wide range of climatic conditions and habitats found in the country (from arid deserts to moist, humid subtropical forests) and variable topography (from sea level to high mountains). More than 100 important bird areas occur in South Africa, as well as five endemic bird areas, a number matched by only one other country (Madagascar). South Africa has seven biomes (forest, thicket, savanna, grassland, fynbos, succulent Karoo and Nama Karoo), in which 440 distinct vegetation types have been identified.

Over the past 15 years, government has prioritised people's needs, while safeguarding the country's considerable natural assets. DEAT seeks to protect the interests of South African citizens whose knowledge or traditional use of indigenous biological resources is being used for bioprospecting by ensuring that benefits derived from commercial exploitation are shared equitably. This also ensures that South Africa's extraordinary plant biodiversity is not commercially exploited by pharmaceutical companies from other countries in an improper fashion. It is based on a legal framework through which communities are rewarded for their knowledge about the use of certain plants.

The apartheid era took a particularly heavy toll on South Africa's communities, biodiversity and ecosystems. In addition to widespread impoverishment and social dislocation, the policies of that period caused significant ecological damage. The majority of the population was confined to 13% of the country's total surface area in overcrowded homelands. These areas suffered massive deforestation, soil erosion and loss of biodiversity. Subsidies on water, energy and agricultural inputs (available to white industrial, agricultural and domestic users) led to wasteful practices in respect of the soil, rivers and wetlands of the country.

### What is biodiversity?

Biological diversity is the total variety of living organisms in all ecosystems on earth, the genetic difference between them and the communities and ecosystems in which they occur. It is the 'natural wealth' of earth, which supplies all our food and much of our shelter and raw materials.

Endangered species need to be protected.



The establishment and expansion of national and provincial parks in many parts of South Africa was accompanied by severe hardship for people. For example, in the 1960s, the Makuleke community in the north of the Kruger National Park was forcibly removed, so that the park could be extended northwards to the Limpopo River. Similarly, thousands of people were removed to form the Ndumo Game Reserve and the Tembe Elephant Park in northern KwaZulu-Natal. This also happened in many other areas throughout the country.

Conservation policies typically mirrored the apartheid policies of the day and were aimed at restricting access to protected areas. As a result, the perception grew that conservation was elitist and of no benefit to ordinary people. This perception was reinforced by a military presence in many protected areas.

The peaceful transition in South Africa presented a unique opportunity for redress and recovery. Starting with the Constitution, new policies and legislation have been developed across all sectors, with full public consultation and participation.

An analysis of the development, implementation, impact and challenges for biodiversity conservation and management policy since 1994 reveals a clear trend towards globalisation.

In an international context, the department's responsibilities have been governed by a number of international agreements, conventions, programmes and protocols. The most significant of these are the following:

- Convention on Biological Diversity (CBD): An international convention adopted at the Earth Summit in Rio de Janeiro in 1992 as part of a comprehensive strategy for sustainable development. It establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.
- United Nations Convention to Combat Desertification (UNCCD): An international

convention, one of the three Rio Summit conventions, that was adopted at the United Nations Conference on Desertification in 1997 to promote sustainable development by combating desertification and the mitigation of drought.

- Ramsar Convention on Wetlands: An intergovernmental treaty signed in Ramsar, Iran, in 1971 to provide the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): An international agreement between governments, drafted as a result of a resolution adopted in 1973 at a meeting of members of the International Union for the Conservation of Nature (IUCN) to ensure that international trade in endangered species does not threaten their survival.
- Convention on the Protection of the World Cultural and Natural Heritage (World Heritage Convention): An international convention adopted by the UNESCO General Conference at its 17<sup>th</sup> session in Paris in 1972 to protect cultural and natural heritage around the world that is of such outstanding universal value that its conservation is important for current and future generations.
- Convention on Migratory Species of Wild Animals (Bonn Convention): An intergovernmental treaty concluded under the aegis of the United Nations Environment Programme and signed in Bonn in 1979 to conserve terrestrial, marine and avian migratory species throughout their range.
- UNESCO's Programme on Man and the Biosphere (MAB): A programme that proposes an interdisciplinary research agenda and capacity-building aimed at improving the relationship of people with their environment globally. Biosphere reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognised to promote and demonstrate a balanced relationship between humans and the biosphere.

The department, through its International Cooperation Unit, participates at an international level in discussions around biodiversity-related issues, particularly as they relate to the country's obligations towards the CBD. In 2008, it participated in the meetings of the Conference of the Parties (COP) as a signatory to the CBD, the Cartagena Protocol on Biosafety in the use of GMOs, the UNCCD, the Ramsar Convention, the World Heritage Convention and the Bonn Convention. At these meetings, representatives of the department put forward South Africa's viewpoint, thereby articulating the country's position on key issues such as access and benefit-sharing, liability and redress, protected areas management and the declaration of world heritage sites. As such, it plays an important role in shaping and contributing to international agreements and promoting a global sustainable development agenda.

In a regional context, the department's responsibilities have been governed by regional strategies, programmes and protocols, including the following:

- SADC Biodiversity Strategy: A regional strategy prepared under the auspices of the SADC Biodiversity Support Programme (BSP) and developed through a participatory process that involved extensive stakeholder consultations in SADC member states.
- SADC Protocols and Action Plan on Wildlife: A portfolio of projects that address some of the regional wildlife constraints identified in the SADC Wildlife Policy and Development Strategy adopted by the SADC Council of Ministers in March 1997.
- Transfrontier Conservation Area (TFCA) Programmes: A regional programme for the establishment, development and joint management of transfrontier conservation areas – in accordance with the SADC Protocol on Wildlife Conservation and Law Enforcement, and the TFCA 2010 Strategy. TFCAs are components of a large ecological region that straddle the boundaries of two or more countries, encompassing one or more protected areas, as well as multiple resource use areas. The protocol commits the SADC

member states to promote the conservation of shared wildlife resources through the establishment of TFCAs.

The department's International Cooperation Unit also plays an important role in Africa as a member of the G77 (developing and like-minded biodiverse countries).

The past 15 years have been characterised by a paradigm shift in natural resource management in which conservation from a preservationist approach moved to environmental management that is focused on human rights, access to resources, equity and sustainability. The first 15 years of democracy has seen a thorough overhaul of founding principles, policies and legislation to achieve justice, equity and sustainability.

Through its Biodiversity and Conservation Branch, DEAT promotes the conservation and sustainable use of natural resources to improve economic growth and alleviate poverty for present and future generations. The functions and responsibilities of the branch entail biodiversity and heritage conservation inside and outside protected areas. Its activities are supported by the work of three public entities: South African National Parks (SANParks), the South African Biodiversity Institute (SANBI) and the iSimangaliso Wetland Park Authority.

The activities of the branch are focused on the development and implementation of regulatory tools for the effective management of biodiversity. The legislation that governs the work of this branch is the National Environmental Management Act (Act 70 of 1998), the National Environmental Management: Protected Areas Act (Act 57 of 2003) and the National Environmental Management: Biodiversity Act (Act 10 of 2004), as well as applicable international conventions such as CITES, the World Heritage Convention and the CBD.

The National Environmental Management Act (NEMA) provides for cooperative environmental governance by establishing

principles for decision-making across all spheres of government on matters that affect the environment. It provides for the prohibition, restriction and control of activities that are likely to have a detrimental effect on the environment.

### Protected areas

Protected areas have been recognised globally as being the most effective means of conserving biodiversity. They are essential in achieving the objectives of the CBD, the Johannesburg Plan of Implementation (developed at the 2002 World Summit on Sustainable Development) and the Millennium Development Goals.

Protected areas provide a range of goods and ecological services, while they preserve natural and cultural heritage. In addition, they provide opportunities for environmental education, tourism and recreation, as well as for research, including adaptive measures for climate change.

The National Environmental Management: Protected Areas Act provides for the protection and management of ecologically viable areas representative of the country's biological diversity. It envisages a national register of protected areas, with a simplified classification system that allows for varied degrees of biodiversity use, such as special nature reserves, national parks, nature reserves, world heritage sites and protected environments. It also provides

for the management of protected areas in accordance with national norms and standards, and for co-management of protected areas between a management authority and a local community. It supports the development of a Protected Areas Management System in order to ensure efficient and uniform management of protected areas throughout the country.

Tools that have been developed to aid the implementation of this act include the Regulations for the Proper Administration of National Parks and World Heritage Sites, the National Protected Areas Expansion Strategy (NPAES), the Protected Areas Register, the Draft Management Plan Framework, a Memorandum of Agreement (MoA) between DEAT and the Minister of Land Affairs on the settlement of land claims in protected areas, the National Co-management Framework, the Draft Regulations for the Proper Administration of the Knysna Protected Environment, the Draft Regulations for the Proper Management of Nature Reserves and the Draft Policy on Hunting in Buffer Zones to National Parks.

Associated legislation that complements the Protected Areas Act in relation to the management of world heritage sites is the World Heritage Convention Act (Act No 49 of 1999). This act provides for the cultural and environmental protection of and sustainable development, as well as related activities, in a world heritage site. In accordance with this act, regulations have been put in place for the proper management of iSimangaliso

as a world heritage site, while regulations for the management of the Vredefort Dome are being finalised with landowners and affected provinces (the Free State and the North West).

The NPAES uses systematic conservation planning approaches to ensure the establishment of comprehensive, ecologically representative and effectively managed terrestrial and marine areas that address ecosystem-wide needs and reduce the current rate of biodiversity loss. In the next five years, in order to move a quarter of the way to meeting the 20-year protected area targets, 2.7 million hectares or 2.2% needs to be added to the terrestrial protected area network (in order to achieve an additional 2.4% of land surface of South Africa under

protection). This includes all protected areas; not only national parks. A further 88 km needs to be added to the inshore marine protected area network, while 52 500 km<sup>2</sup> needs to be added to the offshore marine protected area network in South Africa's mainland exclusive economic zone (EEZ). In terms of the Prince Edward Islands EEZ, which forms part of South African territory, 23 300 km<sup>2</sup> needs to be added to the offshore marine protected area network. The plan will be complemented by provincial implementation plans to ensure action at local level.

As part of the endeavour to expand the country's conservation estate, existing national parks have been further expanded by more than 500 000 hectares over the

	Current protection level*	Addition needed in next five years	20-year target
<b>Land-based</b>	6.1% (7.9 m hectares)	2.2% (2 m hectares)	12%
<b>Marine inshore**</b>	No-take: 9.1% (334 km)	No-take: 1.5% (56 km)	No-take: 15%
	Total: 21.5% (785 km)	Total: 2.4% (88 km)	Total: 25%
<b>Marine offshore: mainland EEZ</b>	No-take: 0.16% (1 671 km <sup>2</sup> )	No-take: 3.7% (39 887 km <sup>2</sup> )	No-take: 15%
	Total: 0.4% (4 172 km <sup>2</sup> )	Total: 4.9% (52 551 km <sup>2</sup> )	Total: 20%
<b>Marine offshore: Prince Edward Islands EEZ</b>	No-take: 0% ***	No-take: 3.8% (17 508 km <sup>2</sup> )	No-take: 15%
	Total: 0%	Total: 5% (23 344 km <sup>2</sup> )	Total: 20%

### Land-based and marine protected area targets, as well as areas still required to meet targets

#### Notes

\* An area is considered protected if it falls within a protected area recognised in the Protected Areas Act.

