

# Environment Quarterly

Kwartaalike Omgewingsverslag • Tikologo ka Kotara • Mupo nga Kotara



**Minister Creecy visits  
Table Mountain**

**2021 DFFE Budget Allocation**



**forestry, fisheries  
& the environment**

Department:  
Forestry, Fisheries and the Environment  
REPUBLIC OF SOUTH AFRICA



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# 2021

# environment CALENDAR



## JANUARY

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02 February  
02 March  
21 March  
23 March  
22 April

**World Wetlands Day**  
**World Wildlife Day**  
**International Day of Forests**  
**World Meteorological Day**  
**Earth Day**

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17 May  
22 May  
05 June  
08 June

**World Migratory Bird Day**  
**International Day for Biological Diversity**  
**World Environment Day**  
**World Oceans Day**

17 June  
18 July  
31 July  
31 Aug - 04 Sep

**Desertification and Drought Day**  
**Nelson Mandela Day**  
**World Ranger Day**  
**Arbour Week**

## SEPTEMBER

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16 September  
19 September  
07 - 11 September  
21 November

**International Day for the Preservation of the Ozone Layer**  
**International Coastal Clean-up Day**  
**South African National Parks Week**  
**World Fisheries Day**

## Cover story

4 Minister Creecy visits Table Mountain

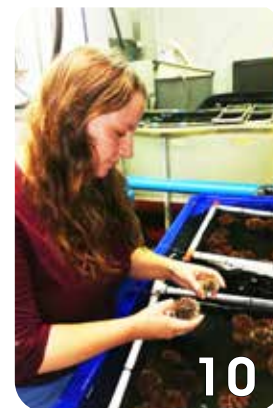
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### About the back cover image

Giant's Castle is a mountain located within the Drakensberg range in KwaZulu-Natal, South Africa. It includes a grassy plateau nestled among the deep valleys of the southern end of the central Drakensberg. Together, the shape of the peaks and escarpment are thought to resemble a sleeping giant's profile; hence, its name. Giant's Castle is best known for its nature reserve and the bushman rock art preserved at its main caves, and the game reserve is home of the eland as well as the bearded vulture and Cape vulture. The area is considered one of South Africa's many adventure areas, and attracts hikers, nature enthusiasts, and other tourists



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# From the Editor-in-Chief's Desk



## Dear Valued Stakeholder

A hearty welcome to our now bi-monthly Environment Quarterly. Allow us to revisit that name to make it more attuned to the new focus of our new Department.

You can be guaranteed that we are building a brand that should take our stories to various sectors of our society. You can safely pin your hopes and trust in us to come back with a bountiful and apt name for your favourite environment publication. In our last editorial I alerted you of our intent to come out bi-monthly, instead of the old quarterly release. It's all work in progress and I am loving the evolution of the new product.

On the subject of progress, Minister Creecy and Deputy Minister Sotyu recently laid out our game plan for the environment sector during the budget vote presentations before lawmakers. It was all done virtually with the leadership of the department articulating our programme of action as we claw our way out of the suffocating Covid-19 restrictions. Of course, we are not out of the woods yet. We should all play our part to keep our communities safe.

Our department has been allocated a budget of R8 716.8 billion for the 2021/22 financial year; and R26.5 billion over the Medium Term Expenditure Framework (MTEF) period.

It is an allocation that will chiefly drive our equitable transition to a low-carbon economy and a climate-resilient society. South Africa has been hard at work to ensure we create an enabling environment for our nation's transition to a circular economy, and the allocation has sought to prioritise programmes aimed at achieving that.

The fisheries sector, which is worth around R8 billion a year, was also prioritised with the mandate of job creation and meeting basic needs in the small-scale and recreational sectors, set as priority. Our efforts to protect our environment must also be twinned with the creation of job opportunities through public employment programmes.

A proactive and responsive administration is the one that descends into communities whenever a challenge visits them. In this edition, we followed Minister Barbara Creecy when she visited Table Mountain National Park to assess the damage following the blaze in the national park that destroyed acres of vegetation and damaged a number of structures, including the recent devastating fire on the side of Table Mountain. Minister's visit was aimed at assessing the impact the fire had on the biodiversity and communities around the national park, as well as engaging authorities and firefighters, to map a way forward.

The first week of May also saw a significant milestone for the Department when the Minister released the report of the High-Level Panel that was appointed to review policies, regulatory measures, practices and policy positions that are related to hunting, trade, captive keeping, management and handling of elephant, lion, leopard and rhinoceros.

Another positive highlight during the past few months was the handover of the Lekgalameetse Nature Reserve to the communities falling under the Greater Tzaneen Municipality by the Deputy Minister, Ms Makhotsa Sotyu.

Deputy Minister Sotyu also led a webinar to celebrate International Day of Forests (IDF) on 25 March 2021 under the theme Forest Restoration: A path to recovery and well-being. It is in the same webinar that the Deputy Minister revealed that industry has committed to invest R24.9 billion in the forestry sector, while government will facilitate and coordinate the recapitalisation of 68 820 hectares of state-owned plantations.

22 May 2021 annually marks the International Biodiversity Day with this year's theme being "We're part of the solution". The theme was chosen as a continuation of the momentum generated last year under the over-arching theme "Our solutions are in nature", which served as a reminder that biodiversity remains the answer to several sustainable development challenges.

We will be celebrating Environment Month in June and will commemorate Environment Day on 5 June with the aim of galvanising positive environmental action. We are looking forward to bringing you all the activities that will take place during the Environment Month in the next issue.

Lastly, let me congratulate Mr. Shonisani Munzhedzi on his appointment as CEO of the South African National Biodiversity Institute. Mr Munzhedzi, brings with him a wealth of experience, having most recently served as the Deputy Director General: Biodiversity and Conservation in the Department of Forestry, Fisheries and the Environment. All the best Shoni. I know you will continue to do us proud.

Until next time – take care of our environment!!

**Albi Modise**

**Head of Communications & Advocacy**

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Albi Modise

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Find more information on: [www.environment.gov.za](http://www.environment.gov.za) or call 086 111 2468

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**PAM WILLIAMS, SECRETARY**



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REPUBLIC OF SOUTH AFRICA



# Minister Creecy visits Table Mountain

By Gaopalelwe Moroane

Images by Ashraf Hendricks, Reuters, Rodger Bosch and Siyabulela Malo



**Above:** Minister Barbara Creecy with some of the Sanparks rangers and firefighters that worked to contain the Cape Town fires.  
*Image by Siyabulela Malo.*

The Minister of Forestry, Fisheries and the Environment, Ms Barbara Creecy, visited Table Mountain National Park on 24 April 2021, following the fires that damaged property and destroyed hundreds of hectares of biodiversity on Table Mountain.

