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Biodiversity for Life
South African National Biodiversity Institute

SANBI Living Catchments **NEWSLETTER**

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Living Catchments Project overview

The Living Catchments Project is a collaborative project that is being implemented and led by the South African National Biodiversity Institute (SANBI) in partnership with the Water Research Commission (WRC) through funding from the Department of Science and Innovation (DSI). The project was developed in response to the Water Research, Development, and Innovation Roadmap (Water RDI Roadmap), which is a national planning intervention by the WRC, DSI, and the Department of Water and Sanitation (DWS). The Water RDI Roadmap is aimed at addressing water scarcity in South Africa over a ten-year period between 2015 and 2025. The Living Catchments Project responds specifically to the RDI Roadmap's Supply Cluster 3: Improve adequacy and performance of supply infrastructure.

The project is being implemented in four unique catchments across South Africa: the uMzimvubu, Thukela, Berg–Breede and the Olifants catchments. The intention of the project is to create more resilient, better resourced, and more relational communities with the ultimate vision to strengthen an enabling environment for catchment governance and the integration of built and ecological infrastructure in support of water security, economic development, and livelihood improvement. The project also intends to strengthen an enabling environment for water governance at the nexus of landscapes and water supply in South Africa. The project is centred on co-learning and co-creation, through communities of practice, to enable collaboration, grow the practice of transformative social learning, and strengthen the practice of policy engagement and how biodiversity is mainstreamed into the water sector.

For further information on the Living Catchments Project, please contact the Project Leader, Mahlodi Tau, at SANBI: m.tau@sanbi.org.za

In this issue

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Olifants Catchment

The Olifants Catchment adds a new Ramsar site to the list of wetlands of international importance

By Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs

Part of the Olifants catchment falls within the Mpumalanga Drakensberg Strategic Water Source Area which has been subjected to degradation through mining and agricultural activities.

Besides its value for biodiversity, this catchment is a source of drinking water for local communities and supports flood control and groundwater recharge and discharge. It is a natural laboratory for scientific and educational research and is used by local communities for spiritual and inspirational purposes. The catchment benefits from a restoration plan which was being reviewed and updated in 2023.

Middelpunt Nature Reserve, which forms part of the Olifants River catchment has been named as South Africa's 29th Wetland of International Importance or "Ramsar site".

The Reserve is located along the headwaters of Lakenvleispruit, a stream in the Olifants River basin, approximately 14 kilometres from the town of Dullstroom in Mpumalanga province.

The site is a permanent freshwater valley bottom forming part of the broader Lakenvlei wetland system, most of which is located in the Greater Lakenvlei Protected Environment. It is one of South Africa's highest rainfall areas. The site supports a variety of plants, animals, and microorganisms and plays a vital role in maintaining the genetic and ecological diversity of the Steenkampsberg Mountain Grasslands.

It is the only confirmed breeding site in South Africa of the white-winged flufftail (*Sarothrura ayresi*), a Critically Endangered waterbird with an estimated global population of fewer than 250 mature individuals. It further supports threatened and endemic birds such as the blue crane (*Anthropoides paradiseus*), secretary bird (*Sagittarius serpentarius*), African grass owl (*Tyto capensis*) and Denham's bustard (*Neotis denhami*).

Potamonautes flavusjo – Credit: Hannes Marais.

Middelpunt Nature Reserve.

Celebrating Biodiversity Day in the Kruger to Canyons Biosphere Region

By Itumeleng Selebalo with the project co-ordinators

Biodiversity plays a crucial role in maintaining the balance of our ecosystems and sustaining life on Earth. Recognising the significance of biodiversity, two remarkable events were held recently in different locations, each with the aim of raising awareness and promoting conservation efforts. Let's delve into the highlights of Biodiversity Day in the Kruger to Canyons (K2C) Biosphere Region:

Event 1: Biodiversity Day talk at Southern Cross College

On 23rd May 2023, the Southern Cross College was abuzz with enthusiasm as Itumeleng Selebalo, a member of the K2C team, addressed the students and faculty on the importance of biodiversity. The talk aimed to shed light on the significance of preserving nature in the K2C Biosphere, an area of rich biodiversity in the region. Itumeleng captivated the audience by emphasising the interdependence of all living organisms and their habitats.