\*\* Marine inshore targets are measured in kilometres of coastline because of the varying distances with which inshore marine protected areas (MPAs) extend from the coastline. Inshore is considered to mean from the high-water mark to the 30 m depth contour. All inshore MPAs extend at least this far. In future, we will move towards using a more accurate area-based measure for inshore MPA targets, but this is not possible with current data.

\*\*\* Fishing has been excluded from a twelve-mile exclusion zone (3% of the PEI EEZ), but the area has not been promulgated as an MPA.



The Mapungubwe Cultural Landscape is a world heritage site.

past 15 years with the establishment of eight new national parks. Two new Ramsar sites (Makuleke and Prince Edward Islands) have been designated over this period and eight world heritage sites have been declared.

Land claims in terms of the Restitution of Land Rights Act (Act No 22 of 1994, as amended) affect some of the country's national parks and world heritage sites. In settling these claims, recognition is given to the fact that persons and communities were dispossessed of rights as a result of past racially discriminatory laws and practices in protected areas. Following the settlement of land claims against areas of high biodiversity significance, the development of beneficiation models, as well as co-management agreements, will be concluded in such a way that the benefits to the claimants are tangible, realistic and optimal, while not compromising the financial sustainability of the protected areas. Cabinet Memorandum No 5 of 2002, a joint government position on the settlement of restitution claims against national parks, world heritage sites and state forests under national government, approved the restoration through the transfer of title without settlement rights, but with registered notarial deed restrictions on the use of the land.

The resolution of land claims in protected areas poses a huge challenge in relation to striking a balance between the interests of the communities who were displaced from their ancestral land by apartheid laws and the need to conserve the country's rich natural and cultural heritage for present and future generations. In an approach to reach this balance, a Memorandum of Agreement (MoA) was concluded between the Minister of Environmental Affairs and Tourism and the Minister of Land Affairs in 2007.

The MoA provides a coherent national framework for the settlement of land claims in protected areas. A national framework for the co-management of protected areas between conservation authorities and successful restitution claimants has been developed to ensure beneficiation from protected areas by land claimant communities and the broader

society. This framework has been consulted widely with stakeholders affected by the establishment of protected areas. A community levy is being considered as one of the key beneficiation tools that could guarantee financial benefits to the claimant communities. This will not add a burden to the fiscus and will guarantee other potential income for claimant communities. A post-settlement support implementation framework will need to be put in place in the interests of both conservation and sustainable development.

The Kids in Parks (KIP) programme, which is in its fifth year of operation, promotes a conservation ethic with mutual benefits for people and parks. It was conceptualised in line with section 41(1) of the Constitution, which makes provision for cooperation between institutions and departments. The programme plays a vital role in providing meaningful environmental learning within the framework of outcomes-based education and Curriculum 2005.

The programme provides learners with insight about the national park system, careers in conservation and their heritage. Apart from the curriculum-based activities, some sporting activities and life skills, such as team-building activities, are provided, depending on what the park has available. The partnership programme involves DEAT, the Department of Education and SANParks, as well its major sponsor, Pick n Pay. This partnership was formalised in October 2004 through the signing of a Memorandum of Understanding (MoU) for a period of three years.

Initially, it was anticipated that the programme would expose 5 000 learners and 50 educators from previously disadvantaged backgrounds to 15 of the national parks managed by SANParks during the three-year period. By the end of 2006, the programme had exceeded expectations with the participation of more than 7 069 learners and 430 educators in the three-day fun-filled trip into the park closest to them.

Against this background, the Minister of Environmental Affairs and Tourism requested

the programme to be extended through the inclusion of more protected areas. The extension was agreed to through the signing of an amended MoU between the partners in 2008 and 2009. Therefore, the programme has been extended for an additional two-year period until 2010.

To provide local people with the key principles necessary for the successful implementation of projects related to Community-based Natural Resource Management (CBNRM), guidelines have been developed that encourage local municipalities to incorporate CBNRM into their respective Integrated Development Plans (IDPs) and Local Economic Development (LED) strategies. In order to reach people at local levels, the guidelines were developed in all official languages and were further complemented by an implementation toolkit that provides user-friendly information and methods to enhance the implementation of CBNRM projects at the community level.

The toolkit has been successfully used by community-based organisations, local economic development officers and councillors, community development workers, non-governmental organisations, donor agencies, the private sector, agricultural officers, teachers and conservation officials. Furthermore, CBNRM radio episodes were developed and broadcast on 13 community radio stations across the country, with a listenership of approximately 4.5 million.

In implementing the guidelines, the department funded pilot projects across the country to the value of approximately R33 million through its social responsibility programme. The projects have further assisted various communities to access high-quality drinking and irrigation water, improve agricultural production systems, reverse the process of land degradation, and improve tourist road access and vehicle control in community conservation areas. The projects have assisted some communities to restock and introduce game species and engage in the conservation

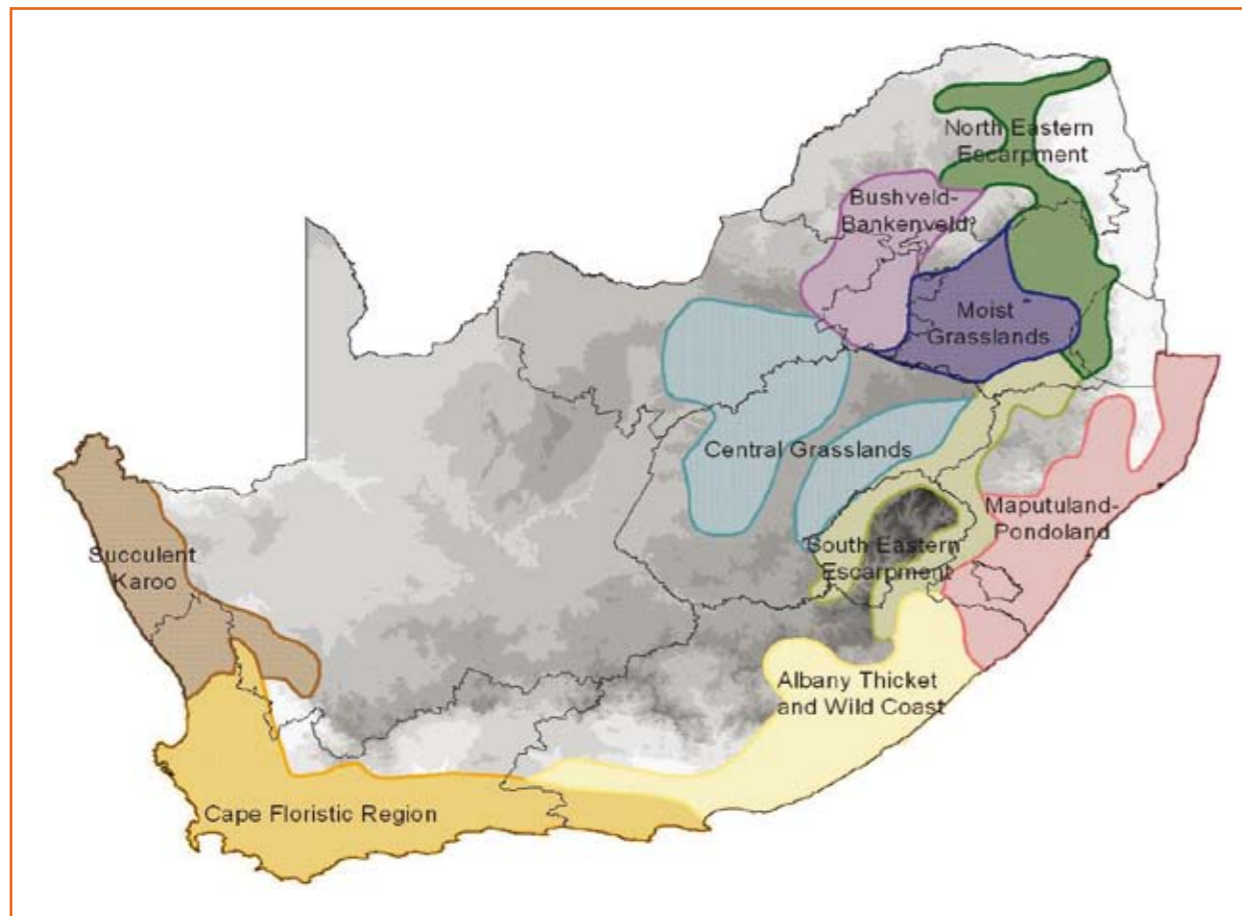
management of communally owned game reserves. Communities have undertaken land and catchment rehabilitation through alien vegetation control and bush clearing, secured sites for propagation, cultivated and processed medicinal plants and herbs, and established and developed marketing and promotional materials.

### **Biodiversity conservation**

In a national context, South Africa's policy and legislative framework has been strongly influenced by international agreements. The White Paper on Conservation and the Sustainable Use of South Africa's Biological Diversity was developed through the Consultative National Environmental Process (CONNEP), and provides the South African policy for the implementation of the CBD. It also sets out a number of goals, strategies and priorities for conservation, sustainable use and equitable benefit-sharing.

People depend on healthy ecosystems and sufficient natural resources to support their livelihoods. To implement the white paper, and as part of the response to the obligations of the CBD, a National Biodiversity Strategy and Action Plan (NBSAP) was developed and published in 2005. This sets out a framework and a plan of action for the conservation and sustainable use of South Africa's biological diversity and equitable sharing of benefits derived from this use. It was underpinned by the National Spatial Biodiversity Assessment, which confirmed that the current system of protected areas does not conserve a representative sample of South Africa's biodiversity in either the marine or terrestrial environments. This is largely because these areas were set aside with limited consideration of biodiversity and the maintenance of ecological processes. A large proportion of biological diversity and ecosystem processes are found outside terrestrial and marine protected areas.

The following nine broad priority areas have been identified for conservation action.



In response to the recommendations of the white paper, the National Environment Management: Biodiversity Act (NEMBA) was promulgated, which provides a regulatory framework to protect South Africa's valuable species, ecosystems and entire biological wealth. The act provides the norms and standards for the conservation, sustainable use and equitable benefit-sharing of South Africa's biological resources, and provides for the management and conservation of South Africa's biodiversity within the framework of NEMA. It protects species and ecosystems that warrant national protection, and manages the sustainable use of indigenous biological resources, as well as the fair and equitable sharing of benefits arising from bioprospecting, involving indigenous biological resources. The implementation of this act brought about the establishment of the South African National Biodiversity Institute (SANBI).

Further milestones related to the implementation of this act include the development and approval of the National Biodiversity Framework (NBF), the development of the Threatened or Protected Species (TOPS) Regulations, the publication and implementation of the Ecological Risk Assessment (ERA) Framework for Genetically Modified Organisms (GMOs), the development of the Bioprospecting, Access and Benefit-sharing (BABS) Regulations, the approval of the Alien and Invasive Species (AIS) Regulations, the development of National Norms and Standards for the Management of Elephants in South Africa, Norms and Standards for Biodiversity Management Plans for Species and the publication of a guideline for the determination and publication of bioregional plans. The finalisation of the norms and standards pertaining to hunting, damage-causing animals and the management of

elephants in captivity are future challenges, particularly in respect of those that have received mixed public reaction. A national strategy on invasive species, norms and standards of biodiversity management plans for ecosystems, and the listing of aquatic ecosystems that are threatened will also receive attention in future.