Minister's visit was aimed at assessing the impact the fire had on the biodiversity and communities around the national park as well as to engage authorities and firefighters, to map a way forward.

Aboard Working on Fire's helicopter huey's, which were instrumental in fighting the fires, Minister, accompanied by the Chairperson for the Portfolio Committee on Forestry, Fisheries & the Environment: Mr Fikile Xasa, flew from the Newlands Fire base to assess the damage the fire has caused.



The Minister thanked the firefighters from different firefighting agencies, including NCC and Working on fire. "When you are up there in the air, you see the scarring of the fire, you see sections of the mountain that now look like sections of the moon, but what one also realises is how much worse it could have been, how huge this mountain is, and as big the damage is, how much worse it could have been, were it not for the efforts of the men and women that put their lives on the line," she said

Sharing his experience with battling fires, Working on Fire's Mr Joseph said, "When we receive fire calls, immediately fear takes over but because we have well trained leaders, we always remember much was given in the training and now much is needed."

Minister Creecy explained that the effect that Climate Change has on wildfires such as the one that ravaged through Table Mountain, "Wildfires are a reoccurring phenomenon because of climate change. Our weather stations are indicating that over the last few years, in April we are recording record high temperatures. These temperatures are much higher than those we experienced a few decades ago, and certainly far higher than a century ago," she said.

"These conditions dry out vegetations and make the existence of wildfires more of a possibility. In these circumstances of Climate Change, it becomes important that we look at our regulatory frameworks, in terms of what kind of vegetation we will allow to grow in high risk areas," she added.

Minister Creecy went on to stress the importance of Climate Change adaptability in the form of fireproofing buildings in cities such as Cape Town, that are built close to areas with vegetation which is highly flammable.

The Minister thanked the residents of Cape Town, "When men and women were risking their lives on the fire line, the outpouring of support, food and water, chain stores, non-chain stores, non-government organisations and private citizens, your support and caring meant a tremendous amount to these men and women. "

Minister Creecy closed by thanking the firefighters and rangers for their efforts in fighting the fires, "We salute your bravery. We salute your ability to fight your fears. We stand in awe of that incredible ability," she said.

- The fire started close to the N2's Hospital Bend;
- The helicopter hueys flew a total of 60 hours and dropped 411 tons of water to extinguish the fire in 733 drops;
- In total between 650 and 700 hectares have been damaged, as well as damage to the University of Cape Town (UCT) and other historical buildings;
- During the height of the fire, 1000 firefighters fought the fire in shifts and;
- There are currently 2 independent investigations underway, 1 by SANParks and the other by UCT. The investigations will give the causes



**Above:** Minister closed her speech by thanking the firefighters and rangers for their efforts in fighting the fire. *Image by Siyabulela Malo.*



**Above:** Minister Barbara Creecy departs from the Newlands Fire base aboard the Working on Fire helicopter which was instrumental in fighting the fires. *Image by Siyabulela Malo.*



**Above:** More than 120 firefighters have been deployed to the area. *Image by Reuters.*



**Above:** Firefighters try to extinguish a fire in the Jagger Library, at the University of Cape Town. *Image by Rodger Bosch.*



**Above:** The historic Mostert's Mill is seen in ruins after the blaze. *Image by Ashraf Hendricks.*

# Lekgalameetse belongs to people of Tzaneen!

By Lydia Makamedi



**Above:** The Deputy Minister of Forestry, Fisheries and the Environment Ms Makhotso Sotyú addresses traditional leaders and communities at Lekgalameetse Nature Reserve in Tzaneen, Limpopo.



**Above:** The Deputy Minister unveils the new infrastructure development at Lekgalameetse Nature Reserve.



**Above:** Some of the new facilities built for the community in Lekgalameetse Nature Reserve.

The Deputy Minister of Forestry, Fisheries and the Environment Ms Sotyú officially handed over Lekgalameetse Nature Reserve to the communities falling under Greater Tzaneen Municipality on 30 March 2021. The Lekgalameetse Nature Reserve is part of People and Parks programme that was piloted by the Department in 2003.

Addressing traditional leaders and six beneficial communities, on whose land the Nature Reserve is situated, the Deputy Minister said the People and Parks programme aims to redress the injustices of the past.

“Through the People and Parks programme, the Department strives to ensure that communities that were forcefully removed from their land in an effort to create protected areas by the apartheid regime, enjoy socio-economic benefits of those protected areas. The Lekgalameetse Nature Reserve is one such area. It is a key biodiversity area within the lower Olifants catchment,” she said.

During the handover, the Deputy Minister also unveiled a new infrastructure aimed at promoting local tourism and environmental protection.

“The facilities we are unveiling today form part of the People and Parks initiative, which invests in infrastructure development and biodiversity conservation for economic benefits by ensuring that local communities are involved in the management of protected and surrounding areas, and by promoting biodiversity values in the proclaimed protected and surrounding areas,” she said.

Mr Laurence Mogakane, National Chairperson of People and Parks was pleased with the progress that the People and Parks is making. He urged communities to be active participants in decision making.

“From the People and Parks perspective, we urge the land claimants to also participate not only as providers of labour but also in the decision making process. Community members must be offered learnership programmes and those who are unskilled must be given training. This will enable them to look well after their properties and continue to drive and enjoy the benefits of their forefathers’ lands economically for generations to come,” he concluded.



## About the contributor: Lydia Makamedi

Ms Lydia Makamedi is an intern in the Communications and Advocacy Chief Directorate at the Department of Forestry, Fisheries and the Environment. She holds an honours degree in communications from the University of Limpopo. Ms Makamedi is a gym fanatic and loves watching cricket.



# Finland, Norway support forestry education in SA

By Veronica Mahlaba

South Africa, Finland and Norway have partnered to launch "21st Century Climate-Smart Forestry Education for Livelihoods and Sustainability in South Africa" (FOREST21) Project, to strengthen capacity in South African higher education institutions offering forestry. This capacity-building project was launched during a two-day virtual workshop on 14 – 15 April 2021.

