



**FORESTRY,  
FISHERIES  
AND THE  
ENVIRONMENT**

**OFFICIAL GUIDE TO  
SOUTH AFRICA**

**2022/23**



## 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 wellbeing, and that is protected for the benefit of current and future generations. To this end, the department provides leadership on sustainability in environmental management, conservation and protection for the benefit of South Africans and the global community.

The department's mandate is derived from legislation that includes the:

- Marine Living Resources Act of 1998, which deals with the sustainable long-term use of marine living resources;
- National Environmental Management Act of 1998, which provides for specific legislation on biodiversity and heritage resources, oceans and coasts, climate change and air quality management, and waste and chemicals management;
- National Forests Act of 1998, which promotes the sustainable management and development of forests for the benefit of all, and creates the conditions necessary to restructure forestry in state forests for protection and sustainable use;
- National Veld and Forest Fire Act of 1998, which provides for the prevention and combating of veld, forest and mountain fires across South Africa;
- National Environmental Management: Air Quality Act of 2004, which reforms the law regulating air quality to protect the environment by providing reasonable measures for preventing pollution and ecological degradation, and securing ecologically sustainable development; and provides for national norms and standards that regulate the monitoring of air quality;
- National Environmental Management Amendment Act of 2004, which streamlines the regulation and administration of environmental impact assessment processes;
- National Environmental Management: Biodiversity Act (NEMBA) of 2004, which significantly reforms the laws regulating biodiversity;
- National Environmental Management: Integrated Coastal Management Act of 2008, which promotes the conservation of the coastal environment, and ensures that development practices and the use of natural resources are sustainable;
- National Environmental Management: Waste Act of 2008, which reforms the law regulating waste management to protect health and the environment by providing reasonable measures to prevent pollution; and
- National Environmental Management: Protected Areas Amendment Act of 2009, which provides for the assignment of national parks, special parks and heritage sites in terms of the World Heritage Convention Act of 1999.

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 jobs and work opportunities through the Expanded Public Works Programme (EPWP); and creating an enabling environment for South Africa's transition to a circular economy.

Over the medium term, the responsibility for enforcement at ports of entry was expected to be shifted to the Border Management Authority.

### Supporting an equitable transition to environmental stability

The department plays a pivotal role in ensuring that South Africa is equipped to manage and mitigate the effects of climate change. Over the medium-term period, the department aimed to promote the enactment of the National Climate Change Bill, which is intended to serve as the overarching legislative framework for adapting to and mitigating the effects of climate change. The Act will be supported by the implementation of the low-emission development and growth, and national climate change adaptation strategies.

As jobs in the coal, agriculture, tourism, petrol-based transport and metals sectors are likely to be affected by climate change, the department planned to spearhead the development of climate resilience plans such as the national climate change response policy in these sectors.

The department also planned to support provinces and municipalities in developing and implementing plans to adapt to climate change.

### Creating work opportunities and jobs

Over the medium term, the department aimed to create work opportunities and full-time equivalent jobs through the EPWP.

These opportunities and jobs will be created through projects and initiatives that involve: restoring and rehabilitating degraded ecosystems (environmental protection and infrastructure programme); increasing the percentage of land under conservation and managing land use sustainably (Working for Ecosystems); protecting, restoring and rehabilitating wetlands (Working for Wetlands); protecting water resources (Working for Water); addressing the challenges faced by the fisheries sector (Working for Fisheries); and sustaining production, growth and transformation in the forestry sector (Working for Forests).

### Transitioning to a circular economy

Over the medium term, the department aimed to focus on creating an enabling environment to support South Africa's transition to a circular economy, which entails shifting away from the current wasteful economy to an economy that is more regenerative, inclusive and equitable. Accordingly, over the medium-term period, the department planned to review and strengthen the extended producer responsibility policy framework and regulations.