During her presentation, Itumeleng stressed the importance of biodiversity conservation not only for the survival of various species but also for human well-being. She highlighted the role of biodiversity in providing essential ecosystem services, such as clean air, water purification, and climate regulation. Furthermore, she joined the Enviro Club at Southern Cross College. By engaging with students, she aimed to foster a sense of responsibility and encourage them to take action towards conserving biodiversity in their daily lives. The event at Southern Cross College was a resounding success, with the attendees leaving with a deeper understanding of the critical role biodiversity plays in sustaining our planet.

Event 2: Celebrating biodiversity at Lekgalameetse Nature Reserve

On 24th June 2023, an inspiring event took place at the Lekgalameetse Nature Reserve, hosted by the Limpopo Department of Economic Development, Environment, and Tourism (LEDET) and Department of Forestry, Fisheries, and the Environment (DFFE) Limpopo. The event's primary focus was to celebrate the biodiversity within the reserve and raise awareness about the importance of community involvement in sustaining biodiversity in the region.

The meeting aimed to inform local communities about the value of their natural resources and to encourage their active participation in biodiversity conservation efforts. Notably, the event highlighted the link between biodiversity and air quality, underlining how preserving diverse ecosystems positively impacts the air we breathe. Experts from various fields delivered insightful presentations, stressing the need for collective action and community-based initiatives to protect biodiversity.

Representatives from LEDET and DFFE Limpopo provided information on existing conservation programmes and initiatives, emphasising the role of the local communities as stewards of biodiversity. They discussed practical steps individuals can take to conserve biodiversity in communal

Event 1: Biodiversity Day talk at Southern Cross College.

Event 2: Celebrating biodiversity at Lekgalameetse Nature Reserve.

areas, such as promoting sustainable agricultural practices, preserving natural habitats, and reducing pollution.

The event at Lekgalameetse Nature Reserve served as a platform for fruitful discussions, allowing community members, government officials, and conservationists to exchange ideas and collaborate on future projects. The participants left with a renewed commitment to protecting biodiversity, recognising their essential role in conserving their natural heritage for future generations.

Umzimvubu Catchment

The ten-year journey of the Umzimvubu Catchment Partnership

By Emily Botts and Nicky Mcleod

In the tiny rural town of Matatiele in South Africa, a momentous occasion is quietly taking place. The Umzimvubu Catchment Partnership (UCP) gathered to celebrate a decade of working together to manage and restore the catchment of the Umzimvubu River from source in the Drakensberg Mountains to the Indian Ocean, while also supporting livelihoods and sustaining the benefits that people receive from nature. The partnership emerged from humble beginnings in 2013 to become one of the most recognised and reliable success stories of collaborative catchment management in the country. It is even lauded internationally as a model for how partners can work together for the overall health of a river catchment, its biodiversity, and its people. In 2016, the partnership received an award from the Critical Ecosystem Partnership Fund (CEPF) of "hotspot heroes" at an event in Hawaii.

Called to the front of the room are the pioneers who were there when it all began and who remain its strongest stalwarts. Counted among them is Ntate Robert Mnika who even as a ward councillor never wavered as a supporter and advocate for the UCP and who rises to thank his colleagues:

> *"Journeys are started by a few people, and others join along the way, but it is those who had the courage to start that deserve the most thanks. It's better to thank them when they are still around to hear it."*

Sissie Matela told of the origin of the UCP from an ERS perspective as a founding member: Environmental and Rural Solutions (ERS) was a small consultancy that had been working in the area for many years, mainly doing environmental assessment for construction and rehabilitation of infrastructure to service rural areas. The work, even though it paid well, left her feeling empty. None of the contractors followed the environmental management plans and no one held them to account. Environmental problems were worsening directly as a result of the so-called development initiatives. There was steady deterioration of grasslands and grazing resources made worse by the relentless advance of invasive wattle, wetlands were disappearing and soil erosion getting worse. Water quality was deteriorating, cattle were sickly, and the communities were getting more and more desperate. It was time that all of the different organisations doing work individually to address resource management issues came together. All of us had expertise and organisational mandates but together, we became a force that could build a thriving Umzimvubu partnership.

With encouragement, and because it was a daunting prospect for a small firm, a funding proposal was put into

UCP members visit the Black Diamond community.

