

# Environment Quarterly

Kwartaalike Omgewingsverslag • Tikologo ka Kotara • Mupo nga Kotara



## The origin of cyclones Deputy Minister visits Robben Island



environment, forestry  
& fisheries

Department:  
Environment, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA



**STAY  
SAFE**

PROTECT SOUTH AFRICA

TOGETHER WE CAN BEAT THE CORONAVIRUS

# 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**

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### About the back cover image

The Prince Edward Islands are two small islands in the subantarctic Indian Ocean that are part of South Africa. The islands are named Marion Island (named after Marc-Joseph Marion du Fresne) and Prince Edward Island (named after Prince Edward, Duke of Kent and Strathearn). The islands in the group have been declared Special Nature Reserves under the South African Environmental Management: Protected Areas Act, No. 57 of 2003, and activities on the islands are therefore restricted to research and conservation management



To use this QR code conveniently you must have a smartphone equipped with a camera and a QR code reader/scanner application feature.





## Dear Valued Stakeholder

Welcome to this edition of Environment Quarterly, which is also our last for this financial year 2020/21. In government's calendar, April marks the birth of a new financial year. I suppose for us it is also ushers in a season of renewal and new commitments to delivering on our mandate to the country, while mindful of our international obligations.

Come the 1st of April 2021, as part of the macro reorganisation of the state, the Department will change its name to the Department of Forestry, Fisheries and the Environment. We live in exciting times that also have seen the digitisation of communication industry, further redefining the speed and frequency of communication. We have to move with the times. We cannot afford to sail against the wind. The days of a publication coming out once a quarter are best left in the past.

In tandem with that digital reality and our renewal agenda, we are excited to announce that this issue will be the last to

be published quarterly. The next edition of your favourite magazine that updates you on the work of the Department and the sector will in future be published bi-monthly.

After all, as the saying goes "old news is no news." We would like you to get the news to you before it becomes history. Right?

We are also exploring a new name for this publication to resemble a new beginning and a new focus brought about by the birth of this new Department and its expanded scope. The name Environment Quarterly was designed for a publication catering for the environment department on a quarterly basis. The horse has long bolted. We have additional responsibilities now, inclusive of forestry and fisheries and our new publication will reflect that in name and focus. Watch this space!

We are excited by this new scope of focus and we can assure you that we will endeavour to keep you updated of key developments in the Department and the sector.

Earlier this year, South Africa joined the global community in celebration of World Wetlands Day. The day is celebrated every year on 2 February with the aim of heightening public awareness on the value of wetlands and their vital contribution to human wellness. The celebrations this year took place under the theme: "Wetlands and Water" presenting a call for action to protect and restore these important water resources.

Following the retirement of Dr Guy Preston as Deputy Director-General for Environmental Programmes, Cabinet approved the appointment of Ms Nonhlanhla Mkhize into this important portfolio. Page 15 of this edition carries our interview with Ms Mkhize about her new role and responsibilities in this Department.

In February, Minister Barbara Creecy visited schools in Gansbaai in the Overberg District of the Western Cape as part of the Government's Back-to-School campaign. Minister Creecy's visit was to assess the readiness of the schools to resume the 2021 academic year. Our editorial team was on the ground with Minister Creecy during the visit. The story is covered in this issue.

In December Deputy Minister, Ms Makhoto Sotyru visited the Robben Island World Heritage Site to assess the progress and status of conservation on Robben Island. Read more about the visit in this issue.

Lastly, let us also congratulate Ms Mamogala Musekene on her recent appointment by Cabinet as the new Deputy Director-General for Chemicals and Waste Management, while Cabinet has also concurred with the recommendation by the South African Weather Service Board for Mr Ishaam Abader to assume the new role of CEO of the South African Weather Service.

Congratulations to both Ms Musekene and Mr Abader as they take on these new roles and responsibilities.

As we transition into the new financial year as a new Department, we should all embrace new beginnings mindful of the bigger sustainable development agenda we should always embrace.

Until next time, let us all remember there is only one planet Earth. We all have a role to play to build a society that continues to live in harmony with its environment.

**Albi Modise**

**Head of Communications & Advocacy**

## Meet our team

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# ASBESTOS

Know what it is and how you can protect yourself.

## WHAT IS ASBESTOS?

Asbestos is a natural occurring mineral composed of millions of microscopic "fibrils" that can be released by abrasion and other processes. It has been mined and used for centuries because of its durability, ability to resist heat, fire, chemicals and electricity.

In South Africa asbestos was mined in Mpumalanga, Northern Cape, North-West and Limpopo.



Above: Abandoned asbestos mines in Limpopo and Northern Cape Provinces.

## Where and how do people get exposed to asbestos fibres?

- At their workplaces
- In their communities, and;
- In their homes



If products containing asbestos are disturbed, tiny asbestos fibres are released into the air. When asbestos fibres are breathed in, they get trapped in the lungs and remain there for a long time. Over time, these fibres can accumulate and cause scarring and inflammation, which can affect breathing and lead to serious health problems.

## EXPOSURE

### 1. Exposure at the work place

Asbestos roof tiles

People can be exposed while removing asbestos containing products such as ceilings and roof sheets.

### 2. Exposure in their communities

Exposure of school kids and teachers

**Photo A:** Gamopedi High School has been closed down and abandoned due to exposed asbestos fibres in the school yard transported from an uphill mine (less than 500m away) and in the bricks.

**Photo B:** Asbestos in the school yard from the nearby abandoned asbestos mine.



### 3. Exposure at home

Yard soil with asbestos fibres

Asbestos contamination to the environment caused by mining, milling and transportation of asbestos from a nearby mine in Gamopedi village, Kuruman in the Northern Cape.



## Health implications of exposure to asbestos

When asbestos materials are disturbed or damaged, asbestos fibres can be released into the air and cause dangerous exposure. When people accidentally inhale or ingest the microscopic fibres, the mineral can eventually lead to serious health problems, like mesothelioma, asbestosis, asbestos cancer etc.

## STAGES AND EVOLUTION OF ASBESTOSIS

**Mesothelioma** is an aggressive cancer that affects the lining of the lungs, heart, or abdomen. Caused by the inhalation of asbestos fibres, Mesothelioma is often diagnosed in older individuals who worked with asbestos products.

**Asbestos cancers** are caused by inhaling or swallowing microscopic asbestos fibres. Increase in exposure causes an increased risk of lung cancer which occurs years after initial exposure.

**Asbestosis** is the fibrosis of the lung parenchyma which can lead to shortness of breath and coughing. Asbestosis development is a slow process which can take 15 to 30 years for symptoms to show

## WHAT IS THE DEPARTMENT OF ENVIRONMENT, FORESTRY AND FISHERIES (DEFF) DOING?

2030 VISION: "AN ASBESTOS RISK FREE SOCIETY"

To give true meaning to the right to an environment that is not harmful to human health or wellbeing.

- The Department is currently implementing the Secondary Asbestos Remediation Plan which entails the construction of asbestos free streets and building of school classrooms with asbestos free material.
- DEFF is developing the National Asbestos Management Strategy which will be an overarching strategy on the management of asbestos risks in the country.

## Yes, an asbestos risk free environment is possible through:

- Paving of roads.
- Removal of damaged asbestos containing roof sheets.
- Phasing out asbestos containing products.
- Remediation of contaminated land.
- Building schools and public sport grounds with asbestos free material.

LET'S WORK TOGETHER TO FIGHT ASBESTOS AND SAVE CHILDREN FROM POOR COMMUNITIES.



