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**OFFICIAL  
GUIDE TO**  
South Africa  
**2020/21**

**FORESTRY, FISHERIES AND THE  
ENVIRONMENT**

The Department of Forestry, Fisheries and the Environment (DFFE) is mandated to give effect to the right of citizens to an environment that is not harmful to their health or well-being, and to have the environment protected for the benefit of present and future generations.

To this end, the department provides leadership towards sustainability in environmental management, conservation and protection for the benefit of South Africans and the global community.

Over the medium term, the department planned to continue focusing on supporting an equitable transition to a low-carbon economy and a climate-resilient society; creating an enabling environment for South Africa's transition to a circular economy; supporting the fishing sector through the implementation of an effective and enabling regulatory framework for the management and development of marine and freshwater living resources; and creating work opportunities and jobs through public employment programmes.

The Green Stimulus Recovery Programme, which forms part of the post Coronavirus Disease (COVID-19) recovery programme, aims to protect natural resources while contributing to equitable economic growth, providing employment to marginalised communities and growing economic sectors reliant on the environment without destroying it.

### **Supporting an equitable transition to a low-carbon economy and a climate-resilient society**

The National Climate Change Adaptation Strategy and National Climate Change Bill aim to serve as an overarching legislative framework for adapting to and mitigating the effects of climate change, supported by the implementation of the low-emissions development and growth strategy for South Africa.

The Bill and strategy recognise the DFFE's pivotal role in ensuring that South Africa is equipped to manage and mitigate the effects of climate change. The Presidential Climate Change Coordination Commission was expected to advise government on an ambitious and just transition to a low-carbon economy .

It was also expected to spearhead the development of sector jobs resilience plans in the coal, agriculture, tourism, petrol-based transport and metals sectors, as these are considered particularly vulnerable to climate change; and support provinces and municipalities with the development and implementation of climate adaptation plans.

### **Improved waste management towards a circular economy**

Over the medium term, the department planned to focus on creating an enabling environment to support the transition to a circular economy, which entails transitioning from the current wasteful economy to a more regenerative, inclusive and equitable one. As such, the circular economy model seeks to decouple

economic development from the consumption of finite resources. By reviewing and strengthening the extended producer responsibility policy framework and regulations over the medium-term period, the department aimed to ensure that priority waste streams such as plastics and packaging, lighting, and electrical and electronics were minimised, and that the industry adopts a culture of reusing and recycling.

Over the medium term, the department planned to finalise the Waste Economy Master Plan to implement work streams for bulk industrial waste, municipal waste, and product design and waste minimisation; and introduce a tyre industry waste management plan in partnership with the Council for Scientific and Industrial Research, and the Department of Trade, Industry and Competition.

To strengthen capacity and improve waste management in municipalities, the department was expected to support the development of integrated waste management plans; collection and diversion from landfills; the integration of waste pickers into formal economic activity; and the implementation of clean-up campaigns and public awareness programmes such as War on Waste.

### **Managing and developing marine and freshwater living resources**

Over the medium term, the department aimed to provide ongoing support to the fishing sector through the implementation of an effective and enabling regulatory framework for the management and development of marine and freshwater living resources. In doing so, it ensures a well-managed fisheries and aquaculture sector that sustains and improves economic growth, particularly for fishing communities.

The department aimed to create work opportunities in the commercial fishing sector by implementing projects such as conserving fish stocks, constructing and maintaining aquaculture production systems, and cleaning coastal areas. The department also intended to fast-track the process of issuing fishing rights.

### **Public employment programmes**

Over the medium term, the department aimed to create part-time and permanent job opportunities through the Expanded Public Works Programme in roles such as restoring and rehabilitating degraded ecosystems (environmental protection and infrastructure programme); expanding the conservation estate (Working for Ecosystems); protecting, restoring and rehabilitating wetlands (Working for Wetlands); protecting water resources (Working for Water); managing land use sustainably (Working for Ecosystems); and sustaining production, growth and transformation in the forestry sector (Working for Forests).

## Role players

### South African National Biodiversity Institute (SANBI)

SANBI contributes to South Africa's sustainable development by facilitating access to biodiversity data, generating information and knowledge, building capacity, providing policy advice, showcasing and conserving biodiversity in its national botanical and zoological gardens.

SANBI engages in ecosystem restoration and rehabilitation, leads the human capital development strategy of the sector and manages the National Botanical Gardens as 'windows' to South Africa's biodiversity for enjoyment and education. South Africa is one of the most biologically diverse countries in the world, after Indonesia and Brazil.

