

Environment Quarterly

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Decline in rhino poaching figures

**SA welcomes adoption of
COP21 Paris climate deal**

**Animal trade:
Wild pets, wild problems**



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

2016

environment CALENDAR



January

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8 June

World Wetlands Day
World Water Day
World Meteorological Day
Earth Hour
Earth Day
World Migratory Bird Day
International Biodiversity Day
World Environment Day
World Oceans' Day

17 June
24 June
11 July
18 July
1 September
16 September
22 September
21 November

World Day to Combat Desertification
Day of the Sea Farer
World Population Day
Nelson Mandela Day
National Harbour Day
World Ozone Day
World Rhino Day
World Fisheries Day

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Dear Valued Stakeholder,

Welcome to the first edition of Environment Quarterly in 2016. The Editorial team hopes you have had a peaceful festive season and are ready to play your part in the year ahead as an environmental ambassador, and agent of behaviour change. In this edition we bring you articles on the highlights of 2015, as well as the activities and environmental days in the first quarter of this year.

Government's coordinated response against the scourge of rhino poaching from enforcement to prosecutions, has borne results. We illustrate this in an article on the 2015 rhino poaching statistics which experienced a decline from the 2014 figures. This edition also features the South African statement following the United Nations Framework Convention on Climate Change (UNFCCC) Congress of the Parties (CoP21) in Paris. The outcomes

of the UNFCCC CoP21 demonstrate the global recognition of the serious impacts of climate change, and an appreciation of the need for concrete measures to mitigate and adapt. Governments are becoming increasingly aware and more responsive to environmental issues as these have an impact on sustainable development goals, job creation, food security, housing and health amongst others.

Researchers Peter and Swilling, in the paper *Greening the South African Growth Path: Transitioning to Sustainability* (2011:3) state that development everywhere is increasingly becoming vulnerable to changes in the global economy and the climate, as well as regional pressures, of which some are the consequences of climate change. "When food prices rose by approximately 60% in the first semester of 2008, the number of people living in poverty globally rose by up to 155 million," state Peter and Swilling (2011:3). The researchers indicate that in Africa there are increased rates of urbanisation, increased desertification, as well as conflict over resources such as water, pasture and arable land.

The effects of climate change have been evident most recently to ordinary South Africans, in the form of drought and municipal water restrictions since the latter part of 2015. Many areas experienced record highs, including Pretoria which reached 42.5 degrees Celsius on 07 January 2016, up from a previous record of 41 degrees C. This extended dry spell was followed by a period of heavy rains, hail and flooding. The drought has affected the livelihoods of many, due to dips in crop production.

This has amongst others, resulted in the need to import yellow maize as opposed to white maize, which is the staple food of most of our population.

Interestingly, the United Nations has declared 2016 as the International Year of Pulses. Pulses are crops such as beans, lentils, peas and chickpeas, and form a critical part of the general food basket in many countries. Pulses are legumes, which are a group of plants that have nitrogen-fixing properties which can contribute to increasing soil fertility and have a positive impact on the environment. They are a valuable crop to add to one's home garden for food security and if one has green fingers.

This edition also features articles on interesting facts about our biodiversity. We explore the healing properties of our plants and also keep you updated with the latest regulations around animal trade.

You can look forward to all of these articles and more, including our regular Vox Pops, the judgments of key environmental cases, and a centre spread pull-out on wetlands.

The editorial team hopes that you learn from, and enjoy the edition. We welcome your contributions of articles and photographs. We urge you to share Environment Quarterly with friends, colleagues and young people in particular, to encourage them to care for their environment and to expose them to various career paths in the sector.

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Meet our team

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Find more information on: www.environment.gov.za or call 086 111 2468

DEA Events in Pictures

Minister Molewa discusses the outcomes of COP21



Above: From left: The Department of International Relations and Cooperation Ambassador, Ms Nozipho Diseko; Deputy Minister of Environmental Affairs, Ms Barbara Thomson, Minister of Agriculture, Forestry and Fisheries, Mr Senzeni Zokwana and Minister of Environmental Affairs, Mrs Edna Molewa at The New Age Breakfast Briefing that was broadcasted on SABC2's Morning Live on 27 January 2016. The briefing was about the outcomes of the 21st Conference of Parties (CoP21) to the United Nations Framework Convention on Climate Change (UNFCCC). The International Climate Change talks were held in Paris from 06 December to 12 December 2015. **Image by Veronica Mahlaba.**

Deputy Minister drives Back-to-School initiative

As part of the Back-to-School initiative, the Deputy Minister of Environmental Affairs, Ms Barbara Thomson handed over school uniforms to indigent learners of Kwabulawayo High School in Hlabisa, KwaZulu-Natal. The Deputy Minister visited the school to handover eco-desks that are manufactured by the department using alien invasive plants. The learners also received much-needed stationery and school bags.

Image by Veronica Mahlaba.



Premier Makhura visits DEA's eco-furniture factory



The Premier of Gauteng Mr David Makhura, City of Tshwane Mayor Mr Kgositso Ramokgopa and Deputy Director General: Environmental Programmes Dr Guy Preston meet one of the Working for Water beneficiaries at the Ga-Rankuwa Eco-Factory in Pretoria. The Premier went on this site visit for the first time where beneficiaries showcased the work of the factory, and how it is benefitting the community of Ga-Rankuwa. **Image by Zibuse Nalovu.**

Welcoming back the expedition team



The Department of Environmental Affairs welcomed back the SANAE 54 Expedition Team from Antarctica on Thursday, 04 February 2016 at the East Pier Quay in Cape Town. The team had been away 14 months on a research expedition. Antarctica is a valuable continent for research despite the difficult weather conditions and isolation that scientists often have to endure. DEA colleagues, family members, friends and members of the media were delighted to welcome them home. **Image by Muano Liphadzi.**

WORLD METEOROLOGICAL DAY

Hotter, drier, wetter – face the future

By Hannelee Doubell

World Meteorological Day is celebrated annually all over the world by countries forming part of the World Meteorological Organization (WMO). This international body was established by means of the United Nations Convention on the World Meteorological Organization in 1950, as the successor of the International Meteorological Organization, created in 1873.

WMO's mission is to support the countries of the world in providing meteorological and hydrological services to protect life and property from natural disasters related to weather, climate and water, to safeguard the environment, and to contribute to sustainable development. The theme of this year, "Hotter, drier, wetter – face the future", could not be timelier, as our climate is changing, and it is happening now.

What can we expect in the future?

During 2015, heatwaves affected many regions of the world, and many local heat records tumbled. South Africa recorded 48.4 °C in Vredendal in October and 31 maximum temperature records were shattered early in January 2016 during yet another heatwave. Around the globe, Spain saw a new temperature record of 46.2 °C in Valencia and Lanzarote in May, which was 6 °C higher than the previous record for that month. In Egypt, the maximum temperature reached 47.6 °C in Luxor in July.

Drought continued in southern Africa, while north-east Brazil and western North America, experienced a record-breaking wildfire season in Alaska. Central America and the Caribbean also suffered deficient rainfall (aggravated by El Niño). The south-west monsoon rainfall was below normal in India, and drought in Indonesia contributed to extreme wildfires, which affected neighbouring countries.

Heavy rainfall events are increasing in response to the warming atmosphere's ability to hold more moisture. Malawi saw its worst-ever flooding in January 2015, and May was the wettest month on record for the contiguous United States of America. Events where 24 hour rainfall totals exceed the normal monthly mean are on the rise. During the monsoon in Pakistan, one station recorded 540 millimetres (mm) of rain in 24 hours, compared to the country's annual average of 336 mm.

The Indian city of Chennai received 500 mm of rain in a 24 hour period on 1–2 December – a deluge not witnessed in living memory – and the United Kingdom of Great Britain and Northern Ireland broke its 24 hour rainfall record on 5 December, with 341.4 mm of rainfall recorded in Cumbria.

Facing the Future

According to the World Meteorological Organization, the world's governments are now fully

convinced of the scientific evidence of climate change and the need to take urgent action.

Although the outlook on the future climate is rather bleak, it is still possible to minimise the damage. In December 2015 the world's governments unanimously adopted the Paris Agreement, providing for rapid and deep cuts in greenhouse gas emissions.

This historic agreement commits all countries to undertake ambitious efforts to respond to the urgent threat of climate change on the basis of their "common but differentiated responsibilities". It also addresses financial support to developing countries, climate resilience and adaptation, loss and damage, technology transfer, capacity-building, and education, training and public awareness.

Meanwhile, scientific advances are making it possible to produce increasingly useful climate information and services to support climate resilience, adaptation and mitigation. South Africa, as members state of the WMO, will join efforts by the WMO and the global network of National Meteorological and Hydrological Services to provide the scientific observations, research and operational climate services that society will need in order to face the future.

Additional information:
www.wmo.int



About the contributor: Hannelee Doubell

Ms Hannelee Doubell works for the South African Weather Service in the Corporate Communications department.

CLIMATE CHANGE IMPACTS COULD BE DISASTROUS FOR WATER SECURITY



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OUR EFFORTS.**

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



CITES COP17 Host Country Agreement signed



Above: Minister of Environmental Affairs, Mrs Edna Molewa and CITES Secretary General Mr John Scanlon sign the Host Country Agreement for the 17th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES CoP17) on 02 March 2016.

The Minister of Environmental Affairs of the Republic of South Africa, Mrs Edna Molewa signed the Host Country Agreement for the 17th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) on 02 March 2016 with CITES Secretary General Mr John Scanlon in the Netherlands.

South Africa was one of the first signatories to CITES in 1975 and continues to play an active role in the enforcement of the Convention.

Mr Scanlon described South Africa as a highly appropriate location given the frontline wildlife challenges and opportunities being tackled on the continent.

"Africa is home to a vast array of CITES-listed species and South Africa is globally recognised for 'the Big Five'. CITES Parties and observers look forward to convening in South Africa for the World Wildlife Conference," said Mr Scanlon.

At COP17, Parties will collectively evaluate the progress made since 2013, and take decisions on what additional measures are needed to end illicit wildlife trafficking.

It will also consider a number of proposals to bring additional species under CITES trade controls, as well as tackle issues concerning livelihoods, and the review of significant trade, traceability, and the effectiveness of CITES implementation, amongst other things.

CITES COP17 logo revealed

The CITES COP17 Host Country Agreement signing coincided with the release of the official COP17 logo.

The logo is an iconic image of the African white rhinoceros. The rhino's 'body' comprises the outlines of a number of species of endangered plants and animals from the African continent, such as the pangolin, cycad, African aloe and African lion.

The selection of the rhino as the dominant image of the COP17 logo reinforces South Africa's status as home to the largest rhino populations in the world. "The choice of a rhino as the dominant image in the logo

for COP17 is also to draw attention to the challenges South Africa and other African range states face as a result of poaching," said Minister Molewa.

The illicit trade in wildlife and rhino poaching will feature on the agenda of COP17. The CITES CoP creates an avenue to communicate and raise awareness of the importance of species / wildlife conservation and the need to address the illegal trade in species - all the while supporting legal trade underpinned by sound sustainable utilisation principles.

"This magnificent logo is furthermore testament to the rich tapestry of biodiversity for which our country is known globally," said Minister Molewa.

The incorporation of human silhouettes emphasises the crucial role people play in species conservation. The colours of the logo draw inspiration from the diverse hues of the African seasons. The rhino's heart, in the shape of the African continent - symbolises the idea that the African continent is the wellspring of life.

"The COP17 logo released today reminds all of us of the interconnectivity between different

species, and of the fragile, complex relationships between humankind and our stewardship of our natural resources. South Africa looks forward to hosting this important gathering, where we will chart the course for a new era in species conservation," said Minister Molewa.

Widespread information nowadays about the endangered status of many prominent species, such as the tiger elephants and specifically for the South African environment, the rhino, might make the need for then Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) seem obvious. But at the time when the

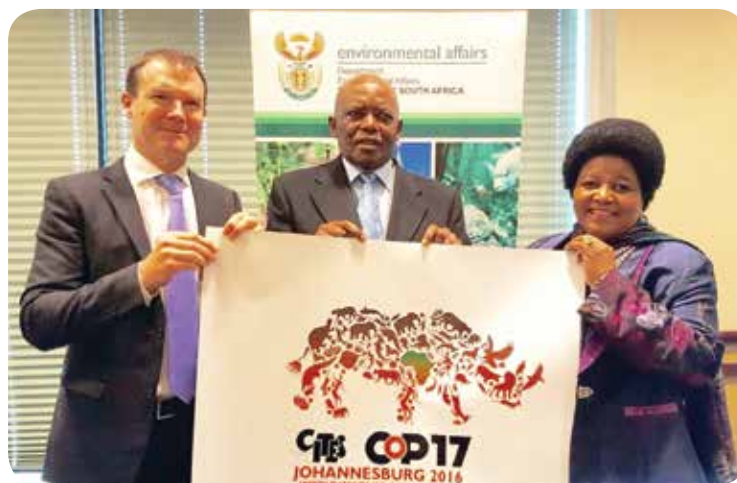
for conservation purposes was something relatively new. With hindsight, the need for CITES is clear.

Annually, international wildlife trade is estimated to be worth billions of dollars and to include hundreds of millions of plant and animal specimens.

The trade is diverse, ranging from live animals and plants to a vast array of wildlife products derived from them, including food products, exotic leather goods, wooden musical instruments, timber, tourist curios and medicines.

Levels of exploitation of some animal and plant species are high and the trade in them, together with other factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction.

Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important in order to safeguard these resources for the future.



Above: Minister Molewa proudly reveals the CITES COP17 logo which is an iconic image of the African white rhinoceros.

ideas for CITES were first formed, in the 1960s, international discussion of the regulation of wildlife trade



Above: The rhino's 'body' comprises the outlines of a number of species of endangered plants and animals from the African continent, such as the pangolin, cycad, African aloe and African lion.

What is CITES and what does it aim to do?

CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Because the trade in wild animals and plants crosses borders between countries, the effort to regulate it requires international cooperation to safeguard certain species from over-exploitation. CITES was conceived in the spirit of such cooperation. Today, it accords varying degrees of protection to more than 35,000 species of animals and plants, whether they are traded as live specimens, fur coats or dried herbs.

For many years CITES has been among the conservation agreements with the largest membership, with now 181 Parties.

SA welcomes adoption of COP21 Paris climate deal



The Minister of Environmental Affairs, Mrs Edna Molewa, led the South African delegation to the twenty first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and eleventh Meeting of the Parties serving as the Conference of the Parties to the Kyoto Protocol (UNFCCC COP 21/ CMP11).