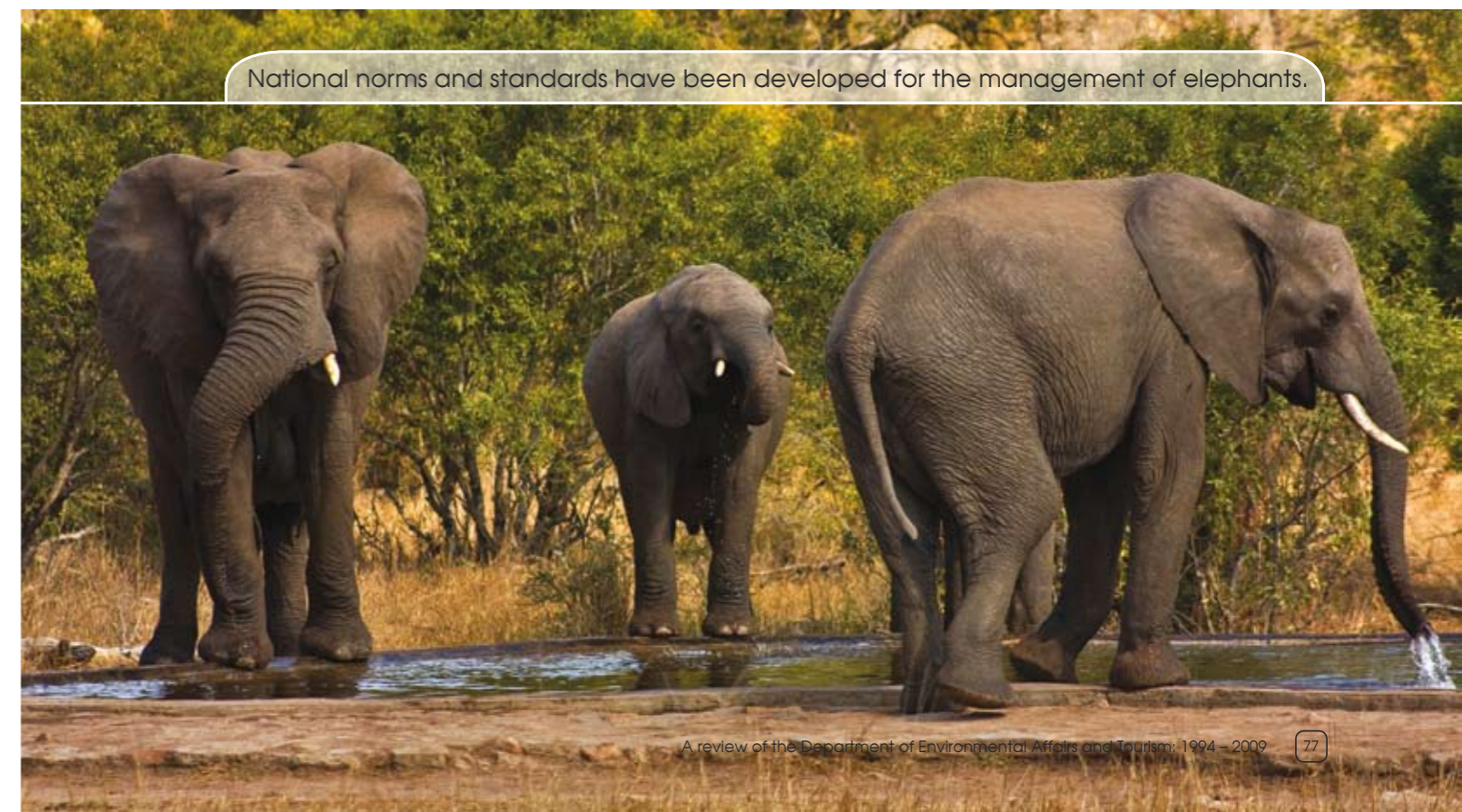
The National Biodiversity Framework (NBF) identifies priority actions for biodiversity management for lead agents for the following five years and sets out the implications of these priority actions for agencies. It forms the blueprint for the conservation of biodiversity in South Africa as it provides for an integrated, coordinated and uniform approach to biodiversity management and highlights the major pressures on biodiversity in South Africa. A draft list of threatened and protected terrestrial ecosystems has been drawn up for publication.

Although biodiversity, conservation and ecosystem management have been noted as important aims in policy and legislation governing natural resources, the other more important element is the vast number of economic opportunities achieved through the proper management and control of these

resources. In 2002, the South African wildlife industry (veterinary services, game capture, hunting and taxidermy) was estimated to be worth almost R1 billion a year. This excludes any money generated from tourism accommodation, entrance fees and game sales.

South Africa's hunting industry is relatively large, with between 5 000 and 6 000 hunters having visited the country during the 2003/04 hunting season. In addition, South Africa has an estimated 200 000 resident hunters. Hunting offers a viable form of land use in areas not suitable for other forms of income generation. Multiple income-generating activities are possible on areas that offer hunting, as these areas are also used for photographic safaris, ecotourism and extreme sports. It therefore became necessary to establish regulations governing activities involving threatened or protected species.

The TOPS Regulations came into effect on 1 February 2008. These regulations introduced a uniform national system for the permitting of listed species, and the registration of captive breeding operations, commercial exhibition facilities, game farms, nurseries, scientific institutions, wildlife traders, sanctuaries and



National norms and standards have been developed for the management of elephants.

rehabilitation facilities. They further regulate restricted activities involving listed threatened or protected species, such as hunting, and prohibit specific restricted activities involving threatened or protected species so as to protect wild populations of these species. This is the first set of regulations that will regulate the movement and subsequent activities involving listed wildlife species on a national basis. Further to the regulations, a guideline document has been developed to provide stakeholders with more information pertaining to its implementation. DEAT issued permits to provincial authorities and SANParks during 2008/09.

As an instrument for the mitigation of threats to biodiversity, the AIS Regulations provide guidelines for the management of alien and invasive species wherever they occur in the country. Delays were experienced in achieving the targets of the National Strategy on Invasive Species and biodiversity management plans for ecosystem listing owing to the need to build a consensus and development objectives.

The development of the ERA Framework for GMOs supports the implementation of the provisions set out in NEMA and NEMBA and informs decision-making involving biosafety. GMO permit applications are assessed using biosafety guidelines to determine effects on biodiversity, changes in agricultural management practices, effects on non-target organisms and food webs, and persistence, weediness and invasiveness. A draft biosafety research strategy has been developed, while the need to establish what impacts GMOs are having on the environment nationally gave rise to the establishment of a donor-funded project on assessing the impact of commercially released GMOs on the environment. The ERA Framework also resulted in a process to develop a similar framework for genetically modified fish.

The BABS Regulations commit South Africa, as one of the few mega-biodiverse countries in the world and signatory to the CBD, to the sustainable use of biological diversity,

as well as the fair and equitable sharing of benefits arising from genetic resources. These regulations aim to further regulate the permit system set out in NEMBA in so far as that system applies to bioprospecting involving indigenous biological resources, and export from South Africa of any indigenous biological resources for the purpose of bioprospecting or any other kind of research. Furthermore, the regulations set out the content of, and requirements and criteria for benefit-sharing and material transfer agreements. Hence, they become a vital step to ensuring that benefits received from bioprospecting are maximised, and that the provider of access to the resources and the holder of indigenous knowledge about the resources are rewarded fairly.

The National Norms and Standards for the Management of Elephants in South Africa came into effect on 1 May 2008. Their purpose is to ensure that elephants are managed in a way that ensures their long-term survival in the ecosystem in which they occur or may occur in future, to promote broader biodiversity and socio-economic goals that are ecologically, socially and economically sustainable and enable the achievement of specific management objectives of protected areas, registered game farms, private or communal land, and that products such as hair, skin, meat and ivory are used in a sustainable manner.

As the management of natural resources is based on balancing scientific input and sustainable development issues, it tends to be contentious and highly emotive. This was particularly the case in the development of the norms and standards for the management of elephants in captivity (with input from the Department of Agriculture), norms and standards for the management of damage-causing animals (to provide for species that are not listed under the TOPS Regulations so as to regulate the management of animals that cause damage to livestock, crops and – to some extent – wildlife game farming), and norms and standards for the management of hunting.

Norms and Standards for Biodiversity Management Plans for Species were published to guide the development of species management plans, as NEMBA makes provision for any person, organisation or organ of state, who wishes to contribute to biodiversity management, to submit draft management plans to the Minister for approval.

The guidelines for the determination and publication of bioregional plans that were published will guide the biodiversity planning processes. SANBI has initiated four bioregional programmes: the Cape Action for People and the Environment (CAPE), the Succulent Karoo Ecosystem Programme (SKEP), the Subtropical Thicket Ecosystem Programme (STEP) and the National Grassland Biodiversity Programme. Biodiversity conservation and tourism frameworks have also been finalised for the Wild Coast and Blyde River areas.

Other programmes that contribute to the conservation of the country's biodiversity include the National People and Parks Programme, the Working for Wetlands Programme, the UNCCD National Action Programme that links combating land degradation and the alleviation of poverty, implementation programmes for CITES and the Biodiversity Stewardship Programme of South Africa (BSSA).

The National People and Parks Programme came about during the World Parks Congress that was hosted by the South African government in collaboration with the IUCN. This congress looked at ways of ensuring the survival of protected areas by integrating what has in the past been considered conflicting interests and priorities: communities and business. Protected areas will not survive unless they enjoy broad public support. This will not happen unless people's fundamental needs are met. Competing land-use and resource management conflicts, inequities or impacts do not go away simply because an area is given protected status. For all these reasons, the planning and management of protected areas must be coordinated with

the use and management of other areas, rather than treated in isolation.

The BSSA aims to encourage conservation on private land. A guideline document has been developed and the programme is already being implemented in three provinces. This programme involves the willing participation of landowners outside of state-owned protected areas and contributes to the expansion of the conservation estate. Incentives for the landowners have already been negotiated with Treasury. A framework for fiscal incentives for biodiversity management is also being researched, which looks at a broad range of incentives.

#### **Transfrontier conservation areas**

Transfrontier conservation areas (TFCAs) are a bold new concept in regional cooperation for the benefit of the environment and tourism. The TFCAs are premised on the understanding that as nature does not recognise or respect human borders, so – in our quest to protect and conserve our biodiversity – we should not allow national boundaries to compromise our sustainable development efforts. A TFCA is, in essence, two linked conservation areas divided by a national boundary, but managed jointly by two (or more) partner countries as a single entity. The goal is to create conservation corridors spanning national borders (thus allowing the holistic management of the entire conservation area), while simultaneously promoting tourism on a regional basis.

South Africa is currently involved in the management of six TFCAs, which entail partnerships with neighbouring countries. These are !Ai-!Ais/Richtersveld (Namibia), Kgalagadi (Botswana and Namibia), the Limpopo/Shashe Transfrontier Conservation Area (Botswana and Zimbabwe), the Great Limpopo Transfrontier Park (Mozambique and Zimbabwe), the Lubombo Transfrontier Conservation and Resource Area (Mozambique and Swaziland) and the Maloti-Drakensburg Conservation and Development Area (Lesotho).

The ultimate goal is to consolidate all six TFCAs into a single transfrontier conservation route to unlock the region's tourism potential. In 2005, important progress was made with the adoption by nine SADC member states (including Angola, Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe) of the strategic positioning of TFCAs (in the form of a TFCAs 2010 Strategy) as southern Africa's premier international tourism destination for the future. The main purpose of the strategy was to increase the tourism potential of southern Africa by consolidating the marketing, infrastructure development and investment promotion efforts of existing transfrontier initiatives and to utilise the 2010 Soccer World Cup as a platform to initiate a long-term investment and marketing strategy for TFCAs.