The country is surrounded by two oceans, occupies only about 2% of the world's land area, but is home to nearly: 10% of the world's plants; 7% of the reptiles, birds and mammals and 15% of known coastal marine species. The country comprises nine biomes (unique vegetation landscapes), three of which have been declared global biodiversity hotspots.

Biodiversity richness is one of South Africa's greatest assets, in terms of landscapes, ecosystems and species – the web of natural life – provides goods and services vital for human well-being and the survival of the planet. South Africa is one of the 30 driest countries in the world. This phenomenon has been intensified by a prolonged drought.

A critical programme aimed at improving the water security is the control of invasive plants in the catchments and wetlands. Recent research estimates that protection and clearing of river catchments can increase South Africa's water supply by as much as one sixth, at a fraction of the cost of projects such as desalination.

By mid-2021, work was being done to secure strategic water sources and wetlands given that South Africa is a water scarce country. These areas supply water that sustains 60% of the country's population, more than 90% of urban water users, 67% of national economic activity and 70% of irrigated agriculture.

The DFFE continues to work with relevant government departments and other sectors responsible for mining, human settlements, agriculture and water affairs to protect strategic water sources from potential undesirable environmental impacts.

Invasive species are major contributors to biodiversity loss and water scarcity. Through the Working for Water programme, the department not only realised conservation outcomes, but also created much-needed jobs for youth and women in rural areas to clear alien invasive species and rehabilitate wetlands.

## South African National Parks

As a leading conservation authority, SANParks is a public entity under the jurisdiction of the DFFE where inclusive conservation as opposed to previous policies of exclusion are central to advancing the policies in line with the National Development Framework for Sustainable Development and the National Development Plan.

SANParks manages a system of 20 functional national parks in seven of the nine provinces of South Africa with a total area of just over four million hectares (ha) comprising 67% of the protected areas under state management.

SANParks is recognised as a world leader in conservation and protected area management, and the biggest tourism product owner in the country, with a total of 6 787 formal beds and 8 643 camping beds throughout the national parks.

In the last two decades, seven new national parks have been established, totalling over 700 000 ha, with much of this being in the under-conserved biomes such as the Succulent Karoo and Fynbos.

The National Environmental Management Protected Areas Act of 2003 mandates SANParks to create destinations for nature-based tourism in a manner that is not harmful to the environment.

SANParks generates 80% of its operating budget from its ecotourism business, therefore fulfilment of its conservations mandate is heavily reliant on thriving and sustainable tourism operations.

The organisation plays a significant role in the promotion of South Africa's nature-based tourism or ecotourism business, targeted at both international and domestic tourism markets. To increase the relevance of the national parks, particularly to young people and to communities living adjacent to the parks, SANParks continues to provide South Africans with free access to its parks during the annual National Parks Week in September.

The national parks are:

- Addo Elephant National Park
- Agulhas National Park
- Ai-Ais/Richtersveld Transfrontier Park
- Augrabies Falls National Park
- Bontebok National Park
- Camdeboo National Park
- Garden Route (Tsitsikamma, Knysna and Wilderness) National Park
- Golden Gate Highlands National Park
- Karoo National Park
- Kgalagadi Transfrontier Park
- Kruger National Park
- Mapungubwe National Park

- Marakele National Park
- Mokala National Park
- Mountain Zebra National Park
- Namaqua National Park
- Table Mountain National Park (which incorporates the Cape of Good Hope, Table Mountain and Silvermine nature reserves)
- Tankwa Karoo National Park
- West Coast National Park
- Meerkat National Park.

SANParks is the leading conservation authority in all national parks around South Africa and responsible for protected land in 19 national parks. A transfrontier conservation area (TFCA) is a cross-border region.

The conservation status of the areas within a TFCA ranges from national parks, private game reserves and communal natural-resource management areas to hunting-concession areas. TFCAs allow tourists easy movement across international boundaries into adjoining conservation areas.

The seven TFCAs are:

- Ai-Ais/Richtersveld
- Kgalagadi Transfrontier Park
- Kavango-Zambezi
- Greater Mapungubwe
- Great Limpopo Transfrontier Park
- Lubombo TFCA
- Maloti-Drakensberg Transfrontier Conservation and Development Area.

## Awelani Community Conservation Area (CCA)

The Awelani CCA is a 1 800 hectare area set aside for conservation by the Mutele Community in Limpopo, including the development of tourism infrastructure.