Using a citizen science tool, the clarity tube, to assess the water quality after a spring rehabilitation project.

UCP pioneers reflect on the 10-year journey.

the Critical Ecosystem Partnership Fund – an international organisation which funds civil society initiatives in the world's biodiversity hotspots. The idea was to bring together the strengths of different organisations to work collectively towards shared goals for the catchment. The funding was awarded to formally begin the journey of the UCP. In this same room ten years ago, the first Memorandum of Understanding was signed between the partners, including non-government organisations, national government, municipalities, and local chiefs. It was loosely binding but was entered into in a spirit of co-operation. ERS could now feel that it was no longer alone.

From the very beginning, the UCP was founded on inclusivity. Sinegugu Zukulu, the Conservation South Africa Landscape Manager and the first UCP Chairperson, is another of the early champions. He stands to talk about the pillars of the partnership. One of the most significant and important was the recognition of traditional governance and indigenous knowledge. The partners spent many days walking the landscape, to humbly listen to the perspectives of the communities. The realisation for the need to integrate traditional African conservation culture became reality. Practices such as "maboella" – a Sotho word that reflects the care for shared resources, were mainstreamed into conservation decision making. This required a lot of consultation with community elders and conviction that it was time to change livestock husbandry from ownership to livestock farming. The spirit of collaboration among the community leaders was visionary, they recognised the importance of coming together and blurring the boundaries when it came to conservation.

The partnership took this indigenous knowledge and built on it to develop a system of rangeland management and rotational grazing/resting to be implemented with the local rangeland associations. Chief Lebenya who leads 72 villages in the upper catchment, remembers:

> *"The cattle became healthier, they began to breed again, so it was time to have a stock sale."*

The very first livestock auction happened in 2014. After fearing that no one would come at the end of a busy day there was already a call for the next sale. Similar auctions have since generated more than R60 million to the benefit of the communities. They brought about an entirely new entity, Meat Naturally, that continues to encourage sustainable rangeland management through mobile auctions and has even expanded to other community-owned areas across the country.

Sinegugu Zukulu also highlights another pillar of inclusivity – the efforts to bring political leadership to the table. An open-door policy ensured that local ward councillors knew that they could turn to the UCP for advice and support, and they are using the opportunities effectively. Ex-councillor Ntate Robert Mnika notes that before the partnership, they had no idea about the state of the land that fed the mighty Umzimvubu River, and what a responsibility it was to live in the upper catchment. The concept of a "water factory" resonated, and they realised that their small part of the country held strategic significance for water. It is thanks to the involvement of political leaders that some of the major successes of the partnership have been achieved. Among these is the work towards the declaration of the Maloti Thaba Tsa Metsi "mountains of water" protected environment – that will encompass about 50 000 hectares and six traditional authorities. Together, the partners also stood up against a mining application for shale gas fracking that would have been disastrous for the area. Nicky McLeod, of ERS, notes that:

> *"It was a unifying time. We realised that together we have a stronger voice and were able to speak up to say that water is more important than mining."*

A member of the audience highlights one of the outstanding elements of the Umzimvubu Catchment Partnership. He says:

> *"We are about actually implementing the work. Rather than writing high level strategies with lofty goals, we get down to doing the work. We know what to do, how to do it and who to do it with."*

It is nearly impossible to count the many activities of the collective.

Over the years, the UCP has evolved and become more complex. New partners have joined, and some have fallen away. A drop off in government funding led to new sources of corporate finance. What is needed now is to look to the future, at how a new generation of champions can take over from the old hands. Luckily, the UCP has welcomed the energy and ideas of young people. Many have joined fresh from university, given the opportunity despite the usual requirement for work experience. Within the partnership, they have been able to grow and to learn things that cannot be learnt from a textbook. Amanda Kalaku, who started off as a youth intern says:

> *"I am who I am today because of the Umzimvubu Catchment Partnership."*

It will be up to these young people to continue the Umzimvubu Catchment Partnership for the next ten years, towards even broader, as yet unknown, horizons.