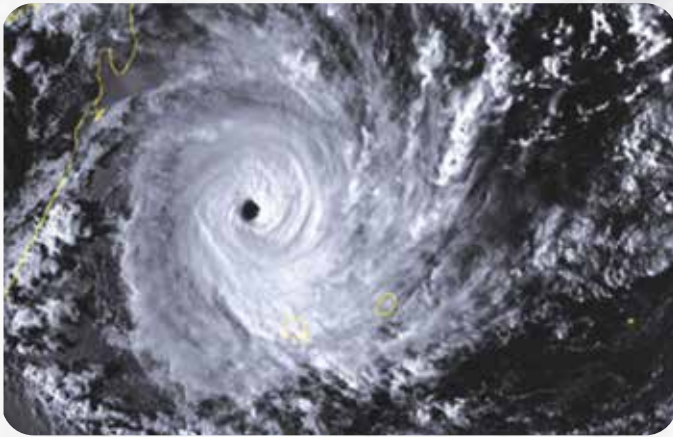
environment, forestry  
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REPUBLIC OF SOUTH AFRICA



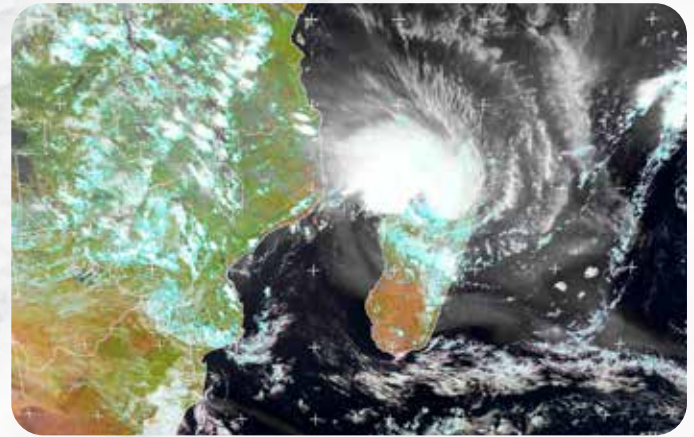
# Cyclones: All you need to know

By Salome Tsoka and Tshegofatso Ndhlovu

Images by SAWS



Above: Satellite image of Cyclone Bonita – January 1996



Above: Tropical storm Eloise en route to Mozambique, January 20, 2021.

**M**ozambique, Zimbabwe and the north eastern parts of South Africa were in January rocked by a Tropical Cyclone Eloise which came into the countries after it developed east of Madagascar and then moved over Madagascar into the Mozambique channel from the Indian Ocean. Tropical Cyclone Eloise brought with it very destructive winds coming in 118 to 166 km/h and caused significant damage as it made landfall in Mozambique. South African Weather Service (SAWS) Communication Manager, Ms Hannelee Doubell has cautioned South Africans to be careful as more cyclones can be expected in future.

“Cyclones develop during late summer in the Indian Ocean and then they move into the Mozambique channel. As such, South Africa can from time to time expect cyclones or tropical storms to move over the eastern parts of the country,” she said.

## What is a cyclone?

A cyclone is a type of weather system in which wind rotates around an area of low atmospheric pressure. Associated with rain and snow, a cyclone rotates counter clockwise in the northern hemisphere and clockwise in the southern hemisphere.

## What is the difference between a cyclone, typhoon, hurricane?

Cyclones, typhoons and hurricanes are all the same weather phenomenon which involve a rotating

organized system of clouds and thunderstorms that form over subtropical or tropical waters. The difference in names derives from where the storm first appears. A storm that forms over the North Atlantic and North Pacific Oceans is called a hurricane, storms that form over the South Pacific and Indian oceans are called cyclones while a storm formed in the Northwest Pacific Ocean is called a typhoon.

## What is the life cycle of a typical cyclone?

The life cycle of a cyclone begins when a typical storm becomes a tropical disturbance, which occurs when cumulonimbus clouds begin to show signs of a weak circulation. Once wind speeds increase to 36km/h, the storm becomes known as a tropical depression. Once wind speeds exceed 63km/h, then the storm becomes a tropical storm. However, once the maximum wind speed exceeds 119km/h, the storm becomes known a cyclone.

As the system moves and wind speeds decrease, the storm can be downgraded from a cyclone to an ex-cyclone otherwise known as a tropical depression which can cause still cause some heavy rain and flooding as seen in parts of Limpopo, Mpumalanga and Kwa-Zulu Natal in January 2021.

The average life span of a cyclone is between 3 and 7 days. While some cyclones can last up to several weeks when in a favourable environment, the longest lasting cyclone recorded in history was Hurricane Ginger in 1971 which lasted 30 days.

## What's the typical size of a cyclone and where do they occur?

The size of a cyclone varies according to the kind of atmospheric environment it forms in. According to Ms Doubell, in the Southern Hemisphere, the air circulation around a cyclone is clockwise and the clouds develop in characteristic spiral bands that move clockwise with the wind into the cyclone. These spiral cloud bands consist mainly of Cumulus and Cumulonimbus clouds that can reach up to a height of 12 km and can cover a horizontal distance of up to 700 km.

## How many cyclones have been recorded in history?

To date, there has been just over 12 791 tropical and sub-tropical cyclones recorded in the Indian, Pacific and Atlantic Oceans.

## What is the biggest cyclone that has ever been recorded?

Referred to by many as the largest storm on earth, Typhoon Tip was the biggest cyclone recorded in history. Typhoon Tip developed in the Western Pacific Ocean in October of 1979 with wind speeds over 305km/h and a diameter of over 2200km. The cyclone caused 600 mudslides in Japan destroying 22 000 homes and killing 86 people.

## Which places are most vulnerable to cyclones?

Areas near warm ocean waters are more likely to experience tropical cyclones as the storm systems are strengthened by the warm waters. According to a Wits 2019 study, countries most affected by tropical cyclones from the South West Indian Ocean are the islands of Madagascar, Mauritius, La Reunion, Mozambique and Zimbabwe. The study found that South Africa, could in future be at risk in the event that the storms begin to occur further south.

## When do cyclones occur?

Cyclones are seasonal weather systems which occur all year round during their different seasons in different parts of the world. For countries based in the western North Pacific Ocean region, typhoon season runs from May to November. Whereas hurricane season in the Americas/ Caribbean regions run from June to November often peaking in August and September. Lastly, the cyclone season in the South Pacific and Indian Oceans runs from November to April.

## How much damage can cyclones cause?

According to Ms Doubell, a cyclone can bring heavy rain, strong winds and flooding. The disruptive rainfall from a cyclone can bring about localised flooding in low-lying areas, informal and formal settlements, damage to agriculture, difficult driving conditions, disruption to essential services including power lines, network issues and the interruption of water supply in smaller towns, the displacement or evacuation of communities living near floodplains and riverbeds at short notice and a danger to life.

## Why was SA hit by the cyclone/ex-cyclone and was it related to climate change?

Cyclone Eloise developed east of Madagascar and then moved over Madagascar into the Mozambique channel. This affected Mozambique, Zimbabwe and the north eastern parts of South Africa. According to Ms Doubell, cyclones do not frequently move over Madagascar, but when they do, the warm Mozambique channel serves as a source to intensify the cyclone. Once the cyclone moves over land, it loses strength and is no more called a cyclone, but a tropical storm.

"Cyclones are a normal occurrence, but as sea temperatures warm up, amongst others due to climate change - part of the increase in cyclone development can be attributed to climate change. However, these systems are very complicated and climate change is not the only phenomenon causing it," she said.

## How can people protect their homes from the effects of a cyclone?

A cyclone brings heavy rain, strong winds and flooding, so all measures that are taken for heavy rains, strong winds and flooding should be taken during a cyclone. Winds of a cyclone are much stronger than what we are normally used to, so sometimes residents need to bolt down windows and doors to protect their houses and structures from too much damage.

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# DEFF hands over wheel-chair mat to EThekwini

By Siyabulela Malo



**Above:** Mr. Ian Gielink praised the Department and EThekwini Municipality for the rollout of the Mobi-Mat™ in North Beach in Durban.



**Above:** Lifeguards showcase how they will be using a waterwheel on the Mobi-Mat.



**Above:** The 90 metres long Mobi-Mat runs from the beach's parking lot straight down to the ocean.

In an effort to improve access to the beaches for all South Africans, the Department of Environment, Forestry and Fisheries handed over a beach access Mobi-Mat to EThekwini Municipality in North Beach in Durban.