In 2021, the DFFE opened and handed over the Awelani Eco-Tourism Lodge and Community Conservation Area in Vhembe District Municipality in Limpopo.

South Africa's biosphere reserves include:

- Vhembe, situated in the north-east of Limpopo, which includes the northern part of the Kruger National Park; the Makuleke Wetland, which is protected under the Ramsar Convention; the Soutpansberg and Blouberg biodiversity hotspots; and the Makgabeng Plateau.
- The Kogelberg Reserve on the country's southern coast is in the middle of the Cape Floral Region and home to different plant species, some of which are found only in this region.

- The Cape West Coast Biosphere Reserve starts in Cape Town in the southern suburb of Diep River and stretches up the west coast as far as the Berg River, encompassing parts of the Cape Floral Region. The reserve includes the Ramsar-protected Langebaan Lagoon as well as Dassen Island, which is home to several protected bird species.
- The Cape Winelands Biosphere Reserve includes a part of the Cape Floral Region, as well as the wine-growing region.
- The Biosphere Reserve, in the Waterberg in Limpopo is an important catchment area for the Limpopo Basin, with four large rivers originating within its borders – the Lephale, Mokolo, Matlabas and Magalakwena rivers.
- The Kruger-to-Canyons Biosphere Reserve stretches from the Kruger National Park to the Blyde River Canyon. It is an important conservation area as it covers three biomes.
- The Gouritz Cluster Biosphere Reserve is also recognised by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in terms of the Man and Biosphere Programme.

## Areas of conservation

### Protected areas

In 2020, Cabinet approved the reviewed National Protected Areas Expansion Strategy for implementation. The strategy aims to achieve cost effective protected areas expansion for improved ecosystem representation, ecological sustainability and resilience to climate change while safeguarding more than 418 000 biodiversity-based jobs.

The new strategy, which extends to freshwater and marine components, is framed to ensure that the country contributes to its international obligations on the protection of conservation estates.

South Africa is home to more than nine million ha of protected areas network, which includes national parks, nature reserves and world heritage sites.

These protected areas, among other things, serve as sites for conserving the country's ecosystems, protection of high biodiversity value and provision of ecosystem services. Most of these protected areas are geographically located in rural areas, forming an integral system with rural communities whose livelihoods and cultures are closely dependent on.

### Scientific reserves

Scientific reserves are sensitive and undisturbed areas managed for research, monitoring and the maintenance of genetic sources. These include Marion Island and the Prince Edward Islands near Antarctica. Access is limited to researchers and staff. The quality of South African and international weather forecasts relies

on the availability of data inputs from the Gough Island region.

Gough Island is a volcanic island rising from the South Atlantic Ocean to heights of over 900 metres above sea level with an area of 91 km<sup>2</sup>.

### Wilderness areas

These areas are extensive, uninhabited and underdeveloped, and access is strictly controlled with no vehicles allowed. The highest management priority is the maintenance of the intrinsic wilderness character.

Wilderness areas include the Cederberg Wilderness Area and Dassen Island in the Western Cape, and the Baviaanskloof Wilderness Area in the Eastern Cape.

### Biomes

The nine major terrestrial biomes or habitat types in South Africa are divided into 70 veld types. The biomes are the Savanna, Nama-Karoo, Succulent Karoo, Grassland, Fynbos, Forest, Albany Thicket, Desert and Indian Ocean Coastal Belt. The Fynbos Biome is one of only six floral kingdoms worldwide.

### World Heritage sites

South Africa has 10 World Heritage sites proclaimed by UNESCO, namely:

- **Robben Island (Western Cape).** Robben Island was used at various times between the 17th and 20th centuries as a prison, a hospital for socially unacceptable groups and a military base. Its buildings, particularly those of the late 20th century such as the maximum security prison for political prisoners, witness the triumph of democracy and freedom over oppression and racism. It is most famous for the incarceration of political prisoners, including former President Nelson Mandela, who was imprisoned for 18 of his 27 years in jail.
- **iSimangaliso Wetlands Park (KwaZulu-Natal).** It was formerly called the Greater St Lucia Wetland Park. The ongoing fluvial, marine and aeolian processes in the site have produced a variety of landforms, including coral reefs, long sandy beaches, coastal dunes, lake systems, swamps, and extensive reed and papyrus wetlands. The interplay of the park's environmental heterogeneity with major floods and coastal storms and a transitional geographic location between subtropical and tropical Africa has resulted in exceptional species diversity and ongoing speciation. The mosaic of landforms and habitat types creates breathtaking scenic vistas. The site contains critical habitats for a range of species from Africa's marine, wetland and savannah environments.
- **Cradle of Humankind (Gauteng).** The Taung Skull Fossil Site, part of the extension to the site inscribed in 1999, is the place where in 1924 the celebrated Taung Skull – a specimen of the species *Australopithecus africanus* – was found. Makapan Valley, also in the site, features in its many archaeological