Indigenous people's cultural and religious practices offer solutions to climate change and biodiversity protection

By Sinegugu Zukulu and Caroline Rose

There are numerous indigenous people's cultural and religious practices that could give the world some lessons and solutions to climate change and biodiversity protection. These indigenous practices have often been ignored by mainstream research and education but are critical to the protection of the planet. Indigenous peoples have a long history of living sustainably with the land, and their traditional knowledge and practices can offer valuable insights into how to address climate change. The setting aside of certain areas as sacred sites, totemism and animism are some of these practices. These practices are a way to encourage people to look after all environments.

A **sacred site** is a place that is considered holy or sacred by a particular culture or religion or indigenous people. Sacred sites can be natural features, such as mountains, rivers, or forests, or they can be man-made structures, such as temples, mosques, or churches. Sacred sites are often associated with religious beliefs and practices, and they may be places where people go to worship, pray, or meditate. In some cases, sacred sites are also important for environmental protection. For example, sacred groves in Africa are often home to a variety of plant and animal species that are not found elsewhere. By protecting these groves, we can help to preserve the biodiversity of the region. Sacred sites can provide a refuge for biodiversity in the face of climate change. As the climate changes, many species of plants and animals are being forced to move to new areas. Sacred sites can provide a refuge for these species, as they are often located in areas that are less affected by climate change.

Totemism is a belief system that holds that certain animals, plants, or other natural objects are related to specific groups of people. These objects are called totems, and they are often believed to be the ancestors of the group, or to have special powers that can help the group. Totems are often used in religious ceremonies and rituals, and they can be important symbols of identity for the group. The people with the surname Ngwenya, or Mgwenya, or Mokoena, or Kwena are all associated with crocodile. The Nxumalo or Mkhatshwa clan people in Mpumalanga do not fish.

Animism is a belief system that holds that all things in the natural world, including animals, plants, and inanimate objects, have a spiritual essence. This essence is often called a spirit, and it is believed to be capable of independent thought and action. Animists often believe that they can communicate with spirits, and that they can influence the spirits to help them in their lives. There are many amazing practices that relate to animism that are practiced to show respect to all creation. If these practices could be adopted by entire humankind, it would make a huge difference in biodiversity protection and adaptation to climate change.

The Thathe Vondo sacred forest is an example of a sacred forest, that villagers have maintained.

Traditional ecological knowledge: Indigenous peoples have a deep understanding of the natural world and how it works. This knowledge can be used to develop sustainable practices that protect the environment and mitigate the effects of climate change. For example, indigenous peoples in the Amazon rainforest have developed a system of forest management that has helped to protect the rainforest from deforestation.

Regenerative agriculture: Regenerative agriculture is a type of farming that focuses on building soil health and restoring natural ecosystems. This type of agriculture can help to mitigate climate change by capturing carbon dioxide from the atmosphere and storing it in the soil. Indigenous peoples have been practicing regenerative agriculture for centuries, and their knowledge can be used to help develop this type of farming on a wider scale.

Indigenous-led conservation: Indigenous peoples are often the best stewards of their own lands. They have a vested interest in protecting the environment and they have a deep understanding of how to do so in a sustainable way. Indigenous-led conservation projects have been successful in protecting biodiversity and mitigating the effects of climate change. For example, the Kuna Yala people of Panama have successfully protected their rainforest from deforestation through a combination of traditional knowledge and modern conservation techniques.

Sustainable use of natural resources: Indigenous peoples have a long history of using natural resources sustainably. They have developed traditional methods of hunting, fishing, and gathering that do not deplete the resources they rely on. This knowledge can be used to develop sustainable practices for the use of natural resources in the face of climate change. For example, the Inuvialuit people of the Canadian Arctic have developed a sustainable fishery that allows them to continue to harvest fish while also protecting the fish stocks.

Making legislation more relevant: There is a need for a paradigm shift in South Africa's legislation when it comes to biodiversity protection and climate change policy. The current system is not working, and it is not reaching the people who need it most. One way to address this is to delegate more power to village level committees. Village committees have a deep understanding of the local environment and the challenges that it faces. They are also trusted by the people in their communities. By delegating power to villagers, we can ensure that biodiversity protection is taken seriously and that it is implemented in a way that is sustainable and beneficial to the local community. Addressing climate change and biodiversity protection requires some structural changes:

- Create a legal framework for villagers to manage biodiversity and climate change. This framework would need to define the powers and responsibilities of village committees, as well as the resources that they would need to carry out their duties.