This global conference, which took place from 30 November - 12 December 2015 in Paris, France, led to the adoption by consensus of the Paris Agreement and a package of supporting decisions, addressing climate action in both the pre-and-post 2020 periods. This outcome recognises that climate change represents an urgent threat to human societies and the planet, requiring the widest possible cooperation by all countries and other stakeholders.

H.E. President Jacob Zuma delivered the South African national statement,

held bilateral meetings and was accorded the special honour by the French President of chairing a full session of the leaders' event.

South Africa participated in these negotiations as Chair of the Group of 77 and China, whose 136 members represent well over 80% of the world's population. Minister Molewa led the G77 and China at the ministerial-level meetings in Paris.

Remarks by the Minister:

"I warmly welcome the adoption of the legally binding Paris Agreement with supporting decisions, which marks the successful conclusion of an intense four year global negotiation process that was started at the 17th Conference of Parties in Durban in 2011, under President Zuma and South Africa's leadership," said Minister Molewa.

"While not as ambitious or legally robust as South Africa would have preferred, I am of the view that the Paris outcome is the best deal possible

for developing countries under the current international circumstances. I am particularly encouraged by the requirement that all countries should deliver on their Nationally Determined Contributions and commit to more progressive measures every five years.

This Agreement therefore provides a solid platform upon which to build and will enable all countries and non-state actors, working together, to combat climate change effectively and boost transition towards resilient, low-carbon societies and economies," she said.

Key features of the Paris Agreement

The Paris Agreement represents a turning point in global climate governance and strengthens rules-based multilateralism, as it is the first time that a comprehensive and universal agreement has been adopted under the United Nations Framework Convention on Climate Change (UNFCCC)..

The Paris Agreement :

- **Marks a breakthrough in securing a more comprehensive and balanced approach to the problem of climate change**, as long called for by developing countries, by abandoning the mitigation-centric approach of the past in favour of a more holistic approach that addresses with an equal degree of seriousness all the inter-related aspects of the problem – mitigation, adaptation, loss and damage, response measures and the necessity to support developing countries.
- **Does not rewrite or reinterpret the UN Framework Convention on Climate Change**, which remains one of the most successful, enduring and important multilateral agreements, premised on the concepts of equity and differentiation of action and support between developed and developing countries.
- **Reaffirms the goal of limiting global temperature increase well below 2 degrees Celsius**, while pursuing efforts to limit the increase to 1.5 degrees. The recognition of the 1.5 degree target is of central importance to South Africa as an African and developing country that is highly vulnerable to climate change.
- **Establishes Nationally Determined Contributions (NDCs)** by all Parties to the global mitigation effort, and to pursue domestic measures aimed at achieving them.
- **Commits all countries to report regularly on their emissions** and progress made in implementing and achieving their NDCs, and to participate in an international aggregate review.
- Further commits all countries to submit new NDCs every five years.
- **Requires Parties engaging in international emissions trading to avoid double counting**; and calls for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC.
- **Establishes an adaptation global goal**, which clearly links the amount of adaptation required and its cost to the level of mitigation ambition.
- **Requires countries to submit adaptation communications periodically**, which includes national priorities, implementation plans and support needed.
- **Confirms that developed countries have an ongoing legal obligation** to provide and mobilise finance to support developing countries, in fulfillment of the Convention in both the pre-and-post 2020 periods. The pre-2020 target of 100 billion US Dollars a year by 2020 will serve as the baseline for the post-2020 period, with a higher target to be adopted after 2025.
- **Confirms the continuation of the Warsaw International Mechanism for Loss and Damage**. This is a priority and important outcome for highly vulnerable countries, such as the Small Island Developing and Least Developed States, that are already experiencing irreversible loss and damage to their economies and societies from the impacts of climate change;
- Establishes the Paris Committee on Capacity Building to deal with gaps and needs for developing countries;

Domestic action on climate change

South Africa is already acting on climate change. We have significant investment in renewable energy, public transport, energy efficiency, waste management and land restoration initiatives. We also invest heavily in programmes that enable communities, farmers and industry to adapt to the impacts of climate change, for example through our working for water, wetlands and fire programmes. We both provide assistance to fellow African countries and receive invaluable support from international partners.

The successful finalisation of the Paris Agreement is extremely significant for South Africa, as we strive to enhance our efforts to transition to a lower carbon economy and society, as well as to adapt in the short, medium and long term to the impacts of increasing temperatures, and reduced rainfall in many parts of the country.



Above: Minister Edna Molewa led the South African delegation to the COP21 in Paris, France.



Above: Minister of Transport, Ms Dipuo Peters was part of the delegation to COP21.

Minister announces a decline in rhino poaching figures

By Fhatuwani Siluna

For the first time in a decade, the rhino poaching situation in South Africa is stable. This is according to a statement made by the Minister of Environmental Affairs, Mrs Edna Molewa when she was addressing members of the media on progress in the fight against rhino poaching at a press briefing on 21 January 2016 in Pretoria, Gauteng.

The Minister was accompanied by Justice and Correctional Services Minister, Advocate Michael Masutha, State Security Minister Mr David Mahlobo, Deputy Minister of Environmental Affairs, Mrs Barbara Thomson, and Major-General of South African National Parks, Mr Johan Jooste.

Giving her key note address, Minister Molewa announced that by the end of December 2015, the number of poached rhinos was at a record of 1 175, of which 826 were in the

Kruger National Park (KNP). She further highlighted that the figure which is marginally down from the record 1 215 in 2014 could have been far worse, were it not for several anti-poaching measures and efforts that are tirelessly being put into place.

"Considering that there has been a 10 percent increase in the number of poaching activities in the KNP, it is clear that were it not for these interventions, the situation would be far worse and many more rhino would be lost," said the Minister.

Kruger Park has experienced the worst poaching incidents in all the national parks. Out of the overall figure of 317 poachers arrested for rhino poaching related offences, 202 poachers were arrested in the KNP and 115 in the area adjacent to the Park. The Minister has attributed this achievement to collaborative efforts by government, the Security cluster and ordinary South

Africans who continue to play a role in the fight against the slaughtering of the rhino population.

"These positive developments are the outcome of stepped up collaboration with the Security Cluster, as well as working with communities adjacent to the park," she added.

To exercise its wildlife activism, the Department of Environmental Affairs (DEA) has strengthened its border training programme, focusing on the illicit international cross-border movement of endangered species. "The Green Scorpions are rolling out this training programme together with the National Border Management Coordinating Committee," she explained.

The Minister also stressed that intervention programmes were still going on, and alluded to the recent training of 147 border enforcement officials, as well as new technologies



Above: From left: Minister of Justice and Correctional Services, Michael Masutha, Minister Edna Molewa, Minister of State Security David Mahlobo and Deputy Minister of Environmental Affairs, Barbara Thomson during a rhino poaching press briefing in Pretoria.



About the contributor: Fhatuwani Siluna

Fhatuwani Siluna is an intern under the Directorate, External Communications in the Department of Environmental Affairs. She holds a Bachelor of Arts Degree in Communications from the University of Limpopo.

that have been introduced to fight rhino poaching. Nearly 400 magistrates underwent intensive training last year to get deeper understanding of the effects of poaching, the Minister said.

Speaking at the briefing, Justice and Constitutional Services Minister, Advocate Masutha indicated that his department has achieved 88.8% conviction rate of rhino poachers since April 2015. 48 people were accused of poaching and poaching-related crimes, of which six were acquitted or had their charges withdrawn.

"Arrests for poaching increased to 317 from a revised 258 in 2014. The ministry stepped up inspections at airports and borders and also made use of technology to combat rhino poaching," he said.

Minister Molewa also acknowledged the rhino horn moratorium judgment that was handed down by the North Gauteng High Court in November 2015. She has announced that the DEA will be applying to the Supreme Court of Appeal (the second highest court in South Africa) for special leave to appeal against the judgement, which has now legalised the domestic trade in rhino horn.

"My legal team is not yet privy to the reason for the decision, but I have decided to apply for leave to appeal to the Supreme Court of Appeal. Once lodged, my application will result in the suspension of the operation and execution of the court's decisions to review and set aside the moratorium," Minister Molewa said.

She also indicated that South Africa has signed Memorandums of Understanding (MOU) with Mozambique and some Asian countries as a way of collaborating in the battle against environmental crimes, in particular the rampant rhino poaching. These MOUs follows global calls for Vietnam, a key destination for rhino horn, to implement its improved penal reforms effectively and to take action to reduce the demand for rhino horn in domestic markets.

"We continue to collaborate strategically with rhino range and consumer states, to support us in neutralising the threat of organised transnational criminal syndicates involved in the illegal wildlife trade", she said.

Minister Molewa also expressed gratitude for anti-poaching supportive efforts which the country has been receiving from various entities and stakeholders both locally and

internationally such as the Peace Parks Foundation, the Council for Scientific and Industrial Research the Warren Buffet Foundation and the Dutch and Swedish Postcode Lottery Funds. She also acknowledged the support from countries like the United States of America, Germany, Netherlands, and the Global Environmental Facility.

Furthermore, Minister Molewa hailed efforts by ordinary South Africans who continue to play an active role in the fight against rhino poaching, mentioning Mr Amos Mzimba, who with his K9 Belgian shepherd "Killer" recently received a medal from the UK's People's Dispensary for Sick Animals, for his contribution towards the successful arrest of poachers in the Kruger National Park.

"On behalf of the whole of South Africa we want to salute you, and thank you. The war against rhino crime cannot be won by government alone," she said.

President Jacob Zuma in his visit to the Kruger National Park in November last year, urged South Africans to report wildlife crimes as a way of acting against those behind the senseless crimes.

"The rhino poaching debacle cannot be won by government alone," he said.



Nature's healing hand

For many generations, different cultural groups have used natural products to improve their lives. Traditional medicine is still being used today to treat conditions such as asthma, boils, skin cancer and other ailments. In this issue, we visit the South African National Biodiversity Institute (SANBI) in Pretoria to learn more about the botanical garden and its medicinal plants. SANBI leads and coordinates research, and monitors and reports on the state of biodiversity in South Africa.

Mr Evans Molekwa, who is the garden foreman, takes long walks in the garden everyday doing routine inspections. Seeing the plants everyday has motivated him to want to know more about the traditional benefits of some of the plants.

"I am not a scientist but ever since I joined SANBI, I have increased my knowledge of plants and their healing properties. I even buy books to study more on plants and their healing powers," says Mr Molekwa.

South Africa is home to nearly: 10% of the world's plants; 7% of the reptiles, birds and mammals and 15% of known coastal marine species. Mr Molekwa takes us through the scenic medicinal garden at SANBI and below are some of the interesting plants with healing properties that we found.

Vangueria infausta

Family: Rubiaceae

Common names: *wild medlar* (Eng.); *wilde mispel* (Afr.); *Mpfilwa* (Tsonga & Shangaan); *Mmilo* (Northern Sotho); *muzwilu*, *mavelo* (Venda); *umViyo*, *umTulwa* (Zulu); *umVilo* (Xhosa); *umbizo*, *umViyo* (Ndebele); *Mmilo*, *mothwanyê* (Tswana); and *umVile*, *amantulwane* (Swati)

Description

This is a deciduous shrub or small tree that varies in height from 3-7 m, depending on the habitat. It can be single or multistemmed, but usually the latter. The bark is greyish to yellowish brown, smooth and peeling in irregular small strips.



Distribution and habitat

This plant can be found in woodlands, scrub, on stony koppies or in sandy valleys.

Uses

An infusion of the roots and leaves has been used to treat malaria, chest ailments like pneumonia, as a purgative and to treat ringworms. An infusion of the leaves is used for the relief of toothache. For the treatment of swelling of the limbs (especially in children) the affected parts are bathed in a decoction of the pounded leaves and small twigs.

Heteropyxis natalensis Harvey

Family: Heteropyxidaceae

Common names: *Lavender tree*, *Laventelboom* (Afrikaans), *iNkunzi* (Zulu)

This is an attractive small tree suitable for townhouse gardens

Description

This is a medium to large deciduous tree that grows to about 10 metres high.



Uses

The leaves and roots of this plant are used medicinally and to treat worms in stock. African healers prescribe inhaling the steam from a decoction of the roots to heal a bleeding nose. The roots are also used in the treatment of mental disorders and fresh leaves are used during weaning.

The leaves are also used to scent tobacco.

Lippia javanica

Family: Verbenaceae

Common names: *Fever tea*/ *Lemon Bush* (English) *Koorsbossie*/*Beukesbossie*/*Lemoenbossie* (Afrikaans) *mutswane*, *umSutane* (Swati) *inZininiba* (Xhosa) *umSuzwane*, *umSwazi* (Zulu) *musukudu*, *bokhukhwane* (Tswana)

For the avid herb gardener with an interest in medicinal plants *Lippia javanica* with its dense creamy white, flower heads and aromatic leaves is a perfect candidate.

Description

This 1 to 2m high woody shrub stands erect and is multi-stemmed. The stems have a square appearance when looked at in cross-section. The leaves are hairy with noticeable veins and when crushed gives off a strong lemon-like smell.



Distribution and habitat

These plants are widespread throughout large parts of South Africa, with the exception of the Western Cape. *Lippia javanica* grows from the Eastern Cape northwards extending into tropical Africa including Botswana, Swaziland, Mozambique, Malawi, Tanzania, Zambia, Tanzania, and Kenya. It grows in open veld, in the bush, as well as on forest margins.

Uses

This plant is well known medicinally to many African tribes and to many avid herbalists and herb gardeners.

Different parts (the leaves, twigs and occasionally the roots) of the plant are used for different reasons. The Xhosa people are known to

drink it in a weak infusion as a tea substitute and in a stronger infusion for the treatment of coughs, colds and bronchial problems in general. They use the leaves and stem and drink it with milk or water. In addition the Xhosa people also use *Lippia javanica* for the disinfection of meat that has been infected with anthrax.

This herb is also said to be affective against fever, especially in cases of malaria, influenza, measles, and as a prophylactic against lung infections. In these cases *Lippia javanica* is often mixed with another herb *Artemisia afra*.

The smoke from the herb has proven to be affective, if inhaled, against asthma, chronic coughs and pleurisy. The leaves and stems are burned.