caves traces of human occupation and evolution dating back some 3.3 million years. The area contains essential elements that define the origin and evolution of humanity. Fossils found there have enabled the identification of several specimens of early hominids, more particularly of *Paranthropus*, dating back between 4.5 million and 2.5 million years, as well as evidence of the domestication of fire 1.8 million to one million years ago. It includes the hominid fossil sites at Swartkrans, Sterkfontein and Kromdraai.

- **Ukhahlamba-Drakensberg Park (KwaZulu-Natal).** The park has outstanding natural beauty, Africa's highest mountain range south of Kilimanjaro, and the largest and most concentrated series of rock art paintings in Africa. The site harbours endangered species such as the Cape vulture (*Gyps coprotheres*) and the bearded vulture (*Gypaetus barbatus*).
- **Mapungubwe Heritage Site (Limpopo).** Mapungubwe is an open, expansive savannah landscape at the confluence of the Limpopo and Shashe rivers. Mapungubwe developed into the largest kingdom in the sub-continent before it was abandoned in the 14th century. What survives are the almost untouched remains of the palace sites and also the entire settlement area dependent upon them, as well as two earlier capital sites, the whole presenting an unrivalled picture of the development of social and political structures over some 400 years.
- **Cape Floral Kingdom (Western Cape).** It is one of the world's great centres of terrestrial biodiversity. The extended property includes national parks, nature reserves, wilderness areas, State forests and mountain catchment areas. These elements add a significant number of endemic species associated with the Fynbos vegetation, a fineleaved sclerophyllic shrubland adapted to both a Mediterranean climate and periodic fires, which is unique to the Cape Floral Region.
- **Richtersveld Cultural and Botanical Landscape (Northern Cape).** The 160 000 ha of dramatic mountainous desert constitutes a cultural landscape.
- **Vredefort Dome (Gauteng).** This is a representative part of a larger meteorite impact structure or astrobleme. Dating back to over two million years, it is the oldest astrobleme yet found on Earth. With a radius of 190 km, it is also the largest and the most deeply eroded. Vredefort Dome bears witness to the world's greatest known single energy release event, which had devastating global effects including, according to some scientists, major evolutionary changes. It provides critical evidence of the Earth's geological history and is crucial to understanding of the evolution of the planet. Despite the importance of impact sites to the planet's history, geological activity on the Earth's surface has led to the disappearance of evidence from most of them, and Vredefort is the only example to provide a full geological profile of an astrobleme below the crater floor.

- **ǀKhomani Cultural Landscape.** (Located at the border with Botswana and Namibia in the northern part of the country, coinciding with the Kalahari Gemsbok National). The large expanse of sand contains evidence of human occupation from the Stone Age to the present and is associated with the culture of the formerly nomadic ǀKhomani San people and the strategies that allowed them to adapt to harsh desert conditions. They developed a specific ethnobotanical knowledge, cultural practices and a worldview related to the geographical features of their environment. The ǀKhomani Cultural Landscape bears testimony to the way of life that prevailed in the region and shaped the site over thousands of years.
- **Makhonjwa Mountains, also known as the Barberton Greenstone Belt (Mpumalanga).** One of the world's oldest geological structures, the Makhonjwa Mountains in Barberton, Mpumalanga represent the best-preserved succession of volcanic and sedimentary rock dating back 3.6 to 3.25 billion years, when the first continents were starting to form on the primitive Earth. It features meteor-impact fallback breccias resulting from the impact of meteorites formed just after the Great Bombardment (over 4.6 to 3.8 billion years ago).

In addition to sites inscribed on the World Heritage list, member states can maintain a list of tentative sites that they may consider for nomination. Nominations for the World Heritage list are only accepted if the site was previously listed on the tentative list. South Africa had listed the following properties on its tentative list:

- Succulent Karoo Protected Areas
- Liberation Heritage Route
- Early Farmsteads of the Cape Winelands
- The Emergence of Modern Humans: The Pleistocene occupation sites of South Africa
- Human Rights, Liberation Struggle and Reconciliation: Nelson Mandela Legacy Sites.