Regenerative agriculture can help to mitigate climate change by capturing carbon dioxide from the atmosphere and storing it in the soil.

- Provide training and support to village committees. This training would need to cover topics such as biodiversity conservation, climate change adaptation, sustainable development, and conflict resolution.

- Create a system of accountability for village committees. This system would need to ensure that village committees are held accountable for their actions and that they are not abusing their power.

The arrival of Western education system and Christianity has had a negative impact on indigenous practices. These practices were often seen as barbaric or backward, and they were often replaced with Western practices. This has led to a loss of knowledge and culture, and it has made it difficult for indigenous people to maintain their way of life.

In recent years, there has been a growing interest in indigenous practices. Scholars and researchers are beginning to see these practices as offering some solutions to the challenges facing our planet. For example, indigenous practices of sustainable agriculture and forest management can help to address climate change. Indigenous practices of healing and wellness can help to address the mental health crisis.

It is important to remember that indigenous practices are not static. They have evolved over time, and they continue to evolve today. Indigenous people are not monolithic, and they do not all practice the same things. However, there are some common themes that run through indigenous practices. These themes include respect for the natural world, a focus on community, and a belief in the interconnectedness of all things.

It is important to support the revival of indigenous practices. These practices can offer us valuable insights into how to live more sustainably and how to improve our

mental and physical health. By supporting the revival of indigenous practices, we can help to create a more just and equitable world. Adapting to climate change and protecting biodiversity do require pragmatic approaches and as such we may not afford to reject any form of knowledge.

Two case studies on the impacts of climate change

By Sinegugu Zukulu

Diary of a rural subsistence farmer in Baleni village - June 2021

Heavy down pours like we are witnessing today are a rare and largely unfortunate incident for us in our area because the negative impact outweighs its positive impact on our rural subsistence farmers. As can be seen in this forecast, heavy rain is scheduled for three days this week.

Under normal conditions (or rather before climate change) the rains stopped at the end of March to allow a dry season from April, May, June, during which harvesting happens. The beginning of July marks the period we start ukuxhoza umbona, (separating maize corn from the cobs). Then, during the month of July, we would expect rain that is associated with cold fronts. This rain is known as umbolisa ndiza (rain that brings about decaying of maize stalks). After this rain, then young shoots of imifino (Cadolo, sincencela, zikeyi, vel'eLudeke, vela kwaMzize, buthuvi beenkumbi, Ndlbezegusha, mambumbu etc) blackjack, amaranth and many others start to grow. We all know that these are the most nutritious super foods that are now being ignored by our young people, out of both ignorance and lack of knowledge. After this, women would be out collecting imifino (imifuno in isiXhosa) emasimini (from crop fields).

During the past ten years things have changed for the worse. Rain in these quantities during this period leads to rotting of our sweet potatoes, (aMadumbe) as they start not cooking well (ukujenga). No matter how long you may cook them they become watery inside and impossible to cook well. Maize cobs in our storage (Udlame) starts germinating, and the beans also germinate before they can be harvested. This means all the money we can make from selling sweet potatoes is gone down the drain with the flood waters.

The bean harvest is at risk as beans are going to start germinating due to too much moisture, and our maize harvest will be rotten and germinate due to high moisture content. We must keep our drying beans indoors in this weather otherwise they will germinate.

Examples of the negative impact of climate: (comments from villagers)

> *"The weak cows are now going to lie down and never be able to wake up. They will not be found for days. Livestock walk long distances to find warm places to hide from this extremely cold weather and the young boys get punished for not finding the livestock." (Vumisa Sobs Issacs)*

> *"It is real disaster. I have lost two kids (young goats) because of harsh weather conditions. They were out with their mothers but late they returned being wet and weak and this morning they were dead. Other*

Mkambati weather forcast.

Bean harvest is at risk, as beans cannot germinate properly due to too much moisture.

Maize harvest rots and germinate due to high moisture content.

thing if our seeds could be confused by this rain and start to germinate, they will die as the winter condition continues. When spring starts there will be less or no more seeds which will result to starvation. We rely on our fields to get Imifino and graze our livestock. Is a real disaster!!" (Tutani Mpunga)

Climate change dictates that we change our ways of storing harvest, as traditional means of storing seeds are impacted by moisture.