The aim of this is to ensure that priority waste streams – such as plastics, paper and packaging, lighting, and electrical and electronics – are minimised, and that a culture of reusing and recycling is widely adopted by industry.

It also planned to implement the National Waste Management Strategy, which is aimed at minimising waste and diverting 40% of waste from landfills over the medium term to be recycled, repurposed and reintroduced into the economy. An example of the department's facilitation of this shift is in the tyre industry, for

which the department is finalising the implementation of a waste management plan that will be carried out over the medium term.

The plan is being developed in partnership with the Council for Scientific and Industrial Research and the Department of Trade, Industry and Competition, and includes the establishment of sustainable markets for recycled tyre products and the development of processing capacity to support the sustainable recycling of old tyres.

By providing training to municipal councillors and officials on waste management over the medium term, the department will seek to strengthen capacity and improve waste management in municipalities. This involves supporting the development of the integrated waste management plan, collection and diversion from landfills, and the implementation of clean-up campaigns and public awareness programmes such as War on Waste.

### Role players:

#### South African National Biodiversity Institute (SANBI)

The SANBI was established in terms of the NEMBA of 2004. Its mandate is to monitor and report on the status of South Africa's biodiversity; all listed threatened or protected species, ecosystems and invasive species; and the impact of any genetically modified organisms released into the environment.

Over the medium term, the institute aimed to focus on restoring and rehabilitating ecosystems across South Africa by maintaining and improving existing national botanical and zoological gardens; conducting research and supporting policies on biodiversity; and refurbishing existing infrastructure in the newly designated and developed national botanical gardens in Kwelera (Eastern Cape) and Thohoyandou (Limpopo).

#### South African National Parks (SANParks)

SANParks was established in terms of the National Environmental Management: Protected Areas Act of 2003. Its mandate is to conserve, protect, control and manage national parks and other defined protected areas and their biodiversity.

As the presence of an efficiently managed system of national parks is a key component of the national tourism economy, the entity plays a significant role in the economy and acts as a catalyst for local economic development. Through the implementation of the EPWP, the entity provides significant support to small, medium and micro enterprises, particularly in rural areas.

Over the medium term, the entity planned to focus on fighting poaching, particularly rhino poaching in the Kruger National Park and abalone poaching in the Western Cape; acquiring 30 752 hectares of land as part of its land inclusion plan; developing and upgrading infrastructure within national parks; and managing more than four million hectares of terrestrial and 369 657 hectares of marine protected biodiversity through a system of 21 national parks and 10 marine protected areas.

The national parks are:

- Addo Elephant National Park
- Agulhas National Park
- Ai-Ais/Richtersveld Transfrontier Park
- Au-grabies 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.

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.

### South African Weather Service (SAWS)

The SAWS is an authoritative voice for weather and climate forecasting in South Africa and as a member of the World Meteorological Organization, it complies with international meteorological standards. As an Aviation Meteorological Authority, the SAWS is designated by the State to provide weather services to the aviation industry, marine and a range of other identified clients, and to fulfil a range of international obligations of the government. It provides two distinct services, namely public good services that are funded by government, and paid-for

commercial services. By mid-2023, the SAWS was in the process of automating and modernising its observations infrastructure. This includes upgrades to mitigate the effect load-shedding is having on its data collection process.

Increased collection and accuracy of data will ensure that the SAWS can warn the public of extreme weather events in good time, saving lives and livelihoods. The SAWS's countrywide observational network consists of:

- 243 automatic weather stations.
- 2 climate stations.
- 1 050 rainfall stations.
- 153 automatic rainfall stations.
- 23 sea surface temperature stations.
- 47 weather buoys in the South Atlantic and South Indian Ocean.
- 14 meteorological radar systems.
- 1 global atmosphere watch station at Cape Point.
- 2 dobson ozone spectrophotometre stations in Irene and Springbok. (A third expected to operate at Cape Point).
- 1 baseline surface radiation network station in De Aar.
- 13 solar radiation stations.
- 5 biometeorological stations.
- 24 lightning detection sensors (excluding one in Eswatini).
- 17 air quality measuring and monitoring stations.
- 11 upper-air sounding stations with Irene also conducting ozone soundings.