Erythrina lysistemon

Family: Fabaceae

Common names: *common coral tree, lucky bean tree (English), gewone koraalboom, kanniedood (Afrikaans), umsintsi (Xhosa), muvhale (Venda), mophete (Tswana), mokhungwane (Sotho), umsinsi (Zulu) Fabaceae/Leguminosae (Pea & bean family)*

Erythrina lysistemon is a lovely, small to medium-sized, deciduous tree with a spreading crown and brilliant red flowers. It is a handsome tree at any time of the year, and its dazzling flowers have made it one of the best known and widely grown South African trees.

Distribution and habitat

Erythrina lysistemon occurs in a wide range of altitudes and habitats from North West Province, Limpopo (formerly Northern Province), Gauteng, Mpumalanga, through to Swaziland and KwaZulu-Natal, and down to about the Mbashe River Mouth in Eastern Cape.

Further north in Zimbabwe, Botswana and Angola it occurs in small pockets. It grows in scrub forest, wooded kloofs, dry woodlands, dry savannah, koppie slopes and coastal dune bush and also in high rainfall areas.

Uses

Erythrina lysistemon is thought to have both medicinal and magical

properties by many people. A tribal chief will wash in water in which bark has been soaked as he believes that by doing this he will ensure the respect of his people.



Women about to give birth are given an infusion of herbs to make the birth easier and a sliver of bark from the four sides of the tree is tied around the bundle of herbs before it is boiled.

Water in which bark has been soaked is mixed with the root of a species of *Cussonia* and used as a purifying emetic. Crushed leaves placed on a maggot-infested wound are said to clear the maggots.

The bark applied as a poultice is used to treat sores, wounds, abscesses and arthritis. Infusions of the leaves are used as ear drops to relieve earache, and decoctions of the roots are applied to sprains.

Hypoxis hemerocallidea

Family: Hypoxidaceae

Common names: *star flower, yellow star (Eng.); sterblom, gifbol (Afr.); moli kharatsa, lotsane (S Sotho); iNkomfe (Zulu). Wrongly referred to as African potato.*

Hailed as 'miracle muti' and 'wonder potato', *Hypoxis hemerocallidea* has been very much in the limelight during the past two decades and is today surrounded by controversy. It is a beautiful tuberous perennial, synonymous with the grasslands, where its yellow star-like flowers herald the arrival of spring and summer rains.

Description

Tuberous perennial with straplike leaves and yellow star-shaped flowers. The leaves are up to 400 mm long, neatly arranged one above the other in 3 ranks, broad, stiff and arching outwards with prominent ribs and tapering towards the tips. The lower surface of the leaves is densely hairy with white hairs. Leaves appear above ground in spring before the flowers.

Uses

African potato (in the misapplied sense) has been used as a traditional medicine for centuries. It is a household name in South Africa and probably the best known muti plant in the country. The African potato has even been recommended by a former Minister of Health for inclusion in the daily diet of HIV patients.

Today it is an alleged component of numerous over-the-counter medicinal preparations. In a study on the plants sold at muti markets in the Eastern Cape, *Hypoxis hemerocallidea* was the most-traded plant.



The tuberous rootstock is traditionally used to treat a wide variety of ailments. Weak infusions and decoctions of the corn are used as a strengthening tonic and during convalescence, and against tuberculosis and cancer. It is also used for prostate hypertrophy, urinary tract infections, testicular tumors, as a laxative and to expel intestinal worms. Anxiety, palpitations, depression and rheumatoid arthritis are further ailments treated with the plant.

Hypoxis hemerocallidea is used to build up the immune system of patients suffering from cancer and HIV. A phytochemical derived from *Hypoxis* is hypoxoside. This is an inactive compound which is converted to rooperol, which has potent pharmacological properties relevant to cancer, inflammations and HIV. Extracts from *H. hemerocallidea* are also effective in the treatment of the urinary system.

Source: www.plantzafrica.com

Useful information

The garden at SANBI is open seven days a week from 8am to 5pm.

Address: 2 Cussonia Avenue, Brummeria, Pretoria.

Conserving the most elusive of the Big 5 is a priority

By Eleanor Momberg



The Department of Environmental Affairs has decided that no permits will be issued in 2016 for the hunting of leopard in South Africa.

The decision is based on the findings of the Scientific Authority, the organisation that ensures that the trade in wildlife is properly controlled and regulated, which had recommended a zero quota for leopard for 2016. The decision came into effect on 1 January. The Scientific Authority had found that the legal national and international trade in live leopard and the export of hunting trophies at present threatens the future survival of the species.

The decision remains in force for a year unless anyone can show that the finding by the Scientific Authority that the leopard population is in trouble is incorrect and that the leopard population is growing. In the coming year a long-term monitoring programme will be undertaken in which landowners are able to participate to ensure that

the information collected relating to leopard populations is as complete as possible. This information will assist in determining whether future off-takes are sustainable or not.

“South Africa presently has a CITES approved quota of 150 leopard per annum, but does not utilise the full quota; for example – in 2015 54 permits were issued.”

The decision to all the hunting of leopard will be reviewed annually. The provincial environmental departments, which issue the permits, have been informed of the decision.

Hunting quotas are allocated annually by the Department in terms of the Convention on the International

Trade in Endangered Species of Wild Fauna and Flora (CITES) Regulations promulgated in terms of the National Environment Management Biodiversity Act (NEMBA). South Africa presently has a CITES approved quota of 150 leopard per annum, but does not utilise the full quota; for example – in 2015 54 permits were issued.

In 2015 the Department had already implemented certain restrictions relating to hunting of leopard, including limiting off-take to males only thereby reducing the potential impact on the population. Detailed hunt return forms also had to be submitted for every hunt, including the removal of damage causing animals.

The Department’s action followed a non-detriment finding (NDF) assessment undertaken for leopard (*Panthera pardus*) at a NDF workshop convened by the Endangered Wildlife Trust in December 2010 and subsequent expert and public consultations.



About the contributor: Eleanor Momberg

Eleanor Momberg is the Rhino Communications Manager in the Department of Environmental Affairs. Ms Momberg was a member of the South African delegation, which attended the CITES 16th Conference of Parties in Bangkok, Thailand.

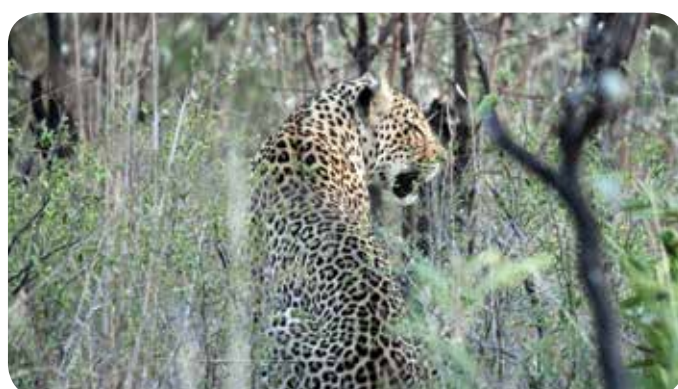
The NDF points out that leopard live long lives, do not normally breed until the age of three or four, do not breed often, and that the mortality rate of leopard cubs outweighs the number of these felids that reach maturity. They are tolerant of a wide range of habitats and climatic conditions, including mountains, bushveld, woodlands, desert and semi-desert, and forests. However, like most felids, leopards are relatively poor dispersers and the degree of connectivity between populations, within and outside of South Africa, is unknown. Although more resilient than many other large carnivores, leopards are still sensitive to human disturbance

the illegal trade in leopard skins for cultural and religious attire; incidental snaring; and the unethical radio-collaring of leopards for research and tourism. However, the relative severity of these threats and their impact on the national or provincial leopard populations remain unknown. Trophy hunting (practised to maximise economic returns) and legal DCA control (practised to minimise economic losses) are formally though often poorly managed, while other forms of harvest are illegal and therefore unregulated. Trophy hunting earned \$1.5bn to the GDP in 2015.

and extensive monitoring to reliably track leopard population trends at a provincial scale, but elsewhere confidence in monitoring is low.

There are likely no effective incentives for habitat conservation arising from the harvest of leopards, although trophy hunting can potentially foster tolerance towards the species.

The NDF found that the high risk to the survival of leopard is in South Africa is mostly due to poor management of harvest practices and a lack of reliable monitoring of leopard populations. The Department is in the process of compiling and finalising



A decision has been made by the Department of Environmental Affairs to prohibit the hunting of leopard.

and have been eradicated from at least 37% of their historic African range.

Approximately 20% (248,770 km²) of South Africa comprises suitable leopard habitat, although much of this is highly fragmented due to agricultural development, persecution and human encroachment. Today leopards are found in the remote mountainous regions of the Western Cape, parts of North West, Limpopo, Mpumalanga, KwaZulu-Natal, the Eastern Cape, and the semi-desert areas of the Northern Cape bordering on Botswana. There is no rigorous estimate for the size of the South African leopard population, nor reliable estimates of leopard population trends at national or provincial scales.

In addition to habitat loss, key documented threats to leopards include: excessive off-takes (legal and illegal) of generally considered to be damage-causing-animals (DCAs); poorly managed trophy hunting;

There are almost no reliable estimates for the extent of illegal off-take of leopards, though data from a few intensive studies in South Africa suggest that levels of illegal off-take exceed levels of legal off-take. The majority of leopard trophy hunting occurs on private land. Harvest of leopards is not managed consistently throughout the country; some provinces implement effective controls, others do not. Legal off-takes are poorly documented in many provinces. There is an urgent need for a coordinated national strategy which provides standardised guidelines to all provinces for the management of leopards.

According to the NDF, the monitoring of trophy hunting nationally is limited to records of the numbers of leopards removed each year, and for legal DCA off-take the numbers of permits awarded annually. There is little to no monitoring of illegal off-take of leopards. KwaZulu-Natal and Limpopo recently instituted frameworks that combine intensive

national norms and standards to address shortcomings in the management of leopard trophy hunting and putative DCAs by the end of the year, for implementation by 2019. Monitoring frameworks that reliably track leopard population trends are being implemented by all provinces to facilitate adaptive management of the harvest of the species, as well as provide insight on the effects of the illegal off-take of leopards.

In addition, the recommendation that guidelines for the allocation of leopard hunting trophy quotas be developed is also being implemented.

The Minister of Environmental Affairs, Mrs Edna Molewa, has expressed the hope that farmers and hunters will accept the decision not to allow the hunting of leopard this year so that these illusive, yet majestic animals, can survive and continue to play an important role in the country's tourist and biodiversity economies.

USA donates equipment to fight rhino poaching

By Madimetja Mogotlane



Above: General Manager of Veterinary Wildlife Services for SANParks Dr Markus Hofmeyr explains why DNA is regularly taken from a sedated rhino, while Minister Molewa and US Secretary of the Interior Ms Sally Jewell look on.



Above: Minister Edna Molewa receives investigative and surveillance equipment donation from Ms Sally Jewell. With them is Kruger National Park Chief-Ranger Mr Nicholas Funda.

The Department of Environmental Affairs has strengthened its conservation relationship with the United States of America in an effort to combat the scourge of rhino poaching. The US Secretary of the Interior Ms Sally Jewell donated investigative and surveillance equipment to Minister Edna Molewa during her visit to the Kruger National Park on 26 January 2016. This was one of Secretary Jewell's visits to African countries to deepen cooperation around a number of environmental issues.

Minister Molewa said the equipment will assist the Ranger community in fighting rhino poaching.

"We are happy to have received the night vigil equipment from the United States. This will help our Ranger community who have dedicated their time and lives to fight the problem of rhino poaching. We do believe that they will continue to be encouraged to do this work on behalf of our country.

"This equipment is going to add to the list of equipment we have already received from other donors. No donation can be looked at as being

small. Anything that anybody does to help us fight this battle is appreciated. From the young children who have donated money, to those who donated sniffer dogs, and those who brought equipment and technology, we are really grateful. As we move on, we know that the syndicates are going to be trying other tricks so we have to outmanoeuvre them. International cooperation is very important," Minister Molewa said.

The donation came at a time when the rhino poaching statistics in the country have stabilised. In January, Minister Molewa announced in the report back on the Integrated Strategic Management of Rhinoceros that rhino poaching has stabilised in South Africa for the first time in a decade. By end 2015, the number of poached rhinos was 1 175, of which 826 were in the Kruger National Park. By the end of December 2014, the number of poached rhinos stood at 1 215 and the Minister says the ultimate goal is to win the rhino poaching battle.

Pledging her solidarity to help South Africa fight rhino poaching, Ms Jewell emphasised the importance of

community involvement in fighting the scourge of rhino poaching so everyone can benefit economically from wildlife.

"We would love to do more with South Africa. Part of the reason of the visit is to meet with the Minister and other government stakeholders to find out the gaps and where we can be helpful. We have provided equipment donations in the past and we wanted to do another one today. We have provided assistance in terms of intelligence.

"We have wildlife Attaché that is in southern Africa but we know we could do more including work through USAID in building relationships with local communities because people in local communities benefit economically from conservation and wildlife.

"When they can see a path forward for economic prosperity it is much better for them than if their only economic opportunity is a temptation to support the poachers or help track the animals. That is another area where we can be helpful and countries can learn from one another," Ms Jewell said.



About the contributor: Madimetja Mogotlane

Madimetja Mogotlane is a Senior Communications Officer, Internal Communications and Events in the Chief Directorate: Communications at the Department of Environmental Affairs. Mr Mogotlane is a former intern in Media Liaison at the Department and has journalistic experience.

20 years of natural resource management

By Sarah Polonsky



Above: Mr Faizel Mohammed, one of the very first programme advisory committee community representative members holds a picture of Professor Kader Asmal, the then Minister of Water Affairs and Forestry, cutting down the first black wattle (*Acacia mearnsii*) on 16 October 1995. This heralded the official start of South Africa's biggest Public Employment Programme, the Working for Water programme.



Above: Deputy Director-General of Environmental Programmes Dr Guy Preston, Ms Asmal who is the widow of the late Professor Kader Asmal, the Director-General of Environmental Affairs Ms Nosipho Ngcaba and the Chief Director of Natural Resource Management Dr Christo Marais spending a minute together to reflect on 20 years of job creation and ecological interventions.

In October 1995, the Working for Water programme was launched by the then Minister of Water Affairs and Forestry, Professor Kader Asmal, as a multi-departmental programme with a budget of R25 million. The first invasive alien tree was cut in the Overberg area. This signified the beginning of a concerted effort by government to address poverty and unemployment through addressing key issues of environmental degradation.