Brooding chickens are not spared of the damp.

Peach trees are getting confused as buds are starting to flower telling us it is time to plant again.

Chicken seek shelter in door due to the cold temperatures.

Peach trees are getting confused as buds are starting to flower telling us it is time to plant again. This is the wrong signal as winter is just starting. Brooding chickens are not spared the damp.

Chickens have difficult time during this cold rain, and we have to share our space ekoyini (Shed hut) with these members of the family as they are cold and damp. Those with babies come into the warmer space indoors as the fireside is the best place to be when it is so cold. For the first few weeks we keep the chicks here to protect them from being taken by eagles and Khetshane.

On the flip side these rains fill up our water tanks, the underground water table is also recharged for prolonged stream and spring flow over winter. Grasslands will

This is the Mnyameni river in flood. Yesterday the water was ankle high, and this is what villagers woke up to after a few hours of rain last night.

Rainwater tanks are overflowing.

Rainwater capturing containers are full..

Rainwater causing soil erosion.

regenerate, imifino will come early but perish again under the harsh winters that will follow. Our winters vegetables will grow well. We can start replanting amadumbe now to be ready in December.

When it started raining last night buckets were taken out to capture more rainwater to supplement our rainwater tanks as harsh winter conditions are usually associated with water scarcity, a thorn in the flesh for rural women as they often must travel far to fetch water. However, already rainwater tanks are overflowing and rainwater capturing containers are full, despite the fact that we still have more days of rain ahead.

Raindrops were hitting the ground very hard causing soil erosion. We need good ground covers, i.e., grasses with roots that bind the soil and help to prevent the runoff and subsequent erosion and structural damage. Roads are also flooded, making regular or emergency access to towns or other villages challenging.

In addition:

> *"Too much rain is dangerous especially in rural areas, our kids are crossing streams when they go to school. (Akhona Nkosunaye Ako Tshutsha)*

Roads are flooded, making emergency access to towns or other villages challenging.

Floods in the Wild Coast and KwaZulu-Natal – April 2022

Impact of flooding in KwaZulu-Natal has been widely publicised but very little has been said about the devastation in the Wild Coast. It is important to note that this was not an ordinary rain. This was a rain bomb that came at the wrong time for rural people of the Wild Coast. The cut-off low was an extraordinary one that came too early for the winter season. The amount of rain that fell is also unprecedented as new records of rainfall were set. We have no weather station in our area but South Coast which is next door to us had record rainfall.

In rural areas poorer families could be identified by poor houses that are normally build out of mud. These are usually the first to give-in during these heavy downpours and these recent rains have not been different. The other common impact has been on livestock. Families lost all their weak animals due to low temperatures. Some families at Mgwede village lost up to seven cows. No one knows whether compensation will ever get to these rural people, because to rural people livestock is a bank. The worst devastation has been on our road infrastructure. Roads that have been built through wetlands became impossible to use, the springs sprang up in the middle of some roads rendering them impossible to pass through. All the bridges built in the last 27 years were washed away, mainly due to the fact that they were low level crossing bridges. This led to villages being totally cut off from town and local clinics.

The worst impact to rural areas is the impact on livelihoods and food systems. Climate changes impact food systems in a way that no one could imagine. The month of April is the time when beans that were planted in February are in their last month. The biggest bean harvest happens in May. These heavy down pours in April mean poor harvest of bean crops in the entire Mpondoland coastline. The thing about beans is that they do not like lots of water in the soil when they are growing. Beans play a crucial role in diets throughout winter, as both sources of proteins and main dish that is served with starch. Poor bean harvests mean poor nutrition throughout winter. It also means people will have to spend more money buying beans.

The other major impact has been on the staple food, maize. The maize that is already getting ready for harvest

Some houses that fell down at Gcinisizwe village.

Families lose livestock due to low temperatures.

Mnyameni Bridge near Noxhoko in Ward 25 of Winnie Madikizela Local Municipality (Mbizana).

Road near Mngungu clinic was totally destroyed.

Bazana Bridge at Mgwede village. This bridge was built recently.