A local man, Mr Ian Gielink said. "I am grateful to DEFF and EThekwini Municipality for assisting us with this beach mat; it will improve my access to the beach and make the lives of people who are living with disabilities and elderly people much better now as we can access the beach," he said.

"I have never enjoyed swimming much like I did today. The waterwheel to the beach made me enjoy the water even more as it is very comfortable. I guess I will be coming here more often this summer," he added.

For many locals around EThekwini, this was the first time they were walking on such a mat and the excitement could be seen on their faces as they took their first steps.

The Mobi-Mat is environmentally friendly and made up of 100% percent recycled polyester and recycled plastics. It is 90 metres long running from the parking lot straight down to the ocean.

The roll- out of the Mobi-Mat will give full access pathway for wheelchair users thanks to its firm, safe and durable make. Its stability will improve the way wheelchair users and elderly people access the beach.

The Department's Integrated Coastal Management officer Mr Tshepiso Monnakgotla, stressed the importance of keeping the Mobi-Mat in good condition by its users and the municipality.

"We plead with you to monitor the Mobi-Mat. We have officially handed it over to you, and so you have to play your role by keeping it in good order. People of EThekwini, you have a responsibility to work together with the Municipality to ensure the Mobi-Mat is taken care of and not damaged," he said.

**"I am grateful to DEFF and EThekwini Municipality for assisting us with this beach mat; it will improve my access to the beach and make the lives of people who are living with disabilities and elderly people much better now as we can access the beach."**



## 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.



## DEFF educates communities on keeping beaches clean

By Siyabulela Malo



The Department of Environment, Forestry and Fisheries led a river mouth estuary compliance and enforcement campaign in the Eastern Cape.

Together with stakeholders such as the Department of Mineral Resources, Department of Water and Sanitation, Eastern Cape Department of Economic Development and Eastern Cape Parks and Tourism Agency, officials set out to bring visibility and to inform communities living around the river mouth estuaries on matters such as access to local beaches, marine pollution and the effects these might contribute to poor water quality other concerns the Department is currently faced with.

The second part of the awareness campaign was conducted at Kiwane Resort and concluded at Chintsa.

Conducting the awareness campaign at these resorts was to ensure that the Department is adhering to its mandate of allowing communities access to beaches, vigilance of illegal sand mining, pollution, illegal dumping and furthermore how sewerage systems including water plants operate in these areas.

## Deputy Minister visits Free State South Waste Landfill Site

By Salome Tsoka



Deputy Minister Ms Makhotso Soty joined by the MEC for the Department of Small Business Development, Tourism and Environmental Affairs Mr Makalo Mohale and the Acting Mayor of Mangaung Metro Mr Lebohang Masoetsa visited the South Waste Landfill Site in the Free State Province on 17 December 2020.

The landfill site has been marred by vandalism with much of the building's infrastructure being stripped by criminal elements. It was also discovered during the site visit that the landfill site doesn't meet minimum standards and there is also a need for a buyback centre in the area.

Speaking at the briefing session, Deputy Minister Soty indicated that while issues have been identified with the landfill site it was still a key area especially in creating employment in the area.

"The waste economy has been identified as one of the areas which would assist the country's economy following the impact of Covid-19. As such, a concrete plan needs to be developed and implemented to ensure the site meets minimum standards," Deputy Minister Soty said.



Above: Deputy Minister Soty and other officials inspect the landfill site to determine the extent of damage.

## Gaansbaai youth partake in beach cleanup

By Gaopalelwe Moroane



A group of learners from Masakhane and Blompark took part in a beach cleanup activity in Romansbaai in the Gansbaai area. The cleanup which was preceded by short presentations from officials from the Benguela Current Commission (BCC), the Department of Environment, Forestry and Fisheries and Dyer Island Conservation Trust aimed to equip learners with the knowledge on the importance of keeping our beaches clean.

The BCC is a formal treaty, signed in 2013, between the governments of Angola, Namibia and South Africa that sets out the countries' intention to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits.

# New committee for Prince Edwards Islands appointed

By Ntombovuyo Madlokazi

In January 2021, the Director General approved the appointment of nominated specialists based on their extensive knowledge and working experience in the fields relevant to the Prince Edward Islands Advisory Committee (PEIAC) to improve the management of the Prince Edward Islands.

The advisory committee is established in terms of Regulation 50 of the Regulations for the Proper Management of Special Nature Reserves, National Parks and Heritage Sites (the "Regulations"). The Committee constitutes nominees from South African Environmental Observation Network, Agricultural Research Council, Afrivet Business Management, BirdLife SA, FitzPatrick Institute of African Ornithology, Southern African Foundation for the Conservation of Coastal Birds and academic institutions (University of Fort Hare; University of Cape Town and Mangosuthu University of Technology).

The members were appointed to support and advise the Department for a period of three years from January 2021 until 31 December 2023. Their experience and expertise varies from wetland research (landscape processes, inventories, monitoring and rehabilitation), biodiversity management, biological control of invasive alien plants, management of wildlife diseases, freshwater ecology, avian demography, botanical specialization, seabird rescue and rehabilitation.

The Prince Edward Islands (PEIs) were formally annexed as part of the Union (now Republic) of South Africa under the Prince Edward Islands Act, 1948 (Act No. 43 of 1948). The Islands are classified as sub-Antarctic ecosystem and are of volcanic origin. They were declared a Special Nature Reserve (SNR) in 1995, in terms of the Environment Conservation Act 1989, (Act No. 73 of 1989). This declaration was carried over and saved in terms of the National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003), "NEMPAA". The PEI SNR (Marion Island and Prince Edward Island) is therefore managed and regulated as if it was declared under NEMPAA. In addition, the PEIs were declared as a Ramsar Site in 22 May 2007 in terms of Ramsar Convention. They are protected natural habitats and do not support any consumptive or exploitative activities.



The Department, as the management authority published a management plan in 1996. The Management Plan was revised after extensive consultation with relevant and affected parties and approved by the Minister in 2014. T

he management plan key focal areas for management include: **Maintaining the integrity and healthy functioning of the total ecosystem, alien and invasive species, species of special concern, habitat degradation and rehabilitation, freshwater ecosystems and fulfilment of international obligations.**

The Department has identified priority areas where the advisory committee efforts and expertise will focus on for the next three years, namely:

- Review of the current PEI SNR Management Plan;
- Inputs into the Mice Eradication Project;
- Mapping and inventory of the freshwater ecosystems;
- Implementation of Ramsar Convention Resolutions;
- Applied scientific research, and
- Provide logistic support for research and management activities

## Recommendations from the Previous PEI Advisory Committee for the new members include:

- Use your common sense, and always bear the ultimate goal in mind, which should be the long-term conservation of the islands.
- Read through the information provided by DEFF and the island members and provide your most valuable inputs to these items.
- Be knowledgeable, passionate and proud serving on the committee. Do not personalise issues but look at the broad spectrum of conserving the islands to allow for a prestige future for our upcoming scientists, technical personnel and heritage conservationists.
- Keep an open mind but ensure the protection of the Islands at all cost. Listen to all the views and opinions expressed by your fellow committee members.
- Diligence and Professionalism

# Deputy Minister plants a tree in Robben Island

By Gaopalelwe Moroane

The Deputy Minister of Environment, Forestry and Fisheries Ms Makhotso Sotyú visited the Robben Island World Heritage Site recently.

The Department is responsible for oversight of the Robben Island World Heritage Site and in particular, the implementation of the Integrated Management Plan.

Robben Island's Chief Heritage Officer, Dr Pascal Taruvinga, who joined the Deputy Ministers on the tour said, "The purpose of the visit was to assess the progress and status of conservation on Robben Island."

As part of the Robben Island's project to increase the number of indigenous trees on the island, Deputy Minister Sotyú and Tshwete planted a wild olive tree.