TFCAs are mostly located in poor rural areas, and the projected income boost from increased tourism will help alleviate poverty in these communities. This is done through the development and implementation of treaties and MoUs between South Africa and its neighbouring countries in order to formalise the partnerships. However, the poor tourism and basic infrastructure in TFCAs, especially on the non-South African side of the parks, is a challenge that will need to be addressed in the future.

The key to fulfilling the potential of TFCAs lies in infrastructure development and facilitating

access to TFCAs, while establishing and upgrading tourism facilities to the standards required by tourists. Four access facilities have been constructed so far to ensure the smooth movement of tourists across international borders. Three of them are already in operation. The access facilities include Giryondo, Mata-Mata, Sendelingsdrift and Twee Rivieren. The Mata-Mata tourist access facility, which links Namibia to the Kgalagadi Transfrontier Park (a TFCAs initiative between South Africa and Botswana) was officially opened on 12 October 2007. The investment in these tourist access facilities has delivered dividends in the form of the facilitation of cross-border movement of tourists within the TFCAs. Statistics indicate that more than 200 tourists and 100 vehicles crossed the Mata-Mata tourist access facility in its first month of operation. Fences have also been dropped to create migratory routes for animals in TFCAs.

A TFCAs 2010 Unit has been established in the department to oversee the implementation of the TFCAs 2010 strategy and promote further investment in tourist access facilities through the development of an investment plan, an infrastructure development plan and a marketing strategy for TFCAs. A strategic brand for TFCAs, 'Boundless Southern Africa', was developed and launched at the Tourism Indaba in May 2008. The brand now forms the basis for awareness campaigns and the active marketing of TFCAs. One of the big tour operators, Thompson's Tours, has already started to sell packages that promote

the brand. Work is underway to develop a framework on the joint implementation of the brand by all stakeholders.

Another area of focus is the development of sustainable financing mechanisms for TFCAs. The approach for executing the infrastructure and investment plan for 2010 and beyond has been developed and approved. This includes consolidating short-term infrastructure and investment opportunities, conducting feasibility studies for new opportunities and technical studies for refurbishments, applying the costing models and investment analysis to quantify return on investment, and packaging the bankable opportunities in an investment catalogue.

Research, however, revealed limited awareness among the investor community about tourism investment opportunities. There was also a lack of packaged investment opportunities from the TFCAs. To address this, 50 investment opportunities across all the TFCAs were identified and packaged in a catalogue. The catalogue will not only include site-specific, bankable investment opportunities, but also the country-specific regulatory environment and contact details of the relevant authorities. These opportunities are being promoted to potential investors through different avenues. An investor conference was held in October 2008 to promote the opportunities to potential investors, and two deals, worth R70 million, between investors and project owners have been signed.

### World heritage management

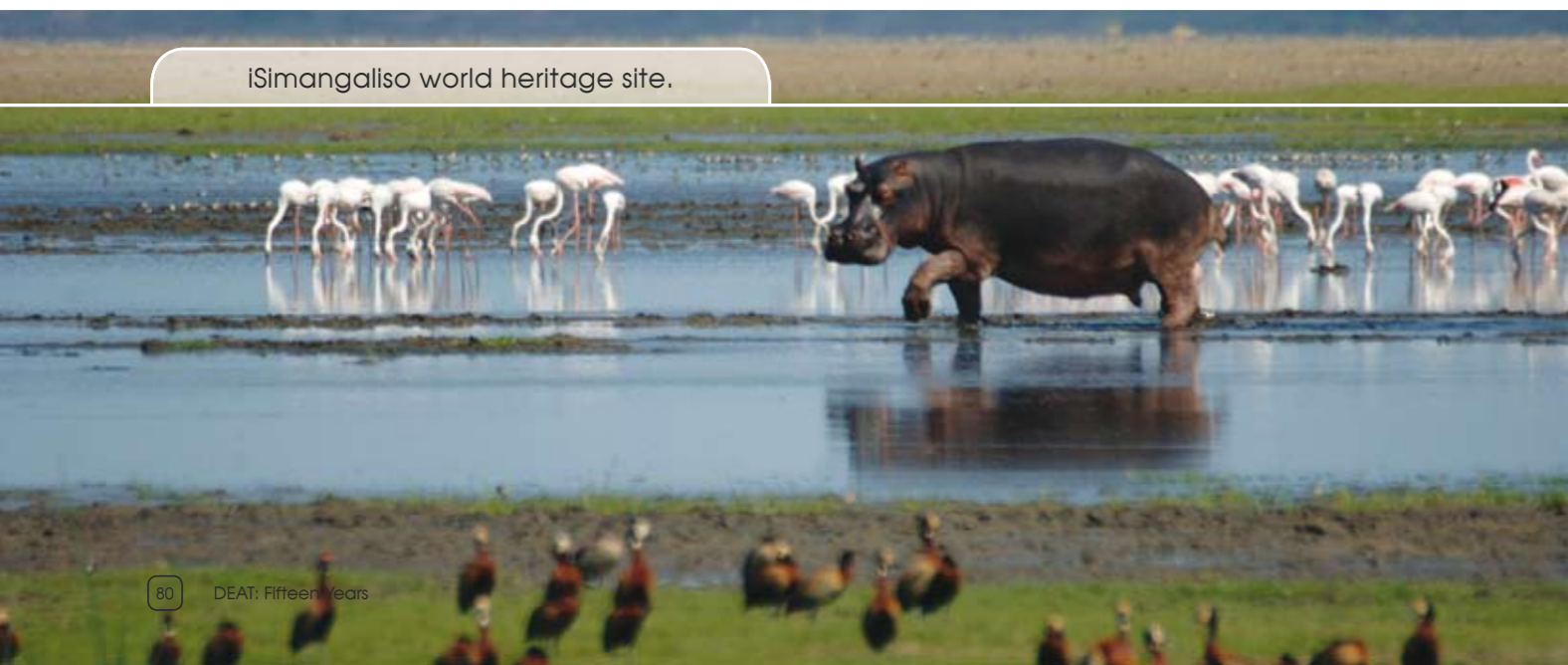
In 1997, South Africa ratified the World Heritage Convention. Two years later, this convention was converted into national law with the enactment of the World Heritage Convention Act (Act No 49 of 1999). Since its promulgation, eight South African sites had been inscribed on the world heritage list of the United Nations Educational, Scientific and Cultural Organisation (UNESCO). These are iSimangaliso Wetland Park (1999), Robben Island (1999), uKhahlamba Drakensberg Park

(2000), Mapungubwe Cultural Landscape (2003), the Cape Floral Region Protected Areas (2004), Vredefort Dome (2005), the Richtersveld Cultural and Botanical Landscape (2007) and the Fossil Hominid Sites of South Africa (1999 and 2005), comprising the Cradle of Humankind (1999), the Taung Skull Fossil Site and Makapan Valley.

In terms of the World Heritage Convention Act, a world heritage site is defined as any place in South Africa that has been included on the world heritage list and the South African tentative list, and which has been proclaimed by the Minister by notice in the Government Gazette to be a world heritage site. With the exception of the Vredefort Dome, all of these sites were legally proclaimed as world heritage sites and management authorities were formally appointed between 2000 and 2009 in terms of the legislation.

In 2005, the department collaborated with the Department of Arts and Culture to host the 29<sup>th</sup> session of the UNESCO World Heritage Committee in Durban. This was the first meeting of the committee in Sub-Saharan Africa. Two years later, the department hosted the UNESCO African Regional Youth Workshop in Cape Town. In 2009, within the context of the UNESCO world heritage thematic study on pre-history, the department hosted an international conference on rock art at the uKhahlamba Drakensberg Park world heritage site.

In order to ensure the broader participation of stakeholders and rope in expertise advice in the implementation of the World Heritage Convention, the Minister established the South African World Heritage Convention Committee (SAWHCC). The committee is constituted of representatives from the nine provincial departments of environment, and arts and culture, national statutory bodies that are responsible for environment and heritage, the national Department of Arts and Culture, the Department of Foreign Affairs and DEAT.



iSimangaliso world heritage site.

## National conservation entities

The work of the department's Biodiversity and Conservation programme is supported by the activities of three individual entities that report to the Minister of Environmental Affairs and Tourism:

- South African National Parks (SANParks)
- iSimangaliso Wetland Park
- South African National Biodiversity Institute (SANBI)

### South African National Parks

South African National Parks is a Schedule 3A public entity in terms of the Public Finance Management Act, with a board of directors that serves as its accounting authority. The Minister of Environmental Affairs and Tourism is the executive authority of this public entity. It was established in terms of the National Environmental Management: Protected Areas Act, 2003, which repealed the National Parks Act (Act No 57 of 1976).

SANParks develops and manages a network of 22 national parks (including the corporate head office property in Pretoria, which is also proclaimed as a national park). The proclamation of the Garden Route National Park (consisting of Tsitsikamma, Wilderness, and the Knysna Lakes Area) will reduce the network to 19 national parks. The national parks represent the indigenous biodiversity,

landscapes and associated cultural heritage of the country for the sustainable use and benefit of all. SANParks promotes the conservation of the country's natural and cultural heritage at local, national and international level, and plays an important role in promoting ecotourism.

Since 1994, its focus has been to make national parks more accessible to tourists and the general public (in particular the local communities living adjacent to the parks) in order to ensure that conservation remains a viable contributor to social and economic development in rural areas. The conservation estate under its protection totals approximately 4 million hectares in the country's arid, coastal, mountain and bushveld habitats. It manages, conducts research and monitors programmes in South Africa's key biomes: grassland, forest, fynbos, succulent Karoo, Nama Karoo, savanna and thicket.

The area of protected land managed by SANParks has been steadily expanded through several innovative initiatives, including contractual parks, public-private initiatives, as well as the traditional means of purchasing identified land that is important for biodiversity management. SANParks's mandate is not just to expand the total land area under conservation, but to focus on land that represents under-conserved biomes, and to consolidate fragmented national parks into contiguous areas.

Eight new national parks have been proclaimed over the past 15 years. The national parks in the country's national parks system are the following:

South Africa's national parks		
Park	Year proclaimed	Total park area in hectares
Addo Elephant	1931	119 928.38
Agulhas	1999	16 190.31
Augrabies Falls	1966	48 253.47
Bontebok	1961	3 415.67
Camdeboo	2007	14 459.36
Garden Route (includes Tsitsikamma, Wilderness)	2009	126 388.56
Golden Gate Highlands	1963	34 799.02
Groenkloof	1968	6.81
Kalahari Gemsbok	1931	958 955.15
Karoo	1979	73 146.59
Kruger	1926	1 917 774.33
Mapungubwe	1998	15 236.73
Marakele	1994	58 501.70
Mokala	2005	19 657.82
Mountain Zebra	1937	7 101.78
Namaqua	2001	75 456.29
Richtersveld	1991	162 377.68
Table Mountain	1998	19 374.70
Tankwa Karoo	1986	89 919.12
Tsitsikamma	1964	59 153.63
Vaalbos	1986	4 979.38
West Coast	1985	29 748.59
Wilderness	1983	2 920.30
<b>Total</b>		<b>3 857 745.48</b>

The conservation status of important biomes, including grassland, succulent Karoo and lowland fynbos, has been promoted through some notable recent inclusions into the national parks system. Some 24 000 hectares of grassland was added to the Golden Gate Highlands National Park in November 2008 with the declaration of the former QwaQwa Reserve as part of the national park. An agreement was signed with De Beers in November 2008 for the incorporation of 35 000 hectares of the sandveld vegetation type between the Groen and Spoeg

Rivers into the Namaqua National Park. Both the Namaqua National Park and the Tankwa Karoo National Park in the succulent Karoo biome have been expanded to over 100 000 hectares, while the Addo Elephant National Park has been expanded to over 164 000 hectares. The new Garden Route National Park consists of approximately 52 500 hectares of newly proclaimed land, as well as 68 500 hectares of the former Wilderness and Tsitsikamma national parks, bringing the total surface area of the new park to 121 000 hectares.