The programme has since seen a phenomenal growth, with the cumulative expenditure increasing to R9.88 billion, and an expenditure of R1.263 billion during 2014/15. It has also given part-time jobs to unemployed people – over 55,000 in the last financial year.

To date some 2.8 million hectares of invasive alien plants have been treated. Invasive alien plants cover some twenty million hectares of South Africa to a lesser or greater extent. If compressed to 100% density, invasive alien plants would cover around 1.9 million hectares, an area bigger than

the Gauteng Province or the Kruger National Park.

Although on the surface it looks as if WfW is making progress, research has shown that invasive alien plants may be spreading by between 7.4% and 15.6% (depending upon species), necessitating additional investment.

Water hyacinth can double the area it covers in ten days, in the growing season. Some of the herbaceous species are also far higher than this. To curb the rate of spread and improve the sustainability of the labour-intensive clearing programmes, WfW is investing around R50 million of its annual budget in biological control – seeking to introduce host-specific enemies (e.g. fungi, insects) of the invasive plants. Biocontrol can drastically reduce seed production and in some cases even kill its host species.

Another notable area of activity that has evolved through the Working for ... (Working for Wetlands, Working on Fire and Working for Ecosystems) programmes is Value Added

Industries, including Eco-coffins, the Eco-Furniture Programme, biomass for building materials and the potential of biomass for energy.

The Eco-Furniture Programme (EFP) seeks to make optimal use of the biomass cleared through the Working for Water programme, in creating work opportunities to make products that help Government to meet its needs and notably the pro-poor opportunities within this, with a particular emphasis on the needs of disadvantaged schools, including school desks, benches and other furniture. The programme plans to build on the range of products that are possible, such as meeting the needs of hospitals, clinics, community centres and other needs across the country.

"The successes of the Working for Water programme, and the suite of programmes that it has spawned, lies in an exceptionally robust model for implementation, and the quality of management", says Mr Guy Preston, the Deputy Director-General of the Environmental Programmes Branch.



About the contributor: Sarah Polonsky

Ms Sarah Polonsky is the Deputy Director: Strategic Support for Christo Marais in the Office of the Chief Director of Natural Resource Management (NRM). Her role is to provide assistance with the development of strategic projects, documentation relating to those, as well as to champion the development of a learning network within NRM and its partners.

€5 million boost for Non-Motorised Transport

By Veronica Mahlaba



Above: Signing the DEA-KfW Non-Motorised Transport Programme Phase 2 Financing Agreement is Deputy Director-General: Environmental Advisory Services, Mr Alf Wills, Director for KfW Development Bank Southern Africa and Regional Funds, Dr. Thomas Duve and Director of KfW Office in Pretoria, Mr Busso von Alvensleben.

The Department of Environmental Affairs (DEA) has received a boost of €5 million for the second phase of the Non-Motorised Transport Programme. The cash injection from funders, the KfW German Development Bank who act on behalf of the Government of the Federal Republic of Germany was announced at the launch on 02 February 2016 in Pretoria.

Speaking at the launch the Deputy Director-General: Environmental Advisory Services, Mr Alf Wills said the Non-Motorised Transport Programme (NMT) forms part of the Department's 2010 FIFA World Cup National Greening Legacy Programme. This programme has been implemented in partnership with KfW and the National Department of Transport. "One way of achieving low carbon or carbon neutral transportation is through the promotion of non-motorised transportation, with the specific focus being on cycling and pedestrianisation," said Mr Wills.

President Jacob Zuma announced prior to the Copenhagen United Nations Climate Change Conference in December 2009 that South Africa will implement nationally appropriate mitigation actions which will result in the reduction of carbon emissions by

34 % by 2020 and by 42 % in 2025, dependent on availability of finance and technology. The National Climate Change Response Policy was introduced and sets the country's vision for an effective climate change response and the long-term transition to a climate resilient and low-carbon economy and society.

The NMT Programme is integral to the implementation of the Policy's Flagship Programmes with particular focus on sustainable transport. The Programme was developed by DEA in consultation with key stakeholders, as a practical measure to reduce carbon emissions.

Mr Wills explained that the Phase 1 of the programme has recently been completed with infrastructure developments undertaken in the City of Johannesburg, eThekweni Metropolitan Municipality as well as in Polokwane Local Municipality where the close-out of the project is at near completion. The construction focused largely on the integration with public transport routes, schools and community facilities whilst also offering improved access for tourists to tourism sites thereby enabling increased economic investment into the areas.

Director for KfW Development Bank Southern Africa and Regional Funds, Dr. Thomas Duve said that they have had an excellent first project and they are very excited to be funding the second phase in South Africa. "The first phase has been very beneficial for the communities to learn about this project and has benefited commuters with other ways of travelling on a daily basis. The first phase was really a learning phase for all of us, but the second phase gives us an opportunity to rectify whatever issues we had previously," said Dr Duve.

Even though the aim of the programme is to address access and mobility through an efficient and effective public transport network supported by NMT, the impacts go beyond just transport imperatives; they also contribute to the long term sustainability of the environment and social upliftment as the country moves towards a low carbon, climate resilient green economy pathway.

Representative from the Department of Transport, Roads Branch, Ms Marleen Goudkamp said that the NMT Programme has started the ball rolling and they appreciate the work that has been done thus far. The Department of Transport is ready to publish the NMT Facility Guidelines for planners and engineers with a view of standardising NMT infrastructure. "NMT will also be included as a chapter in the Roads Policy which is being consulted at this stage," explained Ms Goudkamp.

In closing Mr Wills said, "With the close-out of Phase 1, today we join hands once again, with both our national and international partners in celebrating the fruits of our past success whilst also looking to the future with the undertaking of the agreement for NMT Phase 2".



About the contributor: Veronica Mahlaba

Veronica Mahlaba is the Senior Communication Officer: Editorial Services at the national Department of Environmental Affairs, serving under the Communications Chief Directorate. Ms Mahlaba has experience as a Lecturer in the Media Studies Department at a private college. She has worked as writer for a metropolitan municipality and she is a keen photographer.

SWITCH Africa Green empowers SMMEs

By Veronica Mahlaba and Rhulani Baloyi



Above: The SWITCH Africa Green beneficiaries were awarded cheques to fund their respective projects centred on Green Economy.

The SWITCH Africa Green Project which is geared towards the empowerment of Small, Medium and Macro Enterprises (SMMEs) has injected over \$1.4 million for various projects related to green economy and sustainable development. The announcement of the beneficiaries of the SWITCH Africa Green Project was held on 15 December 2015 in Pretoria.

Speaking on behalf of the Minister of Environmental Affairs, Chief Policy Advisor: Sustainable Development, Mr Tlou Ramaru stated that unlocking the potential of SMMEs can stimulate the economy, "which is necessary to enable national government to deliver on its mandate of job creation, poverty eradication and supporting sustainable development objectives."

It is envisaged that the approximate number of SMMEs to be empowered would be a total of 1000 "green" SMMEs. The overall objective of SWITCH Africa Green is to support six countries which are South Africa, Burkina Faso, Ghana, Mauritius, Kenya and Uganda to achieve sustainable development. They will do this by engaging in the transition

towards an inclusive green economy, based on sustainable consumption and production patterns, while generating growth, creating decent jobs and reducing poverty.

Mr Ramaru said that the beneficiaries of the SWITCH Africa Green grants have been recommended since their projects reflect the government's socio-economic and environmental priorities as outlined in the National Strategy for Sustainable Development and Action Plan, the Green Economy Strategy, the New Growth Path, the National Development Plan and the National Climate Change Response Policy. "These policy instruments outline the green economy as one of the key focus priority areas for economic growth, job creation and poverty eradication," Mr Ramaru said.

European Union Ambassador to South Africa, Mr Marcus Cornaro said there are a number of strategic partners involved in the implementation of Switch Africa Green Project.

"SWITCH Africa Green is developed and funded by the European Union with a total budget of €19 million. The United Nations Environment

Programme (UNEP) as the principal implementing agency offered in-kind support to the amount of € 0.5 million. UNEP is partnering with United Nations Development Programme (UNDP) and United Nations Office of Project Service (UNOPS) in delivering the project at the country level. Other project partners include the African Union Commission (AUC), the African Roundtable on Sustainable Consumption and Production (ARSCP) and the African Development Bank (AfDB)," he said.

Country Director of United Nations Development Programme (UNDP), Mr Walid Badawi remarked that SWITCH Africa Green Project will contribute towards engaging with governments and regional bodies.

"This relating to various issues on low emission and scaling up finance for climate change through Green Climate Finance and Global Environment Facility in support to Intended Nationally Determined Contributions (INDCs) implementation, Africa Adaptation and Loss and Damage Initiative as well as Capacity Development and Technology Transfer," explained Mr Badawi.



About the contributor: Rhulani Baloyi

Mr Rhulani Baloyi is the Deputy Director: International Sustainable Development in the Department of Environmental Affairs. He has been working for the department since 2007. He is responsible for the coordination and management of South Africa's participation in International Sustainable Development Fora.

WETLANDS ARE IMPORTANT

Wetlands are important because they are the only land ecosystem that is saturated or flooded with water, either permanently or seasonally, during part or all of the year. They include swamps, marshes, bogs, and other aquatic systems. Wetlands are important because they provide a wide range of services, including water purification, flood control, and carbon sequestration. They also provide habitat for a wide range of plants and animals, including many species of birds, fish, and invertebrates. Wetlands are also important for their cultural and recreational value. They provide a source of food and medicine for many people, and they are often used for recreation and tourism. Wetlands are also important for their role in the water cycle. They store water and release it slowly, helping to regulate the flow of water in rivers and streams. Wetlands are also important for their role in the nitrogen cycle. They take up nitrogen from the soil and release it into the atmosphere, helping to reduce the amount of nitrogen in the soil and in the atmosphere.

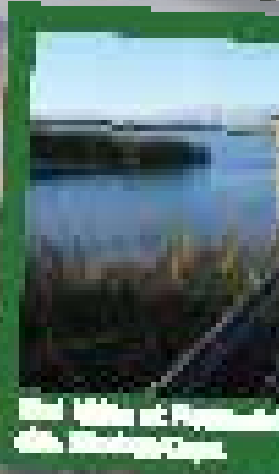
Wetlands For

Wetlands are important for the environment and for people.

- They are important for biodiversity
- Wetlands provide ecosystem services such as water purification
- Wetlands provide important habitat for many species of plants and animals
- They are important for flood control and soil protection
- Wetlands provide important habitat for many species of birds and fish
- Wetlands provide important habitat for many species of invertebrates
- Wetlands provide important habitat for many species of mammals
- Wetlands provide important habitat for many species of reptiles and amphibians
- Wetlands provide important habitat for many species of insects



Wetlands provide important habitat for many species of plants and animals.



Wetlands provide important habitat for many species of plants and animals.





Our Future



Tanzania

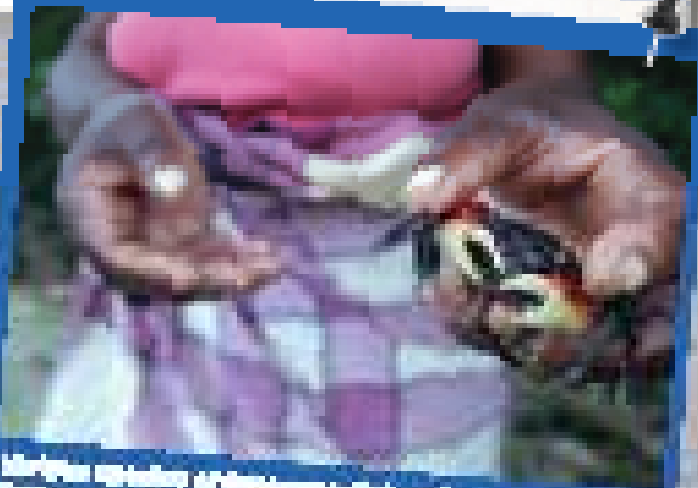


Participating in a community meeting on the Lake Tanganyika Wetlands.

Wetlands and inland waterways play a vital role in providing livelihoods for many people in Tanzania, from fishing to agriculture. To help improve the livelihoods of people who depend on wetlands, WWF is working to:

Provide:

- The knowledge, training, resources, tools and equipment that communities need to improve their livelihoods and protect the wetlands that support them.
- Financial support to help improve the livelihoods of people who depend on wetlands.
- The capacity to manage wetlands sustainably, so that all depend on them for their livelihoods and the environment remains healthy.



WWF is working to help improve the livelihoods of people who depend on wetlands and inland waterways.



Wetland Rehabilitation Project in Tanzania

Education is everyone's responsibility – Deputy Minister

By Veronica Mahlaba

Whilst speaking to the learners and community of Mtubatuba in KwaZulu-Natal, the Deputy Minister of Environmental Affairs, Ms Barbara Thomson said education is everyone's responsibility. She said this during the hand over eco-furniture school desks to Ubhle Bemvelo Primary School in Mtubatuba, KwaZulu Natal on 22 February 2016.

As part of the Back to School initiative, the Deputy Minister assisted the school and destitute learners with much-needed school desks, bags and stationery. Deputy Minister Thomson said one of the most important messages delivered by President Jacob Zuma during the State of the Nation Address in Parliament was that the education of children remains the number one priority for our nation. She further explained that the government will continue to improve the conditions under which children go to school in, as to realise the ideal of the Freedom Charter which states that the Doors of Learning and Culture Shall be Opened to All.

"We all understand that the education of our children is everyone's business that is why I have decided to come to your school to see how we can make a difference to the conditions under which you attend school. I have listened to your plea for decent school desks and other learning materials and am here today to provide you with new school desks, some new school uniforms, school

bags and stationery which I know will make a difference in your lives," said Deputy Minister Thomson.

The school desks are made from invasive alien plants, under the Eco-Furniture Programme which is the Department of Environmental Affairs' brain-child. The programme is a job creation initiative that offers opportunities to unemployed South Africans. Furniture, such as, eco-desks, walking sticks, coffins and chess board tables are produced out of the alien invasive plants.

Invasive alien plants can cause an enormous damage and threat to water security, reduce the productive use of land and affect the ecological functioning of natural systems. Moreover, such species deepen the impact of floods and fires, and increase soil erosion. It is estimated that these plants are present in 20 million hectares of the country, and they are spreading rapidly.