The project is implemented in collaboration with five higher education institutions (HEIs) in South Africa that have forestry curricula or will start teaching forestry. These institutions are: Nelson Mandela University, Stellenbosch University, Tshwane University of Technology, University of Venda and Fort Cox Agriculture and Forestry Training Institute. Two universities in Finland which are Aalto University and Häme University of Applied Sciences and one in Norway which is Inland Norway University of Applied Sciences.

Present to launch FOREST21, Deputy Minister of Forestry, Fisheries and the Environment, Ms Makhotsu Sotyú emphasized her support for the project and stated that forestry as a sector provides economic and employment opportunities in predominantly rural areas, where there are high levels of poverty and unemployment.

The South African government working with industry and labour have just finalised the Forestry Sector Master Plan. Cabinet approved the plan for implementation in the 2021 financial year. One of the key focus areas of the Master Plan is Research Development, Innovation, Human Resources and Skills Development. "This focus area is aimed at ensuring that we have well-skilled professionals and technocrats in the field of forestry to implement the Master Plan, which is essentially a growth, transformation and investment plan for the sector. In addition, the focus area on skills development will ensure that entrepreneurs are created in the sector who can create employment opportunities and grow the economy," explained Deputy Minister Sotyú.

The FOREST21 Project received a generous grant of €999,965.00 co-funding from the Erasmus+ Programme of the European Union. The project started in January 2021 and is implemented by reforming the curricula in forestry education to equip graduates with problem-solving skills, an entrepreneurial mind-set and climate-smart thinking. Students will learn through solving real-life business challenges on the field in international teams. FOREST21 requires close collaboration between the public sector and the industrial sector, as well as the teaching and managerial staff in partner HEIs to find the practices in the local context.

Also joining the virtual launch was Deputy Minister of Higher Education, Science and Innovation, Mr Buti Manamela who stated that from an international cooperation perspective, the FOREST21 project is very significant for international cooperation in science and innovation. He further elaborated that under Sustainable Development Goal (SDG) 15 the international community committed to the following:

- The protection, restoration and promoting sustainable use of terrestrial ecosystems;
- Sustainably managing forests;
- Combating desertification; and
- Halting and reversing land degradation and biodiversity loss.

"These goals can't be achieved without increased international cooperation in science and education. The objective of the FOREST21 project to strengthen capacity in South African higher education for forestry, responds directly to the intention of SDG 15 and it is therefore deserving of our strong support. This doesn't just significantly benefit South Africa, but also bolsters our efforts in the development of global knowledge resources for sustainable development. FOREST21 is therefore a perfect example of the type of cooperation with Europe that South Africa values and would like to further promote," Deputy Minister Manamela said.



## About the contributor: Veronica Mahlaba

Ms Veronica Mahlaba is a Senior Communication Officer in the Communications and Advocacy Chief Directorate at the Department of Forestry, Fisheries and the Environment. Ms Mahlaba has experience as a Lecturer in the Media Studies Department at a private college.

# SAWS praised for Cyclone Eloise advanced warnings

By Tshegofatso Nahlovu and Zibuse Ndlovu

The Minister of Forestry, Fisheries and the Environment, Ms Barbara Creecy has praised the South African Weather Service (SAWS) for the sterling work done in tracking the unusual path of Cyclone Eloise. Minister Creecy was speaking during a webinar held on 23 March 2021 to celebrate the World Meteorological Day.

“Early this year, I had the opportunity to experience first-hand the important work our Weather Service plays in mitigating the impacts of severe weather, natural disasters and climate-related challenges,” said Minister Creecy.

In January, Cyclone Eloise travelled across the country wreaking havoc from Mpumalanga to the Northern Cape. “For over two weeks we participated in the National Disaster Management Committee where SAWS predicted disruptive rainfall and supported provincial and municipal governments prepare for and avert the worst aspects of this extreme weather event,” said Minister Creecy.

Using its state of the art technology and collaborating with other international organisations, SAWS was able to give accurate hour by hour information that enabled disaster management services across the country to mobilise support services to close roads and bridges threatened by flooding, monitor dam levels, clear debris, and search for and rescue those affected by flood waters.

“Much of our success in this regard was due to the progress SAWS has made in the 2020/21 financial year to change to Impact-based Weather Forecasting. I believe that the advance warnings by SAWS as part of its Impact-based warning services played an important role to raise awareness among the public, thereby ensuring that the public took the necessary precautionary steps to be as safe as possible,” said the Minister.

Minister Creecy said that SAWS will during the next few years, increase its efforts to improve its ageing infrastructure while bringing on board more experts to ensure an excellent service. “The South African Weather Service will continue to grow its pool of highly qualified scientists, weather technologists and other human resources to ensure that we maintain our scientific excellence and competitive edge to face environmental challenges while also adhering to various frameworks, national and international priorities,” said Minister Creecy.

Executive in Weather and Climate services at SAWS, Dr Jonas Mphepya said that climate change has impacted the manner in which forecasts are executed. “South Africa is surrounded by a large body of water from two oceans, the impact of oceans on our weather and climate is significant and with climate change occurring at a rapid pace, the influence on our local and regional weather systems dictate that SAWS’ impact-based forecast needs to be of the highest quality,” said Dr Mphepya.

**“Early this year, I had the opportunity to experience first-hand the important work our Weather Service plays in mitigating the impacts of severe weather, natural disasters and climate-related challenges.”**



## About the contributor: Tshegofatso Nahlovu

Mr Tshegofatso Nahlovu is an Intern in the Communications and Advocacy Chief Directorate at the Department of Forestry, Fisheries and the Environment. He holds a diploma in Journalism from The Tshwane University of Technology. He is an avid Tennis Player who looks up to the Williams Sisters.

# Industry to invest R24.9 billion in the forestry sector

By Tshegofatso Nahlovu and Zibuse Ndlovu

Image by Veronica Mahlaba

The Industry has made a commitment to invest R24.9 billion in the forestry sector, while government will facilitate and coordinate the recapitalisation of 68820 hectares of state-owned plantations. This was revealed by Forestry, Fisheries and the Environment Deputy Minister, Ms Makhotso Soty during a webinar held to celebrate International Day of Forests (IDF) on 25 March 2021.

The webinar brought together stakeholders from the government, industry representatives, scientists and labour to deliberate on the implementation of South Africa's Forestry Sector Master Plan approved by the Cabinet last year.