Augrabies Falls National Park.



Management plans for all national parks have been developed for approval by the Minister of Environmental Affairs and Tourism, in accordance with the National Environmental Management: Protected Areas Act.

There are currently 27 claims against national parks, covering 25% of its conservation estate. Of these claims, the highest number of claims is against the Kruger National Park. The other parks that are affected by land claims are Mapungubwe, QwaQwa (Golden Gate Highlands), Au-grabies Falls, West Coast and Namaqua. Two land claims against the Tsitsikamma and Vaalbos national parks have been settled. In the case of Vaalbos, the entire land area of the park was given to the land claimant community and SANParks relocated to a new park area (Mokala in the Northern Cape).

Four of the national parks under the management of SANParks form part of transfrontier conservation areas (TFCAs). These are Kalahari-Gemsbok (Kgalagadi), Kruger (Great Limpopo), Richtersveld !Ai!Ais/Richtersveld) and Mapungubwe (Limpopo/Shashe). SANParks is the South African government's implementing agent in these TFCAs, rendering all the professional and logistical support to these projects. It also takes part in the Maloti/Drakensburg Conservation and Development Area, which forms part of the Golden Gate Highlands National Park.

It is not just the country's natural and biological diversity that is conserved in the areas of land set aside for protection in national parks. The country's cultural heritage and history are also important aspects that need to be conserved. National parks contain several examples of rock art and other evidence of earlier human settlement. Identifying and preserving these sites is an important priority for SANParks. A cultural mapping project was launched in 2005 to identify cultural heritage sites in South Africa's national parks that need to be conserved, and that provide opportunities for cultural tourism. SANParks' cultural heritage programme strengthens the implementation of cultural resource management and indigenous knowledge in national parks.

Heritage tourism opportunities include the archaeological sites in the Mapungubwe National Park, as well as the Thulamela and Masorini sites in the Kruger National Park. Most other parks also have a variety of Stone Age and Iron Age sites. Historical buildings in the national parks range from the remnants of old kingdoms to old colonial buildings and the Agulhas Lighthouse. Impressive and very old rock art has been left behind by the San and Khoekhoen throughout South Africa. Examples of these sites can be seen in shelters in the Golden Gate Highlands, Mapungubwe, Tsitsikamma, Mountain Zebra and Kruger national parks. Fossils can be found in the Golden Gate Highlands, Karoo,

Mapungubwe and West Coast national parks. Historical war sites, which include the battlegrounds of the Anglo-Boer War, can be found in the Golden Gate Highlands National Park. There are ancestral graves in most national parks.

In addition to conserving the country's indigenous biodiversity and cultural heritage, SANParks also plays an important role in the management of species within the various biomes that are protected in its network of parks. It has the largest population of black rhinoceros (500) and white rhinoceros (13 000) in the country, and is a leading supplier of these animals to the market. It also has the largest population of elephant (15 000) in the country.

Since 1999, SANParks has engaged in the widest public consultation and debate on elephant management in South Africa. This led to the development of the National Norms and Standards for the Management of Elephants in South Africa. It is at the forefront of restocking other range states of Africa with endangered mega-fauna and has supplied 30 white rhinoceros to Botswana, 20 black rhinoceros to Zambia and 60 Eastern black rhinoceros to Tanzania. It contributed the biggest stock of ivory and led the process to consolidate efforts for the sale by South Africa of nearly double the initial approval of 30 tons approved by CITES. The funds will be used to promote the elephant conservation agenda in line with the CITES requirements.

As most of the organisation's income is generated through tourism, the development and maintenance of infrastructure forms an important part of its operations.

Since the democratisation of South Africa, the entity has successfully managed to transform itself into an organisation that provides ecotourism experiences to all the people of South Africa and protects South Africa's natural heritage for future generations. It has also launched a business approach to tourism and generates up to 80% of its own operating revenue, thereby

diminishing reliance on Operational Grant funding. The Kruger National Park accounts for nearly 70% of of SANParks's gross revenue. In 2008/09, this park alone contributed R351 million to SANParks's total income of R580 million (excluding government grants). It is projected to contribute R403 million of a total of R651 million worth of revenue (excluding grants) during 2009/10. Other parks that generate a good income for the organisation are Table Mountain, Addo Elephant and Tsitsikamma (now part of the Garden Route National Park).

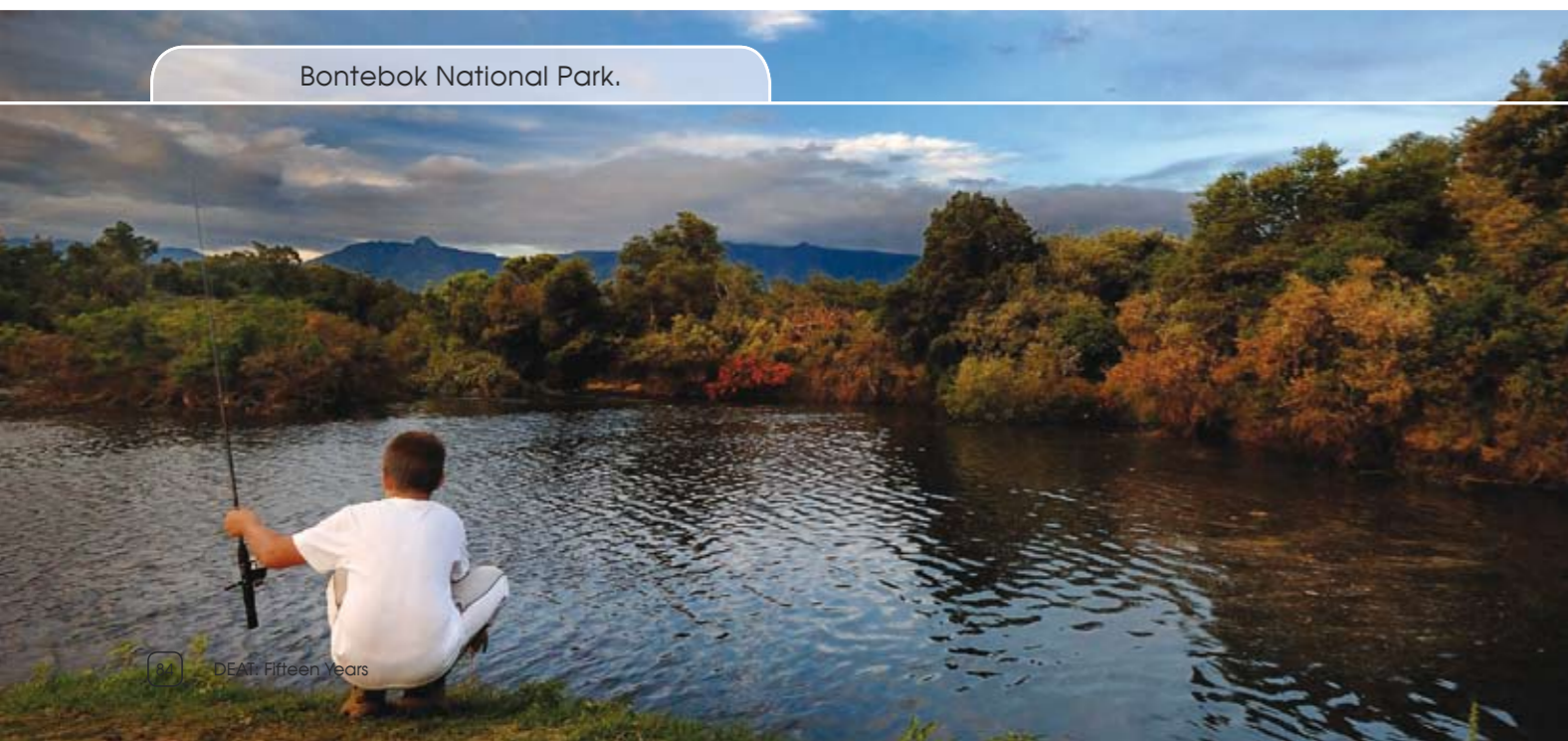
Together with three provincial agencies (Mpumalanga, North West and KwaZulu-Natal), SANParks raised R67 million through the sale of legal ivory.

The organisation's Revenue Generation Strategy over the last 10 years has to a large degree been focused on two key components: to maximise income from its own tourism operations and to develop a commercialisation strategy by outsourcing 'non-core' operations and developing new products through public-private partnerships.

In 2000, SANParks adopted a commercialisation and conservation strategy that involved making concessions available at carefully chosen sites in various national parks for private lodges. At the same time, certain commercial operations like shops and restaurants were outsourced. These sites were specifically chosen for their combination of low volume, low impact and high revenue. Eleven concession sites were awarded to private operators. Of these, seven are in the Kruger National Park and two in the Table Mountain National Park. In addition, 21 shops and 17 restaurants across all national parks are managed by private operators.

Through this strategy, SANParks can rely, with a degree of certainty, on a guaranteed income stream over the 20-year concession period, which makes a major contribution to the future finances of the organisation. The entity is also able to transfer the risks involved in the running of these undertakings, and is

Bontebok National Park.



confident that they are properly managed with private capital.

The model that is followed with the establishment of concession lodges is one in which the investor constructs a development on park property, operates it, and then transfers the structure that has been developed to SANParks at the end of the concession lease period of 20 years, thereby optimising value for the government. This has obvious infrastructure benefits for the organisation and has resulted in infrastructure development worth over R360 million (in 2006 terms) for SANParks. In addition, over R30 million worth of refurbishment value is received for the outsourced shops and restaurants.

Further added value of these concessions for SANParks relates to market penetration, as the programme has allowed SANParks indirect entry into the five-star market segment. Socio-economic benefits include the creation of at least 620 additional jobs, excluding construction jobs, the recruitment of 79% of employees from historically disadvantaged communities adjacent to the parks, and a guaranteed minimum spend by the concessionaires of R14 million per annum with local SMMEs. There is also considerable skills transfer and training on an ongoing basis, and the country benefits through the tourism multiplier effect on the broader economy.

In addition to the development of concessions to supplement its income, the organisation has also benefited from a better yield of accommodation rates on the basis of sound historical statistics. In order to collect such data, a Reservations and Property Management System was required. The system that SANParks was using prior to that stage was not suitable and was replaced by the RoomSeeker System in June 2004. All SANParks' accommodation inventory is on this system, which allows accommodation to be booked through central reservations, the various satellite reservation offices in the main towns and cities or at any park around

the country. A second phase of this project was the implementation of a 'real-time' web reservations system. This has proven to be very successful, with over R50 million worth of bookings being made through this system since its launch in November 2007.

The number of tourism accommodation facilities managed by SANParks has increased from 2 866 units in 1997 (1 655 accommodation units, 1 209 campsites and two commercialised units) to 3 618 units in 2009 (2 061 accommodation units, 1 339 campsites and 218 units built and managed by private concessionaires). This has resulted in an increase in the overnight capacity from 12 405 in 1997 to 15 027 in 2009.