"When we clear these invasive plants we use the wood to make desks. Through this we are able to reduce the backlog for school desks at poor schools, while at the same time creating jobs for the unemployed. The Eco desk programme shows the value of our environment in addressing social needs. As young people, I want to encourage you to take responsibility for our environment. Your generation and the generations to come after you will have to live in this environment. It is your

responsibility therefore to look after your environment," explained Deputy Minister.

The principal of the Ubhle Bemvelo Primary School, Mr Oscar Sithole said he was glad that the Deputy Minister honoured her promise to visit his school even though it is in a remote area. "This has made us feel special to be chosen amongst many schools throughout South Africa. The handover of the desks has shown us that DEA does not choose schools because of performance or who they know. It is such a pleasure to know that DEA remembered us and came to support the advancement of quality education," said Mr Sithole.

Ms Phillsiwe Mhlongo, a great grandmother of a grade 2 learner, Tepiso Magudulela who goes to the school said she could not contain her happiness. "I cried when she received her uniform because I really needed the help. I don't have much but only give myself to the wellbeing of my great granddaughter. I pray that God bless the Department of Environmental Affairs to continue be a blessing to others," Ms Mhlongo said.

The following day, Deputy Minister Thomson continued with the Back to School initiative at Kwabulawayo High School in Hlabisa.



Chief Director: Transfrontier Conservation Areas

Ms Deborah Kahatano

By Fhatuwani Siluna

"Knowledge is power." This is a phrase Chief Director: Transfrontier Conservation Areas (TFCA), Ms Deborah Kahatano identifies well with. Growing up in the dusty streets of Dar es Salaam in Tanzania, she has managed to beat poverty through education and hard work. She is now one of the Department of Environmental Affairs (DEA) officials in the forefront of conservation within the Southern African Development Community (SADC) region. She talks to the Environment Quarterly about her leadership role in the department.

As a top female executive in a high performance department, what is your career planning advice to other women who may be looking to follow in your footsteps?

Education is the foundation of success. I believe women should acquire education in order to empower themselves. We should not let our gender be a limiting factor to the career choices we can make. Women need to have dreams, ambitions and the skills and drive to achieve them. I studied Environmental sciences during a time when most girls shied away from scientific studies. As a result, I often found myself being one of the few females in male-dominated classrooms.

What do you find most challenging and most rewarding, about working for the Department of Environmental Affairs?

It is challenging working for the DEA because in most cases it takes time to see the results and/or impact of your efforts. For instance if you develop and implement a management plan for the conservation species and/or ecosystem, the results are only seen after a long period of time.

The rewarding part is addressing issues that have a direct impact on the lives of people. We depend on nature for provision and sustenance (food, water, energy, clean air).

Many women find it difficult to balance their careers, continuing studies and meeting the demands of family. How do you strike a work/family balance?

I would say a supportive family structure is essential. There is always someone who is willing to assist with house work when I am away for work. When my son was younger, my mother and sister took turns babysitting him.

How would you describe your leadership style? Do you consider certain leadership traits to be more applicable to women, than men in general?

I have mixed styles of leadership, depending on circumstances and demands of the situation. Firstly, I view myself as a manager more than a leader. I believe that managers are facilitators of their team members' success and that

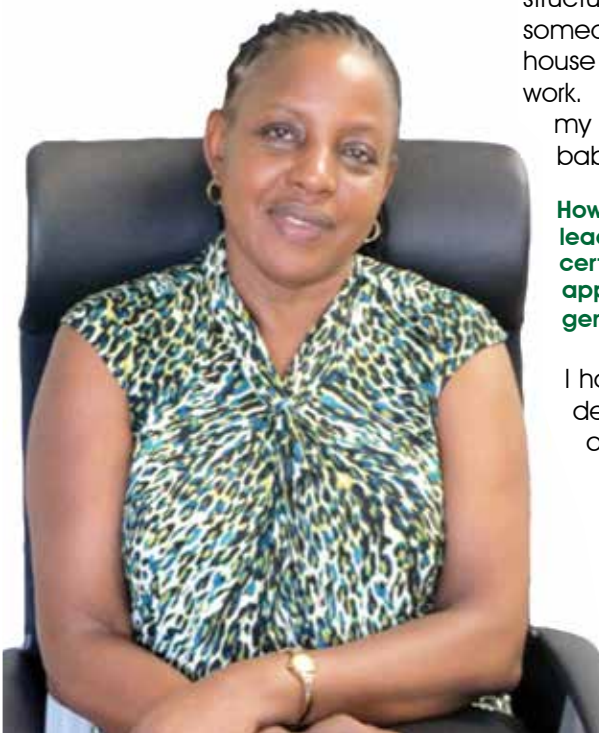
within the team there are people with different leadership qualities. With this in mind I always try to involve every team member in order to tap into the collective wisdom of the group.

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

My achievements are many but if I am to pick one it would be the mainstreaming of Transfrontier Conservation Areas into the SADC programme.

If you could give your 20-year-old self any advice, what would it be?

I would tell myself that "You can achieve pretty much anything with vision, dedication and commitment". Acquire skills that are essential to enable you to achieve your dreams and do not be limited by your situation or circumstances.



Quick facts

Hometown: Dar es Salaam, Tanzania.

Role model: My late mother is and always will be my role model.

Interests: Travelling.

I am currently reading: *Audacity of Hope* by Barack Obama.

I am currently listening to: *Hello* by Adele.

Choose an environmental career

By Veronica Mahlaba

The environment field provides many exciting, interesting and satisfying career choices, stretching across a range of fields and disciplines. By working in the environmental field, you can contribute to the maintenance and conservation of essential life systems necessary for human survival. Veronica Mahlaba finds out about the career paths of Mr Dzunisani Makhubele, Ms Ipeleng Machiswa and Mr Khulekani Mpontshane who are currently doing their internship programmes at the Department of Environmental Affairs in Pretoria.



Above: Mr Dzunisani Makhubele comes from Mhangweni Village near Tzaneen in Limpopo.

Mr Dzunisani Makhubele

Which course did you study, and at which tertiary institution?

I have a BSc. Honours in Environmental Analysis and Management from the University of Pretoria that I obtained in 2013. Before that I studied BSc. Community Water Services and Sanitation at the University of Limpopo from 2010 to 2012.

Why did you choose this field?

I chose studying Water Services and Sanitation because I grew up in a village where there was a serious shortage of water and I felt that a career in water or environment related studies would allow me the opportunity to provide solutions to this problem. The most important thing in life is to add value to someone else's life. Being an environmentalist will

help me to be in touch with the reality that is affecting my people.

What are the minimum requirements to study in your field?

A learner must have been awarded the National Senior Certificate and should meet the minimum requirements for admission to a bachelor's degree. Mathematics 60%, Physical Science 50 %, Life Sciences/Agricultural Sciences 60% and English 60 %

What did your course entail?

My BSc. in Water Services and Sanitation was mainly science, a little bit of financial knowledge and statistics. It is a broad course as it enables one to know the various sectors that involve water from a scientific, political and economic point of view. Some subjects that are in the programme include Physics, Microbiology, Calculus, Elementary

Statistics, Environmental Health and Practices, Planning for Water Projects, Development of Ground Water Resources and Environmental Resources Management.

The BSc. Honours in Environmental Analysis and Management was more focused on the field of Environment. My subjects included Environmental Compliance, Environmental Principles, Environmental Change and Environmental Impact Assessment and Auditing. My research was based on Waste Management, the comparison of waste management practices between rural areas and urban areas in order to identify gaps between rural areas and the urban areas. Also to determine their perception about the environment.

As an intern at the DEA, which section do you work under and what does it deal with?

I work under International Climate Change relations and Negotiations. We conduct research to inform the South African positions on Climate Change and Related Multilateral and Cooperation Agreements. We coordinate government reviews for Intergovernmental Panel on Climate Change (IPCC). Develop briefing inputs to bilateral engagements on climate change.

In your opinion, what are the advantages and disadvantages of being in an internship programme?

Advantage: It is excellent exposure for graduates to have a taste of the work they studied for. It is a growing platform where you learn a lot in preparation for the start of your career.

It gives you experience to make you become employable.

Disadvantage: Internships take you in for a short period and sometimes employers are looking for 2-3 years' experience, which makes it difficult to get employment in a competitive world.

What are your future plans?

I hope to stay in government. I believe this is a place where I can grow better and it is a great platform to be influential in coming up with solutions to the problems that we face with regards to the environment in our country

Ms Ipeleng Machwisa

Which course did you study, and at which tertiary institution?

I studied a BSc. Honours in Chemistry, BSc degree in Biology and Chemistry at the University of North West. I also have a Certificate in Environmental Law with the University of Pretoria.

Why did you choose this field?

I chose to study biology and chemistry simply because it includes all the science fields such as environmental science, physics, and so on. My curiosity of everything around us made me choose this field. I chose the two universities because of the quality of education they offer and my passion for learning.

What are the minimum requirements to study in your field?

For the Bachelor of Science Degree in Biology and Chemistry, the minimum requirements are: Mathematics (Level 4), Physical Science (Level 4) and English.

What did your course entail?

Biology was one of the majors.

As an intern at the DEA, which section do you work under and what does it deal with?

I am in the Branch: Biodiversity and Conservation. In a nutshell, my directorate deals with conservation of the species, and entails facilitation of

Biodiversity Management Plans (BMPs) for all the species, Threatened or Protected Species and facilitating the implementation of several Multilateral Environmental Agreements (MEAs).

Has the internship at DEA exposed you to the field you studied for?

Most definitely. Some of the courses in the degree I studied included ecology and biostatistics, plant morphology, animal morphology organography and so on.

The exposure is related and it has made me grow intellectually. The internship programme has given me a career experience that will be a way for me to get my foot in the door of my ideal position.

In your opinion what are the advantages and disadvantages of being in an internship programme?

The advantage of the internship programme is that you gain working world experience and when you transition to the job market, you will have a demonstrated level of expertise that you cannot get from the classroom or research.

You get a head start in developing a professional network.

The disadvantages are that under

the current economic climate most institutions cannot absorb their interns into permanent positions and thus leaving most interns distressed. The other disadvantage is that you must accept that for a year you will be receiving a stipend which might not be enough to take care of your daily needs.

Has being in the internship programme met your expectations?

I enjoyed working in DEA. I have gained valuable insight on my future career development. I went into the internship programme with my eyes open and my expectations realistic. For me it was a profoundly rewarding experience, with its own challenges and it has paved the way for a successful professional career.

What would be your advice to someone who wants to study in the field you studied?

I would say go for it. It is an exciting career path, I have no regrets.

What are your future plans?

All I can say is that He carried me this far, so I believe God's plan is always better than my own plans.



Above: Ms Ipeleng Machwisa comes from Tsetse Village in Mafikeng in North West.



Above: Mr Khulekani Mpontshane comes from Makhane in northern KwaZulu-Natal.

Mr Khulekani Mpontshane

Which course did you study, and at which tertiary institution?

I completed a three-year Nature Conservation Diploma at Mangosuthu University of Technology in 2013. My majors were Conservation Ecology, Resource Management, Animal Studies and Plant Studies.

Why did you choose this field?

When I was growing up, I used to watch the programme 50/50 on SABC 2. From then on, I developed a keen interest in the natural world, especially birds, trees, mammals, insects, flowers and the marine environment. I was also inspired by people who promote and protect conservation and saw why it was important to save and protect our wildlife.

What are the minimum requirements to study in your field?

You need to have a National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with English (level 4 as a home language or first additional language) and Mathematics (level 3) or Mathematical Literacy (level 4).

Other recommended subjects are: Agricultural Sciences, Geography, Life Sciences and Physical Sciences. To be considered for this qualification,

applicants must have an Admission Points Score (APS) of at least 19 (with Mathematics) or 20 (with Mathematical Literacy).

What did your course entail?

“The advantages of the internship programme include exposure to the public sector and its operations.”

Nature Conservation is all about the management of natural resources, conducting researches, environmental education, ecotourism, law enforcement, and alien plant control.

As an intern at the DEA, which section do you work under and what does it deal with?

I work under the Directorate: Transfrontier Conservation Areas (TFCAs). Transfrontier Conservation Areas are defined as relatively large areas, straddling frontiers between two or more countries and cover large-scale natural systems encompassing one or more protected areas. TFCAs involve a unique level of international co-operation between the participating countries, particularly issues related to the opening of international boundaries and within each region.

In your opinion what are the advantages and disadvantages of being in an internship programme?

The advantages of the internship programme include exposure to the public sector and its operations. It prepares you for the workplace or permanent position. It has also capacitated me to plan and execute my daily tasks, and take accountability of my work, as well as take initiative in the Directorate. The disadvantage of an internship programme includes not being fully trusted by officials with certain areas of work as you are still a junior.

What would be your advice to someone who wants to study the same course as you?

It is important for young people to be involved in conservation initiatives and I would strongly advise young people to study the same course I studied.

I believe young people should develop an interest in conservation because it is important for us to realise how our world is changing and to get into good environmentally friendly habits sooner rather than later. Environmental problems such as extinction, global warming and conflicts over resources should be considered and preserved by our generation through the practice of sustainable natural resources for the future generation.

What are your future plans?

My future plan is to get a permanent job and continue studying.

The internships opportunities at DEA are advertised through print media or national newspapers towards the last quarter (beginning of December) of the year. The departmental recruitment and selection processes apply. DEA is an equal opportunity, affirmative action employer. It is our intention to promote representation (race, gender and disability). The candidature of persons with disabilities will receive preference for the Internship Programme. Candidates with disabilities are always encouraged to apply.

Youth benefiting from environmental jobs

By Gaopalelwe Moroane



Above: Nature guards from the Limpopo YES group do a routine march.



Above: Singing and dancing to welcome and celebrate the launch of YES in 2013.

The Youth Environmental Services (YES) programme was rolled out in the 2013/14 Budget Vote. YES will benefit 2700 young people over the next three years. Upon exiting the programme, these young people will be placed in either permanent employment or further training institutions.

The programme was launched in Tembisa in September 2013, with various youths from different provinces across the country coming together to celebrate.

YES is one of the ways in which the Department of Environmental Affairs (DEA) seeks to address the unemployment issue facing the South African youth.

When asked how he has benefitted from YES, Mr Lehlohonolo Sedite, who

is part of the Gauteng group, under the initiative called City Year, said since he started the service, he has improved his communication skills and is able to lead the youth in his community.

The programme is part of a big government intervention to reduce the runaway unemployment rate. The programme targets unemployed matriculated youth between the ages of 18 and 25, and seeks to help young people get trained for environmental employment opportunities.