Robben Island was inscribed on the United Nations Educational Scientific and Cultural Organisation (UNESCO) World Heritage List in 1999 and further declared as a World Heritage Site in terms of the Act in 2007. It is amongst the ten World Heritage Sites in South Africa. When the World Heritage Committee inscribed this property on the World Heritage List, it was on the basis of criteria (iii) which refers to the buildings of Robben Island that bear eloquent witness to its sombre history, and criteria (vi) on the basis that Robben Island and its prison buildings symbolise the triumph of the human spirit, of freedom, and of democracy over oppression.

The Robben Island Marine Protected Area (MPA) is one of three new MPAs within South African National Parks, which were gazetted by the Department on 23 May 2019.

## Birdlife in Robben Island

Robben Island provides shelter for about 132 species of birds including some endangered species. The variety of species includes sea birds, water birds and terrestrial birds.

The Chauker Partridge and Guinea Fowl were introduced to the Island by humans. Many of the birds use the Island for breeding and roosting. Some birds from the mainland such as the Crowned Cormorant and Black Crowned Night Herons breed on the Island in large colonies.

(Source: Robben Island)

## What is the purpose of the Robben Island Marine Protected Area?

- To contribute to a national, regional and global representative system of marine protected areas by conserving and protecting coastal, island and offshore benthic and pelagic ecosystems in this region, including threatened ecosystem types.
- To conserve and protect the biodiversity and the ecological processes associated with these ecosystems.
- To contribute to the conservation and protection of threatened seabird and shorebird species including African penguin, Bank and Cape cormorants.
- To facilitate species management by supporting fisheries recovery and enhanced species abundance in adjacent areas for west coast rock lobster, abalone and other over-exploited species.
- To protect an area of significant cultural heritage, contributing to the tourism value of a South African National Heritage Site and World Heritage Site.
- To protect and provide an appropriate environment for research and monitoring and to promote and contribute to environmental education.

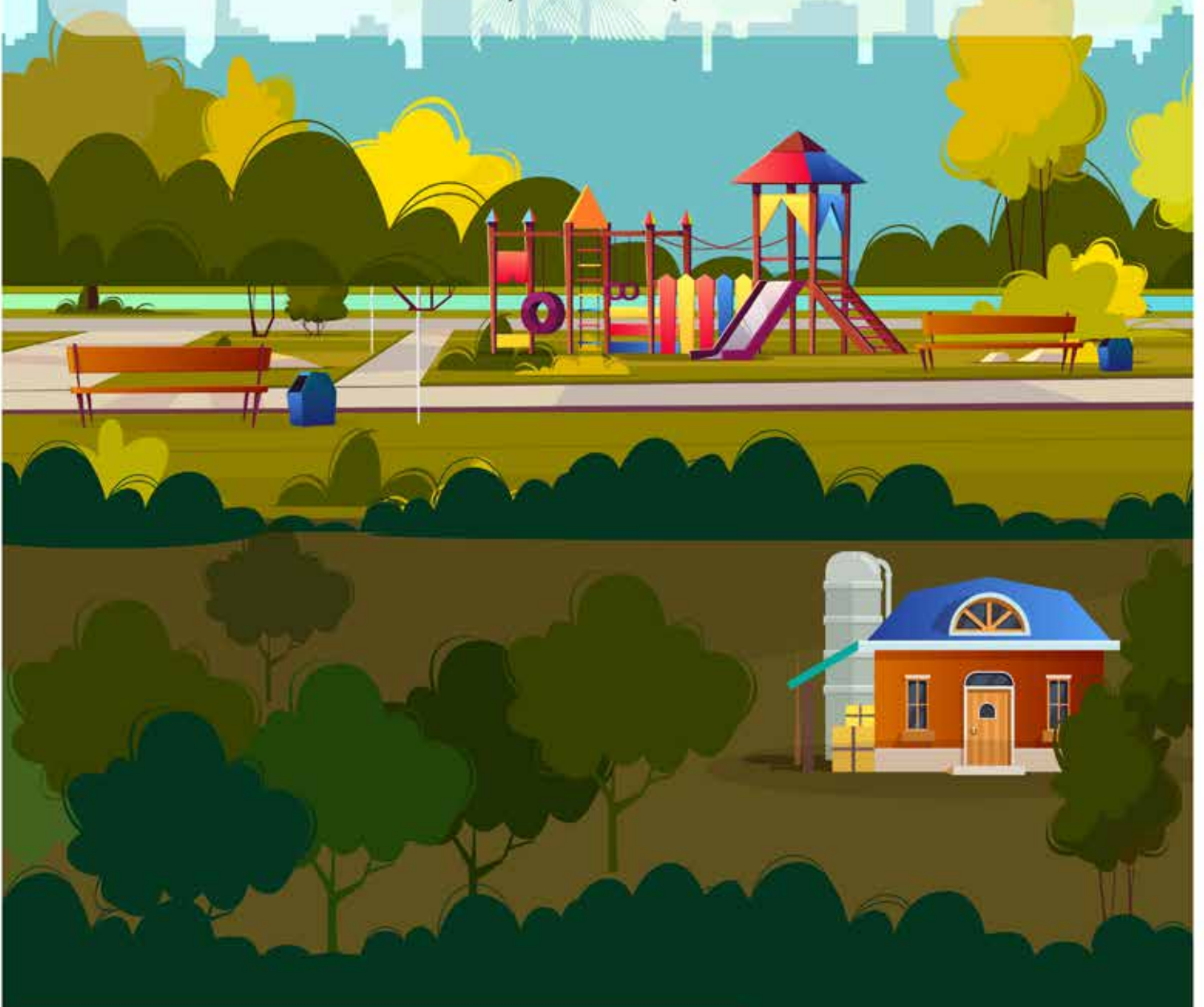
(Source: South African National Parks)



# Forests and sustainable living for all in South Africa

**Mandate:** The National Forests Advisory Council (NFAC) is appointed by the Minister in terms of Chapter 5 of the National Forests Act, 1998 (Act No. 84 of 1998)

**Objective:** Advise the Minister on any matter related to forestry in the Republic



environment, forestry  
& fisheries  
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Environment, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA



Call Centre: 086 111 2468  
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# Rescued turtles released back into the ocean

By Gaopalelwe Moroane



**Above:** Two Oceans Aquarium Education Foundation's Conservation Coordinator, Talitha Noble and DEFF's Oceans and Coasts Researchers Darrell Anders and Sarika Singh. .

**T**wo turtles, Annie and Luis have come a long way to recovery ever since they were discovered in bad shape by conservationists in 2019 and 2020, respectively. The turtles were rehabilitated and have since been reintroduced to their natural habitats

In preparation for their release, DEFF's Oceans and Coast Marine Biodiversity Research Scientist, Ms Sarika Singh and Mr Darrell Anders deployed satellite tags or tracking devices to the two loggerhead turtles at the Two Oceans Aquarium on 13 January 2021.

Annie and Luis were to be part of more than twenty other turtles that Cape Town's Two Oceans Aquarium would be releasing on 14 January 2020.

According to the Aquarium's Conservation Coordinator, Talitha Noble, Luis was brought in with holes in his shell, in May 2020. After the turtle rehabilitation team successfully facilitated the sealing of the holes in his shell by placing a lunchbox on the shell, he is ready to be released back into the ocean space.

"Annie was rescued by the National Sea Rescue Institute in July 2019, when she was found tangled in a fishing net, and she is also ready to set out to sea," said Noble.

"A research project was initiated under the Branch Oceans and Coasts Oceans to investigate post release survival and behaviour of captive marine turtles. The first tags were deployed in December 2015 on two Hawksbill turtles that had been rehabilitated by Two Oceans Aquarium," said Ms Singh.

Since then an additional 12 tags have been deployed on rehabilitated turtles from Bayworld Aquarium in Port Elizabeth, uShaka Marine World in Durban and Two Oceans Aquarium in Cape Town. Training has also been provided to staff from various rehab/welfare facilities and academic institutions.