The change in the demographic profile of visitors to national parks since the advent of democracy is very encouraging. This indicates that the national parks have become more accessible to communities who had not had the opportunity to visit them prior to 1994. In 2005, when the organisation was able to reliably capture the demographic profile of its visitors, it received 182 814 black visitors (19.7% of the total South African visitors to national parks). This number increased to 248 778 in 2007 (20.6% of the total South African visitors). By the end of 2008, the number of black visitors has increased to 345 559. These visitors now make up 23.2% of all South African visitors to national parks where demographic statistics are captured. The growth of this market, given the national demographics and the emerging black middle class ('black diamonds') requires serious consideration going forward, as it presents a great source of revenue for the organisation.

Historically, South Africa inherited a Eurocentric model of parks from the apartheid government that was managed according to a system that was suited to the relatively wealthy urban societies. However, by the end of the first decade of democracy, the entity's transformation was clearly evident in its support of themes such as 'people and parks' and 'benefits

beyond boundaries'. By then, it had already explored ways and means in which the South African community, especially the parks' neighbouring communities, could reap benefits from biodiversity and champion its protection.

Over the past five years, it has continued on this trajectory of transformation, focusing its community engagement initiatives on the alleviation of poverty and the empowerment of ordinary citizens in the villages adjacent to national parks. Activities include environmental awareness programmes for schoolchildren, developing entrepreneurial skills, creating opportunities for sustainable employment and improving stakeholder liaison. It is committed to enabling people through education, awareness, training and research to take responsibility for the conservation of our natural heritage.

Its environmental education programmes (including the Kids in Parks Programme) have grown to the level where over 100 000 learners are hosted in the national parks every year to undergo park-based environmental education programmes. In 2008, just over 157 000 learners participated in these programmes.

Furthermore, people who have never had the opportunity to visit national parks are targeted with awareness-raising programmes such as Take Kruger to Kassie, a project aimed at Mpumalanga and Limpopo communities who live within 50 km of the Kruger National Park.

Communities benefit from parks in a number of ways, including the clearing and re-use of alien vegetation, limited and controlled harvesting of certain resources in parks, such as mopane worms, firewood and proteas, and the sustainable use of various plants, especially those with medicinal properties.

Several flagship resource use projects have been initiated over the past year. A post-restitution programme to ensure sustainable resource use resulted in an agreement on

cultural heritage resource-use protocols with the Khomani San community, including the contentious issue of traditional hunting and gathering of plants in Kgalagadi. Other projects in national parks included the Suurvy Harvesting Project in Agulhas, the Rustafarian Rooiwortel Nursery Project in Knysna, the Kruger National Park Grass Harvesting Project, the Outeniqua Eco Honey Bee Farming Project in Wilderness, the Mopane Worm Harvesting Project in Mapungubwe and the Fern Harvesting Project in Tsitsikamma.

Resource use is permitted subject to certain conditions being met, such as the rate of resource use not being more than the natural replenishment rate of the resource by an amount that takes into account the uncertainties in both estimates and the scarcity of the resource inside and outside the protected area. The resource itself, any other resource, ecosystem process or dependent biodiversity element must not be threatened, and the activities associated with the resource use must not have an unduly negative impact on the benefits that can be derived from other resources (in meeting park objectives) or on the risks associated with custodianship of the park.

Through its Infrastructure Development Programme, SANParks has put in place over R396 million worth of new and upgraded infrastructure in the parks since 2006, with a further R185 million allocated for 2009/10. The focus of this programme is to upgrade existing facilities – tourism and staff accommodation units – with limited new infrastructure. Together with funding from DEAT's Social Responsibility Programme, SANParks has been able to upgrade 483 staff units and 656 tourism units since 2004.

SANParks also makes use of the Expanded Public Works Programmes (EPWP) for infrastructure development through the efficient implementation of DEAT's Social Responsibility Programme (through which it receives R100 million per annum). The new and developing parks have benefited, in



Over-exploitation of natural resources from the ocean and coastal zone is the single greatest threat to the marine environment.

particular, as eight new restcamps have been built in Mapungubwe, Addo Elephant, Golden Gate Highlands, Namaqua, Tankwa Karoo and Richtersveld. A range of further accommodation facilities have been established, including six new wilderness camps. Since 2001, when infrastructure funding was first made available to SANParks, 541 km of new and upgraded roads and 1 100 km of new and upgraded fences have been constructed in the parks.

Other projects implemented under the EPWP are the Working for Water Programme (the budget grew to R46 million per annum over the past 10 years), and the Working for Wetlands and Working for the Coast programmes (through which it receives R20 million per annum).

In anticipation of the influx of tourists to South Africa for the 2010 FIFA World Cup, SANParks has formulated a strategy, based on the following five key principles:

- Sustainable infrastructure development: Tents that will be used to provide additional accommodation during the World Cup. These will be used across the national parks after the event, based on event-driven demand, such as the Namaqualand flower season, as well as in parks such as the Karoo over the December period.

- Optimal occupancies in parks: SANParks expects to introduce approximately 15 000 people to national parks over the event period. Ongoing cooperation with MATCH will ensure optimal occupancies during the World Cup.
- World-class service: SANParks will strive to provide world-class service on all the products and experiences offered in national parks.
- Retention of committed client base: At least 70% of existing accommodation must be kept available for the loyal domestic customer base. Certain camps will be dedicated to FIFA visitors and the remainder of the camps will be open to the general public. Additional units will be available for loyal customers through the normal booking procedures, as a result of the extended holiday period.
- Optimisation of marketing opportunity and brand-building: The marketing value of new visitors of diverse nationalities could contribute greatly to increased international tourist business. SANParks's agreement with FIFA (through MATCH) provides the organisation with the opportunity to leverage promotional value for SANParks. This agreement will also contribute to the addition of a five-star tented product in SANParks that will bring high-value customers to the parks to experience an 'authentic African experience'. This could play a major role for conservation in South Africa in the future.

## iSimangaliso Wetland Park

The natural systems that are protected in the iSimangaliso Wetland Park (formerly the Greater St Lucia Wetland Park) range from dunes, swamps and coastal forests to rocky, sandy shores, coral reefs and submarine canyons, mangroves, savanna grassland, thickets and woodlands. Its coastline and beaches protect 100 species of coral, eight inter-linking ecosystems, 65% of South Africa's remaining swamp forests, three major lake systems (including Kosi Bay, Lake St Lucia and Lake Sibayi) and eight major game reserves in the broader Lubombo Transfrontier Conservation Area (TFCA). iSimangaliso incorporates South Africa's largest marine protected area, making up 9% of our coastline, part of which is home to at least 18 prehistoric coelacanths.

“... the only place on the globe where the world's oldest mammal (the rhinoceros) and the world's biggest terrestrial mammal (the elephant) share an ecosystem with the world's oldest fish (the coelacanth) and the world's biggest marine mammal (the whale).”

– Nelson Mandela

iSimangaliso is listed as a world heritage site for its unique range of ecosystems, biodiversity and global beauty. It includes four Ramsar sites of international importance and includes more types of wetlands than any other place on earth.

This fragile combination of natural beauty and social diversity has elevated iSimangaliso to the status of an icon in the history of the environmental struggle in South Africa. During the late 1980s and early 1990s, the struggle for the future of iSimangaliso reached fever pitch when a broad coalition

of South African citizens and organisations resisted plans by a multinational company to mine the dunes of iSimangaliso's eastern shores for titanium and other heavy metals. Half a million citizens signed a no-mining petition. Informed by the recommendations of the Leon Commission, South Africa's new democratic government ruled that dune mining in iSimangaliso be prohibited and the area's fragile beauty and sense of place be protected for future generations.

The commission recognised that many local people were living under conditions of severe poverty. The region was experiencing a decline in tourism at a rate of approximately 2% per annum. Most, if not all of the tourism projects – and with it related job creation in the area – had come to a standstill. The commission, therefore, recommended the establishment of a 'people's park for the iSimangaliso' that was managed by an independent entity, constituted under national legislation with national funding.

Government gave effect to the recommendations of the commission by establishing the Lubombo Spatial Development Initiative (SDI) and, subsequently, the iSimangaliso Wetland Park Authority (then known as the Greater St Lucia Wetland Park Authority). The aim is to conserve the biodiversity and provide benefits to communities using the vehicle of tourism. In the words of the then Deputy President, Jacob Zuma, “The aim ... to begin ending the paradox of human poverty amid natural plenty”. iSimangaliso has become a prime example of government's emphasis on nature tourism as a strategic and environmentally friendly industry to lead economic growth in rural areas.

At the same time as the establishment of the Lubombo SDI, the South African project team prepared an application for the iSimangaliso Wetland Park to be listed a world heritage site. In 1999, it became South Africa's first world heritage site, followed by Robben Island and the Cradle of Humankind. South Africa also became the second country in

the world to pass legislation incorporating the World Heritage Convention into its national law. This legislation gave the convention force in South African domestic law.

This effectively consolidated 16 parcels of land and a patchwork of earlier proclamations (the earliest going back to 1895) to create an integrated park for the first time. It stretches over 330 000 hectares south from the Mozambican border for 220 kilometres along one third of the KwaZulu-Natal coastline and 9% of that of South Africa. It extends from Maphelani in the south to Kosi Bay on the Mozambican boarder in the north. It is an area of exceptional cultural and biological diversity.

The iSimangaliso Wetland Park Authority is a dedicated management authority made up of major stakeholders, including representatives from the local communities. Its mandate, as set out in the World Heritage Act and associated regulations, is to ensure the conservation of the park's world heritage values, balanced with local economic development and transformation, and to optimise tourism development. However, 'balance' does not necessarily mean equal. While a commitment to development is crucial, the park's primary measure remains the conservation of its universal values. The park has the right to exist as it is for the priceless ecological services it provides.

This was the first time in South Africa that local people and traditional leaders living in and adjacent to a park of such national and global significance were fully represented in the park's highest decision-making body.

The iSimangaliso Wetland Park Authority is a Schedule 3A public entity under the Public Finance Management Act (PFMA). It has a board, comprising nine members (including the CEO). The members are representatives of business, traditional councils, land claimants, provincial government (specifically Ezemvelo KZN Wildlife), national government (specifically DEAT) and local government.

The iSimangaliso Wetland Park Authority deals with three broad areas: managing the wildlife and ecological systems of the area, improving the social and economic conditions of people living in the area, and engaging in commercial activities that include the development of nature-based tourism businesses and associated infrastructure in the park. It has entered into a management agreement with the provincial conservation agency – Ezemvelo KZN Wildlife – for the day-to-day conservation management of the park.

In 2003, the Greater St Lucia Wetlands Park Authority became a statutory body of the Department of Environmental Affairs and Tourism, reporting to the Minister. The name of the park was changed to the iSimangaliso Wetland Park in 2007. The word iSimangaliso has a rich historical context. uJeqe was King uShaka's *insila* or aide, the keeper of the king's secrets and customarily buried with him. When uShaka died in 1828, uJeqe fled to avoid this fate. He wandered east into Thongaland, which includes today's wetland park, and later returned, saying: “I saw wonders and miracles in the flat land and the lakes of Thonga.” From this followed an isiZulu saying: “If you have seen miracles, you have seen what uJeqe saw: *Ubone isimanga esabonwa wuJeqe kwelama Thonga.*” So uJeqe could be regarded as one of the first tourists to visit what is now the iSimangaliso Wetland Park and to appreciate its miracles and spiritual value: recognised 171 years later by the 176 UNESCO member countries who supported its world heritage site listing.

iSimangaliso is the anchor project of the larger Lubombo SDI, which spans north-east KwaZulu-Natal, south-east Swaziland and southern Mozambique. Under the auspices of this initiative, the three countries signed various protocols for regional cooperation. These included the General Protocol, the Malaria Protocol, the Transfrontier Conservation Areas protocols and the Visas and Access Protocol. As a result, malaria infection rates have been reduced in South Africa and Swaziland by over 95% (making

iSimangaliso's Lake St Lucia malaria-free for the first time) and in Mozambique by over 65%. A programme was implemented under the management of the Medical Research Council with funding from the Business Trust and government. The Mozambican component of the programme is now funded by the Global Environment Facility (GEF).