The Youth Environmental Service involves bringing about solutions to environmental problems inclusive but not limited to erosion, waste, deforestation, biodiversity management, education and

awareness. Ms Lorraine Langa (22), who did her service as a nature guide under the Waterberg (Limpopo) group said, "As well as serving the environment, I am empowering myself, and equipping myself with skills for when I pursue jobs elsewhere in the environmental sector. This programme helped me because it was frustrating being at home with a matric certificate. Now I have become an asset to the community and environment".

The Youth Environmental Service Programme emphasises three pillars:

- Community development or service.
- Accredited learning and skills development.
- Exit opportunities.



About the contributor: Gaopalelwe Moroane

Gaopalelwe Moroane is a Senior Communication Officer under the sub-directorate, Editorial Services in the Department of Environmental Affairs. Prior to working for DEA she worked for short periods with the Pretoria News, Grahamstown's local paper Grocott's Mail as well as writing reviews for the National Arts Festival publication, Cue Newspaper.

An in depth look at red tides

By Tshego Letshwiti
Picture by Liwa Madikiza

During the late summer (February-March) we often find a peculiar reddish-brown discoloration of our coastal waters, rock lobster walkouts and mass mortalities of marine organisms. This often causes confusion and concern about the safety of our waters, but what actually causes this atypical phenomenon?

According to scientists, this trend can be attributed to Harmful Algal Blooms (HABs), also commonly known as 'red tides'. They are natural phenomena in coastal waters caused by a dense accumulation of microscopic algae. These minute organisms carry pigments to photosynthesize which then give HABs their typical reddish-brown appearance. Some of the 29 algal species that are known worldwide for forming HABs are harmful because they contain toxins, which are poisonous to humans.

"The Department of Environmental Affairs' Oceans and Coasts branch, is the lead agency responsible for the detection of Harmful Algal Bloom events and the management of harvesting closures. Monitoring of Harmful Algal Bloom has a primary objective to provide a warning and information system to the public, other departments and fishing industry", added Scientist Manager Mr Liwa Madikiza.

Poisoning may take place through the consumption of seafood that is contaminated by toxic algae, or by toxic aerosols or water bound compounds that cause respiratory and skin irritation. Other HABs cause harm through the depletion of oxygen (anoxia), which affects all marine animals and can lead to mass mortalities of the entire marine

communities or mass walkouts of rock lobsters that try to escape the anoxic conditions. HAB occurrences can have major environmental as well as societal implications, with knock-on effects on coastal economies. Fisheries and Aquaculture industries suffer from the episodic mortalities of stocks caused by HABs, while poor water quality and foul smells associated with these occurrences affect coastal tourism.

HABs occur in most coastal regions of the world, and are particularly common in the productive west coast upwelling regions, such as the California, Humboldt, Canary, Somali and Benguela upwelling systems. It is commonly claimed that HAB events have increased in their frequency, magnitude and geographic extent, but due to a lack of consistent long-term observations it is difficult to support this trend with appropriate data. The facts are that economic losses, types of affected resources and number of toxic species reported have all increased, which are concerns that have prompted national and international management actions for HABs.

The reasons for increasing trends of HAB impacts include the introduction of new HAB species in ship ballast water, the effect of land-based pollutants on coastal nutrient dynamics, and the dispersal of HAB cysts by storms. An understanding of the relative roles of human-induced versus natural drivers of HABs is needed to determine the types of management actions required.

In the Benguela upwelling region off the West Coast of Southern Africa, HABs have periodically led to rock

lobster strandings. The most famous examples are the strandings of hundreds of tonnes of rock lobsters in Elands Bay in 1997 and 2000. The latter resulted in losses to local fish stocks estimated at US\$50 million. In 2014, an extensive and long-lasting Red Tide occurred for the first time along the South Coast, extending from Knysna to beyond Port Elizabeth and causing wide-scale mortalities of fish. A HAB that was recently blooming in St Helena Bay on the West Coast had already caused mortalities of fish and strandings of rock lobster along the coast and threatened to cause further damage.

As a result the Department of Environmental Affairs wants to propose a research programme to assess and monitor the formation and impacts of HABs. Although the effects of HABs on exploitable resources (such as rock lobsters and shell fish) arguably fall under the mandate of the Department of Agriculture, Fisheries and Forestry (DAFF), the environmental aspects of HABs, especially with respect to anoxic events, fall under the mandate of DEA.

In addition, coastal user safety and socio-economic impacts have been identified as focus areas that have not been assessed to date by the department. While mitigation of such naturally occurring events might not be feasible, adaptation requires a better understanding of the factors that lead to HABs, and technologies that aid the prediction of harmful events. DEA proposes to develop a programme for the assessment and monitoring of HABs, with the aim to complement existing efforts by DAFF.



About the contributor: Tshego Letshwiti

Tshego Letshwiti is an Assistant Director: Internal and External Communications at the Department of Environmental Affairs in Cape Town. Ms Letshwiti is a Journalism graduate with experience in print and broadcast media.

iSimangaliso promotes enviro education



Above: At Sodwana Bay and Mission Rocks, learners are educated about the different marine animals and plants found on the rocky shores. They are able to see, touch and feel rock crabs, lobsters, mussels, limpets, sea cucumbers, sea urchins, seaweed and coral. For most of them, this is their first time seeing what lies beneath the sea.



Above: At kuMziki Lookout point, learners get to touch and feel plants and trees, and enjoy a panoramic view of the five major interlinking ecosystems of iSimangaliso.

The iSimangaliso Wetland Park Authority is committed to providing environmental education and awareness to communities, and has for the past eight years implemented an awareness programme, reaching out to school learners surrounding the Park.

The iSimangaliso Environmental Education Programme gives the iSimangaliso Authority an opportunity to work with South Africa's future leaders - the youth. The primary goal of the programme is to create access for local youth by bringing learners from neighbouring schools into iSimangaliso Wetland Park, a World Heritage Site, and creating fun educational experiences around the natural and cultural heritage they see in the Park.

The iSimangaliso Authority aims to bring 150 schools, totalling 2400 learners and 300 educators, into the Park over the next two years. This is approximately quarter of the number of schools within the Obanjeni District surrounding iSimangaliso. The current programme is funded by the Department of Environmental Affairs and the National Lottery Distribution Trust Fund.

Programme implementation

The Authority team has prepared

educational material for the awareness activities and trained four environmental education facilitators from local communities to facilitate all EE field trips under this programme: Ms Mary Barnes, Mr Vusi Mthiyane, Ms Ntombifuthi Mathenjwa and Mr Jabulani Mbonambi.

African Conservation Trust (ACT) was hired to provide logistical support in implementation of the programme. In the 2015 programme, 45 schools were hosted in two of the Park's 'jewels' namely the Eastern Shores and Sodwana Bay. These schools are from the communities surrounding Mtubatuba, uMkhuze and Mbazwana. Learners are transported to and from the Park using the new purpose-designed iSimangaliso bus and learners are provided with caps, information materials and a packed lunch. Educators at each school select the representatives based on their interest in conservation and/or tourism.

A day in the programme

Mr Vumase describes a typical EE outing as follows: "The EE facilitators and I meet and greet learners at the Park's gate where learners are given an introduction to iSimangaliso and the role of the iSimangaliso Authority. On the Eastern Shores, learners explore the Park using different game viewing roads that provide access to

varied habitats such as grasslands, wetlands and coastal dune forest as well as the wildlife that lives there. We visit the kuMziki Lookout point on the road towards Mission Rocks and learners have the opportunity to ask questions relating to the natural and cultural features of the Park's plants, animals and sites. In response, the EE facilitators tell stories such as how ancient people used isundu (wild date palm) to make palm wine and why the strange behaviour of Blue wildebeest was traditionally associated with the behaviour of iSangoma (the traditional healer)." What teachers and learners had to say

Ophaphasi Primary School:

Teacher - Mr Bafana Ndebele: "The trip was very good. We learned about different things that we did not know about nature, such as the difference between the high tide and low tide and two forces that influence the tide movement. We wish iSimangaliso would organise another trip that can take the whole school into the park to learn about different nature aspects." Learner - Nkululenko Shoba (Grade 6): "We have learned a lot about marine life. It was amazing to see and learn about animal species found in the rocky shores such as zebra fish and crabs. We also learned more about how dangerous 'Big five' animals are to human beings."



About the contributor: Neroshia Govender

Neroshia Govender is the Manager: Development and Planning at iSimangaliso Authority. She studied Geography and Environmental Management.

A global collaborative effort to integrate ecological infrastructure into national planning

By Reyhana Mahomed



Above: A strategic review workshop held in 2010 to finalise the maps.

Scientists from South Africa, Vietnam, Chile, and Trinidad and Tobago combined their expertise in a global collaborative effort to enhance the integration of ecological infrastructure and ecosystem services into development planning and policy. The recently completed global ProEcoServ programme looked at how mainstream biodiversity and ecosystem services can best be integrated into multi-sectoral planning processes across scales.

The South African component of the project was structured as a partnership between the South African National Biodiversity Institute (SANBI) and the CSIR with the Department of Environmental Affairs chairing the project steering committee. This multi-institutional arrangement, with the CSIR building a much-needed science foundation for policy and implementation, and SANBI forming a bridging institution mandated by government to catalyse and maintain implementation activities and ensure post-project sustainability, was key to the success of ProEcoServ in South Africa. The programme was funded by the Global Environment Facility and United Nations Environment Programme (UNEP).

"ProEcoServ looked at how we can integrate mainstream biodiversity and ecosystem services into multi-sectoral planning processes across scales," says Dr Nadia Sitas, CSIR senior researcher for the South African component of ProEcoServ. "In South Africa we engaged with a variety of role-players involved in ecosystem governance — from local to national scales, and including the public and private sector — to highlight the importance of ecological infrastructure for South Africa's development.

The programme involved partners from sectors such as agriculture, urban development, water management, insurance and mining during its four-year duration. Sitas says that the programme focussed on: integrating ecosystem-based solutions for disaster risk reduction at a local level; integrated water resource planning at a catchment level; and, identifying key policy intervention points at a national level through targeted mainstreaming strategies.

The ProEcoServ project saw many scientists and policy makers in South Africa working together to ensure that ecosystem services were embedded in national policy. In the October 2015 edition of Time Magazine, Achim Steiner, Executive Director of UNEP was quoted as saying that through ProEcoServ, UNEP has identified almost \$1 billion worth of ecosystem benefits in only four test countries. "In South Africa, a map of strategic water source areas indicated they make up only 8% of the land area, but provide a staggering 50% of the water, collectively contributing to over half the national economy," he said. This statement was based on the work by CSIR principal scientist Jeanne Nel. ProEcoServ-SA engaged with key decision makers and facilitated the inclusion of ecosystem services concepts in the National Development Plan, the National Water Resource

Strategy, the Disaster Management Act, and the Norms and Standards for Biodiversity Management Plans for Ecosystems.

A five-year communications strategy has been developed and its associated toolkit has been making good progress with implementation. A key highlight has been the completion of a series of ten case studies that demonstrate how the wise management of biodiversity and ecological infrastructure contributes to economic and social development.

The concept of ecological infrastructure

Ecological infrastructure refers to functioning ecosystems like wetlands, coastal dunes, rivers and estuaries that deliver valuable services to people. Ecological infrastructure plays a crucial role in a country's development as built infrastructure like roads and railways. South Africa's wealth of ecological infrastructure — viewed as a nice to have for decades — is increasingly proving to be the cornerstone that underpins urban and rural economies. This ecological infrastructure provides us with many benefits (called ecosystem services) including fertile soil for agriculture, and protection from extreme events — floods, droughts and fire. This is increasingly relevant in the face of the mounting risks of climate change.



About the contributor: Reyhana Mahomed

Reyhana Mahomed is a Communications Manager at the Council for Scientific and Industrial Research (CSIR): Natural Resources and the Environment. Before joining the CSIR, Ms Mahomed was a Deputy Director in the Department of Environmental Affairs' Chief Directorate: Communications.

Limpopo tackles invasive species

By Marcini Govender and Werner Roux



Above: Lantana.



Above Campuloclinium macrocephalum.



Above: Eichhornia crassipes.

The Limpopo province is situated at the North Eastern corner of South Africa and shares borders with Botswana, Zimbabwe and Mozambique and forms a link between South Africa and countries further a field in sub-Saharan Africa. This location has resulted in its ability to facilitate greater trade, transport, travel and tourism, all of which can facilitate the introduction and spread of species that are not native to an area. Currently the province finds its natural vegetation under threat of the invasive alien species which is a significant threat to its biodiversity. Alien species have become predators, competitors, parasites, hybridizers, and diseases of our native and domesticated plants and animals.

Currently the top invaders in the province include Triffid weed (*Chromolaena odorata*), Bramble (*Rubus cuneifolius*), Pom pom weed (*Campuloclinium macrocephalum*), Water hyacinth (*Eichhornia crassipes*) Giant lantana (*Lantana camara*), and Parthenium (*Parthenium hysterophorus*).

The **Triffid weed** can be identified as a scrambling, sparsely hairy shrub up to 4m or higher, often forming dense thickets with wide-spreading branches. It produces straw-coloured, bristly fruits and this plant is poisonous. It is considered a threat as it completely smothers and suppresses indigenous vegetation and known to replace up to 100% of indigenous vegetation in some regions. It is also highly flammable contributing to fires.

The **bramble** is an erect to sprawling thorny shrub growing up to 2m high with deeply ridged stems. Its invasive nature is seen as it competes with and replaces indigenous woody and grassland species. Dense stands are impenetrable and restrict access to forestry plantations; they also restrict access to grazing and water by domestic and wild animals.

The **Pom pom weed** is an erect, perennial herb with fluffy pink flowerheads, its stems are green to purplish, up to 1.3 m high, dying back annually to a root crown. It threatens the survival of grasslands and wetlands as it can tolerate a wide range of habitats. It transforms the landscape from green to pink in summer. Herbicides registered for use on pompom weed are Plenum, Access and Climax. The two physical methods of eradication include uprooting and burning of the plant.

The **Water hyacinth** is frequently branded as the world's worst aquatic weed due to its invasive potential, negative impact on aquatic ecosystems, and the cost it necessitates to control it. It is an herbaceous, free-floating aquatic plant with erect aerial leaves, lilac flowers and submerged roots. Once growth is sufficient to cause crowding of individual plants, these petioles elongate and interweave, forming dense self-supporting mats that can cover the entire surfaces of dams and slow flowing rivers.