Explaining what led to the research project, Singh says, "There was uncertainty about whether animals that had been exposed to captive conditions could reintegrate into wild populations. So initially the objective was to establish whether captive turtles would survive in the wild and if so, if they would integrate into normal patterns of movement and migration behaviour, then finally whether they would contribute to breeding stocks of the species."

"The stranding of marine Turtles is quite common along the South African Coastline. Animals like Annie and Luis, tend to wash ashore if they have veered off course due to strong currents or winds, or due to injury or illness. Species which are nationally protected and/ or have a poor conservation status require the intervention. Wildlife welfare and rehabilitation facilities, subject to criteria outlined in the National Environmental Management: Biodiversity Management Act, are equipped to provide specialised care required," she continued.

"While we are still building a data set, the provisional indications from the data are positive. The next step is to use this information to establish guidelines for rehab and release. For example, what captivity durations fare the best after release, what age groups or species are more conducive to successful reintroduction into wild populations," Ms Singh added.

Satellite tagging and tracking studies provide very basic information of where an animal goes and how long it spends there. This data can be used to identify whether South Africa shares breeding stock and populations with other countries, whether we are effectively protecting turtles preferred habitats, identify whether the current Marine Protected Areas are inclusive of critical turtle habitat, residency in national waters and development of congruent conservation and management objectives across territories that share South African stocks.



## About the contributor: Gaopalelwe Moroane

Ms Gaopalelwe Moroane is the Assistant Director in the Chief Directorate: Communications at the Department of Environment, Forestry and Fisheries, in Cape Town. She joined the department in 2012 as an intern after completing her studies at Rhodes University.

# A new data pipeline for SA's wetlands and waterbirds

By Zimkita Mavumengwana  
Images by David Harebottle



**Above:** Deputy Minister Soty and the Mayor of Mantsopa Local Municipality, Cllr Mamsie Tsoene handing over eco-desks and other essential items to Ladybrand Public Primary School.



**Above:** The Principal of Ladybrand Public Primary School, Mr Wetes welcomes garden tools donated by DEFF from the Deputy Minister.

There is a disconnect between the production of freshwater biodiversity data and its application into effective conservation policy and action in South Africa. Much local data exists for many freshwater ecosystems – data such as water quality, types of wetland plants in a particular location, or bird observations from a wetland or river system. The challenge is collating all such rough data into something meaningful that can assist decision-makers.

Freshwater resources and wetlands of southern Africa are of international importance as they provide a host of ecological services. The National Biodiversity Assessment, released by the South African National Biodiversity Institute (SANBI) in 2019, revealed that freshwater ecosystems are the most threatened and least protected ecosystems in South Africa. Approximately 88% of wetland area is threatened and less than 2% of their extent is Well Protected.

## A new data pipeline for SA's wetlands and waterbirds

SANBI is leading a consortium of research institutions on a new biodiversity data pipeline project nicknamed

the 'BIRDIE Project'. This project aims to develop a wetlands and waterbirds data-to-decision pipeline that will use state-of-the-art statistical tools to extract policy relevant information from key data. The project's partners are the University of Cape Town (Centre for Statistics in Ecology, Environment and Conservation and Fitzpatrick Institute of African Ornithology), Sol Plaatje University, Seascope Belgium and the Royal Belgian Institute of Natural Sciences. This consortium of institutions will ensure sufficient statistical modelling capacity, data pipeline development expertise and ecological knowledge to understand the challenges and threats facing freshwater biodiversity in South Africa and produce the data products required for reporting on South Africa's commitments to international conventions.

Important data about wetland birds, when combined with crucial information like water quality or the threat status of a wetland, can start to provide excellent indicators of freshwater biodiversity that can inform decision-making about wetland rehabilitation or protection efforts. The information will be available to decision-makers in an online dashboard that will automate the production of important indicators.



### About the contributor: Zimkita Mavumengwana

Ms Zimkita Mavumengwana is the Outreach and Programme Officer for the South African National Biodiversity Institute.



## Public participation platforms to shape science

The project will leverage two bird-related datasets: the Coordinated Waterbird Counts (CWAC) and Southern African Bird Atlas Project (SABAP). These data will be combined with other important informant layers (e.g. wetland threat status from the National Biodiversity Assessment and site data such as water quality) to create comprehensive data packages that feed the pipeline.

The CWAC and SABAP are citizen science-based freshwater bird monitoring datasets housed at the University of Cape Town, wherein birders across the country submit their observations of birds to these platforms, thereby contributing to some of South Africa's longest-standing biodiversity datasets. These datasets, where bird counts and data have been recorded over long timeframes, supply scientists with fascinating information about changes in species population sizes, migratory patterns, distribution ranges and more.

A focus for the next few years will be to develop a citizen science network to help with monitoring depression (pan) wetlands across the country. Interested citizens should contact the SANBI Freshwater Biodiversity Programme or register on the CWAC or SABAP sites as observers at:

<http://sabap2.birdmap.africa/howto>  
<http://cwac.birdmap.africa/>

## Summary of the BIRDIE Project activities

There are many activities associated with this project, and they can be summarised as follows:

- Assembling, engaging, and linking key stakeholders to help define user needs.
- Preparing data (both bird data and other auxiliary datasets) and identifying key pilot sites to test the pipeline.
- Exploring and defining current best practices in data pipeline development and statistical routines, and define specifications for the architecture.
- Developing and testing a modular freshwater biodiversity data-to-decision pipeline that

automates the production of indicators and displays these outputs on a user-driven, scalable web application.

- Integrating the pipeline and web application into SANBI's existing hardware and software systems and be designed to be interoperable with SANBI's National Biodiversity Information System (NBIS) and other platforms developed by partners in South Africa.
- Train users and system managers through various capacity building activities.
- Finalize the modular data analysis pipeline for converting raw data into decision-quality analytics and confirm its scalability.

## Planned BIRDIE Project outputs

Besides the data pipeline and its web-interface, the following are the planned outputs from the project:

- Project reports and documents covering pilot sites, workshops, user interface, best practice guidelines, and project design.
- Water birds trend report incorporated into at least one of the following: Bioregional Plan, State of Biodiversity Report, RAMSAR Report, or African-Eurasian Migratory Waterbirds (AEWA) report.
- Communication materials, including conference presentations, scientific publications, newsletters, and social media.

## Planned BIRDIE Project Outcomes

The completed and operational integrated waterbird and wetland habitat observation and information system will establish a user-driven process to sustain freshwater biodiversity data production and effective delivery of policy relevant outputs. It will streamline domestic and international reporting on freshwater biodiversity status and trends and serve as a key information source for decisions affecting wetland ecosystem management and associated species conservation. An increase in citizen-science data submissions and use is also expected. Collectively, these tools will support species Red Listing assessments for birds and reporting at the state, national, and international level.

For more information on the project please visit South African National Biodiversity Institute (2020) - JRS Biodiversity Foundation or contact Project Principal Investigator Nancy Job .



# Living eco-friendly in the forests of Eastern Cape

By Tshegofatso Nahlovu

**D**eep in the secluded forests of East London in the Eastern Cape, lies Heartwood Homestead. A beautiful timber frame eco-guest farmhouse built in 2019 by the Galloway family with the aim to create a space to live a green life, away from the hustle and bustle of the city. Built on the principle of “less is more” this off-grid homestead is nestled right on the edge of the Gonubie Forest and overlooks the Gonubie River.

The Heartwood Homestead provides off the grid living at its best, with no municipal services required. This eco-guest farmhouse runs 100% on renewable energy with solar power and a rainwater first flush system that helps remove dust and other debris that is collected during the rainwater collection process. The farmhouse also features an impressive compost toilet system that saves a lot of water compared to any conventional flush toilet system that uses an estimated 26 000 litres of potential drinking water per person per year.