The completion of the main national arterial road by the South African National Roads Agency, the R22 from Hluhluwe to the Kosi border post, gave 70 000 people their first all-weather access road. Approximately 50% of the capital expenditure went to local SMMEs and labourers. On the Mozambican side, the road is being upgraded from Kosi Bay to Maputo as funding becomes available to enable two-wheel drive access all the way to Maputo. Several border posts between Swaziland, South Africa and Mozambique have been opened and/or upgraded and – more recently – visa requirements between the countries have been relaxed.

Several transfrontier conservation areas (TFCAs) have been established, including the South African and Mozambican Kosi/Ponta d'Ouro TFCA. At present, a proposal is on the table to extend South Africa's iSimangaliso world heritage site to include areas in Mozambique. This will be the first transboundary or serial marine world heritage site in Africa. The vision of the heads of states of Mozambique, Swaziland and South Africa of tourists "seeing three countries in one day" has become a reality, and a Lubombo Tourism Route has already been launched that consolidates the gains that have been made.

iSimangaliso has developed a new approach to conservation that seeks to balance biodiversity protection and ecosystem rehabilitation, on the one hand, with a genuine commitment to social equity and regional economic development, on the other. The model recognises the value of the park's natural assets and its people, and is uniquely appropriate to South African conditions. It relies on active partnership between all those with an interest in the region to promote development in order to be able to conserve. UNESCO has commended the iSimangaliso Wetland Park

Authority several times for this work and, at the 2003 World Parks Congress, cited South African legislation as a model for the implementation of the UNESCO World Heritage Convention and the iSimangaliso Wetland Park as an example of best practice.

The settlement of claims on land that forms part of the iSimangaliso Wetland Park is an important priority for the conservation of the cultural and biological diversity of this world heritage site. A total of nine land claims over 75% of the park have been settled. The settlement of these claims is a significant milestone for the park as it creates stability and outlines a clear way forward in establishing a working relationship with the new landowners. Five co-management agreements have been signed, setting the development of a co-management framework, as well as a formalised programme of action, together with the land claimants, all essential to the successful management of the park.

The management authority also negotiated the removal of approximately 15 000 hectares of commercial plantations from the Eastern and Western Shores of Lake St Lucia that were negatively affecting the hydrology of the lake system. This is linked to a major land care programme, which includes the rehabilitation of the wetlands and dunes, and the eradication of alien plants. This programme is community-based and job-intensive. Additional land has been incorporated into the park on the Western Shores in terms of its park expansion policy. A land inclusion policy has also been developed that eases the incorporation of private and communal land on the fringes of the park.

The substantial redevelopment of the park is also underway. This has included the construction of new roads, hides, picnic sites, bulk services such as water and electricity, fencing (certain sections of the park have been fenced for the first time in living memory), and the provision of conservation-related infrastructure.

A wildlife translocation programme has been in operation since 2004 to restock the park with endemic and endangered species.

The translocation of several thousand head of game has included black rhino, oribi, elephant, cheetah, wild dog and buffalo. In addition to promoting the park as a tourist destination for both international tourists and domestic visitors, its main focus areas are to increase revenue for the park by positioning it as a value-for-money tourist destination, to roll out the park's new brand, to complete the remaining phases of the infrastructure development programme to ensure that economic imperatives are met, to improve the activity base of the park, and to create jobs by involving emerging entrepreneurs in the development of the park. iSimangaliso is also committed to providing equitable access to the park for people from the neighbouring communities. On New Year's Day, over 60 000 neighbours visited the park at no cost. Approximately 200 schools from around the park also visit it annually, 3 500 community members – mainly women – harvest ncema rushes annually, and wilderness trails and marine visits are undertaken with youths from the surrounding communities.

iSimangaliso facilitated the Cape Vidal Accord, which was adopted by the World Parks Congress that was held in 2003, and initiated DEAT's People and Parks Programme. It is implementing local economic development programmes such as a craft programme, arts programme, tourism training programme, entrepreneurship

programme and cultural programme. Craft groups have secured contracts with a major national retailer and are now looking at options in the international market. In the last few years, more than 100 learners have received tourism training up to NQF Level 4 and there has been a 60% workplace placement rate. Forty-eight entrepreneurs receive support from the entrepreneurship programme and a SMME support cluster is being established.

The net result of these interventions has been the improvement of the tourism market. A study undertaken in 2006 showed that between 2000 and 2006, there was a 59% increase in the number of tourism facilities in and around the park and a 20% increase in bed numbers. During the same period, average room occupancy went from below to above the national average. Other outcomes include the creation of some 3 500 temporary jobs per annum (with 4 600 being created in 2008/09) year on year since the establishment of the iSimangaliso Authority, as well as an annual increase in the number of permanent jobs (43 in 2008/09). The permanent jobs exclude those created at the new facilities that are being established in the park, in which members from the local communities are mandatory equity partners. Maintenance and infrastructure development is another source of SMME development and jobs for the local communities. This entails the construction

Environmental education empowers communities.



and ongoing maintenance of fences and expansion of the road infrastructure.

The development of tourism accommodation in the park includes the 24-bed Thonga Beach Lodge, which was opened in 2004, with a 64% shareholding by the mandatory community and a 30-bed dive camp at Manzegawenya, which was opened in 2008 by Wilderness Safari's, with a 21% shareholding by the mandatory community partner.

The equitable access programme enables people from neighbouring communities to visit the park. A key management objective of iSimangaliso is to grant access to the park to the many people living on its boundaries who have never had the opportunity to visit the park for purposes of relaxation and education. The programme enables all South Africans to experience the wonders of this world heritage site and, through environmental education, contributes to its conservation.

In May each year, 3 500 community members gather to harvest ncema, a rush that is used for the construction of mats. As part of its broader community-based natural resource management programme, iSimangaliso regulates the annual harvest and cutting practices to balance communities' current needs with the longer-term sustainability of the ncema resource.

Traditionally, many residents in the park produced grass mats, carvings and other craftworks that were sold at roadside stalls. Evaluation conducted by the iSimangaliso Authority revealed that the pricing structure of these crafts was not sustainable. The assistance of local and international designers was enlisted to help identify more commercially viable and sustainable product lines. This project bore fruit in 2005 when a contract was negotiated and continues today with a major national retailer, Mr Price Home, to market the products crafted by the women in the park. The iSimangaliso Authority continues to assist SMMEs with product development, while implementing measures to help them become more independent, self-sufficient and sustainable.

Future challenges that need to be addressed include the timely settlement of four outstanding land claims that remain unresolved by the Regional Land Claims Commission (RLCC) due to complexities, addressing Lake St Lucia's hydrological issues through a Global Environment Facility-funded project and dealing with illegal developments over the last 20 years that have placed increasing pressure on the park. In this regard, national and provincial government is implementing the R450 million Duku Duku On-Site Resettlement Project.

The redevelopment of existing state facilities such as Cape Vidal and Charters Creek is also necessary. In the case of large projects like Cape Vidal, this requires investments of some hundreds of millions of rands. The inability of the state to provide guarantees in the absence of a secondary market remains a hurdle, as the property cannot be sold and there is no capital appreciation. For smaller projects, one of the key issues has been the availability of capital, in particular for the mandatory partner (iSimangaliso's policy requires the beneficiary community that has been identified for each site to participate on an equity basis). Current market conditions have exacerbated this. One of the options being considered is for iSimangaliso to invest in these properties and enter into operating agreements that include risk transfer.

The new approaches to the conservation of the iSimangaliso Wetland Park, that were made possible through South Africa's new democracy in 1994 and Cabinet's no-mining decision of 1996, have paved the way for a broader, more positive reorientation of the manner in which South Africa values and manages its conservation assets. These approaches recognise the need to develop to conserve. In the words of former President Nelson Mandela, the reintroduction of elephant into iSimangaliso was "an almost spiritual form of restitution. It is an attempt to recreate the wholeness of nature so that we can live in harmony with its creator's magnificence ... so that the descendants of the elders of Maputaland, the generations of the future, too, can experience this grandeur".

## South African National Biodiversity Institute

South Africa has the third highest variety of biodiversity in the world, which has earned it a 'mega-diverse' status. The South African National Biodiversity Institute (SANBI), as a public entity established in terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act No 10 of 2004), strives to champion the exploration, conservation, sustainable use, appreciation and enjoyment of South Africa's exceptionally rich biodiversity for all people.

### South Africa's biodiversity

- South Africa has the third highest variety of flora and fauna in the world. Although it only covers 2% of the land surface of the world, it is home to nearly 10% of the planet's plants, 5.8% of its mammals, 8% of its bird species, 4.6% of its reptiles, 5.5% of its insects and almost 15% of all known coastal marine species.
- No other developing country in the world has as rich a tradition of research and conservation.
- The Cape Floral Kingdom is one of the earth's six floral kingdoms, and the only one to be found entirely within the borders of one country. It covers only 4% of the area of southern Africa, but is home to 45% of the subcontinent's plant species.
- South Africa's mega-diverse status (it is one of only 17 countries that collectively contain two-thirds of the world's biodiversity) is due largely to the wide range of climatic conditions and habitats found in the country, from arid deserts to moist, humid subtropical forests, and variable topography, ranging from sea level to high mountains.
- More than 100 important bird areas occur in South Africa, as well as five endemic bird areas, a number only matched by one other country: Madagascar.

In 2004, with the promulgation of NEMBA, SANBI became a Schedule 3A public entity in terms of the Public Finance Management Act, 1999, as amended. It has a board of directors that serve as accounting authority. The Minister of Environmental Affairs and

Tourism is the executive authority of the entity in terms of NEMBA.

Since its establishment, SANBI has built forth on the foundations of the former National Botanical Institute (NBI). Its mandate expands the traditional role of the former NBI to cover the full diversity of South Africa's uniquely rich flora and fauna. It is responsible for the assessment, research and reporting on the state and dynamics of the country's biodiversity, the development and administration of nine national botanical gardens, biodiversity education and empowerment, habitat rehabilitation and sustainable use programmes, and for acting as the nation's biodiversity information resource.

The mandate of SANBI, under NEMBA, is as follows:

- Monitor and report on the state of South Africa's biodiversity.
- Lead biodiversity research, which includes taxonomy and biosystematics, conservation, sustainable use, restoration and rehabilitation and bio-adaptation, as well as climate change.
- Provide biodiversity policy support.
- Become the country's 'one-stop shop' for biodiversity knowledge and information.
- Run best-practice models to manage biodiversity better at an ecosystem level.
- Maintain and run a number of national botanical gardens for the purposes of conservation, education, research, leisure and tourism.

Some of the most significant work done by the NBI prior to the establishment of SANBI since 1994 was done through the Southern African Botanical Diversity Network (SABONET). This network was established in 1996 as a regional network aimed at building capacity among botanists in southern Africa. Its main objective was to develop a strong core of professional botanists, taxonomists, horticulturalists and plant diversity specialists in the 10 participating southern African countries (Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe).