### 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. 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 Lephhalale, 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

The National Protected Areas Expansion Strategy aims to achieve the cost-effective expansion of protected areas for improved ecosystem representation, ecological sustainability and resilience to climate change and safeguarding biodiversity-based jobs. The strategy extends to freshwater and marine components and 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 fine-leaved 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 meteorite 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.

A Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as 'The Convention on Wetlands', an intergovernmental environmental treaty established by UNESCO on 2 February 1971 in Ramsar, Iran.

It came into force from 1975 and provides for national action and international cooperation regarding the conservation of wetlands and wise sustainable use of their resources. Each year on 2 February is World Wetlands Day to mark the date of the adoption of the Convention on Wetlands in 1971. South Africa's 29 Ramsar wetland sites are:

- Seekoeivlei Nature Reserve (Free State)
- Barberspan (North West)
- Blesbokspruit (Gauteng)
- De Hoop Vlei (Western Cape)
- De Mond (Western Cape)
- iSimangaliso (KwaZulu-Natal)
- Kosi Bay (KwaZulu-Natal)
- Langebaan (Western Cape)
- Lake Sibaya (KwaZulu-Natal)
- Makuleke (Limpopo)
- Ndumo Game Reserve (KwaZulu-Natal)
- Ntsikeni Nature Reserve (KwaZulu-Natal)
- Nylsvley Nature Reserve (Limpopo)
- Orange River Mouth (Northern Cape)
- Prince Edward Islands in Antarctica
- Seekoeivlei
- St Lucia
- Turtle beaches and coral reefs of Tongaland
- Ukhahlamba-Drakensberg Park

- Verlorenvlei Nature Reserve (Western Cape)
- Wilderness Lakes (Western Cape)
- Dyer, Geyser and Dassen islands (Western Cape)
- Kgawane Mountain Reserve (North West).
- Bot-Kleinmond Estuarine System (Western Cap)

### 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

By mid-2023, the 85-hectare National Zoological Gardens (NZG), also known as the Pretoria Zoo, housed 3 117 specimens of 209 mammal species, 1 358 specimens of 202 bird species, 3 871 specimens of 190 fish species, 388 specimens of four invertebrate species, 309 specimens of 93 reptile species, and 44 specimens of 7 amphibian species.

The NZG is the largest zoo in the country and the only one with national status. More than 600 000 people visit the Zoo annually. The total length of the walkways in the Zoo in Pretoria is approximately six kilometres.

The highly accredited tourism site, World Atlas, published an article rating the Pretoria Zoo, as one of the 10 best ranked zoos in the world, competing with the well-known Bronx Zoo in New York. An Aquarium and Reptile Park also form part of the Zoo facility in Pretoria.

The Aquarium is the largest inland marine aquarium in the country. The third largest collection of exotic trees can be found at the Zoo. The NZG has since been incorporated into the SANBI.

As part of a new repositioning strategy, the zoo will be modernised and its role in species conservation, research, biodiversity education and public engagement, tourism and recreation enhanced. 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. The centre covers an area of 1334 hectares, comprising of a zoo-like environment, breeding camps and a free ranging area, all accommodating a large variety of African species as well as species from other continents..

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.

### 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 2023, the DFFE partnered with the UN Environmental Programme on World Environment Day to raise public awareness about the Triple Planetary crises of climate change, biodiversity loss and pollution by observing World Environment Day under the theme “Beat Plastic Pollution”.

### Climate change

Severe weather events, a phenomena associated with global warming, are a reminder that climate change is already part of our lived reality.

The Sixth Assessment report of the Intergovernmental Panel on Climate Change says that by 2030, 50% of the world’s population will live in coastal areas that are exposed to floods, storms and tsunamis intensifying the vulnerability of communities living in conditions of poverty.