Parthenium is an annual herb that grows between 0.3m to 1.5m tall, with an erect longitudinally grooved stem. The stems and leaves have short hairs, and the leaves are pale green in colour. The seeds are black and rapidly invades disturbed areas, agricultural land used for crop and animal production, fallow land, roadsides and watercourses, causing severe economic losses and threatening biodiversity. Continuous exposure to the plant causes respiratory problems such as hayfever and asthma in many individuals, as well as allergic contact dermatitis.

Lantana is a spreading shrub or untidy scrambler growing up to 2m or higher. Stems are usually covered with short, stiff hairs and recurved thorns. The glossy green fruits are poisonous glossy and turn purplish-black. It competes with and replaces indigenous species and its allelopathic suppression of indigenous species interrupts regeneration processes and reduces biodiversity of natural ecosystems. It is highly poisonous to humans and animals and responsible for livestock mortalities.

Control and eradication of alien invasive plants becomes much more difficult and expensive once they have established and invaded a sizable portion of land. For more information on the identification and best methods for eradication of alien invasive plants in the Limpopo Province, contact Werner Roux on (015) 291 5403/5526 or email: wroux@environment.gov.za.

About the contributors: Marcini Govender and Werner Roux

Marcini Govender is the Assistant Director under the Directorate Environmental Sector Advocacy and Coordination in the Department of Environmental Affairs. She is a registered Principle Natural Scientist in the field of Botany and prior to working at DEA. She has worked for Department Agriculture Forestry and Fisheries and SANBI.

Werner Roux is the Regional Programme Leader for the Sub directorate Limpopo Natural Resource Management (NRM). He is responsible for the NRM projects in the Limpopo province which consist mostly of Working for Water related activities.

Invasive alien species: lethal beauties

By Carina Malherbe

Invasive species are animals, plants or other organisms introduced by man into places out of their natural range of distribution, where they become established and disperse, generating a negative impact on the local ecosystem and species. Alien species are species that are not indigenous to South Africa.

Alien invasive species are therefore species which do not naturally occur in South Africa, and their establishment and spread threaten ecosystems, habitats and other species. The occurrence of these species could harm the economy, environmental and human health.

They represent the second most significant cause of species extinction worldwide after habitat destruction. If they are found on islands, they are the most significant cause of species extinction. The impacts of alien invasive species on landscapes are immense, insidious, and usually irreversible. They cause significant damage to ecological, economic and health levels. As a matter of fact, they can compete with native species, act as pests or pathogens for cultivated or domesticated species, or even disseminate allergic or infectious agents.

The spread of invasive species is facilitated by increasing trade, travel, and the transporting of goods, as these organisms may "hitchhike" on ships, containers, cars, soils to mention a few methods of dispersal. This is therefore a global problem that requires international cooperation and action.

The invasive potential of a species can be predicted by a number of

characteristics, listed below. Typically invasive plants:

- Are indigenous (native) to another continent
- Have other members of the genus or family which are recognized as invasive or
- Are the only member of its genus or family (monotypic)
- Are well adapted to a variety of natural conditions
- Are touted as being disease and insect free
- Grow very rapidly
- Reproduces by vegetative shoots arising from the roots
- Produce flowers and fruits at a young age
- Produce large numbers of seeds
- Seeds have a high percentage germination
- Have small fruit that is eaten by birds
- Have red fruit which is attractive to birds
- Have ornamental characteristics making it highly desirable to gardeners
- Are already known to be invasive in other regions

What can I do as a South African citizen to curb the spreading of alien invasive species?

The most important thing is to be aware of the impact of invasive species and to know which species are alien and which are invasive. Should you become aware of an invasive species in your area, it is important for you to inform your local conservation agency. Increasing awareness of the

impacts of invasive species is crucial both in South Africa and the rest of the world.

Who should I contact if I see plants or animals that may be invasive?

First, try to take a photograph of the organism, so that you can confirm the species identification in a book or on the internet. South Africa has many field guides that show our indigenous and exotic plants and animals. For plants, two essential references are Lesley Henderson's Alien weeds and invasive plants (Plant Protection Research Institute Handbook No.12, Agricultural Research Centre, 2001) and Clive Bromilow's Problem Plants and Alien Weeds of South Africa (Published by Briza Publications 2010).

There are a number of organisations who can be contacted to determine the status of a particular plant or animal species. These include the Department of Environmental Affairs' Working for Water Programme (www.environment.gov.za), the Agricultural Research Council's Plant Protection Research Institute (<http://www.arc.agric.za/arc-ppri>), the South African National Biodiversity Institute (www.sanbi.org.za), the Invasive Species Specialist Group (www.issg.org) and Invasive Species South Africa (www.invasives.org.za).

Do South African species become invasive elsewhere?

Yes, many South African species have been taken to other countries for their commercial or ornamental value. However, once in these countries some of the species have become invasive. Examples of these are the



About the contributor: Carina Malherbe

Carina Malherbe is the Director of the Environmental Sector Advocacy and Coordination (ESAC) in the Environmental Programmes Branch. Ms Malherbe joined the Department in 2006. The ESAC directorate coordinates the sub-committee or working group to the technical committee (MinTech) that informs the Minister and MECs on technical matters associated with policy implementation on environmental sector job creation (Working Group 6).

beautiful Agapanthus species which adorns the gardens at Environment House, the African honeybee and the common platanna.

Common agapanthus

Agapanthus (Agapanthus praecox and others) can form very dense clumps and pure stands, which exclude all other vegetation. This can lead to suppression of growth of native species, and can result in massive biodiversity loss. The root network is very dense, and can also exclude native species. The roots can crack concrete, causing problems for walkways and roads. Growth on roadways can cause clogging of drains leading to flooding, which can damage roads. This species has been reported as invasive in Argentina, Australia, Cook Islands, Marshall Islands, New Caledonia, New Zealand, Portugal, Spain, United Kingdom and the United States of America.



Above: Thick impenetrable Agapanthus rhizomes (cramped tough roots); Agapanthus flower (agapanthus post bloom)

Common platanna

The common platanna (*Xenopus laevis*) is indigenous to South Africa, but has become invasive in South America (Chile), North America (Mexico and many other states), Europe (France), Asia (Indonesia) and the United Kingdom. The common platanna is the standard experimental amphibian used in laboratories globally. There are also traded in the pet/aquarium trade as pets. Escapees have formed viable and

invasive populations in many climates, where individuals are generalist aquatic carnivores, preying on invertebrates, amphibians and fish.

Common platanna (*X. laevis* pair)

African honey bee

The African honey bee (*Apis mellifera scutellata*) was brought from Africa to South America in 1957 to help revive the failing Brazilian beekeeping industry, which was using various European honey bee subspecies, unsuitable for the South American environment. The queens and workers of several colonies of the African honey bee were accidentally released, and these bees hybridized with local colonies. European honey bees reproduce only two or three times a year, but African honey bees reproduce up to 17 times a year. The African Honey bee has been gradually spreading since the release, causing economic, social, and ecological problems, due to the more aggressive behaviour shown by these hybrid bees.

Compared to the European honey bee, the African honey bees are more defensive of their nests and have a propensity to sting in large numbers and chase intruders from their nest up to 1.6 kilometers away. They have caused deaths of pets, livestock, and even people who could not get away from the attack, giving them their "killer bee" nickname outside of Africa. Victims of African honey bee attacks commonly receive ten times more stings than similar attacks from European bees, and African honey bees respond to disturbances up to ten times faster than European bees. The biggest threat from the African honey bee is the hybridization with European bees. The hybrid bees are more aggressive, are less tolerant to cold winter temperatures, abandon nests more frequently and produce less honey.



Above: the bee on the left is an Africanized honey bee (killer bee) and the bee on the right is an European bee. (*Apis mellifera scutellata* 1355020)

African bee (*Apis mellifera scutellata* Phakama / honey bee takes nectar)

Globalisation, land-use change and climate change are the driving forces behind introduction of and spread of invasive plants to other regions. Increased global trade, travel and transport contribute to the spreading of alien plants. Remember that agapanthus tubers you carried in your suitcase a few summers ago to your cousin's aunt's sisters' brother in the US? Perhaps you introduced the alien invader to their region, and now the US has to focus on eradicating thick impenetrable tangles of roots. Alien invasive species, in any country, are a significant threat to their biodiversity. But the best start in the course of action for the fight against alien invasive species is prevention of introduction: do not bring plants from your exotic holiday destination back to South Africa, and do not take South African plants abroad.



The platanna's common English name comes from the Dutch word, *plathander*, which means "flat-handed creature".

Wild pets, wild problems

By Carina Malherbe and Marcini Govender



Above: Giant African Snail (*Achatina fulica*), an invasive species in Hong Kong.

Exotic pets are animals desired by consumers that are rare or do not occur in the owner's region. Exotic animals in South Africa are the wildlife of another country. Television shows and movies can make certain animals popular. For example, exotic turtles grew in popularity in the 1980s thanks to the popular television show, "Teenage Mutant Ninja Turtles." While many of these animals can be obtained from legal sources, many animals are captured from their native environments, smuggled across national borders, and wind up in family homes, menageries, or roadside circuses.

Pet trade encourages impulse purchases that are acquired on a whim and discarded when the novelty wears off as most owners don't realize the huge responsibility they are inheriting when they purchase exotic pets. There's rarely a happy ending for the animal. What happens to these animals when the novelty wears off? Many times they

are "set free" by their owner, who has come to realise that wild animals are not pets. This causes the introduction of invasive and harmful species into the ecosystem, which can endanger indigenous wildlife. Wildlife smuggling directly affects the biodiversity of different ecosystems. Certain animals are in higher demand by smugglers, leading to a visible decline of these species in their native habitats. Thousands of exotic animals end up in rescue every year.

The lot of a reptile captured or bred for the pet-store trade is grim. Living conditions during the trip from the breeder or dealer are typically cramped and unsanitary, and many reptiles do not survive the ordeal.

Those who do will probably have health problems that don't show up until months later. Unfortunately, reptiles are perceived as requiring minimal care rather than specialized care, so they're big business about 13 million reptiles are kept in

United State households. Pet-store employees are rarely trained to tend to the complex needs of reptiles effectively and therefore are not in a position to educate prospective reptile caretakers.

The unregulated trade in exotic animals poses a threat to animals in the wild, as they are often wild-caught to supplement the gene pool. Exotic reptiles are often carriers of diseases that are transferred from the animal to the human. Reptiles in captivity can never be released into the wild in their original country, because they may carry diseases that could be harmful to the wild reptiles.

Animals are viewed as commodities and profit is king. The animals are bred, housed, transported, bought and sold in the cheapest possible way. The exotic pet trade is a lucrative industry renowned for its extreme cruelty and ruthless exploitation of animals kept in the retail or breeding environment.



Above: The fallow deer (*Dama dama*) is a ruminant mammal belonging to the family Cervidae. This common species is native to western Eurasia.



Above: The green iguana, also known as common iguana or American iguana, is a large, arboreal, mostly herbivorous species of lizard of the genus *Iguana* native to Central, South America, and the Caribbean.



Above: *Liposarcus multiradiatus* is commonly known as the "common pleco" to most aquarists. It is native to Brazil of South America.



Above: The Burmese python is one of the five largest species of snakes in the world. It is native to a large variation of tropic and subtropic areas of South and Southeast Asia.

The increased variety of pets available to the public poses a threat to the indigenous fauna, with some unprincipled dealers infringing laws or using gaps to sell illegal exotics. Pet shops across the country sell a number of exotics from reptiles and birds to a variety of marine life, legally or borderline illegally, with little, if any, personal repercussions, but potentially disastrous effects to indigenous species and ecosystems.

According to Mr Itani Tshivhandekano, an Environmental Management Inspector who deals with alien invasive species, nearly 72% of pet shops in South Africa offer illegal exotic animals for sale. The most commonly found alien invasive species found in the illegal exotic pet trade include (category 2 listed invasive species) were the common boa, rattle snake, Burmese python, green iguana and corn snake, rose ringed parakeet, Lechwe and fallow deer. Plecostomus and Giant African snails were amongst the prohibited species found.

Category 2 species are species that have value, such as plantation trees and fish-farming species, and yet can invade with very negative

consequences outside of where they are being utilized. The Department has taken an approach that seeks to optimize the economic benefits of these species, whilst minimizing the damage that they cause. Permits are granted for their utilization, but they must be controlled outside of what is allowed in terms of the Permit.

The Alien and Invasive Species Regulations came into effect on 1st October 2014. The list of Alien Invasive Species can be found at www.environment.gov.za.

A total of 559 alien species are listed as invasive in four different categories, and a further 560 species listed as prohibited and may not be introduced into the country. The list relates to both fauna and flora.

The main aim of the legislation is prevent more alien invasive species coming into South Africa and the new regulations are intended to halt the spread of potentially devastating species. Invasive Alien Plants (IAPS) are a major threat to biodiversity, human livelihoods and economic development. Many IAPS are products of unwise and unintentional

plant introductions, however if new invasions are discovered before they are well established, eradication is possible and management costs are greatly reduced. The second main focus is on the early detection of and the rapid response to emerging invasive species. The third main focus is to address the established invasive species that are most harmful and destructive.

How do we make a difference?

As long as the human demand for exotic pets continues, so will the trade. Do not support pet shops that sell illegal exotic animals. Do not buy exotic animals as they are not pets and belong in the wild. Do not support "free to good home" advertising, or brokers who sell animals through the internet, or through newspaper advertising sections. Be an advocate for animals: Advise your friends and family about the environmental impact of the exotic pet trade on our own biodiversity and health. Report illegal exotic animal trade to the Environmental Crimes Hotline at 0800 205 005.



Alien and Invasive Species

How much do you know?

Alien invasive species are plants, animals, pathogens and other organisms that are exotic, non-indigenous or non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. They spread aggressively, and which threaten indigenous ecosystem functioning and biodiversity. Invasive species are controlled by the National Environmental Management Biodiversity Act (NEMBA) Act 10 of 2004 –Alien and Invasive Species (AIS) regulations, which were gazetted on 1 August 2014 and became law on 1 October 2014.

What is in the Regulations?

The AIS Regulations list 4 different categories of invasive species that must be managed, controlled or eradicated from areas where they may cause harm to the environment, or that are prohibited to be brought into South Africa. A total of 559 alien species are listed as invasive in four different categories of the regulations. A list of Alien Invasive Species was published and the list can be found at <http://www.invasives.org.za/legislation.html>.