At the end of 2004, the first ever comprehensive assessment of biodiversity – the National Spatial Biodiversity Assessment (NSBA) – was

conducted throughout the country. The assessment covered terrestrial, freshwater and marine ecosystems in South Africa, and utilised a discipline known as systematic conservation planning, using Geographic Information Systems (GIS) and related software to identify priority areas for conservation action. The NSBA provided the spatial information that fed into the National Biodiversity Strategy and Action Plan in 2005.

The aims of the assessment were to identify broad spatial priority areas for conservation action, to make recommendations about options for conservation action in each priority area, and to provide a national context for conservation plans.

The purpose of the NSBA was to inform the policies, plans and day-to-day activities of a wide range of sectors, both public and private, whose core business is not biodiversity. The focus of the NSBA was on mainstreaming biodiversity priorities throughout the economy, and making links between biodiversity and socio-economic development to ensure sustainability. Considering that 60% of our people make their living off land and marine resources, there is a self-evident need to ensure healthy ecosystems that will support sustainable development. The assessment provided a tool for ongoing monitoring and reporting on the state of biodiversity: a key responsibility of the new national biodiversity institute. It informed decision-makers on the health and productivity

of the country's ecosystems, and identified where priorities lie for conservation action and rehabilitation.

### Biodiversity research

SANBI has a proud record of research on indigenous, naturalised and alien flora that occurs in South Africa, southern Africa and beyond. Its research covers biosystematics and collections expansion, applied biodiversity science, and climate change research and bio-adaptation. The numerous thrusts within these research domains have benefited from close intra-institutional collaboration. A multidisciplinary approach to scientific hypothesis testing is deliberately fostered and supported.

The *ex situ* collections in the national botanical gardens are developed and reviewed on an ongoing basis in an endeavour to increase the collections to 45% of South Africa's indigenous flora. Additional plant material is regularly sourced from the wild for inclusion in national botanical garden collections. SANBI collaborates with the Millennium Seed Bank and local conservation authorities to integrate its garden-based plant conservation programmes, as well as to initiate reintroduction programmes where plants are cultivated in the gardens and reintroduced into their natural habitats. These integrated conservation efforts form part of the endeavour to expand the *ex situ* collections to 50% of South Africa's threatened plants.

Climate change research forms an important part of the research related to biovulnerability. In 2004, a representative from SANBI was selected to serve as the coordinating lead author for the Intergovernmental Panel on Climate Change (IPCC). In 2008, Dr Guy Midgley, SANBI's head of Climate Change and Bio-Adaptation, was part of a team that won the Nobel Peace Prize for their contribution to climate change. Ongoing field experiments are conducted in the winter rainfall zone to develop an understanding of drought, temperature and fog vulnerabilities for climate change impact projections. Climate change and bird vulnerability projects have been initiated in the Table Mountain and West Coast national parks. Specialist input is also provided on the impact of climate change on migratory birds and other animals for the national negotiating position for the Convention on Migratory Species.

Bird checklists have been published for all nine national botanical gardens. Biodiversity checklists for mammals, reptiles, dragonflies and damselflies, butterflies and amphibians are updated and expanded on a regular basis. Publications are produced on a regular basis. These have included popular plant identification aids, such as *First field guide to fynbos in southern Africa*, *Southern African wildflowers* and *Common names of Karoo plants*, which were published by SANBI scientists in 2004. A checklist of the flowering plants of sub-Saharan Africa, the first comprehensive and authoritative list of more than 50 000 species of African plants, was published in 2005. In 2006, a wall-map version of the new vegetation map of South Africa, Lesotho and Swaziland was published, showing the 435 vegetation types at a scale of 1:1 million. An important new book that was published in 2007 was *The vegetation of South Africa, Lesotho and Swaziland*. This was the culmination of ten years of research. Publications that were released in 2008 included *A climate for life*, an influential large-format book on climate change and biodiversity with contributions from SANBI staff that was launched at the IUCN Conference in Barcelona.

In 2004, SANBI received funds from the Andrew W Mellon Foundation to initiate and facilitate the digitalisation of type specimens of African plants, as part of the African Plants Initiative (API) Project, in partnership with herbaria on the continent and beyond. In 2005,


information for over 4 500 medicinal plants was recorded as part of the API project. Over 45 000 vernacular names of southern African plants have been captured from *Common names of southern African plants* (CA Smith, 1966). In 2007, over 23 000 vernacular names of southern African medicinal and magical plants were captured from literature into a database. A dictionary has been compiled of over 4 000 ailments treated through the medicinal and magical use of southern African plants.

### Biodiversity knowledge, policy and network management

SANBI's biodiversity planning and mainstreaming programmes focus on making biodiversity science widely available, and supporting its use in policy, management and decision-making. Key elements of this work are biodiversity knowledge and information management, identifying priority areas through spatial biodiversity planning, assessing and monitoring the status of biodiversity, support to DEAT on policy development and implementation, mainstreaming biodiversity in municipalities and urban areas, and the establishment of multi-partner bioregional and ecosystem programmes.

Positioning itself as the central national resource for knowledge management and information dissemination on biodiversity, SANBI has developed systems and databases to provide ease of access to biodiversity science information. The Biodiversity GIS (BGIS) website provides access to spatial biodiversity information in order to inform biodiversity planning, research and land-use decision-making.

Assessing and monitoring the status and trends of biodiversity in South Africa is an important priority for SANBI. Since 2004, SANBI has responded to its mandate by initiating a wide diversity of projects to assess and monitor the status of the country's indigenous fauna. As part of its Threatened Species Programme, SANBI coordinates several atlas projects, which capture records of species occurrences across the country through the participation of hundreds of volunteer members of the public. These projects include the South African Reptile Conservation Assessment (SARCA), the South African Bird Atlas Project (which forms part of the Birds and Environmental Change in South Africa Programme), the South African National



The red data listing of protea species has been completed.

Survey of Arachnida (SANSA), and the South African Butterfly Conservation Assessment (SABCA). The Freshwater Conservation Assessment of southern Africa, in collaboration with the IUCN, covers a variety of plant and animal taxa. Red data list assessments have been completed for the 20 475 plant species in South Africa. The red data listing of the *Proteaceae* has been finalised and the global cycad red data list has been completed. These projects all form part of a process that has been initiated to develop a strategy to support the conservation of threatened species.

Biodiversity planning and assessment continues to form an important part of SANBI's activities under its mandate. It supports the initiation of provincial spatial biodiversity plans and the development of bioregional plans provided for in terms of NEMBA.

A number of bioregional and ecosystem programmes have been established to mainstream biodiversity in socio-economic development, including the following:

- **The Succulent Karoo Ecosystem Programme (SKEP)** focuses on enabling the people that inhabit the succulent Karoo to take ownership of and enjoy their unique living landscape in a way that maintains biodiversity and improves livelihoods. The succulent Karoo is the world's only arid biodiversity region, and is home to a wide diversity of succulent flora, reptiles and invertebrates. The impacts of this programme include a significant increase in the amount of land in the conservation estate, improved land management, funding for conservation and livelihood projects, the development of best practice guidelines, contribution to poverty alleviation and improved livelihoods.
- **The Grasslands Programme** focuses on mainstreaming biodiversity in production sectors in the grasslands biome, including agriculture, forestry, mining and urban development. Although this biome provides essential ecosystem services for economic development, many grassland ecosystems are threatened. The aim of this initiative is to balance environmental and development needs, conserving grassland ecosystems to ensure sustainable ecological services for economic development. A research

strategy has been developed that has identified research priorities in this biome. It will guide the research needs that hinder biodiversity management in the grasslands biome and will link into the National Biodiversity Research Strategy.

- **The Subtropical Thicket Ecosystem Programme (STEP)** focused on promoting informed decision-making on land-use by integrating maps of biodiversity priorities into municipal planning and land-use decision-making.
- **Cape Action for People and the Environment (CAPE)** focuses on supporting the conservation of the fynbos biome in the Cape Floristic Region. The goal of the programme is to ensure that by 2020 the rich biological heritage of the Cape Floristic Region is protected, while delivering significant benefits to the people of the region. The programme has successfully consolidated and expanded the protected area estate through landscape initiatives and innovative stewardship contracts with landowners, developed fine-scale biodiversity plans for priority areas, developed management effectiveness tracking tools for conservation areas, established business and biodiversity initiatives, and established partnerships for alien clearing. The programme developed a Monitoring and Evaluation Framework through a participatory process with partner organisations.
- **The Marine Biodiversity Programme** focuses on facilitating the establishment of a network of offshore marine protected areas in South Africa's waters. Marine biodiversity was identified as a research priority for coordinated biodiversity research through a managed network. The programme engages with commercial fishing, diamond mining, petroleum and scuba-diving stakeholders to discuss marine biodiversity issues.
- **The Freshwater Ecosystem Programme** has been developed as a new ecosystem programme and will incorporate the management of the Working for Wetlands programme. An inception workshop has been held for a two-year partnership project to identify a network of national freshwater conservation areas and to explore institutional mechanisms for protecting these priority areas. The

National Wetland Inventory Project, the first systematic assessment of the extent of South Africa's wetland resources, was completed. A total of 121 642 individual wetlands have been mapped, which accounts for 7.2% of the country's surface area.

SANBI has established a National Municipal Biodiversity Programme with the aim of ensuring that biodiversity and ecosystem services are effectively managed and contribute to sustainable economic development and human wellbeing in municipalities across South Africa.

SANBI aims to establish indigenous gardens in at least 100 schools and at least five community gardens around each school within a 30 km radius of national botanical gardens and in areas where there are no botanical gardens. A number of indigenous gardens have been developed. Biodiversity education and empowerment programmes have been initiated at several national botanical gardens. Greening initiatives are launched in provinces without botanical gardens or with botanical gardens that do not have education programmes.

### Conservation management

South Africa has a network of nine botanical gardens that showcase and contribute to the conservation of the country's rich plant biodiversity. In order to expand and consolidate South Africa's conservation estate, a new national botanical garden, the Hantam National Botanical Garden, was established in 2008 in Nieuwoudtville in the Northern Cape, 'the bulb capital of the world'. This was the first new national

botanical garden to be established in South Africa since 1982 and brings to nine the national botanical gardens in South Africa.

Botanical gardens showcase and contribute to the conservation of the country's rich plant biodiversity. South Africa's embassies of biodiversity and culture are Kirstenbosch (Cape Town), the Free State (Bloemfontein), Harold Porter (Betty's Bay), Karoo Desert (Worcester), KwaZulu-Natal (Pietermaritzburg), Lowveld (Nelspruit), Walter Sisulu (Roodepoort), Pretoria and Hantam (Nieuwoudtville). Potential sites in the Eastern Cape are being reviewed for a new national botanical garden to be established in this province.

Over a million people visit SANBI's national botanical gardens annually to admire their natural beauty, enjoy walks, concerts, exhibitions and take refreshments, or for educational purposes. Biodiversity walks and talks offered to members of the public introduce visitors to the birds, trees, snakes, aloes, insects, frogs, bats, fungi, scorpions and spiders of the country. Infrastructure development in the national botanical gardens includes visitor centres and amenities, restaurants, educational facilities and research facilities.

In 2004, Kirstenbosch was declared a world heritage site as part of the Cape Floristic Region. This botanical garden is one of the few self-sustainable botanical gardens in the world. Each year it participates in the Chelsea Flower Show, and in 2008 it received its 29<sup>th</sup> gold medal from the Royal Horticultural Society.

Namaqualand flowers in bloom.