In her opening address, the Deputy Minister stressed the importance of the Commercial Forestry Sector Master Plan. "The Masterplan balances environmental, economic and social benefit from the forestry resources, and is aimed at addressing the expansion of the forestry resource, transformation of the sector, value addition and processing, timber theft and illegal activities, research, development, innovation and skills development, and key inhibitors to the growth of the sector," she said.

The Masterplan covers labour issues such as training and reskilling where there is increased mechanisation and ensuring that there are opportunities for worker equity and enterprise development.

"The Masterplan is aligned to the priorities of government in relation to creation of decent employment, rural development, skills development and the development of small micro and medium enterprises to grow the economy," said Deputy Minister.

The figures released in December 2020 by Statistics South Africa, indicate that the Agriculture, Forestry and Fisheries sector continued its positive growth and contribution to Gross Domestic Product (GDP) during the third quarter of 2020.

"We are pleased that there was agreement among the three major parties that have made commitments to the Masterplan i.e. government, industry and labour. Sectors like forestry, which have potential for growth and creation of economic, and employment opportunities need to be given the attention they deserve," said Deputy Minister Soty.

Mr Mark Hazel of the Institute for Environmental and Recreation Management praised the recommendation from President Cyril Ramaphosa to the Department to increase the planting of trees. "Trees provide a lot of benefits to our communities by providing us with food, providing homes for our animals and bringing about the reduction of pollution in our cities. The mandate given to the deputy minister by the president is one that we should all celebrate as the planting of trees will bring about a lot of environmental value," said Mr Hazel.

This year's International Day of Forests was celebrated under the theme: **Forest Restoration: A path to recovery and well-being.**



**Above:** As a build-up to the IDF, tree-planting initiatives were undertaken in the Gauteng, North West and Northern Cape Provinces. A total of 6 000 trees have been planted and 233 workers have been appointed through the Expanded Public Works Programme. *File Photo: By Veronica Mahlaba*



## About the contributor: Zibuse Ndlovu

Zibuse Ndlovu is the Assistant Director in the Communications and Advocacy Chief Directorate at the Department of Forestry, Fisheries and the Environment.

# Marissa's quest to save marine life...one organism at a time

By Zibuse Ndlovu

It is often said that the future belongs to those who believe in the beauty of their dreams and that, with a bit of grit, patience and hard work, the world can become your oyster. These words could not hold truer for Dr Marissa Brink-Hull, who besides being an embodiment of intellectual adroitness, is also rabidly passionate about delving deeper into the field of aquaculture research.

"I am motivated by the contributions that my research can make to the growing aquaculture industry, especially given the challenges that our oceans and marine life are facing," she says.

## What led you to your career and what motivates you to wake up every day?

Prior to my postgraduate studies, I always had an interest in biology, science, and it amazed me how complex the natural world around us is. I was quite uncertain with regards to the exact career path I wanted at this stage, but through my exposure to molecular biology in my honours and PhD, applied to a marine science field, I gained an interest in marine science and aquaculture then I decided to pursue a career in this, in a research capacity.

## As a young female scientist in a male-dominated environment, what is your career planning advice to other young people, especially young women who may be looking to follow in your footsteps?

Young female scientists shouldn't feel hesitation to get involved in research in male-dominated fields, as I think that equal representation is important in any field. I am fortunate to work with researchers that value mentorship and are welcoming to female scientists in the team.

## What do you find challenging and most rewarding about your work?

The complexities of the analyses we perform, compounded by the intricacies of working with living, biological systems can be challenging. However, this can also be the most rewarding part as this allows us to identify patterns and best practices for the future management of aquaculture species.

## As one of the young people who were chosen to make up the second cohort of All-Atlantic Youth Ambassadors...how has the experience been for you?

Working with this group of young ocean enthusiasts and building a network for knowledge-sharing and spreading ocean awareness to impact the protection of our ocean has been quite rewarding so far. This programme is also equipping us with the skills to promote ocean awareness through various workshops and seminars, and through this, we hope to empower communities to protect our seas.



Above: Dr Marissa Brink-Hull Collecting kelp to feed to the sea urchins currently housed at the Marine Research Aquarium.



Above: Dr Bink-Hull size grading juvenile sea urchins (*Tripneustes gratilla*) that are approximately 4 months old.



Above: Dr Brink-Hull Holding a broodstock animal.

### **You have been previously involved in organising shoreline clean-ups... what inspired the initiative ?**

This can contribute to improving ocean health and protect the marine species that plastic and other items along the shoreline affects. In light of Earth Day on 22 April, we are planning another beach clean-up in Cape Town and will most likely plan more throughout the year.

### **Having had an opportunity to assess various species along the South African coastline and abroad...how would you describe the current state of our marine life, is there a reason for concern?**

My research has been focused on a single sea urchin species, along the South African shoreline. However, based on global data as well as research conducted in my previous research group, many species are facing population declines, quite often driven by anthropogenic (human-mediated) forces. Given that the South African coastline is considered a biodiversity hotspot, this region requires continuous monitoring to preserve this diversity.

### **How do you create balance between your career, continuing studies and meeting the demands of your marine research work?**

In my career path, these aspects are largely interconnected. Through the research I am doing, I am constantly learning new techniques and how to apply them to answer marine research questions, so luckily it all tends to balance itself out.

### **Who has been your strongest influences in life?**

My parents, for encouraging my interests and curiosity as I was growing up, with my dad being a strong driving force for my interest in science as a scientist himself. I

have also been influenced and inspired by my peers throughout my studies, particularly my husband. We completed our undergraduate and postgraduate degrees in the same field, and in fact, met on the first day of first year in university.

### **What do you consider to be your single greatest achievement in life thus far?**

Though I know that this is only the start of my career, it would have to be my Doctorate Degree. It's a long road, with many challenges along the way, but I completed it at the end of 2020, and I cannot thank my supervisors, family and friends enough for their continued support.

### **Maybe share with us something about yourself that you want to improve**

I think that scientific communication is a skill that is becoming more and more valuable in this interconnected social-media orientated world. I would like to learn more on bridging the gap between science and the general public, as often times the main findings of research can get lost in translation.

### **What are the minimum requirements to study in your field?**

I'm not sure of the exact minimum requirements as this might differ depending on the institution students apply to. In general, relatively good marks (>70%) in Biology, Science (Chemistry/ Physics) and Mathematics are required for BSc undergraduate degrees, but there are also extended degree programmes that are available.