## Wetlands

Wetlands support a range of specialised plant, insect and mammal life and also supply food, grazing, building and craft material to people. They are able to improve water quality, reduce flood impacts, control erosion and sustain river flows.

South Africa's Ramsar sites include:

- Barberspan
- Blesbokspruit Nylsvley Nature Reserve
- De Hoop Vlei
- De Mond (Heuningnes Estuary)

- Kosi Bay
- Langebaan
- Makuleke Wetlands
- Ndumo Game Reserve
- Ntsikeni Nature Reserve
- Nylsvley Nature Reserve
- Orange River Mouth Wetland
- Prince Edward Islands in Antarctica
- Seekoeivlei
- St Lucia
- Turtle beaches and coral reefs of Tongaland
- Ukhahlamba-Drakensberg Park
- Verlorenvlei Nature Reserve
- Wilderness Lakes
- Dyer, Geyser and Dassen islands
- Kgaswane Mountain Reserve.

## Marine protected areas (MPAs)

Government shares joint responsibility for South Africa's MPAs with SANParks and Ezemvelo KwaZulu-Natal Wildlife.

South Africa's MPAs include the:

- Aliwal Shoal, KwaZulu-Natal
- Betty's Bay, Western Cape
- Bird Island, Eastern Cape
- De Hoop, Western Cape
- Dwesa-Cwebe, Eastern Cape
- False Bay, Western Cape
- Goukamma, Western Cape
- Hluleka, Eastern Cape
- iSimangaliso, KwaZulu-Natal
- Langebaan Lagoon, Sixteen Mile Beach, Malgas Island, Marcus Island, Jutten Island, Western Cape
- Pondoland, Eastern Cape.
- Robberg, Western Cape
- Sardinia Bay, Eastern Cape
- Stilbaai, Western Cape
- Table Mountain, Western Cape
- Trafalgar, KwaZulu-Natal
- Tsitsikamma, Western Cape.

## Zoological gardens

The National Zoological Gardens (NZG) of South Africa, also known as the Pretoria Zoo, is the largest zoo in the country and the only one with national status. It is home to approximately 5 000 different mammals, birds, fish, reptiles, amphibians and invertebrates, comprising around 600 species and subspecies.

One of its unique features is that it has the largest inland aquarium in Africa, which also has a marine fish component. It is also the only zoo in South Africa that is home to Koalas, Okapi, Komodo Dragons and Forest buffalo, to name but a few.

Some of the government and private venues include the following:

- Joburg Zoo in Johannesburg, which was founded in 1904, covers 55 ha of land and houses over 320 species of animals.
- Mitchell Park Zoo in Durban, which was named after Sir Charles Bullen Hugh Mitchell, is the country's second oldest zoo after the NZG in Pretoria.
- East London Zoo is located in the Queens Park Zoological Gardens in East London, Eastern Cape. It is financed and managed by the Buffalo City Metropolitan Municipality. Apart from the animals, the zoo and gardens contain a treasure trove of flora and fauna, some of which is only found in the Eastern Cape.
- Birds of Eden is the world's largest free flight aviary and bird sanctuary, located near Plettenberg Bay in the Western Cape, South Africa. Its unique two-hectare dome (the world's largest) spans over a gorge of indigenous forest. It is home to over 3 500 birds from over 220 species, with the main focus being African birds.
- Umgeni River Bird Park in Durban, in KwaZulu-Natal, is situated in 3.5 ha of lush tropical landscaping and houses an ever-increasing collection of more than 800 birds from 200 species.
- World of Birds is the largest bird park in Africa and one of the few large bird parks in the world. Over 3 000 birds (and small animals) of 400 different species are uniquely presented in more than 100 spacious landscaped walk through aviaries, allowing you the most intimate closeness with nature.
- The Bushbabies and Monkey Sanctuary, situated in Hartbeespoort Dam provides an environment where monkeys (primates) can be given their freedom in a natural environment. The sanctuary situated in one of the many Kloofs (Gorges) of the Magaliesberg mountain range provides the perfect environment for Monkeys from around the world.

## Conservation centres

The NZG of South Africa is responsible for the management of the Mokopane Biodiversity Conservation Centre (MBCC), covering 1 394 ha.