Mnyameni bridge at Baleni before and after the community fixed the damage.

has been soaked wet and is now beginning to germinate. The first harvest of maize which was already stored to dry is now also germinating due to excess moisture. So, more people are going to lose maize harvest which is yet to rot due to excess moisture penetrating crops. Rotten maize will have no use to people and could only be used to feed livestock.

Root crops such as sweet potatoes and yams (amadumbe) have not been spared. Sweet potatoes in waterlogged soils get rotten. Sweet potatoes are a coastal crop as it grows well in sandy soil. People grow it in larger amounts so they could sell surplus to people away from the coast. Every farmer now is worried about sweet potatoes getting rotten after these rains. It is stored underground with no issues in winter as soil is normally dry. The other sad part is that the sweet potatoes season has just started in March, with rains coming this early before people have started selling means a huge loss for those who were hoping to sell. The yams (amadumbe) do not cook well once experienced a long period on water-logged soils.

Crocodile River Catchment

The Crocodile River Catchment celebrates Environment Day

By Pride Simelane

According to the United Nations Environment Programme:

> *"World Environment Day, which takes place on the 5th of June annually, brings together millions of people from across the globe, engaging them in the effort to protect and restore the Earth. World Environment Day puts a global spotlight on the pressing environmental challenges of our times. The theme for World Environment Day on 5 June 2023 focused on solutions to plastic pollution under the campaign #BeatPlasticPollution. The world is being inundated by plastic. More than four hundred million tons of plastic is produced every year, half of which is designed to be used only once."*

Environment Day is a great way to teach about environmental awareness, hygiene, pollution and climate change.

The Crocodile (West) River catchment celebrated Environment Day through the participation of young people and community members. This catchment spans portions of the Gauteng, Northwest, and Limpopo provinces, forming part of the Crocodile West and Marico Water Management Area. Residential and commercial development within the catchment has increased significantly over the last few years. These developments have placed tremendous pressure on the environment. The Crocodile (West) River with its major tributaries such as the Jukskei and Hennops Rivers as well as Magalies River feeds into the Hartbeespoort Dam.

Pulset Kids Academy, a preschool in Atteridgeville Ext 6 west of Pretoria observed Environment Day by picking up waste around the Atteridgeville area. This was done with the help of a local non-governmental organisation (NGO) called Soulbent. This established NGO works with citizens to tackle pressing environmental issues in their communities. The objective of Soulbent is to create environmental awareness such as the dangers of pollution, and the importance of hygiene, as well as engage citizens in agriculture related projects and waste management activities. It was established in 2007 to help Gauteng residents tackle their environmental concerns and provide information and support to report litter problems. It has since grown and developed significantly to become a key environmental partner in Gauteng.

On Environment Day the Pulset Kids Academy along with community members participated in a Soulbent project activity, where over one thousand children and adults were involved in cleaning up an illegal dumping site along the Moganwe River. Community-based initiatives such as these create awareness among communities and relevant stakeholders of the need to care for South African water resources and to actively become involved in the protection and management of our water resources.

Pulset Kids Academy students with the posters they made for Environment Day.

Pulset kids planting in their school garden on Environment Day.

The kids working with the community to pick up waste around Atteridgeville.

Also, in collaboration with Soulbent project recycling and gardening services, the Pulset kids cleaned up the surrounding area, promoting awareness to highlight the urgent challenges we face with pollution.

Hygiene is one of the themes taught and practiced as part of Pulset's curriculum. The learners made posters, performed songs and rhymes that teach and create awareness about hygiene, pollution, climate change and the importance of recycling for the community and guests in attendance.

Learners were also given practical demonstrations of the appropriate attire to wear and tools to use when cleaning up. They will then be able to share the lessons learnt in their homes.

Additionally, other learners had the opportunity to plant spinach in the schools' food garden. The clean-up received support from the Gauteng Department of Agriculture and Rural Development, Department of Water and Sanitation, Department of Environmental Affairs and Tshwane Metro.