### **What are your future plans?**

I am planning on continuing research in aquaculture, with a focus on microbiome work, where I want to mentor students and form lasting relationships with collaborators in this field. I also plan to continue working in ocean awareness and conservation campaigns, as this youth ambassadorship programme has ignited a passion for this work.

Despite standing at the pinnacle of her chosen field of study, Dr Marissa Brink-Hull says this is just the beginning...It is a passion she is keen to see being replicated among our country's youth, "given the infinity of research possibilities in this complex yet immensely fulfilling field."

### **Quick facts:**

**Age:** 27

**Hometown:** Paarl, Western Cape.

**Interests:** Ocean conservation, marine microbiomes, animals, music, gardening.

**I am currently reading:** Bad Science, by Ben Goldacre, which I highly recommend.

# Local Marine biologist lands learners on National Geographic stage

By Gaopalelwe Moroane and Siyabulela Malo



**Above:** Zoleka Filander hosted National Geographic's Explorer virtual classroom. (Image provided by OceanX)



**Above:** Milani Ndamse asks Zoleka Filander the kind of research she does and types of species the researchers normally find in the ocean.

**Z**oleka Filander, a benthic researcher within the Department of Forestry, Fisheries and the Environment (DFFE) hosted a global National Geographic's Explorer virtual classroom, titled Seeing the Sea Floor on Friday, 19 March 2021.

With the aim of involving South African learners in this global classroom, DFFE partnered with the Benguela Current Commission (BCC) to host 90 South African learners in this global classroom.

Participating learners were from Gansbaai Academia High School in Gansbaai, STS Lawhill Maritime Centre in Simons Town, and Solomon Mahlangu High School, in Kariega (former Uitenhage).

The learners got the opportunity to engage with Zoleka on life in the ocean and the importance of Marine and Science today and beyond.

Zoleka who is an expert in the field of marine science took her virtual class aboard OceanX vessel and the ROV (Remote Operating Vehicle), which she has been using to explore the ocean floor. She emphasised the importance of knowing our oceans and the need for conservation.

She continued to highlight that world trade happens through the oceans and made a call for learners to spread the word to everyone about keeping our oceans clean.

According to the Explorer Classrooms host, Celeste Harrison, an estimate of 1,575 students from across the globe tuned in live.

Zoleka cheered the interest shown by the learners in the field of marine science and encouraged especially female to boldly choose scientific careers. "Science is about curiosity, critical thinking and the ability to answer questions in a critical manner," she said.

Filander is one of four young ocean researchers from different countries that are experts in various marine science research fields who are part of National Geographic Explorer at Large James Cameron, BBC Studios' Natural History Unit ("Blue Planet II") and the OceanX six-part series.

Filming began in February 2021 and will continue National Geographic's expansive legacy of partnering with the most iconic natural history documentary filmmakers in the world to deliver ground-breaking stories about the earth's oceans. National Geographic announced the start of production of its upcoming global six-part series: OCEANXPLOERS.



**Above:** Learners at Gansbaai Academia High School after the National Geographic Explorer Virtual Classroom. (Photo by Nwabisa Timeni)



## About the contributor: Siyabulela Malo

Mr Siyabulela Malo is a Media Relations & Editorial Services Intern in the Directorate : Communication Services in Cape Town. He holds a BA Communications Management Degree from the University of Fort Hare.

# Promoting the sustainable use of biodiversity and ecosystem services

By Tshegofatso Ndhlovu



**Above:** Mrs Mamfasi from Hobeni Village, South Africa, displays wild spinach that she has collected from her home garden. (Image by Katie Tavenner).



**Above:** Volunteers from Kaya planting and environmental education initiative. Nature-based solutions have huge potential to help communities cope with the impacts of climate change (Image by Kaya Responsible Travel).

Hosted under the theme “strengthening the evidence and informing policy” by the Department of Forestry, Fisheries and the Environment, the 2nd Ecosystem-based Adaptation (EbA) Community of Practice (CoP) took place virtually from 17-18 March 2021. The EbA virtual CoP aimed to bring together key stakeholders from national, provincial, and local departments, public entities, Non-Profit Organisations, research institutions and the private sector to participate in an intellectual discussion on EbA and identifying common challenges and major barriers and developing practical solutions for implementing EbA in South Africa.

EbA promotes the sustainable use of biodiversity and ecosystem services to enable people to adapt to climate change and has been defined as an effective and cost-efficient way to reduce vulnerability to climate change while enhancing sustainable development and as such contributes simultaneously to socio-economic development, climate change adaptation and mitigation and biodiversity conservation.

Discussing the National Climate Change Adaptation Strategy (NCCAS), the Director for Climate Change Adaptation-Natural Resources, Mr Sibonelo Mbanjwa said that the NCCAS is a tool that can be used to highlight the work being done in South Africa to adjust to climate change.

“The National Climate Change Adaptation Strategy is a reference point for Climate Change adaptation efforts in our country that guides stronger coherence and coordination between different institutions and levels of government. The strategy can also help us in adopting climate-resilient approaches to natural resource

management to restore and maintain ecosystem goods and services while investigating technologies that can be used in consideration of the 4th industrial revolution,” said Mr Mbanjwa.

Mr Mbanjwa added that we need to provide education and awareness on climate change adaptation at all levels and sectors, including government, private and public sectors and at a school level to ensure that people are able to deal with the consequences of climate change.

The 2nd EbA CoP saw stakeholders share concrete experiences and results on the implementation of EbA in South Africa while identifying entry points for strengthening EbA within sector policy frameworks, institutions and governance structures at national and subnational level. The stakeholders also identified options for financing EbA measures through public and private initiatives and provided evidence on EbA effectiveness by showcasing ecosystem-based adaptation projects that have been implemented in South Africa.

Giving a report on the Buffelsdraai Community Reforestation Project, Manager in the Restoration Ecology branch at the City of eThekweni, Mr Errol Douwes said that the project has produced biodiversity benefits that have seen an increase in bird species diversity around the area.

“We have been able to successfully plant over 140 species of trees and shrubs into 580 hectares of land which has brought with them different kinds of bird species into the area while also encouraging the exchange of plants for food and essential goods,” said Mr Douwes.