The MBCC is home to an abundance of exotic and indigenous fauna such as lemur, the rare tsessebe, roan antelope and black rhino. In 2007, it was proclaimed as a protected area as a Fossil Hominid Site of South Africa: Mokopan Valley.

The Ann van Dyk Cheetah Centre, formerly known as the De Wildt Cheetah Centre, is a breeding sanctuary for cheetahs and other endangered animals situated in Hartbeespoort. Other creatures being housed at the centre include African wild dogs, brown hyenas, servals, suni antelopes, riverine rabbits and a population of vultures.

The Hoedspruit Endangered Species Centre (HESC) in Limpopo focuses on the breeding and conservation of a variety of animal species, including African wild cat, ground hornbill, sable antelope, lion, cheetah and rhino. The HESC works closely with advisory committees of the Pretoria Zoo and the University of Pretoria.

### Aquariums and oceanariums

There are aquariums in Pretoria, Gqeberha (formerly Port Elizabeth), Cape Town, Durban and East London. The Aquarium and Reptile Park of the NZG of South Africa in Pretoria is the largest inland aquarium in Africa.

The Gqeberha Oceanarium's exhibits include an underwater observation area, a dolphin research centre, various smaller tanks containing 40 different species of bony fish and two larger tanks that display sharks and stingrays.

Officially opened on 2 December 1931, the East London Aquarium is the oldest public aquarium in Southern Africa. At the Two Oceans Aquarium situated at the Victoria and Alfred Waterfront, Cape Town, more than 3 000 specimens represent some 300 species of fish, invertebrates, mammals, birds and plants supported by the waters along the Cape coast. The aquarium at uShaka Marine World in Durban incorporates both fresh and seawater species.

### Snake and reptile parks

The Bayworld Snake Park in Gqeberha is home to a wide variety of South African and foreign reptiles. The Aquarium and Reptile Park at the NZG in Pretoria also houses a wide variety of reptile species from all over the world.

The Hartbeespoort Dam Snake and Animal Park near Pretoria features one of the finest reptile collections in southern Africa. The Pure Venom Reptile Farm is one of the largest of South Africa's reptile parks. It is situated inland from Shelly Beach, on KwaZulu-Natal's South Coast. The Croc River Enviro Park in Nelspruit, Mpumalanga is the largest facility of its type in Africa.

Khamai Reptile Centre primarily aims to conserve and breed endangered reptiles. Located outside Hoedspruit, it offers a close-up look at many local as well as exotic snakes, crocodiles and lizards.

The Croc City Crocodile and Reptile Park breeds crocodiles on a farm in Nietgedacht, Chartwell and other resident reptiles.

### Private sector involvement

More than 400 organisations in South Africa concentrate on conservation, wildlife and the general environment, while more than 30 botanical and horticultural organisations concentrate on the conservation of the country's fauna and flora. These include the:

- BirdLife South Africa
- Botanical Society of South Africa
- Centre for Rehabilitation of Wildlife
- Conservation International
- Delta Environmental Centre
- Dolphin Action Protection Group
- EcoLink
- Endangered Wildlife Trust
- Ezemvelo KZN Wildlife
- Green Trust
- Keep South Africa Beautiful
- KwaZulu-Natal Sharks Board
- National Conservancy Association of South Africa
- Peace Parks Foundation
- Southern African Foundation for the Conservation of Coastal Birds
- Trees and Food for Africa
- Wildlife and Environment Society of South Africa
- World Wildlife Fund of South Africa.

### Biodiversity

South Africa is home to some 24 000 species, around 7% of the world's vertebrate species, and 5,5% of the world's known insect species (only about half of the latter have been described). In terms of the number of endemic species of mammals, birds, reptiles and amphibians found in South Africa.

Marine biodiversity is also high, with more than 11 000 species found in South African waters, which is about 15% of global species. More than 25% of these species (or 3 496 species) are endemic to South Africa, many of which are threatened, especially in river ecosystems (82%) and estuaries (77%).

### Poaching

Fighting poaching, particularly rhino poaching in the Kruger National Park and abalone poaching in Western Cape, remains a top priority.

Strategies to combat wildlife crime involve the technological improvement of early warning systems and risk assessments, better coordination with law-enforcement agencies, and the deployment of additional rangers.

## Recycling

The Waste Management Bureau, which was established in 2016 in terms of the National Environmental Management: Waste Management Act of 2014, is tasked with promoting and facilitating the minimisation, reuse, recycling and recovery of waste by providing specialist advice and support for the development of integrated waste management plans for industry and municipalities.