Being surrounded by nature, guests can expect to see a lot of birds, animals and mysterious insects. The farmhouse can sleep three guests at a time with a fully equipped kitchen and a braai area. Guests can enjoy the scenic views that the homestead has to offer or take a hike up a steep trail through the indigenous forests that leads to the Gonubie River. Visitors to the homestead are afforded an opportunity to help out with the harvesting of vegetables in the garden which they can use to cook healthy meals during their stay and if gardening is not their cup of tea, the owners provide guests with an opportunity to milk cows on their farm or feed the rabbits growing out in their rabbit tractors.

This year, the Galloway family will be launching a nine month long holistic homestead management and discipline internship programme, aimed at providing a hands-on learning experience in green farming practices, administration and character development to agriculturally minded post matrics.

Mr Roger Galloway who is the co-owner of this eco-guest farmhouse said that he wants people who stay at the homestead to leave with a different perspective on the impact that green living can bring into their lives.

“We want our guests to be inspired to live differently and to help them realise that they can make small changes to their lives that can yield a positive influence not just to themselves but onto the environment as a whole. This can be done in the form of small things such as harvesting rainwater, installing a dry compost toilet or having a few chickens that will provide them with eggs,” said Mr Galloway.



**Above:** Heartwood Homestead situated deep in the forests of the Eastern Cape Province.



**Above:** The Eco-guest farmhouse features an impressive compost toilet system.



**Above:** Fresh vegetables grown on the farm.



**Above:** The Eco-guest farmhouse features an impressive compost toilet system.



## About the contributor: Tshegofatso Nahlovu

Mr Tshegofatso Nahlovu is an Intern in the Chief Directorate: Communications. 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.



# Leadership Profile: DDG, Ms Nonhlanhla Mkhize

By Tshegofatso Ndhlovu

"A good leader is someone who is able to listen and learn from others while having the power to motivate and inspire those very same people is what makes a great leader," said newly appointed Deputy Director-General for Environmental Programmes, Ms Nonhlanhla Mkhize.

**M**s Mkhize was appointed into the Department in November 2020. In her role as Deputy Director-General, she is responsible for leading the Branch that is tasked with implementing programmes that employ Expanded Public Works Programmes (EPWP) principles to help tackle unemployment in our communities.



Above: DDG, Ms Nonhlanhla Mkhize.

## What are you most excited about in your new position as Deputy Director General for Environmental Programmes?

I think one of the things that excite me the most about this position is knowing that I am in a space where I am afforded the opportunity to contribute and make an impact in society while developing the country as a whole.

## What does working for the Department of Environment, Forestry and Fisheries mean to you?

Getting the opportunity to work here brings me comfort because I have always had the utmost respect for this Department because of the portfolio that it carries. I also like the fact that this Department is directly linked to tangible results that yield to the development of our country, where the work we do is not just about policy but there is an element of implementation too.

## How do you practice green living in your everyday life?

Green living in my life takes form in the simplest of things such as trying to recycle as much as I can and also opting for cotton shopping bags, which can be used more than once over something like plastic.

## What in your opinion makes a good leader?

Someone who is prepared to lead and be led in my opinion is a good leader. Someone who is able to harness the strengths of individuals in their team for the benefit of the work that needs to be done.

## How would you describe your leadership style?

I am a leader that strongly believes in consulting, a type of leader who believes in making decisions on

my own while also having the ability to engage and seek expertise from those who know more than I do.

## Where do you draw your inspiration from?

God, my belief in Him helps in terms of grounding me and making me appreciate the individuality of all the people that I work with. There are quite a number of people that I respect and find inspiring in terms of my career and my life, but God is definitely my main source of inspiration

## What have you taken from the year 2020 looking at the lockdown and the current pandemic that we are in?

This year, I think has been one of the hardest years for most of us. It's a year that has exposed and brought to light the kind of unequal society that we live in, this has somewhat allowed me to start thinking of new and innovative ways for us as a Department to offer efficient services to the people that need them the most.

## Quick facts:

**Home town:** Pietermaritzburg, KwaZulu-Natal.

**Role model:** My mother.

**Favourite quote/motto:** "Do not withhold good from others when you have the power"

**Hobbies:** Reading and hiking.

**I am currently reading:** Complexity and Leadership by Dr Riaan du Plessis.

# Acacia Naming Dilemmas

By Marcini Govender



The genus *Acacia* is a well-known landmark in African savannas and velds. It has a tropical to subtropical distribution and occurs in Australia, Asia, Africa and the Americas.

The genus *Acacia* is from the Fabaceae family which are economically important and is globally the third largest flowering plant family. Comprised of trees, shrubs, herbs and creepers, the common characteristic is that they all have pods in which seeds are produced and they all have a symbiotic relationship with bacteria that form nodules on the roots, and thus are important for maintaining and improving the nitrogen status of the soil and, in the case of rotational-field crops, are valuable in enhancing the fertility of the soil.

There has been much controversy in *Acacia* classification. Research has indicated that the genus should be split into several genera, and a difficult decision was required as to whether the name *Acacia* should be used either for a very large group of species found mainly in Australia or for a smaller group found mainly in Africa and Central and South America.

The reclassification of the genus *Acacia* was proposed by an Australian group of botanists in 2003 and after difficult discussions spanning many years, finally in 2011 the revision of *Acacia* was approved at the 17th International Botanical Congress. These changes have been

accepted by the international botanical community and are already in use in the botanical literature.

The genus *Acacia* is now reserved for approximately 900 species that are native to Australia. Species such as *Acacia mearnsii* that have become naturalised in other parts of the world remain unchanged. The new world lineages in the Americas were renamed to *Acaciella* and *Mariosousa*.

The African acacia species are now grouped into two distinct genera *Vachellia* and *Senegalia* which are clearly separated based on a number of morphological, anatomical and biochemical attributes. The main differences are that *Vachellia* has round, head-like flowers (capitate inflorescences) and thorns (spinescent stipules). *Senegalia* bears flowers in spikes (spicate inflorescences) and while the stipules are non-spinescent, thorns are present elsewhere on stems.

Based on this the well-known *Acacia karroo*, *A. nilotica*, *A. xanthophloea* and *A. sieberiana* now become *Vachellia karroo*, *V. nilotica*, *V. xanthophloea* and *V. sieberiana*, respectively. Similarly, *Acacia nigrescens*, *A. caffra* and *A. senegal* become *Senegalia nigrescens*, *S. caffra* and *S. senegal*, respectively.

Although the genus *Acacia* is still a touchy subject, it is very important that we embrace this classification and ensure we use the current names for our iconic trees and shrubs.



## About the contributor: Marcini Govender

Ms Marcini Govender is in the Directorate Environmental Sector Advocacy and Coordination in the Department of Environment, Forestry and Fisheries. 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.

# 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.

# Harvest the rain

By Marcini Govender

**W**ater is one of our threatened natural resources, but so taken for granted. It is predicated that eventually countries will be fighting over water and in a water scarce country such as South Africa, it is our responsibility to conserve every drop of this precious commodity. One way to do this would be to collect rainwater to help us through the rain scarce dry seasons.

What an achievement to collect nature's water source and repurposing it for your home, landscape, lawn, or farm. While you should always follow local regulations and laws regarding private rainwater harvesting, there are dozens of ways you can put it into action for your own personal use.

There are several effective eco-friendly DIY rainwater harvesting systems available on the market that you could install or build. Rainwater tanks come in a range of shapes and sizes. There are rigid angular ones that can be placed in the yard and others that are less rigid like a bag or bladder type which allows to be placed under houses or decks. Truth be told, any type of sturdy water storage tank, barrel or container could be used for rainwater storage.

The basic barrel or bucket is one of the commonest and easiest methods practiced. All that is needed is a roof where rainwater can easily slope from and a system of gutters. In this system, the water which falls on the roof is made to flow through the gutter and eventually reach a central point where a barrel is placed to collect it. This barrel should provide an outlet to which a pipe can be connected to allow for the use of the collected water. One can then use water directly from the barrel to water plants.