# Tree of the year 2021 – *Vachellia karroo*

By Marcini Govender  
Images by Wolf-Achim and Hanna Roland



Common names: sweet thorn (English); soetdoring (Afrikaans); mookana (North Sotho); mooka (Tswana); muunga-ludzi (Venda), umuNga (Zulu / Xhosa)

The sweet thorn (*Vachellia karroo*) is one of South Africa's most recognisable trees. It is a magnificent dense thorn tree species typical of southern African vegetation. It is one of the three 'tree of the year' trees for 2021, alongside the well-known spekboom (*Portulacaria afra*) and the pepperbark (*Warburgia salutaris*).

**A**s an adaptable species it can either be a shrub ranging from 5 to 7 metres or a tree that reaches heights of 7 to 12 metres. It has round ball-like flowers which are found in clusters at the end of branchlets.

These flowers are bright yellow, sweetly scented and appear in summer from November to February. It has feathery dark green leaves that are arranged alternately on the branches. The straight white thorns grow from the base of the nodes in pairs. The pods are brown and sickle-shaped and they remain on the tree for a very long time. The young bark is reddish-brown with whitish lenticels whilst the old bark is fissured and dark brown to black.

This beautiful tree is often used as a shade tree, windbreaker or screen. It is a pioneer species and grows up to 1 meter a year. It is unfortunately not very long-lived as it survives for only 30-40 years. However, it is an

excellent choice for sunny positions in the larger wildlife garden as it attracts insects, butterflies and birds. Bees collect both pollen and nectar from the flowers. Birds find some measure of protection from predators between the thorns. At least 10 butterfly species use the sweet thorn as a larval host plant, including the club-tailed charaxes (*Polyura zoolina*), burnished opal (*Chrysoritis chrysaor*) and the topaz-spotted blue (*Azanas jesous*). It is an extremely water-wise and cold-resistant tree which means it is suitable for a garden.

It is low maintenance and easy to grow in many types of soils although added nutrients will reward the gardener. It can also be pruned to any desired shape. The root system is quite aggressive, so do not plant it too close to buildings, paving or a pool.

The sweet thorn is a very useful tree. It is an indicator of sweet

veld where highly palatable and nutritional grass species grow. Due to the year-round sweetness of the grass, sweet veld can easily be overgrazed. The foliage and pods of the sweet thorn offer a food source for both livestock and wildlife. The gum produced by the tree is edible and can be used in candy production whilst the seeds can be roasted to be a coffee substitute. Bush babies or galagos are very fond of the gum.

The tannin rich bark assists in dyeing leather and the inner bark can be used to make rope. The wood is used for fuelwood and as a charcoal source, and burns clean with little smoke. The thorns were historically used as sewing needles while early naturalists used it to pin the insects they collected. It is also a frequently used tree for soil rehabilitation as it not only fixes nitrogen, but also improves soil structure and water infiltration.



## About the contributor: Marcini Govender

Ms Marcini Govender is in the Directorate Environmental Sector Advocacy and Coordination in the Department of Forestry, Fisheries and the Environment. She is a registered Principle Natural Scientist in the field of Botany and is currently pursuing interests in Science Communication which allows scientist to inform, educate, share wonderment and raise awareness of science related topics.



# Changing how we burn for biodiversity - Patch Mosaic Burning

By Romy Antrobus-Wuth  
Image by Wynand Uys



**Above:** Blyde River Canyon Nature Reserve, where patch mosaic burns have been implemented for years (Image by Wynand Uys)

**A**cross South Africa fire is a key ecosystem driver in many biomes, including grasslands, savanna and fynbos (heathland) ecosystems. Controlled fires are also often used as a management tool by land managers to help meet a number of objectives including reducing the risk of large-scale, destructive wildfires; clearing land for improved grazing; reducing bush encroachment; tick control, biodiversity and improving tourism objectives.

In conservation areas, the primary objective of fire management should be to increase or maintain biodiversity. It is argued that the best way to achieve this is to mimic natural fire regimes as closely as possible through patch mosaic burning (PMB) techniques. PMB can however also be used in a variety of land uses including commercial forestry, rangelands and agriculture as it reduces the risk of wildfires and the detrimental economic implications thereof. PMB requires less manpower, thus reducing costs associated with management.

The use of fire and its incorporation into conservation management has changed in parallel with shifts in ecological thinking which have taken place over the past 100 years. Historically it was thought that the environment was in a state of balance or equilibrium and management practices were implemented to reduce change. This paradigm has since been replaced with the view that ecological systems are rather in a constant state of flux and that heterogeneity leads to greater biodiversity. Fire management is therefore increasingly focusing on introducing heterogeneity in burning patterns under the assumption that "pyrodiversity creates biodiversity." Under the Biodiversity and Land Use Project,

implemented by the South African National Biodiversity Institute (SANBI), the Kruger to Canyons BR in partnership with Mpumalanga Tourism and Parks agency compiled a set of guidelines to assist landowners and manages to implement patch mosaic burns on their properties. The purpose of the guideline document is to explain the principles behind PMB and give step-by-step instructions on how to implement a successful patch mosaic burning regime.

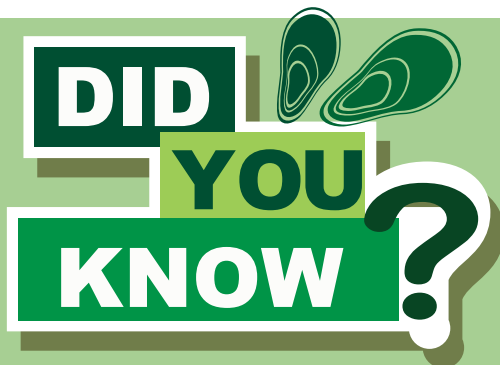
As part of this broader project, specific sites were identified to implement patch burns on the slopes of Mariepskop. Three wetland sites that had become encroached with woody shrubs and alien invasives as a result of fire being excluded from the area, were burnt in September 2020. The first burn in over 20 years! The impact of these burns and the regeneration of these sites will be monitored going forward in partnership with SAEON, MTPA and K2C BR.

In the new year it is hoped that a series of workshops and training sessions will be held to support fire teams to better understand the benefits and implement PMB in conservation landscapes in our region.

For more information or to download the detailed Patch Mosaic Burning Guidelines, go to the K2C Website.

This work was conducted under the Biodiversity and Land Use Project (BLU) which is implemented by the South African National Biodiversity Institute (SANBI) together with its partners, with funding from the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP).