The bureau is also tasked with monitoring the implementation of industry waste management plans, and managing the disbursement of revenue generated from charges for waste management. The National Regulator for Compulsory Specifications also receives funding to implement compulsory specifications for plastic bags.

In May 2021, the DFFE published the new requirements for plastic carrier bags, which require all to contain 50% recycled content from 2023, increasing to 100% by 2027. This will not only ensure circularity but will also see product design taking the environment into consideration.

By mid-2021, the DFFE was finalising norms and standards for organic waste treatment that would enable biogas generation and assist with organic waste diversion from municipal landfills.

To begin to ensure manufacturers and importers of products are responsible for the impact their products have on the environment, Extended Producer Responsibility plans were required for the paper and packaging, electrical and electronic equipment and lighting sectors in 2021.

This will divert these waste streams from landfills and increase recycling and up-cycling. In the 2021/22 financial year, the scope of products was being broadened to include pesticides, lubricant oils and batteries.

The National Recycling Forum is a non-profit organisation created to promote the recovery and recycling of recyclable materials in South Africa. Collect-a-Can, one of the oldest recycling initiatives in South Africa, has been instrumental in creating a culture of recycling in the country. It has obtained local and international acclaim for its contribution towards protecting the environment, as well as its significant contribution to job creation and poverty alleviation.

As part of the Presidential Economic Stimulus, the DFFE has revitalised the Good Green Deeds Programme to support cleaning up dumping hotspots across all district and metro municipalities, which will provide work opportunities of unemployed youth across the country.

## Climate change

The year 2020 also marked the coming into force of the Paris Agreement on Climate Change. By mid-2020, the department was reviewing contributions to reducing emissions and building resilience to the impacts of climate change, through its Nationally Determined Contributions.

As the country moved to a “nature-positive future”, the department called for public comment on three more Renewable Energy Development Zones (REDZ), namely Emalahleni in Mpumalanga, Klerksdorp in North West and Beaufort West in the Western Cape. This will bring to 11 the number of REDZ in the country. The declaration of these zones will fast-track the development of renewable energy projects in line with the Integrated Resource Plan.

## Green economy

Through South Africa’s Green Economy Strategy, the DFFE continues to promote equitable, inclusive and sustainable economic growth and social development. The strategy has eight key pillars, namely:

- Green buildings and the built environment;
- Sustainable transport and infrastructure;
- Clean energy and energy efficiency;
- Natural resource conservation and management;
- Sustainable waste management;
- Water management;
- Sustainable consumption and production; and
- Agriculture food production and forestry.

## Forestry

Forestry is one of the sectors that have a huge potential in job creation whilst ensuring the sustainable use of natural resources. The forestry, timber, pulp, paper and furniture sector not only has the potential to create more jobs and growth in marginalised areas of South Africa.

As part of the Government Greening Programme, the DFFE will coordinate and facilitate the planting of two million trees annually, for the next five years.

The Forestry Master Plan is a formal implementation plan to ensure the creation and sustainability of decent employment, long-term investment, and the transfer of skills and expertise to the next generation.

According to Forestry South Africa, forestry is estimated to contribute about 150 000 jobs, predominantly in rural areas where there are high levels of unemployment. This translates to about 11.5% of job losses in the sector due to factors of production affecting profitability throughout the value chain. The contribution to the economy is estimated at R45.5 billion.



This translates to 7.7% of manufacturing gross domestic product (GDP) and 25.5% of Agricultural GDP, including Pulp and Paper. It is through commercial plantations that timber is produced for construction, mining, furniture, paper production and other beneficial timber related enterprises.

### National Arbor Week and Month

National Arbor Week, which is celebrated annually in September, serves to promote awareness for the need to plant and maintain indigenous trees throughout South Africa. National Arbor Month in 2021 was coordinated under the theme: “Forest Restoration: A path to recovery and well-being”.

The theme is adopted from the United Nations Collaborative Partnership on Forests and is congruent to President Cyril Ramaphosa’s call for the planting of 10 million trees, for the next five years in South Africa.

As highlighted by the Paris Climate Agreement in 2015, forests and trees play a crucial role in reducing the accumulation of greenhouse gases in the atmosphere. Acting as carbon sinks, they absorb the equivalent of roughly two billion tonnes of carbon dioxide each year.