With a stand-alone rain water collector, a tank is placed in the middle of your backyard or any free piece of land you can find and with the aid of a huge canvas to function as a funnel by means of attaching it to proper tubes. All the water which flows into the funnel is then made to collect over either a tank on the ground or can be made to collect in underground storage areas for higher water requirements.

Unused trash cans can be used to store smaller quantities water. Drill a hole at the bottom to function as an outlet and secure it with waterproof sealant to prevent water leakage. Add a hole on the top to allow excess water to flow over.



Whichever size or shape, all rainwater collection tanks should have all these common elements:

1. An inlet to rainwater into the tank – this is generally on top but covered with a screen which prevents plant and insects from falling in.
2. An outlet which allows you to dispense and use the collected rainwater. This is at the bottom.
3. Has to be made of non-transparent material which does not allow sunlight to pass through, or you can paint it or cover it with a tarp to block sunlight. Sunlight causes algae to form.
4. Have fine mesh screens securely in place at all openings to prevent the entry of insects, pests or debris.

By harvesting rainwater, we can all play a small role in conserving our share of water – so try your hand at being green and reusing your rainwater.



# SA students part of All-Atlantic Youth Ambassadors



Above: Ms Thando Mazomba

Above: Ms Marissa Brink

Two South African students will participate in the All-Atlantic Youth Ambassadors Programme, which seeks to enable young people to become actors of change in their communities by promoting the sustainable development of the Atlantic Ocean.

Thando Mazomba and Marissa Brink are among 24 young people from Atlantic Ocean communities who were chosen to make up the second cohort of All-Atlantic Youth Ambassadors. The new group was announced on Friday, 4 December during the 3rd All-Atlantic Ocean Research Forum, which was co-hosted virtually by the Department of Science and Innovation (DSI).

Brink recently completed her doctoral studies in the Department of Genetics at Stellenbosch University. She has joined a UCT/Department of Environment, Forestry and Fisheries research team to work on an EU-funded project, "All-Atlantic Ocean sustainable, profitable and resilient aquaculture", as a postdoctoral research fellow.

Speaking in a video message to the Forum, Brink said her vision for the oceans was "to develop and implement sustainable practices to preserve our natural resources".

Her research project aims to develop and validate the integrated multi-trophic aquaculture (IMTA) model in a land-based pump ashore system, thereby contributing to zero-waste aquaculture practices. She has previously been involved in organising shoreline clean-ups.

The All-Atlantic Youth Ambassadors Programme was launched in August 2019 by the co-chairs of the Galway Statement on Atlantic Ocean Cooperation and the Belém Statement on Atlantic Ocean Research and Innovation Cooperation.

The first cohort of youth ambassadors were challenged to drive change in their own communities, an effort

that is delivering inspiring results focused on "sharing, connecting and acting". Ten ambassadors from the first cohort have agreed to mentor the new group.

Following the success of the first Summer School in August 2019, Mariya Gabriel, the European Commissioner for Innovation, Research, Culture, Education and Youth, launched the All-Atlantic Ocean Youth Forum in Brussels in February 2020. The Youth Forum aims to empower early-career ocean youth in the larger All-Atlantic Ocean Research Alliance.

The idea is to equip a broader community of early-career ocean professionals with the skills, education and training to enable them to drive movements of positive change and sustainable development along and across the Atlantic Ocean.

As part of providing education and training pathways for career development, the Youth Forum seeks to promote young people's competencies and skills by integrating science and citizen engagement. The Youth Ambassadors Programme is the cornerstone of this larger effort.

Source: Department of Science and Innovation.

**"The idea is to equip a broader community of early-career ocean professionals with the skills, education and training to enable them to drive movements of positive change and sustainable development along and across the Atlantic Ocean."**



# Wealth of the world of science – Antarctica

By Carina van Collier and Kusi Ngxabani  
Images by Christel Hansen

**A**ntarctica is Earth's southernmost continent. It is on average, the coldest, highest, driest and windiest continent. It contains the geographic South Pole, is surrounded by the Southern Ocean and is considered a polar desert. Its record low temperature is  $-94^{\circ}\text{C}$ . It sure doesn't sound like any place worth visiting, yet it intrigues nations so much that seven countries have laid claim to parts of Antarctica in the past: Argentina, Australia, Chile, France, New Zealand, Norway and the United Kingdom. The United States of America and the Russian Federation have reserved their rights to claim any or all of Antarctica in the future. To manage these claims and international relations in Antarctica, the Antarctic Treaty was developed.



The Antarctic Treaty and related agreements is called the Antarctic Treaty System. The main treaty was opened for signature on 1 December 1959 and officially entered into force on 23 June 1961 after being signed by the 12 countries active in Antarctica during the International Geophysical Year (IGY) of 1957–58. These countries included Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Soviet Union, the United Kingdom and the United States of America.

The Antarctic Treaty set Antarctica aside "forever to be used exclusively for peaceful purposes and in the interest of all humanity". It declares Antarctica as a scientific preserve, establishes freedom of scientific investigation, bans military activity and mining on the continent as well as the disposal of radioactive waste and nuclear explosions. For the purposes of the treaty system, Antarctica is defined as all of the land and ice shelves south of  $60^{\circ}\text{S}$  latitude – an area that constitutes 10% of Earth.

The Antarctic continent is a land area of 14 million  $\text{km}^2$  of which only 2% or 280 000  $\text{km}^2$  is ice free; the remaining 98% or 13.72 million  $\text{km}^2$  is covered in ice. The nearest countries to Antarctica are South Africa, Australia, New Zealand, Chile and Argentina.

There are no towns or cities in Antarctica and the only places where people live are research bases and stations which are staffed seasonally or year-round by nations who conduct research on the continent and in its surrounding oceans. There are about 111 government operated bases south of  $60^{\circ}\text{S}$ .

The Antarctic Treaty is one of the world's most successful international agreements. Antarctica is one of the few places in the world where there has never been war, where the environment is fully protected and where scientific research has priority.



There has been consistent occupation of a South African base since 1959 when South Africa took over a base from Norway during the first South African National Antarctic Expedition (SANAE).

The current South African base, SANAE IV, is staffed and maintained year-round by a team of scientists and support personnel. Located in the Queen Maud Land region of Eastern or Greater Antarctica, SANAE IV is on top of a distinctive flat-topped nunatak, Vesleskarvet, on the fringe of the Ahlmann Range of mountains. A nunatak (from the Inuit word nunataq) is the summit or ridge of a mountain that protrudes from an ice field or glacier that otherwise covers most of the mountain or ridge. They are also called glacial islands. The base is approximately 80 kilometres from the edge of the continent and 160 kilometres from the edge of the ice shelf. Vesleskarvet is completely surrounded by the glacial ice sheet.

Each overwintering team arrives during the summer expedition and take-over period aboard the research and logistics vessel S. A. Agulhas II. The overwintering team remains at the base alone and isolated between the months of March and December.

The summer expedition and re-supply team (excluding ship's crew) consists of 80–100 persons, and includes administrative staff, heavy vehicle operators, helicopter crew, maintenance staff, the new overwintering team and a large scientific contingent. During the brief summer (typically December/January to February/March) the base must be resupplied with food, equipment and fuel, all waste products must be removed for transport back to South Africa, the new overwintering team must receive on-site training, and scientific investigations which cannot be undertaken in the winter months (such as extended field-work) must be completed.

The Antarctic and Southern Ocean Strategy (ASOS) outlines South Africa's interest in the coordination and implementation of the Antarctic Treaties Act relating to research, conservation, sustainable resource use and environmental management to ensure that Antarctica and the Southern Ocean are understood, valued and protected in the interest of South Africa, Africa and the world.

The S. A. Agulhas II arrived on 4 January 2021 at Penguin Bukta, Antarctica, and the return of the summer expedition and re-supply team to Cape Town is expected early March 2021.



# Kagisanong Combined School receives support from DM

By Salome Tsoka



**Above:** Deputy Minister Sotyu handed over some much needed supplies to Kagisanong Combined School during the Green Back to School programme.