# Dynamite Mussels



## DO YOU KNOW HOW MUSSELS ARE FARMED?

Mussels are filter feeders, which means they filter the seawater for nutritious phytoplankton (mostly microscopic free floating marine plant-like species). Take a look at one of the many mussels farms in Saldanha Bay. Try out the very tasty recipe at the end and support local SA mussel producers.

Check out the DFFE's Aquaculture Video Series on various species each Friday! Email: [AquaculturePhakisa@environment.gov.za](mailto:AquaculturePhakisa@environment.gov.za) for any questions.

#AquacultureSA #OperationPhakisa



## INGREDIENTS

- 800 g local frozen half-shell mussels, thawed, or 2 kg live mussels, washed and de-bearded
- 200 ml mayonnaise
- 60 ml sriracha
- 100 g dried bread crumbs
- 100 g desiccated coconut
- chopped parsley for serving

## METHOD

### Serves 4

1. Pre-heat the grill to high and place the thawed mussel's shell-side down onto a baking tray. If you're using live mussels, steam them until they open, remove one shell, and continue with the process below.
2. Mix the mayonnaise and sriracha together – adding more sriracha if you enjoy spicy food.
3. Mix the bread crumbs and desiccated coconut together.
4. Carefully lift the mussels from the shell and spoon a little spicy mayonnaise into the shell, place the mussel back into the shell and sprinkle generously with the bread crumb mixture.
5. Grill for 7-10 minutes or until the bread crumbs are toasted and golden.
6. Remove from the oven, sprinkle with parsley and serve immediately.

## SERVING SUGGESTION

If you don't have sriracha, you can always substitute it with your favourite hot sauce.

Recipe supplied by:



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# Mussel Aquaculture in South Africa



## 1. Where and how long have mussels been farmed in South Africa?

Mussel culture began early 1900's and started in South Africa after 1970's. All mussels are currently farmed in the cold, nutrient rich water of Saldanha Bay.

## 2. How are mussels farmed?

Production systems for mussels are entirely offshore (not on land). Mussel larvae naturally settle on suspended ropes which are attached to floating raft structures or longlines with floats.

## 3. What do mussels feed on?

Mussels are known as filter feeders, which mean they filter the seawater for nutritious phytoplankton (mostly microscopic free floating marine plant-like species). Like plants on land, phytoplankton requires nutrients to grow.

## 4. Can mussel culture improve water quality?

Mussel farming generally has a low impact on the environment, due to natural filter feeding which in essence harvests nutrients from the water and sourcing spat naturally from the area. Mussel farming is used as a management measure to improve water quality.

## 5. Are mussels safe to eat?

All farmed mussels require rigorous food safety testing to ensure that they are safe for consumption. Samples are tested weekly and farms are closed from sale if any parameters exceed the standards.

## 6. Employment/Socio economic opportunities?

Aquaculture can provide an alternative livelihood for remote, impoverished coastal communities. Mussel farming creates employment both upstream and downstream of the farming activity; but is also predominantly undertaken by Small to Medium Enterprises (SMME's) and therefore a good opportunity for new entrants into the sector. Most of workers in mussel farms are unskilled and are therefore sourced from the local area. Skilled labour is also required in terms of production management, skippers, divers and biologists.

Buying proudly South African aquaculture products has a direct impact in supporting this developing sector which is responsible for uplifting communities.

## 7. What are nutritional/health benefits?

As mussels feed off natural algae, they are considered in essence "wild caught". Mussels are good source of nutrition as they are high in B12 vitamins and provide a readily absorbed source of many other B & C vitamins, amino acids, and vital minerals including iron, manganese, phosphorus, potassium, selenium and zinc.



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# Hard at work for a Greener SA

By Salome Tsoka,  
Veronica Mahlaba and Tshegofatso Ndhlovu

Images by Mfanafuthi Gambu, Siyabulela Malo,  
Mirriam Motsepe, Lydia Makamedi and Titus Tlowana

The Department of Forestry, Fisheries and the Environment through its dedicated officials spread the good message of cleanliness in South Africa over the Easter weekend in support of the presidential Good Green Deeds Campaign.

Stationed in eight different provinces across the country, the officials encouraged motorists and travellers at various Shell and Engen petrol stations to stop littering by handing out refuse bags for disposing their litter and keeping the environment clean while travelling on our roads.

The Good Green Deeds' Green Easter Awareness Campaign is a continuation of the programme launched by President Cyril Ramaphosa in March 2019 to highlight the importance of active citizenry in the protection of natural resources and proper waste management in the environment.

## Bloemfontein, Free State

Images by Salome Tsoka



**Above:** Working with Billy Bin, the Bloemfontein Shell Ultra City petrol attendants helped spread the Good Green Deeds Green Easter message.



**Above:** DFFE Official Ms Phuti Mashamaite gives a kid a plastic bag after he vows to ensure his family does not litter along the road.

## Cato Ridge, KwaZulu-Natal

Images by Mfanafuthi Gambu



**Above:** Bikers were amongst the hundreds of weekend travellers eager to take home with them the message of Good Green Deeds.



**Above:** DFFE official, Ms Munyadziwa Mphaphuli encouraged motorists to keep their environment clean.

## George, Western Cape

Images by Siyabulela Malo



**Above:** Refuse bags were given out to vendors at the Thembalethu Taxi Rank encouraging them to keep their surrounding spaces clean.



**Above:** Members of the community were also given refuse bags to keep their communities litter free.

## Kimberley, Northern Cape

Images by Tshegofatso Ndhlovu



**Above:** MEC for Agriculture, Environmental Affairs, Land Reform and Rural Development in Northern Cape, Ms Mase Monapole worked together with officials in spreading the message of Green Easter.



**Above:** Kids at the Shell Ultra City in Kimberley were excited to interact with Good Green Deeds mascot, Billy Bin.

## Middleburg, Mpumalanga

Images by Mirriam Motsepe



**Above:** The Department's mascot, Billy Bin with officials on Day 2 of Good Green Deeds Waste Management Awareness.

**Above:** Motorists being taught to throw their waste in refuse bags, handed out by DFFE official, Mr Mandla Shabangu and Billy Bin.