Effective forest management can strengthen resilience and adaptive capacities to climate-related natural disasters, underscoring the importance of integrating forest-based measures into national disaster risk reduction strategies. For 2021 the following three tree species were selected as trees of the year:

- *Vachellia karoo* (Sweet Thorn) – This tree falls under the common tree category.
- *Portulacaria afra* (Pork Bush) – This tree falls under the tree for promotion category.
- *Warburgia salutaris* (Pepperbark Tree) – This tree falls under the tree for appreciation category.

### Woodlands

Woodlands include those types ranging from wooded grasslands (between 5% and 10% tree canopy cover) to dense thickets (areas with over 75% tree canopy cover but which do not meet the other criteria required to be defined as natural forest).

The woodland, also known as savannas, constitute a forest resource of major importance in South Africa. It is the most accessible forest resource for poor communities and contributes in the region of R2 000 to R5 000 to poor households annually. While natural forests cover less than one million ha of land in total, and plantation forestry covers less than 1,3 million ha and the woodlands collectively cover about 29 million ha to 46 million ha.

Several protected tree species of the savanna, such as camel thorn and leadwood, contribute substantially to the lucrative braai wood market, and

guidelines have been set for licensing processes to assist with the control of their use. Kathu Forest in the Northern Cape is the first woodland area to be declared protected woodland under the National Forests Act of 1998. The woodlands are a valuable source of fuel, building material, craft timber and a variety of non-timber products.

These include fruit, fodder, medicinal compounds, honey, meat and mushrooms. They form the backbone of the livelihoods of millions of people. The wood processing sector comprises board manufacturers and manufacturers of wood-based products.

## Fisheries

The fishing sector remains a significant contributor to food security and the economy. Stabilising the sub-sector through the allocation of longer-term fishing rights is critical to attracting investment into the industry.

The fisheries sector is worth around R8 billion a year and the commercial sector directly employs approximately 28 000 people with many thousands more people depending on fisheries resources to meet basic needs in the small-scale and recreational sectors.

The transformation of the South African fishing industry is a constitutional and legislative imperative. The Fishing Rights Allocation Process (FRAP) and the management of commercial fishing rights are an important site for industry transformation. Twelve sectors were due for reallocation of fishing rights in 2021.

As part of the FRAP 2020/21 process, the DFFE will be reviewing the General Policy on the Allocation of Commercial Fishing rights; the 12 sector-specific policies; the Policy on the Transfer of Commercial Fishing Rights and the Policy on Fish Processing Establishments. The department will also be reviewing all our fees for applications, licences and permits.

The FRAP 2021 implementation process aims to be clean, transparent, accountable, transformative and legally defensible. A total of 110 Small-Scale Fishing cooperatives were allocated 15-year fishing rights in the Northern Cape, Eastern Cape and KwaZulu-Natal prior to lockdown in March 2020.

In December 2021, the Consultative Advisory Forum appointed to advise on the West Coast Rock Lobster (WCRL) fishery recommended that the Total Allowable Catch be increased for the 2021/22 season to 700 tons from the present 600 tons given the dire socio-economic conditions of fishers reliant on WCRL for their livelihood. The WCRL fishery has been experiencing challenges of declining stocks in recent years.

Besides the sector being faced with increasing demand from fishing communities and the broader public for access to the resource, illegal fishing and the effects of climate change have also contributed to the vulnerability of the species.

## Aquaculture

South Africa is a maritime nation with jurisdiction over one of the largest exclusive economic zones in the world. Its oceans represent a significant asset for current and future generations, with enormous economic potential, in aquaculture, bioprospecting, marine ecotourism, extractive industries, and less obvious benefits of healthy ecosystem services such as climate regulation, carbon storage and waste absorption.

The growing ocean economy had by mid-2021 contributed R41 billion to South Africa's gross domestic product, creating jobs in six focus areas including marine transport and manufacturing, offshore oil and gas exploration, aquaculture; small harbours development, coastal and marine tourism, marine protection services and ocean governance.

By mid-2021, consultations on the Aquaculture Development Bill were being finalised to be tabled in Parliament. The National Freshwater (inland) Wild Capture Fisheries Policy was also developed.

The Oceans Economy Programme includes a specific focus on marine protection and ocean governance while the Marine Spatial Planning Act of 2018 provides for the development and implementation of a shared marine spatial planning system to facilitate responsible use of the oceans, and to conserve the oceans for present and future generations.