Four categories of invasive species:

Category 1a: Invasive species which must be combatted and eradicated. Any form of trade or planting is strictly prohibited.

Category 1b: Invasive species which must be controlled and where possible, removed and destroyed. Any form or trade or planting is strictly prohibited.

Category 2: Invasive species, or species deemed to be potentially invasive, in which a permit is required to carry out a restricted activity. Category 2 species include commercially import species such as pine, wattle and gum trees.

Category 3: Invasive species which may remain in prescribed areas or provinces. Further planting, propagation or trade, is however prohibited.

Permits information: Category 2 invasive species

Permits are required to carry out certain restricted activities with Category 2 listed plants and animals species.

Download permit applications from:

www.environment.gov.za – Search AIS Permit Application form
www.invsive.org.za – Search Permit Application form

Cost of Permits to be paid for applications of permits:

Import into the Republic - R200. All restricted activities - R100.
Renewal of permit - R50. Appeals - R50.

Permit application can be submitted through the following methods:

- By Hand Delivery** - Biosecurity Services, Department of Environmental Affairs, 1st Floor, 14 Loop Street, Cape Town, 8000.
- By Post** - Biosecurity Services, Department of Environmental Affairs, Private Bag X4390, Cape Town, 8000
- By Email** - AISpermit@environment.gov.za
- By Fax** - 086 604 408

Category 2: Mallard duck



Category 2: Iguana iguana



Category 2: Castor-oil plant



Category 2: Leucaena



For more information, visit www.environment.gov.za

Call Centre: 086 111 2468



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Bontle ke Botho Campaign

By Kennedy Msibi



Above: Green cadets clean-up the streets of Alexandra Township during the relaunch of the Botho ke Bontle campaign on 31 January 2016.



Above: Minister of Environmental Affairs, Mrs Edna Molewa addresses the community of Alexandra.

The Minister of Environmental Affairs (DEA) Minister Mrs Edna Molewa joined Gauteng Provincial government (GPG) and City of Johannesburg (CoJ) Municipality at the relaunch of Bontle ke Botho campaign on 31 January 2016 in Alexandra Township in Johannesburg.

The early morning clean-up was led by Minister Molewa, Gauteng Province Premier, Mr David Makhura and MEC for Gauteng Department of Economic Development, Environment and Rural Development Mr Lebo Maile.

In her address, Minister Molewa said, "Youth must take this opportunity to establish waste enterprises with both hands. When you see a beverage drink container outside your house, know that if you pick it up and store them in numbers, *madi ke amantsi* (there is a lot of money)". She went on to say, "The day our community members realise the opportunity in waste, they will create mass employment and diminish poverty in our society".

Minister Molewa also reminded communities of the importance to Reduce, Reuse and Recycle waste.

The Gauteng Premier told communities that "*Uzoyithola kanjani uhleli ekhoneni*" (You snooze you lose)" during his address. He also emphasised that government can

"Gauteng Premier Mr David Makhura told communities that "*Uzoyithola kanjani uhleli ekhoneni*" (You snooze you lose) during his address."

only do so much and that the most responsibility lies with us the valued citizens of this democratic country. "Picking up waste that lies in the corners of your street, is a business opportunity for you and an economic growth opportunity for the country."

The relaunch of the campaign included the introduction of the Green cadets who are administered by the Bontle ke Botho campaign and will serve the purpose of job creation in greening our society.

"The Green Cadets are a group of young people who are employed to champion the issue of cleaning up on a daily basis. They will be in townships and shopping locations, and the number of workers will continue to grow as the year progresses," said MEC Maile.

CoJ Member of Municipal Council (MMC) for Environment and Structure, Ms Matshidiso Mfikoe added that, "The Green Cadets are now working closely with the Stjwetla Township and will gradually be adopted by all municipalities across Gauteng province."

"Bontle ke Botho has been relaunched and is now stronger than before," said MEC Maile. "This year will see a great sanitary change in all regions within south Gauteng, from Soweto, to Sebokeng and all areas where the waste rate is on a notable state."



About the contributor: Kennedy Msibi

Mr Kennedy Msibi is public relations management graduate from Vaal University of Technology (VUT). Mr Msibi has served as a general supervisor for the Extra School Support Programme of the Extended Public Works Programme. He is currently an intern at the Department of Environmental Affairs in the Chief Directorate: Corporate Communications under the sub-directorate: Branding Corporate Image and Exhibition.

Tour de Tuli annual cycling event

By Thapelo Motebo



Above: Cyclists enjoying the wilderness area of the GMTFCA.



Above: Cyclists crossing Limpopo River under protection from field rangers.

The eleventh Nedbank Tour de Tuli Annual Cycling Event took place at Greater Mapungubwe Transfrontier Conservation Area (GMTFCA). The route traversed areas of the GMTFCA including Botswana, South Africa and Zimbabwe. The tour was meant to achieve the following objectives: Create a wonderful cycling adventure for cyclists; raise awareness about GMTFCA and the beautiful wilderness areas together with community land through which the tour traversed; development of skills and training of local community members and staff as well as raising funds for educational camp for selected children neighboring the Transfrontier and Conservation Areas (TFCA).

Children in the Wilderness (CITW) in conjunction with other partners, including the TFCA Directorate of the Department of Environmental Affairs hosted the event. The event contributed immensely to the economy of the partner countries through purchasing of goodies locally, use of local labour, over-border payments, fuel and drinks. The route covered approximately 280km of mountain biking tracks over four days, covering three countries. The tour attracted many top South

African business leaders and many international participants from as far as Australia, Canada, Germany and the USA. 289 cyclists took part in the event with 41 cyclist leaders, 63 volunteers and 97 paid staff members. Four development riders joined the cyclists, together with TFCA Director Mr Ernest Mokganeedi who managed to finish the entire tour. Mr Mokganeedi said "the experience was fulfilling and the excitement among cyclists from different countries was encouraging"

Proceeds from Tour de Tuli cycling event were used to set up tri-nations eco camp for children neighbouring the GMTFCA. Children were chosen from Botswana, South Africa and Zimbabwe. The camp was held in December 2015 on the South African side of the GMTFCA. It focussed on environmental learning, various life skills activities, including focus on careers in tourism and conservation. It is an environmental and life skills educational programme that focuses on the next generation of rural decision makers. The camp hosted 24 children and eight teachers from Botswana, South Africa and Zimbabwe.

The programme aims to develop environmental leaders and

ambassadors who are inspired to care for their heritage and environment to ensure they become custodians of their area in the future. The camp displayed cooperation from various agencies involved in TFCAs activities such as Agriculture, Defence, Health, Immigration and Police in ensuring that there was smooth crossing over of children into GMTFCA.

Ms Cynthia Skommere from the TFCA Directorate who was part of the eco-mentors said: "The camp was a good initiative to give back to local communities and also helped in raising awareness of the TFCA. It played an important role in ensuring interaction among the kids and information sharing, particularly because they came from different backgrounds".



Above: Children learning about plants through demonstration.



About the contributor: Thapelo Motebo

Mr Thapelo Motebo is the Control Biodiversity Officer within: Transfrontier and Conservation Areas (TFCA) directorate. The directorate is responsible for establishment and development of Transfrontier Conservation Areas as a vehicle for conservation and sustainable use of biological and cultural resources.

Cycad appeal fails, conviction and sentence confirmed

By Nicole Limberis



Norman Naledzani Maphari and three of his co-accused were charged with the crime of theft of 28 cycads and of unlawful picking, buying, transporting or possessing of endangered flora without a permit required in terms of the Cape Ordinance on Nature and Environmental Conservation.

In the Kirkwood Regional Court (Trial Court), Norman pleaded not guilty and explained in his plea that he did not have the intention to commit both the offences because he was hired by accused no. 2 to transport the cycads to Gauteng for an agreed fee. He explained further that he was not aware that the cycads were an endangered species that required a possession permit in terms of the Ordinance.

The Trial Court rejected Norman's version as being reasonably possibly true and that found that it was improbable that Norman did not know that he was transporting a valuable consignment since the agreed transportation fee was R10, 000. Through oral evidence, the Trial

Court also found that Norman had given two different explanations to his employees for his presence at the scene of the crime.

Accordingly, the Trial Court found that the only reasonable inference to be drawn from the facts was that Norman and his co-accused had formed common purpose illegally, to harvest cycads and to sell them in Gauteng for a profit.

On the above basis, the Trial Court convicted and sentenced Norman to 7 years' imprisonment, 3 years of which were conditionally suspended. This matter deals with Norman appealing both his conviction and sentence in the Eastern Cape High Court (Appeal Court).

The Appeal Court confirmed the Trial Court's decision in respect of the conviction and sentence. It affirmed that the only reasonable inference that could be drawn from the facts was that Norman was indeed aware of the illegality of the removal and subsequent possession of the cycads. Therefore, the State had proved beyond reasonable doubt that

Norman possessed the necessary intention to commit the offences and that he and his co-accused had acted with common purpose.

The Appeal Courts' decision was as follows:

1. After considering the oral evidence given by Norman's employees in the Trial Court, it was clear to the Appeal Court that Norman provided fictitious reasons for his presence at the scene of the crime.
2. Accordingly, the Appeal Court agreed with the Trial Court's view that Norman's explanation was contrived and improbable.
3. The Appeal Court held that the State had proved beyond reasonable doubt that Norman's conduct at the material times was fundamentally incompatible with the claims of his innocence and the lack of knowledge of the true nature of the transaction.



About the contributor: Nicole Limberis

Nicole Limberis is the Environmental Control Officer (grade B), EMI Legal Support within the Directorate: Capacity Development and Support in the Chief Directorate: Enforcement. Nicole practiced as an attorney until joining the Department in January 2014.

Vox Pops

DEA staff members

Why is it important to conserve our plant and animal species?



1

1. Ms Wilma Lutsch

Biodiversity and Conservation

It is very significant that we preserve plants and animals mainly because South Africa has a diversity of landscapes and natural beauty to match our variety in culture and language. Our nature reserves, our wetlands and unique fauna and flora, provide us with essential such as the regular supply of clean water and prevention of flooding and soil erosion.

These benefits from nature are also important as a safety net in rural areas, as many communities are directly dependent on the products of nature for survival-hunting, fishing and harvesting of food, medicine and shelter. What is also invariably not acknowledged is that the

flow of benefits or ecosystem services from nature, is contributing to the economy of the country in many ways, one of which is the tourism sector. Over half of the population of South Africa rely on medicinal plants for health care, and up to 12 million of the population use fuel wood, wild fruits and wooden utensils obtained from forest and savannas. It is for these reasons that we need to protect and conserve these natural assets.



2

2. Mr Mark Jardine

Environmental Management Inspectorate Capacity

As once expressed by Mahatma Gandhi that the greatness of a nation and its moral progress can be judged by the way its animals are treated. This sentiment echoes my own personal belief that nature does not

exist simply to be used or consumed by humans, but that humans are simply one species amongst many. We are merely a part of an ecosystem; and any actions which negatively affect the living systems of which we are a component, would adversely affect us as well.

All species have inherent value, and humans are not "superior" to other species in a moral or ethical sense. In fact, our ability to change our natural environment so significantly must be accompanied by a duty to do in a responsible and sustainable manner.



3

3. Ms Nonkanyiso Ntabeni

International Advisory Service

The natural processes of plants protect our planet and supply the air we breathe

and the water we drink. They have a value as genetic reservoir. Plants and animals possess undiscovered or undeveloped traits, which are very important for the survival of a particular species. They have value in maintaining ecosystem stability. As you know, ecosystem includes abiotic factors like temperature, humidity etc. and biotic factors like plants and animals. The ecosystems maintain a delicate balance of nature. They have economic value. In our daily life, we use many things, which are products of wildlife. Plants provide the raw materials for food, clothing, medicines, construction and many other products that sustain our lives.

They have aesthetic value. Aesthetic value of a species also promotes its preservation. For example, the taste of wild berries, the refreshing fragrance of wild flowers and the softness of a bed of moss have no monetary value, but still their aesthetic value compels us to preserve them. They have inherent value, each species has a right to exist. So, if a species exists, then it has a fundamental right to continue to exist without being driven to extinction by human activities. The inherent

Vox Pops continued

Members of the public



1. Ms Thandile Mayalo

Conserving and protecting our plants and animals is important to me because it is a source of life for all humanity. Without plants oxygen production is limited. I am particularly concerned with the preservation of life as I am a vegetarian and rely heavily on healthy vegetables from the plants the earth produces. As for animals I feel they should be conserved as humans can learn a lot about life and living from their behaviour and thus treat each other better.



2. Ms Tahera Sayed

Both plants and animals contribute to the flora and fauna of our environment and this means they contribute to

some aspect of our food chain. So they exist for a certain purpose. Plants are responsible for giving us oxygen, they recycle our air. Animals ensure we have food and if you take away one aspect in the food chain, it will get interrupted thereby adversely affecting us humans as well. Our nature and livelihood depends on us conserving preserving the plants and animals we have.



3. Ms Mohube Mashabela

Sustainable conservation is important. We have already lost so much from nature if we lose much more we won't be able to protect ourselves from Mother Nature. If we lose plants, we won't be able to moderate our temperature and it will heighten the climate conditions we already have that is termed climate change. Plants and animals are resources that can bring money into the country, which can boost our economy and the lives of people in general. We need to conserve what is left of our plants and animals for future generations.



4. Ms Silindile Mayise

It is important that we protect our plants for the good of our plants to protect the ozone layer, because as we all know plants absorb carbon dioxide which causes global warming. I also think it's important that we preserve our animals for the good of our future generations so that they also know of our heritage.



5. Ms Consolee Nishmwe

I always liken nature with mothers, it always gives yet it receives so little. Nature gives us clean fresh air, food and energy- all the important things we need survive, but yet humans are responsible for deforestation, pollution

and poaching amongst other environmental injustices. I protect these animals and plants for the same reason why I cherish my mother, because they give so much- so it is up to me at the receiving end to protect them. If they are well protected, then we will also keep receiving.



6. Mr Ben Lombard

Nature is beautiful, and it is what makes South Africa special and different from other countries. Our natural resources put us on the map, hence on a yearly basis, we are able to generate revenue through the tourism industry. Not many countries in Africa and other continents are rich in biodiversity, so we need to protect this heritage.

We need to keep protecting and preserving our nature not only for its monetary value, but also for the future generations. The idea of natural capital which is the world's stocks of natural assets including soil, air, water and all living things needs to be explored because placing an economic value on nature (maybe monetary) we will start to protect it



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