## Harrismith, Free State

Image by Veronica



**Above:** Mr Manyano Jikijela from DFFE hands out bibs to encourage people participate in community clean-ups.



**Above:** Young kids enjoyed interacting with Billy Bin and learning about reducing, reusing and recycling waste.

## Midrand, Gauteng

Image by Lydia Makamedi



**Above:** Good Green Deeds mascot, Billy Bin interacted with bikers who made a stop at Shell Ultra City in Midrand.



**Above:** The message of a clean and healthy environment was passed on to young kids to take with them into the future.



**Above:** DFFE official, Mr Gabriel Dlamini hands out promotional material that promotes the Good Green Deeds Programme.

## Kranskop, Limpopo

Images by Titus Tlowana



**Above:** DFFE official Mr Titus Tlowana is handing out refuse bag to gospel artist, Mr Mpho Thosago encouraging him to keep our roads litter free.



**Above:** Churchgoers were part of the people who were also encouraged to introduce the values of the Good Green Deeds programme into their everyday lives.



**Above:** Mr Brian Chapole from the DFFE engaged with Kranskop community who were eager to take home with them the message of Green Easter.

# 2021 DFFE Budget Allocation

**R 487.2 million** has been allocated to the Marine Living Resources Fund

The fund's mandate and core business are to manage the development and sustainable use of South Africa's marine resources, and protect the integrity and quality of the marine ecosystem.



**R 2 262.2 billion** has been allocated to South African National Parks.

Its mandate is to conserve, protect, control and manage national parks and other defined protected areas and their biodiversity.



**An amount of R 421.0 million** has been allocated to South African Weather Service

Its core mandate is to provide 2 distinct services: the public good service, funded by government; and commercial services, where the user-pay principle applies - maintaining, extending and improving the quality of meteorological services.



**An amount of R 753.8 million** has been allocated to South African National Biodiversity Institute.

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 organism released into the environment.



**iSimangaliso Wetland Park Authority** has been allocated an amount of **R 236 076 million**

The authority's ongoing aim is to support and maintain biodiversity conservation, and uphold the park's status as a world heritage site.



**Fisheries Management** has been allocated **R562.8 million** to ensure the sustainability, utilisation and orderly access to marine living resources through improved management and regulation.



**R 746.2 million** has been allocated to Forestry Management

to develop and facilitate the implementation of policies and targeted programmes to ensure the management of forests, the sustainable use and protection of land and water, and the management of agricultural risks and disasters.



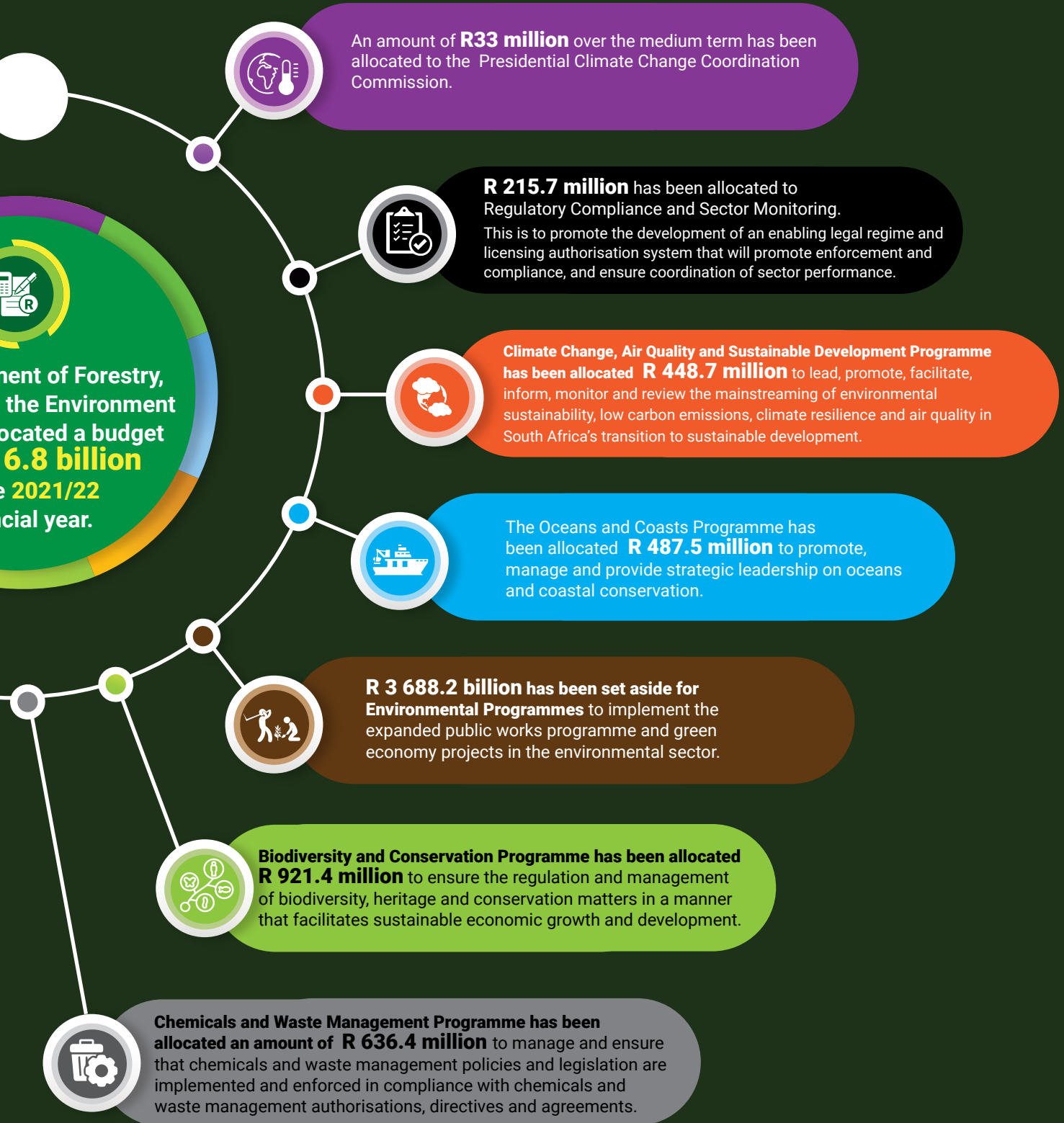
The Department of Forestry, Fisheries and the Environment has been allocated a total of **R 8 711.2 million** for the 2021 financial year.



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REPUBLIC OF SOUTH AFRICA







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