**Above:** Deputy Minister Sotyu along with other officials planted ten indigenous trees at the Kagisanong Combined School.

**H**undreds of learners from the Kagisanong Combined School in Soutpan in the Free State will start off their school year with new school shoes and stationery following the Deputy Minister of Environment, Forestry and Fisheries Ms Makhotso Sotyu's visit to their school on 5 March 2021.

Deputy Minister Sotyu visited the school during the Green Back to School programme in which she handed over 840 school bags and stationery, uniform, school shoes, sanitary towels, three desktops for the staff room, gardening tools, vegetable seeds, sanitizers and marked bins.

The Green Back to School programme endeavours to encourage learners to commit themselves to studying, create awareness about environmental management, encourage learners to be environmental champions who tackle environmental challenges in their communities and schools.

Speaking during the school assembly, Deputy Minister Sotyu said that the Green Back to School programme is one of the programme's the Department run to assist identified schools around the country during the start of the year.

"We focus on school programmes during the first three months of the year because we want to ensure that all school children go back to school. During a number of site visits to the school, the Department identifies what the school needs and we try by all means to assist the schools with their challenges," Deputy Minister Sotyu said.

The school will continue to receive support from officials from the Department as well as the provincial department who will ensure the school is adopted as an eco-school. In addition to this, the Wof Bloemfontein

team has also adopted the school ahead of the fire season and will be maintaining the school yard while also creating fire awareness. All this support will also be accompanied by Coca-Cola Beverages South Africa (CCBSA) and the Department's waste management project and vegetable garden.

The Principal of Kagisanong Combined School Mr Nameng Sehloho said that he was happy with the Deputy Minister's visit to the school as well as for the number of items which she donated to the school.

"The three desktop computers will make attending Zoom Meetings easier. Many of the school learners will also benefit from the school shoes and stationery received. I am also very happy that the Department has vowed to continue to support our school and also assist in making it greener through the eco-schools programme," Mr Sehloho said.

**“ The Green Back to School programme endeavours to encourage learners to commit themselves to studying, create awareness about environmental management, encourage learners to be environmental champions who tackle environmental challenges in their communities and schools.**



# Dikgabje Primary School leads in waste management

By Veronica Mahlaba



**Above:** The school has also reused old desks as garden borders to beautify certain areas of the school.



**Above:** The Dry Enviro-park that the school with the prize they got from SAGSP.



**Above:** The school has also created a sorting area to teach learners about recycling.

**B**ased in the rural area of Mokwete, Janefurse in Limpopo, Dikgabje Primary School has taken a lead in teaching its learners and community members about the importance of keeping their school and community clean. This was motivated by their participation in the South African Green Schools Programme (SAGSP).

The Department of Environment, Forestry and Fisheries with the Limpopo Economic Development, Environment and Tourism (LEDET) launched the SAGSP in 2017. The SAGSP project was aimed to raise awareness to learners to the problem of environmental degradation which can be reversed through educating the nation and adopting sustainable measures of harvesting environmental resources with a view to create a legacy that future generations can inherit.

As part of the SAGSP initiative, learners from at least 105 schools in and around Limpopo province showcased their projects that focus on environmental conservation. Dikgabje Primary School was one of the schools with an outstanding project and was awarded a prize that was channeled towards small-scale projects that support meaningful learners' action on environmental issues.

According to the school's principal, Mr Tagishi Thipane, the school had a waste management challenge where litter from snack wrappers, cold drinks, in class papers, office paper, leftover food, old, school desks, plastic bag etc. was affecting school grounds and areas outside of the school. In their SAGSP presentation for the community they focused on plans that will promote waste management hierarchy addressing the 3Rs (Recycle, Reuse and Reduce).

Mr Thipane explained that Dikgabje does awareness cleaning campaigning which includes inviting parents, the public, LEDET, district officials for motivations and cluster schools in order to observe calendar days. "The school has an environment slogan song which states: **"Ge o mmona a e lahla, aowa aowa o mmotse a e tope topa topa"** loosely translated when someone litters, tell that person no, pick it up and throw it in the bin. The prize that we received became an extrinsic motivation to motivate us to do more and be a green school and litter free," explained Mr Thipane.

To address the waste management challenge, with the prize the school won, they decided to create a Dry Enviro-park. "We converted an area that was filled with waste into a park where learners can sit and have their lunch. We got rid of alien plants and replaced them with indigenous plants. We also created a sorting area, to make it easy for everyone to throw away waste and for cycling. The level of waste has been reduced at the school and as a result a positive behavioural change and attitude towards the environment in the school and the community," Mr Thipane said.

Educators at Dikgabje Primary School have stressed the need and importance of having environmental education linked to curriculum because it responds to legislative mandate as stipulated in the constitution of Republic of South Africa, 1996 Act 108 of 1996 chapter 2/4 which state, "Everyone has the right to an environment that is not harmful to their health or well-being."



## About the contributor: Veronica Mahlaba

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

# Rabie Ridge gets a clean-up

By Veronica Mahlaba

**B**oshoff Street at Rabie Ridge in the City of Johannesburg was left spotless during a clean-up on 26 February 2021. The clean-up was organised by Maru in partnership with the Department of Environment, Forestry and Fisheries, Gauteng Department of Agriculture and Rural Development, City of Johannesburg, Joburg Zoo, Joburg City Parks, Pikitup and National Lotteries Commission.

The clean-up came with education and awareness raising about the importance of wetlands and water. Internationally, each year on 2 February, World Wetlands Day is celebrated. This day marks the adoption of the Ramsar Convention on Wetlands of International Importance. On this day, government departments, non-governmental organisations, and civil society at large come together to raise public awareness on the value of wetlands and their vital link to human wellbeing. The CEO of Maru, Ms Joyline Josamu stated that since it was still February, Maru and their partners saw a need to create awareness and educate people about wetlands and keeping the place clean as the community of Rabie Ridge have a wetland in ward 110.

"We have trained and recruited 48 environmental champions that are going to be involved in daily clean-ups, environmental awareness campaigns on sustainable waste management and recycling activities within our communities. I am grateful to our partners for joining us and making all of this possible," said Ms Josamu.

Attending the clean-up was DEFF's Director: General Waste Minimization, Mr Dumisani Buthelezi said as a Department they felt it was necessary to partner with Maru because some of the challenges that are talked about within the space of solid waste management

hamper on the programmes to manage wetlands as well. "There's talks around plastic waste and plastic pollution in our rivers streams and into our ocean. Wetlands play a critical role in trapping a lot of this waste, but we don't need that, we need to find systems to capture a lot of this waste before it gets into the wetlands or rivers stream or the ocean," explained Mr Buthelezi.



**Above:** DEFF's Director: General Waste Minimization, Mr Dumisani Buthelezi thanking Maru for assisting the government in providing solid waste management.

Mr Buthelezi further stressed the importance of corporative governance. "This is a community based organisation, as a Department we are trying to emphasize that corporative governance, it's quite central in solid waste management. The Department on its own or the municipality cannot execute the responsibility of solid waste management alone effectively. From time to time you need dedicated community members who will group themselves into organisations such as Maru to collect and trap waste, clear out illegal dumping sites and conduct recycling where possible."



# REDUCE RE-USE RECYCLE RECOVER

**4** great ways YOU can eliminate waste and protect your environment!

## How can you help?

### What is Waste?

Waste is anything we throw away or get rid of that doesn't get used.



You can help by learning about and practicing the four R's of waste management: Reduce, Re-use, Recycle and Recover! Practicing all four of these activities every day is not only important for a healthy environment, but it can also be fun too.



### Reduce

A key part of waste "reduction" is "conservation"—using natural resources wisely and using less than usual in order to avoid waste.

### Re-use

You can "re-use" materials in their original form instead of throwing them away, or pass those materials onto others who could use them too!

### Recycle

Your recycling mission is not impossible! In fact, it is very simple: Don't throw away anything that can be recycled!

### Recover

Convert waste into resources (such as electricity, heat, compost and fuel) through thermal and biological means.



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