In the face of this reality, the importance of early warning systems and effective rapid response to disasters cannot be over emphasised. Over the next three years, the DFFE will be investing over R100 million to upgrade and modernise weather stations to bring radar and forecasting in line with modern very short-term prediction standards.

### 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

In terms of Forestry South Africa, which represents the forestry industry, the South African forestry landscape is a tapestry of commercial timber plantations – or tree farms – interwoven by natural spaces of unplanted land to enhance and conserve biodiversity, grasslands, wetlands and indigenous forests.

With some 80% of the country's timber plantations certified by the Forest Stewardship Council, South Africa has one of highest degree of forest certification in the world. South Africans can be proud of their Forestry Industry as one that is environmentally, socially and economically responsible.

### 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. The theme for 2023 was “Forests and Health”, as adopted by the United Nations Collaborative Partnerships on Forests.

The 2023 theme aimed to highlight how forestry and tree planting play key roles in creating sustainable healthy communities through health benefits derived in forests through nutritious foods, medicine, fresh air, clean water, and places for recreation.

The following were selected as Trees of the Year for 2023:

- ***Leucadendron argenteum* or Silver tree:** The Silver tree is naturally confined in the Western Cape, in the city of Cape Town, and on the slopes of Table Mountain. The silver tree is widely cultivated as an ornamental garden specimen. Its beautiful silver foliage is used in floristry. The leaves have also long been collected, pressed, and dried for decoration or as a souvenir. The dried female cones are decorative and the small silver balls of the dried male flower heads are used in dried floral arts and crafts.
- ***Buddleja saligna* or False olive:** The False olive is found in all provinces in South Africa and is common near Johannesburg and Pretoria. It can grow in poor soils, on hot mountainsides, either away from or close to water and is both cold and drought resistant. The False olive can be used for traditional medicine purposes; leaves to treat colds and coughs, and roots used as a purgative. It is also used to make small pieces of furniture and fence posts as

well as assegai handles.

- ***Bolusanthus speciosus* or Tree wisteria:** The Tree wisteria, being a protected tree in South Africa, wild specimens may not be removed, cut down or damaged. Flowering time is from August to January. It is widespread in wooded grasslands of the Limpopo, Mpumalanga, Eswatini and KwaZulu-Natal. The roots are used medicinally to alleviate stomach problems and the inner bark used to treat abdominal cramps. The wood makes excellent furniture.

## 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. 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 nontimber 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 transformation of the South African fishing industry is a constitutional and legislative imperative. The Fishing Rights Allocation Process and the management of commercial fishing rights are an important site for industry transformation.

On 15 November 2023, the DFFE announced the final outcome of the allocation of 15-year fishing rights to small-scale fishers in the Western Cape. This marked the final province where these rights have been granted for the first time in South Africa's history.

In the lead-up to fishing rights allocation, the department worked with community-based organisations and fishing communities to register cooperatives and identify suitable species and fishing areas to be used by the cooperatives.

By the end of 2023, the department was in the process of developing a sustainable and financially viable basket of species for the small-scale sector.

Some of the species that have been granted to date include commercial traditional line-fish species, west coast rock lobster, seaweed, bait species,



abalone aquaculture ranching sites, net-fish species, white mussels, oysters and hake handline.

### 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 aquaculture subsector can be divided into two main categories:

- **Freshwater aquaculture** consists mainly of freshwater species such as rainbow trout, brown trout, Koi carp, crocodiles, ornamental fish, African catfish, Mozambique and Nile tilapia, Marron and waterblommetjies.
- **Marine aquaculture** consists of abalone, white prawns, oysters, seaweeds, Spanish & Brown mussels, Dusky & Silver Kob; yellow tail, Atlantic salmon, clownfish, White Margined Sole, West & East coast rock lobster, scallop and blood worms.