SANBI

SANBI contributes to the City Nature Challenge

By Namhla Mbona, Puseletso Nkadimeng and Lucy Ngubeni

The City Nature Challenge (CNC) is an international effort for people to find and document plants and animals in their cities. It is a BioBlitz-style competition where cities around the world are in a contest against each other to see who can make the most observations of biodiversity, who can find the most diverse species, and who can engage the most people. A South African National Biodiversity Institute (SANBI) team participated in the City Nature Challenge from 28th April to 1st May 2023 as part of the Tshwane region. We competed against the thirty-one southern African cities that had registered to participate for this year. This included several South African cities as well as cities from Botswana and Zimbabwe. Prior to the CNC, we made a series of tutorials available online. People could join for free and learn how to use the iNaturalist app and participate in the challenge.

Our team started the challenge at the SANBI National Botanical Garden in Pretoria, and we also visited the Austin Roberts Birds Sanctuary. Through participating in the CNC, we hoped to create extensive community awareness of

SANBI provided iNaturalist tutorials before the City Nature Challenge took place.

local biodiversity and increase further exploration of our local environments. The second phase of the challenge is uploading and identifying the observations. The identification period for CNC observations took place from 2nd to 7th of May 2023. Each identification helps confirm or improve the community's consensus on what species the record represents, as the observations need to be identified before being counted.

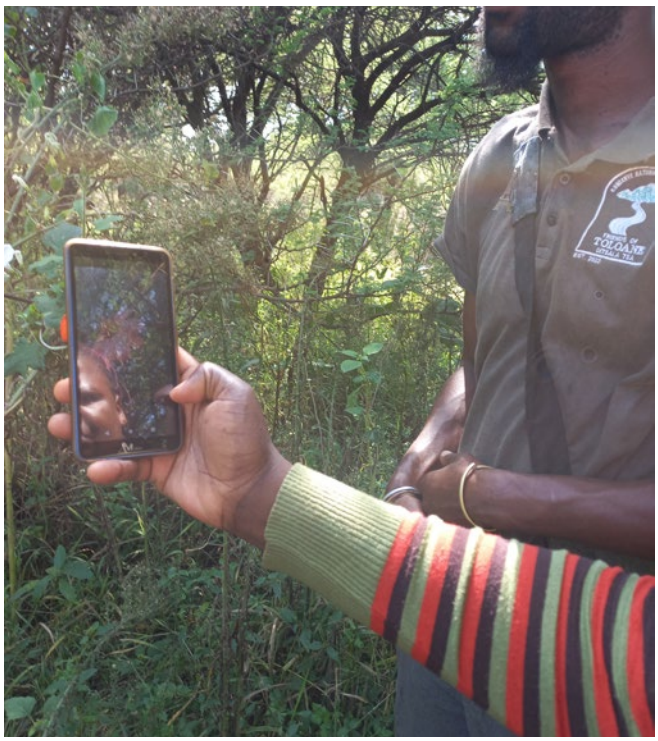
The results for the southern Africa region for the most observations, species, and observers for the top five cities, from the highest ranking, was as follows: City of Cape Town; eThekwini; Overstrand; Garden Route; and Overberg. The City of Tshwane came in the 10th position this year with the participation of observers decreasing by 66 compared to the year 2022. The City of Tshwane region recorded 1 471 observations, 683 species and 54 observers.

As an organisation, SANBI believes in the importance of sustainability and taking care of our environment. By participating in the CNC, we can contribute to a global effort to increase our understanding of the natural world and promote conservation. The CNC was great exposure to gain knowledge on the local biodiversity that we have in the Tshwane region. It was the perfect opportunity to monitor changes in the cities biodiversity as we are gradually moving into a new season. The public are encouraged to join this exciting initiative. Not only is it educational, but it is a fun outdoor activity, that will enable you to meet other nature enthusiasts.

Join the Great Southern BioBlitz 2023: The 'GSB' for short, is an international period of intense biological surveying in an attempt to record all the living species across the Southern Hemisphere in Spring. The purpose of this event is to highlight both the immense biodiversity spread across the Southern Hemisphere in the flourishing springtime, as well as to engage the greater public in science and nature learning. GSB2023 will be held from 24th to the 27th of November 2023, incorporating different communities, areas, and regions across the Southern Hemisphere.

For more information, contact Namhla Mbona: n.mbona@sanbi.org.za

Wisani Lubisi and Lucy Ngubeni, interns at SANBI admiring nature at the Austin Roberts Birds Sanctuary.



A City Nature Challenge participant using the iNaturalist app.